ROMANIA

Reimbursable Advisory Services Agreement on
Romania Capacity Building for Statistics (P167217)

OUTPUT No. 6e

Report on two (2) five-day workshops for NIS statisticians in methodologies and tools for transforming questionnaires into intelligent statistical e-questionnaires for the inter-census

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THE WORLD BANK
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This report has been delivered in October 2021 under the Reimbursable Advisory Services Agreement on Romania Capacity Building for Statistics (P167217) signed between the National Institute of Statistics in Romania and the International Bank for Reconstruction and Development on September 17, 2019. It is part of Output 6 under the above-mentioned agreement.

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List of Acronyms

CAPI	Computer-Assisted Personal Interviewing
CATI	Computer-Assisted Telephone Interviewing
CAWI	Computer-Assisted Web Interviewing
CONRENA	Consolidation of the National Statistical System Project
EU-SILC	EU Survey on Income and Living Conditions
ICT	Information and Communication Technologies
INS	National Institute of Statistics
LFS	EU Households Labor Force Survey
LINQ	Language Integrated Query
PHC	Population and Housing Census
PAPI	Paper and Pencil Interviewing
RAS	Reimbursable Advisory Services
WB	World Bank

Introduction

This report presents the advisory services provided during the "**two (2) five-day workshops for NIS statisticians in methodologies and tools for transforming questionnaires in intelligent statistical e-questionnaires for the inter-census**" as part of Output 6 under the Reimbursable Advisory Services (RAS) Agreement on Romania Capacity Building for Statistics (Project No. P167217). The project is implemented by the National Institute of Statistics (INS) with support from the World Bank (WB).

This Output provides support to the National Institute of Statistics (INS) for developing a documented system for major statistical works during inter-census. The advisory services consisted of two five-day workshops on the Survey Solutions Designer App. The workshops were attended by 25 statisticians, the first workshop for advanced users, and the second one for very advanced users. The knowledge gained by the participants will support the preparatory work for the inter-census surveys.

The report presents the process for organizing the workshops and the activities performed, the topics covered, the agenda, the materials developed, the observations of the experts/trainers and several conclusions and recommendations for further improving the skills of the INS statisticians. The materials produced for the workshops are available in electronic format and are described in the annexes at this report.

The participants in the workshops offered feedback on the process, knowledge, and skills acquired, showing good understanding of the principles, concepts, tools, and processes of creating templates for data collections for different types of surveys. Among the skills acquired, the participants can now use different tools and methodologies associated with the preparation of nationwide surveys. Following the workshops, the participants were involved in preparing e-questionnaires for specific needs of the INS (e.g., preparing the PHC e-questionnaire or the inter-census e-questionnaire).

1. Preparation of the workshops

The INS carries out year by year sampling surveys at national or regional level to produce statistics in line with the requirements of national or international organizations and as stated in the Annual National Statistics Program. The methods of data collection vary from PAPI to CAPI or CAWI. In its effort to modernize the statistics production one important step of the INS is to transform questionnaires into electronic/intelligent e-questionnaires. As such, the CONRENA project envisages the modernization of statistics along these lines. In this context, through the RAS, two workshops have been organized, of five days each, for knowledge transfer on producing e-questionnaires in advanced and very advanced conditions.

A group of 25 statisticians were selected and nominated by the INS to attend the workshops. Participants were chosen from the statisticians having preliminary understanding and knowledge about the Survey Solutions Designer application and who were involved in producing social statistics. In order to acquire and consolidate the knowledge, the team selected statisticians participated in both workshops, initially in the advanced one, held in February 2020, in a face-to-face approach, and subsequently in the very advanced one, held in October 2021, online, as the COVID-19 pandemic limited the possibilities of face-to-face meetings and collective activities.

Considering the needs of the participants and the requirements for preparing the e-questionnaires, the objectives of the workshops were to: (i) provide knowledge on the Survey Solution Designer application components; (ii) train participants in the use of the C# language in the Survey Solution Designer application, lookup tables, validations and skip patterns; (iii) explain the differences in designing questionnaires for CAPI and CAWI surveys; (iv) go through the real life surveys based scenarios; and (v) practice the development of e-questionnaires. Both workshops covered subjects related to the process of preparing templates for data collections for different types of surveys.

In organizing the workshops, the following main activities were considered:

- Workshop preparation: the focus was on identifying the topics responding to the needs for knowledge transfer. The topics of the workshops and the agenda were set together by the WB experts and the INS specialists. The production of materials and accessories necessary for organizing the classes (presentations, case studies, login application access) were prepared by the WB experts covering the agreed topics. The premises and the equipment for organizing the workshops were provided by the INS.

- Workshop delivery and results: following agreement on the scope and agenda, two five-day workshops were delivered by the WB experts to the participants selected and nominated by the INS, in the format of face-to-face, respectively online, during the periods agreed. The participants actively developed their own questionnaires that covered the topics agreed and had real life-based examples.

2. Activities performed

Workshops' preparation

The preparation of the workshops was based on topics covering the needs for developing the e-questionnaires identified by the WB experts and INS specialists and agreed as part of the agenda.

The topics for the advanced users' workshop were:

- New features in Survey Solutions
- Roster's display modes
- Multi-select combobox
- Collections of categories
- Classifications
- Test Scenarios
- Functions and Syntax
- Dealing with exceptions in expressions
- Useful expressions for a set of questions
- Useful expressions for date type questions
- LINQ and lambda functions
- Selection of member/item within a category
- Random selection
- Lookup tables
- Conditions in Household rosters
- Linked questions and filters for them
- RosterVector in household roster
- Rosters and enabling conditions
- Introduction to CAWI.

The topics for the very advanced users' workshop were:

- New features in Survey Solutions
    - Separation of different data collection operations in different workspaces
    - Dynamic filters
    - Calendar events
- LFS questionnaire and its representation in CAWI:
    - Particular aspects of CAWI
    - Design & validation questions
- EU SILC and its representation on CAPI:
    - Better design for questionnaire optimization
    - Balancing of complexity & quality
- ICT questionnaire and its representation in CAWI
    - Particular aspects of CAWI
    - Design & validation questions

Based on the topics agreed, as above, the agenda for each type of workshop was developed (see Annex 1). The experts also developed training materials that included

presentations, training exercises, video compilations and relevant online articles for the Survey Solutions support page.

Presentation materials and training questionnaires with exercises are attached in electronic form (archive available) to be put at the disposal of the participants and the INS (see Annex 2 and Annex 3 to this report).

The video materials are available on the YouTube channel of Survey Solutions: https://www.youtube.com/channel/UCzGrZ3FiEu5NbDJB2GKazOA
Online help can be found on the Survey Solutions support portal: http://support.mysurvey.solutions .

Workshop delivery and results

The first workshop for the advance users was delivered face-to-face during 24-28 of February 2020 for 25 participants. The second workshop was held in an on-line format for the very advanced users during 11-15 of October 2021, for 25 participants, a measure imposed by the COVID-19 pandemic. The list of participants is available at the INS for both workshops.

The workshops were delivered following several key principles:

- **Interaction:** Participants were encouraged to engage in the workshop discussions. All parts of the workshop covered topics and practical activities that generated interesting discussions and exchanges of ideas.
- **Practicality:** Examples were based on real situations for the Romanian statistics and the international experience. They were used to contextualize the needed tools for e-questionnaire development for the inter-census periods and highlight their usefulness in addressing relevant issues.
- **Learner (participant) - centered:** Participants were encouraged to propose examples from their own experience to apply the means, approaches and methodologies taught.
- **Complementarity:** Experts highlighted links, connections and complementarity of content across the different sessions of workshops whilst avoiding duplication and overlap.

Different teaching and coaching methods and tools used for e-questionnaires development were used intensively during the workshops, among which:

- Presentation (in PowerPoint);
- Sample of questionnaires
- Survey Solution Designer application
- Brainstorming
- Case studies
- Q&A sessions

As a result of the workshops, the participants learned to write advanced validation, enablement and filter expressions using the C# programming language and LINQ expressions. The workshops also covered real life-surveys examples from surveys which were developing by the INS (e.g.: EU LFS, EU-SILC, ICT). The group acquired information and knowledge to create questionnaires for Computer-Assisted Personal Interviews (CAPI) and Computer Assisted Web Interviews (CAWI) as well as an

overview on particularities of each data collection mode (CAPI/ CAWI/ CATI) in Survey Solutions – with focus on CAWI.

Besides some technical difficulties in terms of internet connection during the face-to-face workshop the knowledge transferred to the participants was well delivered and appreciated by them. In the case of the very advanced workshop (online), all equipment and connections worked very well for the entire period. An Interviewer account was created for each participant and they had the opportunity to work through the Supervisor and Headquarter accounts on the examples presented during the workshop.

The questionnaires EU LFS, ITC and EU-SILC were completed through the Designer platform of Survey Solutions and clarifications for which there were questions from the INS were discussed. The EULFS and ITC questionnaires highlighted the particularities of some sections for the transformation from CAPI to CAWI. Examples of the administration and production of data for a questionnaire, including pre-loading data into the questionnaire (https://designer.mysurvey.solutions/questionnaire/details/9219f3fcadcc456694629a1721685327) were presented during workshop. The demonstration of automatic approval of the completed questionnaires through the API method was made resulting in an R. script (Annex 3).

A main result of workshops, the participants were able use the newly acquired knowledge and create their own questionnaire, component by component, on their laptop or computer, despite the sometimes difficult conditions.

3. Conclusions and recommendations

The two workshops were designed to ensure an effective knowledge transfer from the experts of the WB to the participants through in-depth presentation and practice on the topics related to using Survey Solutions Designer App and transforming questionnaires into e-questionnaires. Participants who at the time were working on their own questionnaires were able to get support on questions that they had about particular cases/surveys and work them through during the workshop.

Part of the group of the advanced workshop had information and knowledge from previous workshops provided on Survey Solutions Designer application, which made it easier for them to comprehend the material. However, there were also some participants who did not have any practical knowledge of Survey Solutions, which made it somehow difficult for them to keep up with the group, but for sure the workshop have an added value for them and their work.

In terms of the very advanced workshop, the participants were connected and active all day long in webex sessions and used the chat for questions and answers. The participants were familiar with the Survey Solution platform and this allowed the group to go through the topics in the rhythm corresponding to the daily program, without syncope. Moreover, the participants were active and performed the practical activities daily on a real collection server opened through the "self-service-portal" mechanism on the site https://mysurvey.solutions/ .

An important objective and expected result of the workshops was to establish teams within the INS which have information and can use the tools for designing the e-questionnaires. These teams are prepared to offer guidance to other colleagues from the INS with respect to the designing and development of the components of e-questionnaires and their integration into different surveys.

One important result of very advanced workshop was the hands-on practice on e-questionnaires applicable for current activities of the INS. Several issues were observed during training, allowing to make recommendations for improving the questionnaires, such as:

- rewriting some questions to be more suitable for the CAWI collection method.

- rewriting the explanations / instructions for some questions so that they are suitable for the respondent who will complete the questionnaire without an intermediary (investigator).

- for the CAWI mode, considering that a questionnaire will be completed by a person without the advice of an investigator / interview operator, the questionnaire must be tested on a sample of people from as many professions as possible, with different levels of education and various ages, and depending on the way of interaction with the questionnaire to adapt for a better presentation of information, questions and sections.

- establishing the flow of administration and data collection, both before the design of the questionnaire, but also whenever it is necessary so that, at the end of the questionnaire, the training of the reviewers / investigators is carried out correctly.

- testing the entire data collection and production flow, from the design stage (design), import and assignment (assignments), approval and rejection of questionnaires, the operation of each user role, to the export of collected data and transformation in microdata.

The working tools for preparing the e-questionnaires (login and access to Survey Solutions Designer App) are made available to the participants and can be used in the future in the process of revision or update of the e-questionnaires.

To strengthen and offer continuous support on preparing surveys by using CAPI/CAWI data collection methods and developing e-questionnaires, continuous training and coaching, in-house or outsourced, shall be provided to the INS specialists, both through specific trainings in using the Survey Solutions Designer App, and through workshops for transforming questionnaires into intelligent statistical e-questionnaires.

4. Annexes

Annex 1 - Agenda of workshops

Annex 2 - Presentations during workshops

Annex 3 - Questionnaire practice

Annex 1 – Agenda of workshops

1. Advanced users' workshop agenda

Day 1

Time	Activities
08.30 – 09.30	Validation of participants and other technical issues
09.30 – 11.15	New features in Survey Solutions p1 a. Roster's display modes b. Multi-select Combobox
11.15 – 11.30	Break
11.30 – 12.15	New features in Survey Solutions p2. a. Collections of categories b. Classifications c. Test Scenarios
12.15 – 14.00	Break
14.00– 15.45	Functions and Syntax Dealing with exceptions in expressions Useful expressions for a set of questions
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 1

Day 2

Time	Activities
08.30 – 09.30	Validation of participants and other technical issues
09.30 – 11.15	Useful expressions for date type questions
11.15 – 11.30	Break
11.30 – 12.15	LINQ and lambda functions p.1
12.15 – 14.00	Break
14.00– 15.45	LINQ and lambda functions p.2 . Selection of member/item within a category
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 2

Day 3

Time	Activities
08.30 – 09.30	Validation of participants and other technical issues
09.30 – 11.15	Random selection p.1
11.15 – 11.30	Break
11.30 – 12.15	Random selection p.2
12.15 – 14.00	Break
14.00– 15.45	Lookup tables p.1 . Lookup tables p.2 .
15.45 – 16.00	Break
15.00 – 15.45	Questions and answers Day 3

Day 4

Time	Activities
08.30 – 09.30	Validation of participants and other technical issues
09.30 – 11.15	Conditions in Household rosters
11.15 – 11.30	Break
11.30 – 12.15	Linked questions and filters for them
12.15 – 14.00	Break
14.00– 15.45	RosterVector in household roster Rosters and enabling conditions
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 4

Day 5

Time	Activities
08.30 – 09.30	Validation of participants and other technical issues
09.30 – 11.15	Introduction to CAWI
11.15 – 11.30	Break
11.30 – 12.15	Assessment
12.15 – 14.00	Break
14.00– 15.45	Questions and answers Day 5
15.45 – 16.00	Break
16.00 - 16.30	Conclusions

2. Very advanced users' workshop agenda

Day 1

Time	Activities
08.30 – 09.15	Validation of participants and other technical issues (1)
09.15 – 09.30	Break
09.30 – 10.15	Validation of participants and other technical issues (2)
10.15 – 10.30	Break
10.30 – 11.15	New features in the most recent versions of Survey Solutions: - Separation of different data collection operations in different workspaces
11.15 – 11.30	Break
11.30 – 12.15	New features in the most recent versions of Survey Solutions: - CAPI/CAWI Switch
12.15 – 14.00	Break
14.00– 14.45	New features in the most recent versions of Survey Solutions, like: - Dynamic filters - Calendar events
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 1 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 1 (2)

Day 2

Time	Activities
08.30 – 09.15	Validation of participants
09.15 – 09.30	Break
09.30 – 10.15	Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	LFS questionnaire and its representation in CAWI: - Particular aspects of CAWI - Design & validation questions
11.15 – 11.30	Break
11.30 – 12.15	LFS questionnaire and its representation in CAWI: - Particular aspects of CAWI - Design & validation questions
12.15 – 14.00	Break
14.00– 14.45	LFS questionnaire and its representation in CAWI: - Particular aspects of CAWI - Design & validation questions
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 2 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 2 (2)

Day 3

Time	Activities
08.30 – 09.15	Validation of participants and other technical issues
09.15 – 09.30	Break
09.30 – 10.15	Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	EU-SILC and its representation on CAPI: - Better design for questionnaire optimization - Balancing of complexity & quality
11.15 – 11.30	Break
11.30 – 12.15	EU-SILC and its representation on CAPI: - Better design for questionnaire optimization - Balancing of complexity & quality
12.15 – 14.00	Break
14.00– 14.45	EU-SILC and its representation on CAPI: - Better design for questionnaire optimization - Balancing of complexity & quality
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 3 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 3 (2)

Day 4

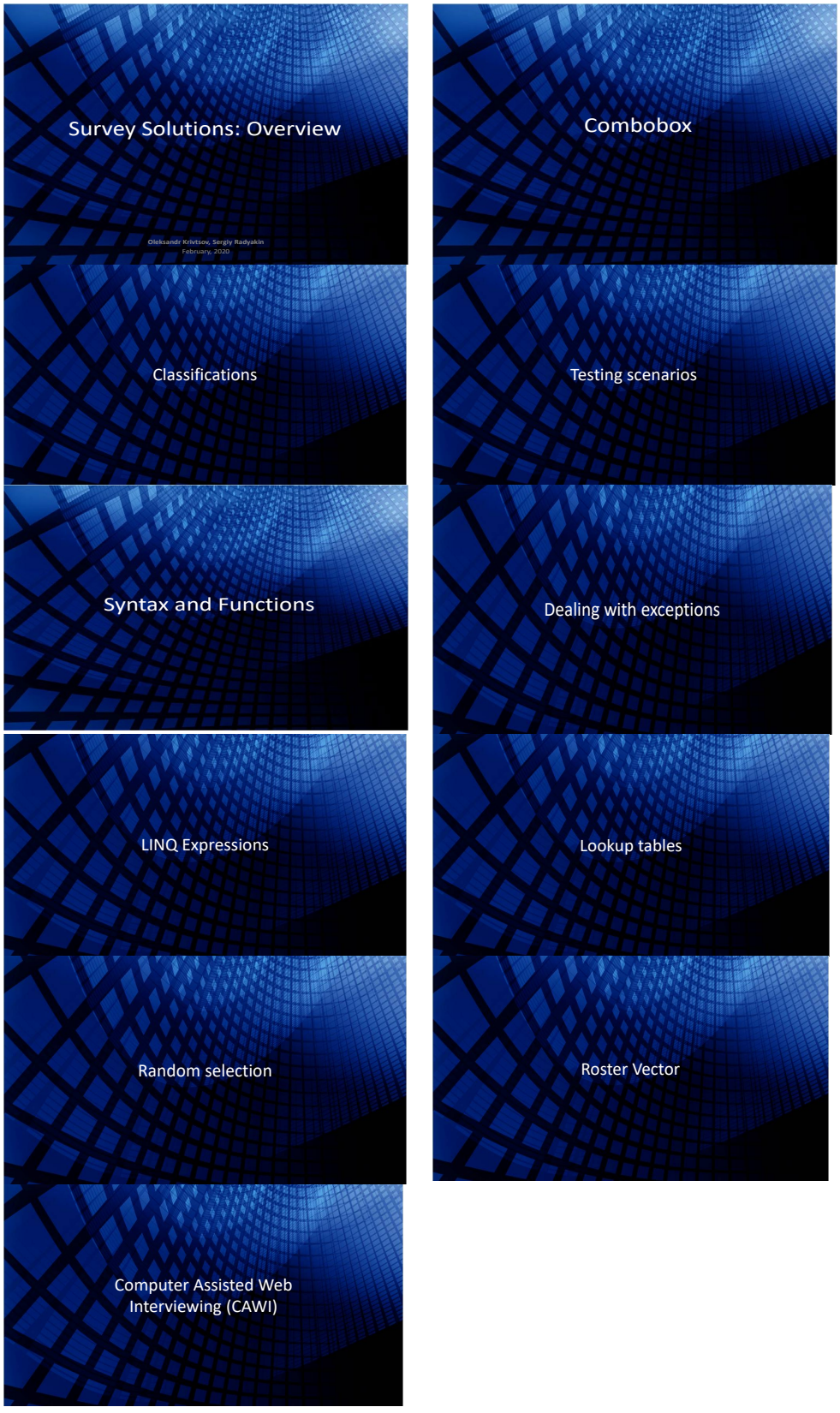
Time	Activities
08.30 – 09.15	Validation of participants and other technical issues
09.15 – 09.30	Break
09.30 – 10.15	Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	ICT questionnaire and its representation in CAWI - Particular aspects of CAWI - Design & validation questions
11.15 – 11.30	Break
11.30 – 12.15	ICT questionnaire and its representation in CAWI - Particular aspects of CAWI - Design & validation questions
12.15 – 14.00	Break
14.00– 14.45	ICT questionnaire and its representation in CAWI - Particular aspects of CAWI - Design & validation questions
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 4 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 4 (2)

Day 5

Time	Activities
08.30 – 09.15	Validation of participants and other technical issues
09.15 – 09.30	Break
09.30 – 10.15	Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	Round up based on previous days topics (1)
11.15 – 11.30	Break
11.30 – 12.15	Round up based on previous days topics (2)
12.15 – 14.00	Break
14.00– 14.45	Questions and answers Day 5 (1)
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 5 (2)
15.45 – 16.00	Break
16.00 - 16.30	Conclusions

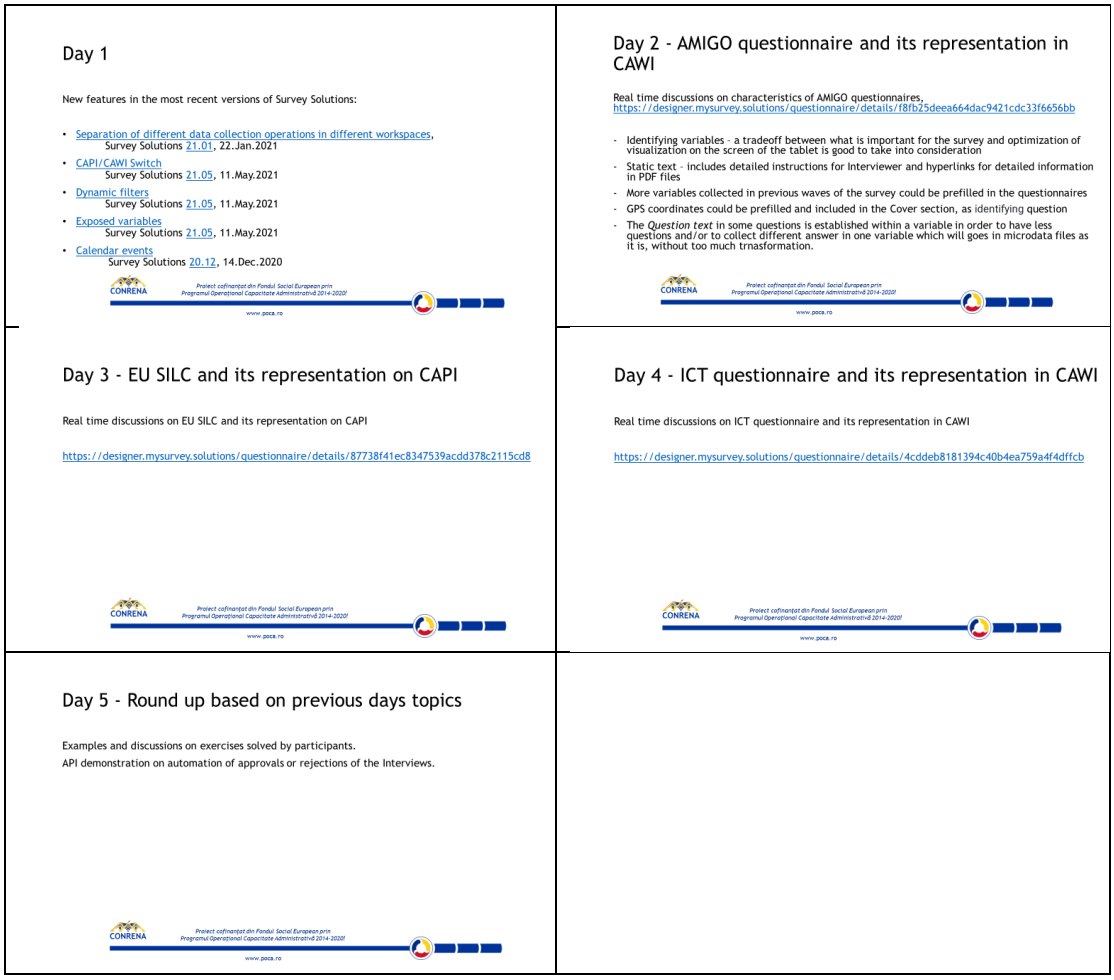
Annex 2 – Presentations during workshops

1. Presentations for advanced users' workshop (cover-pages)



Presentations are available in electronic format in the archive provided with the Report.

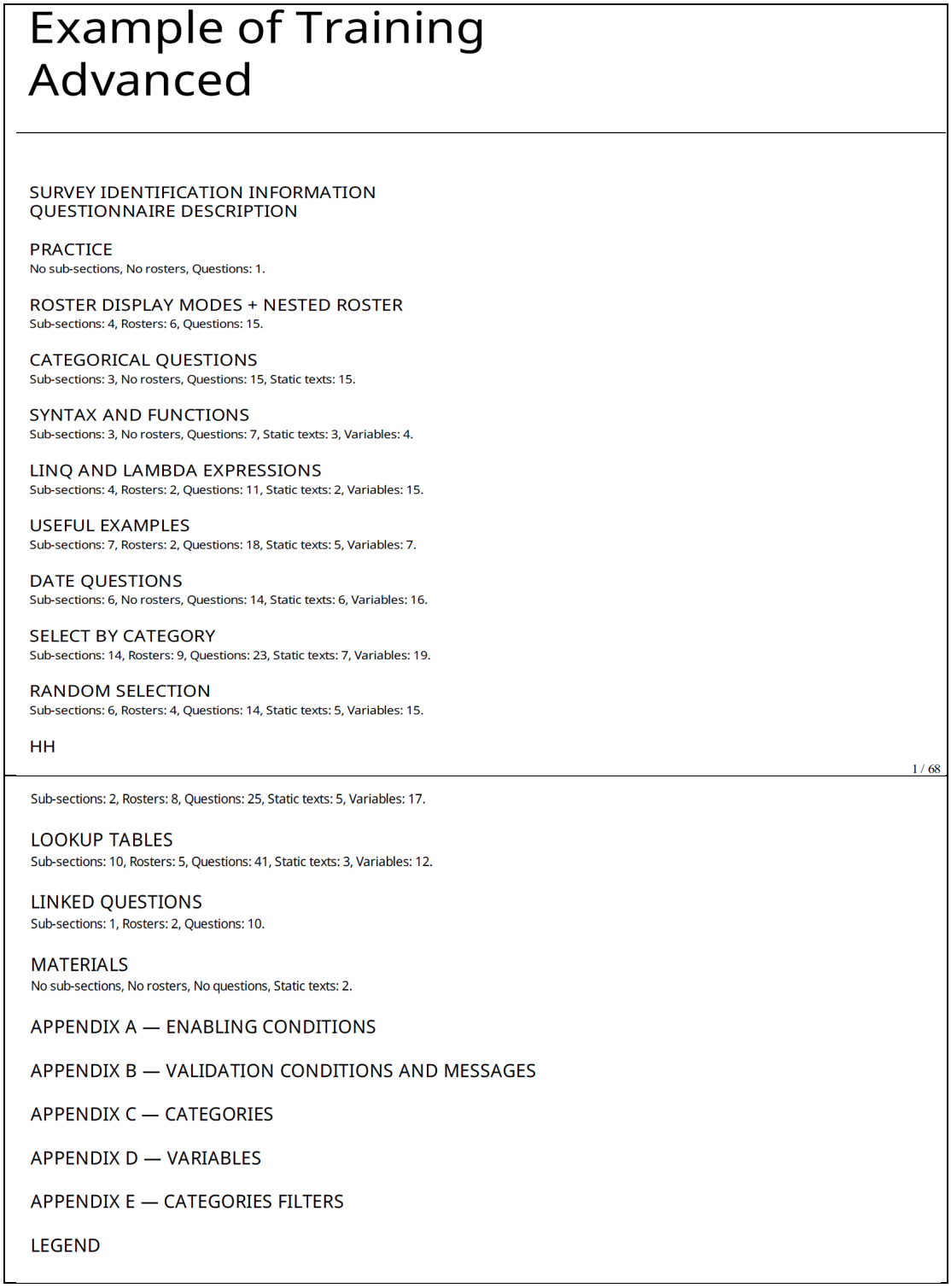
2. Presentations for very advanced users' workshop (cover-pages)



Presentations are available in electronic format in the archive provided with the Report.

Annex 3 – Questionnaire practice

1. Questionnaire practice for advanced users' workshop (excerpt)



Example of Training Advanced

SURVEY IDENTIFICATION INFORMATION
QUESTIONNAIRE DESCRIPTION

PRACTICE
No sub-sections, No rosters, Questions: 1.

ROSTER DISPLAY MODES + NESTED ROSTER
Sub-sections: 4, Rosters: 6, Questions: 15.

CATEGORICAL QUESTIONS
Sub-sections: 3, No rosters, Questions: 15, Static texts: 15.

SYNTAX AND FUNCTIONS
Sub-sections: 3, No rosters, Questions: 7, Static texts: 3, Variables: 4.

LINQ AND LAMBDA EXPRESSIONS
Sub-sections: 4, Rosters: 2, Questions: 11, Static texts: 2, Variables: 15.

USEFUL EXAMPLES
Sub-sections: 7, Rosters: 2, Questions: 18, Static texts: 5, Variables: 7.

DATE QUESTIONS
Sub-sections: 6, No rosters, Questions: 14, Static texts: 6, Variables: 16.

SELECT BY CATEGORY
Sub-sections: 14, Rosters: 9, Questions: 23, Static texts: 7, Variables: 19.

RANDOM SELECTION
Sub-sections: 6, Rosters: 4, Questions: 14, Static texts: 5, Variables: 15.

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Sub-sections: 2, Rosters: 8, Questions: 25, Static texts: 5, Variables: 17.

LOOKUP TABLES
Sub-sections: 10, Rosters: 5, Questions: 41, Static texts: 3, Variables: 12.

LINKED QUESTIONS
Sub-sections: 1, Rosters: 2, Questions: 10.

MATERIALS
No sub-sections, No rosters, No questions, Static texts: 2.

APPENDIX A — ENABLING CONDITIONS

APPENDIX B — VALIDATION CONDITIONS AND MESSAGES

APPENDIX C — CATEGORIES

APPENDIX D — VARIABLES

APPENDIX E — CATEGORIES FILTERS

LEGEND

The Questionnaire in full is available in electronic format in the archive provided with the Report.

2. Questionnaire practice for very advanced users' workshop

The Questionnaire is available in electronic format
https://designer.mysurvey.solutions/questionnaire/details/9219f3fcadcc456694629a1721685327

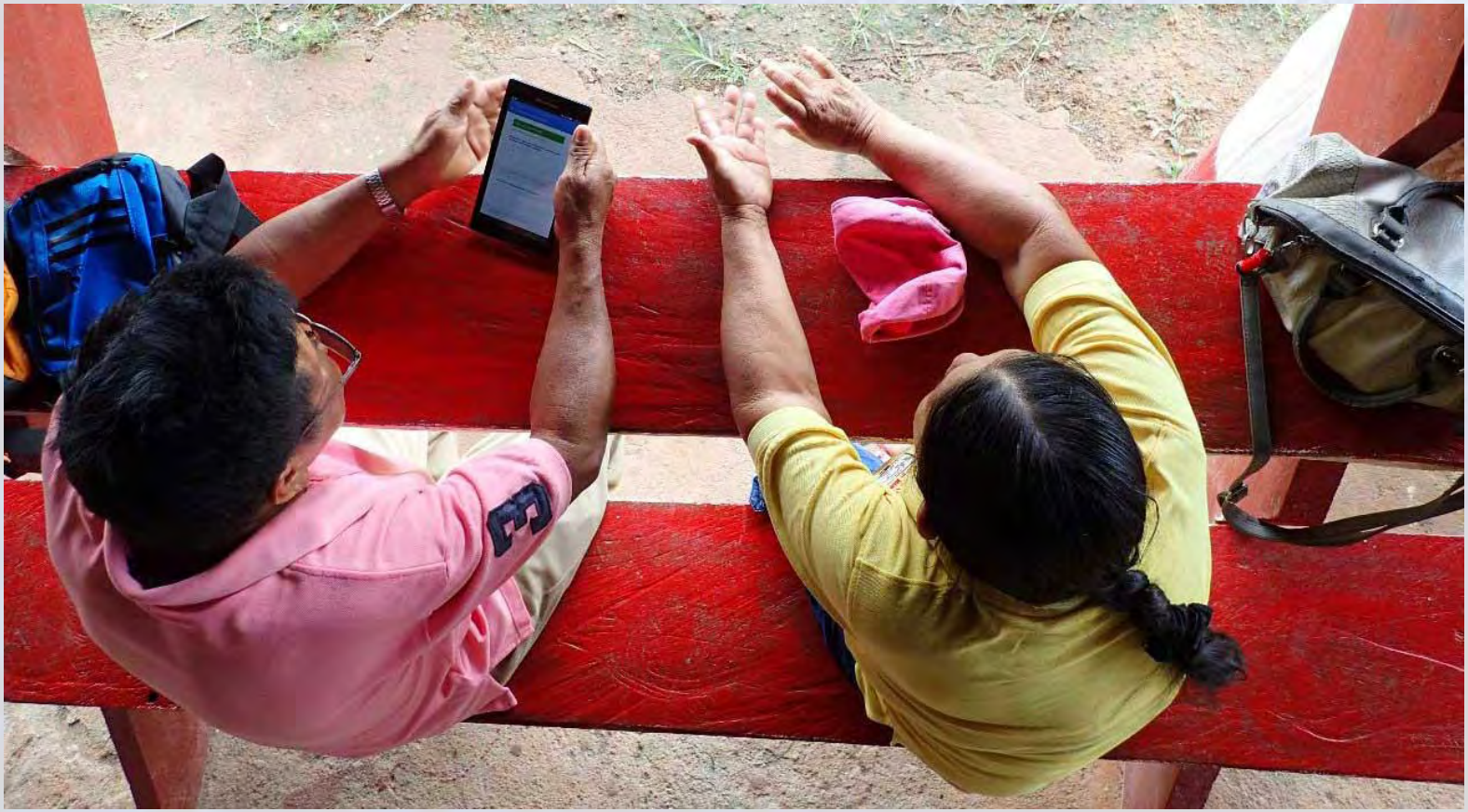
Script for automate approval of questionnaires (automate_approvals.R) is available in the archive with materials of workshops.

Survey Solutions: Overview

Oleksandr Krivtsov, Sergiy Radyakin

February, 2020

Survey solutions



Survey Solutions is a free software for data collection and survey management developed in the Data group of The World Bank.

Applications

Use of Survey Solutions can help solve common data collection problems:

- improve data quality;
- speed up data availability;
- simplify routing and survey coordination.

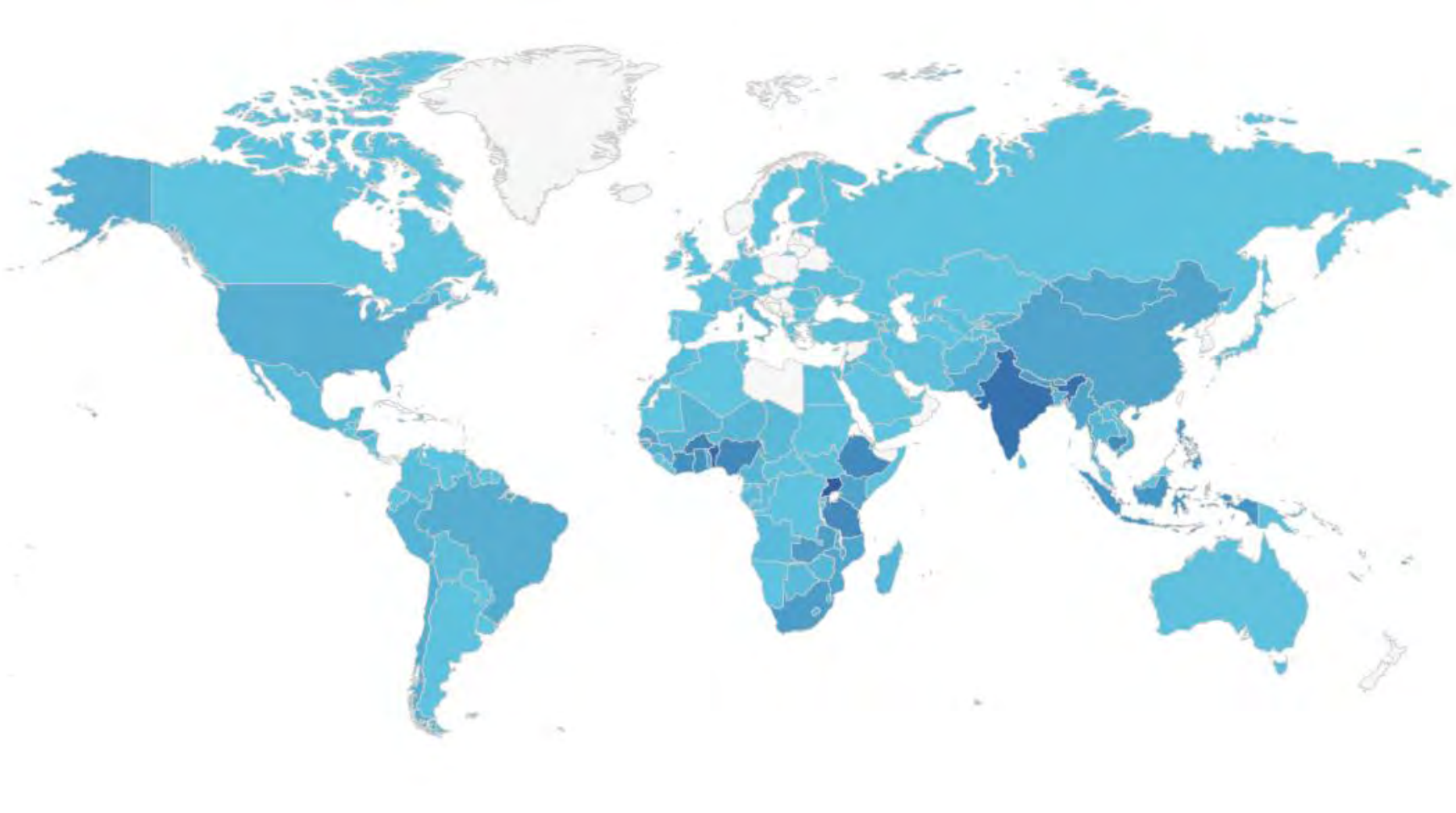
Applications

Survey Solutions provides rich functionality for planning, design and implementation of surveys and is suitable for surveys of all types:

- ✓household income and budget surveys,
- ✓labor force surveys,
- ✓agricultural surveys,
- ✓health surveys,
- ✓enterprise surveys, etc.

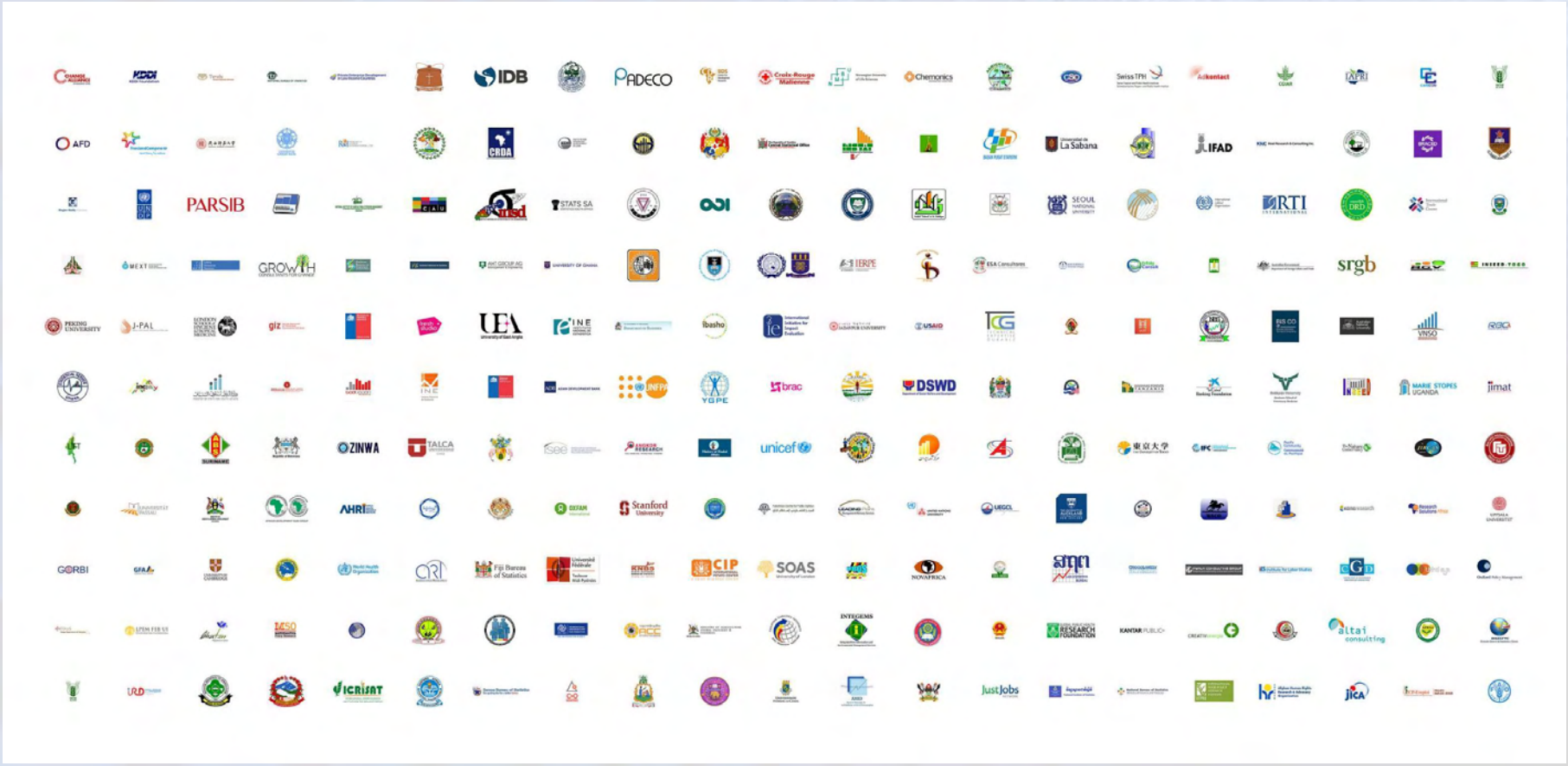
Our clients and partners

Surveys Solutions pipeline: 2500 + national surveys in 170 countries
22,200,000+ face-to-face interviews



Our clients and partners

Our clients and partners are National Statistical Offices, NGOs, Universities, Think Tanks, Private firms and e.c..



Components and Roles

- ✓ Designer;
- ✓ Tester;
- ✓ Headquarter;
- ✓ Interviewer;
- ✓ Supervisor;
- ✓ Administrator;
- ✓ Observer.

Assignments

Survey Solutions software operates based on assignments. An assignment contains:

1. survey questionnaire;
2. responsible person;
3. identifying question;
4. number of interviews;
5. other attributes.

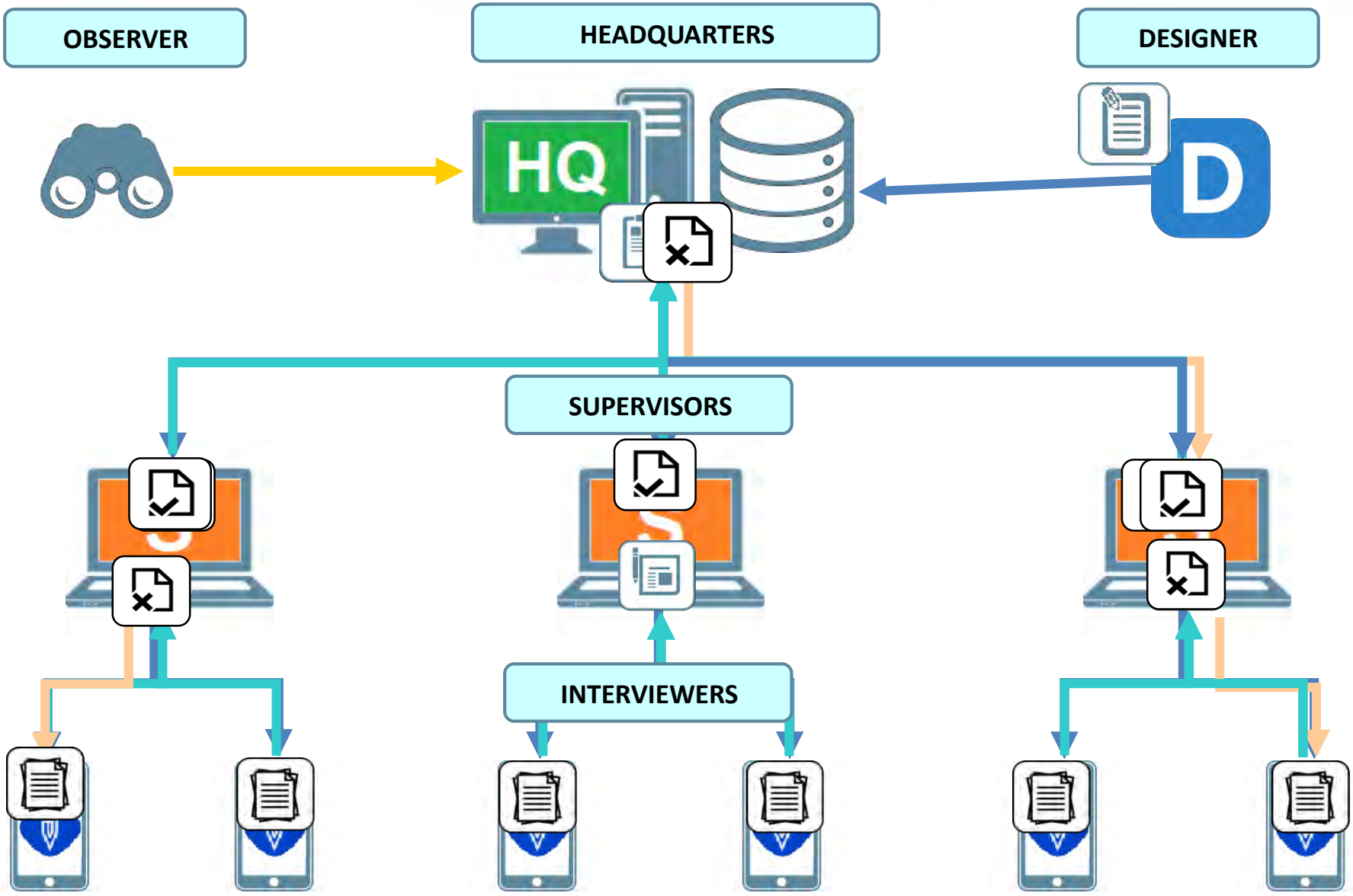
Assignments

Assignments allow interviewing for sample-based surveys or listing/census enumerations, various mixtures of modes.

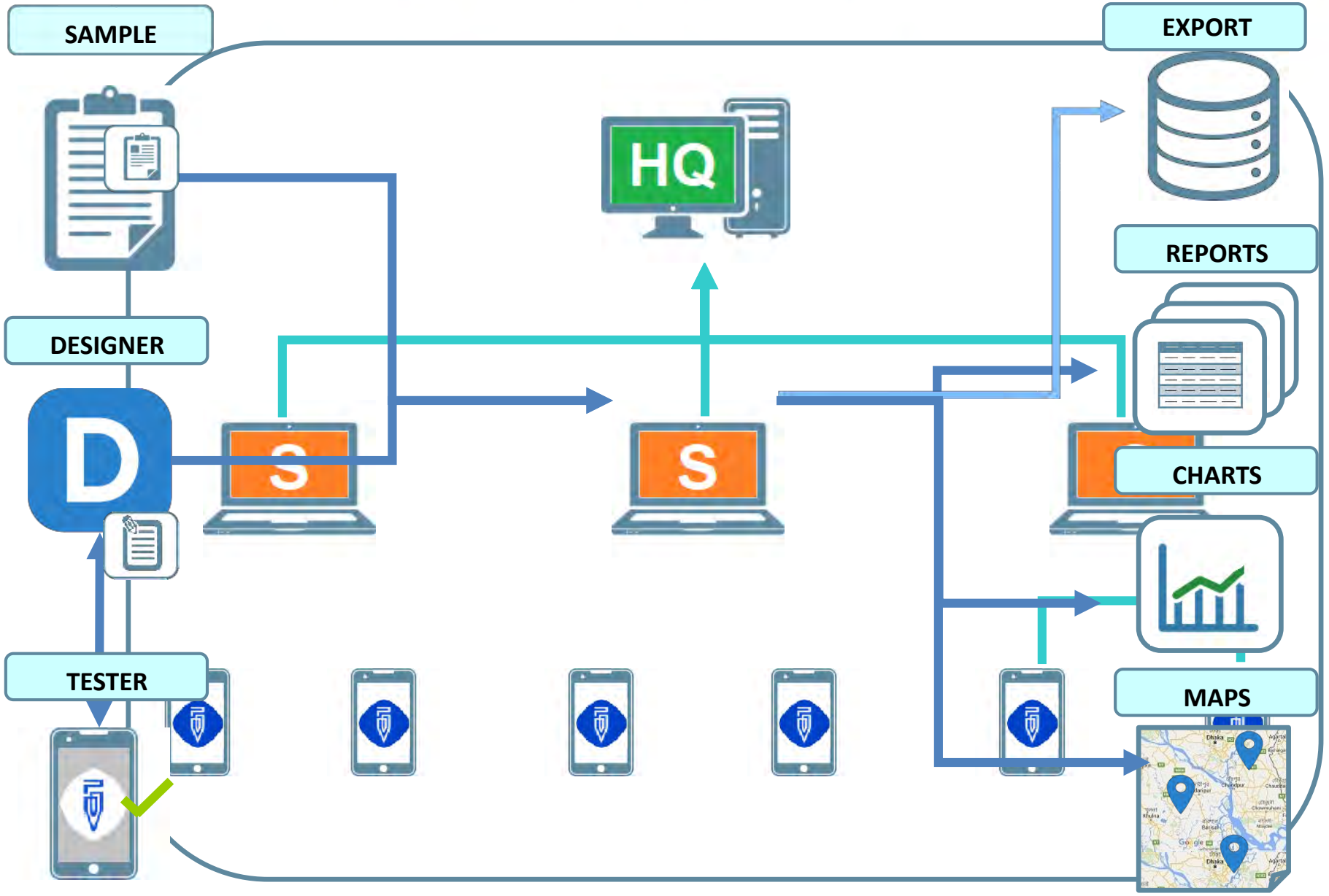
Sample-based surveys

Census and Listing operations

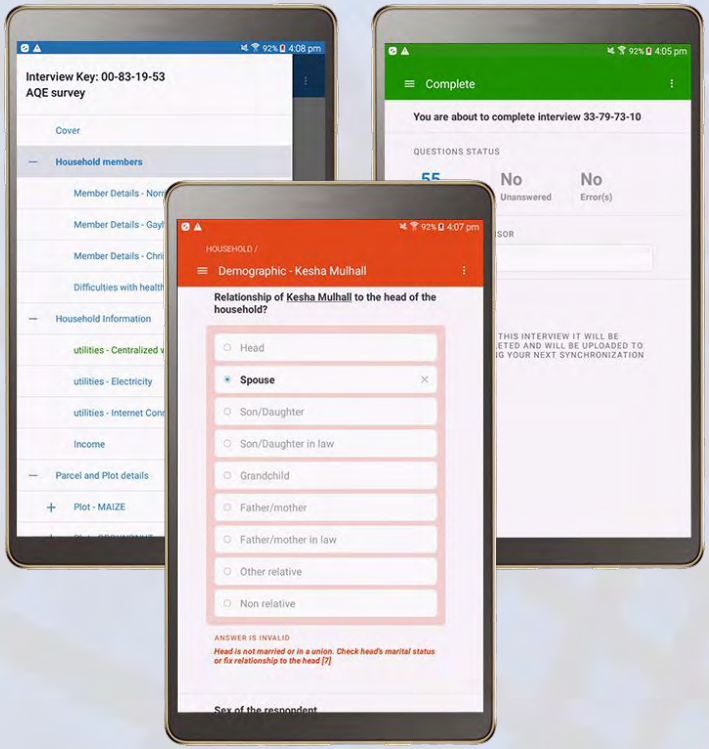
Survey Solutions Flow

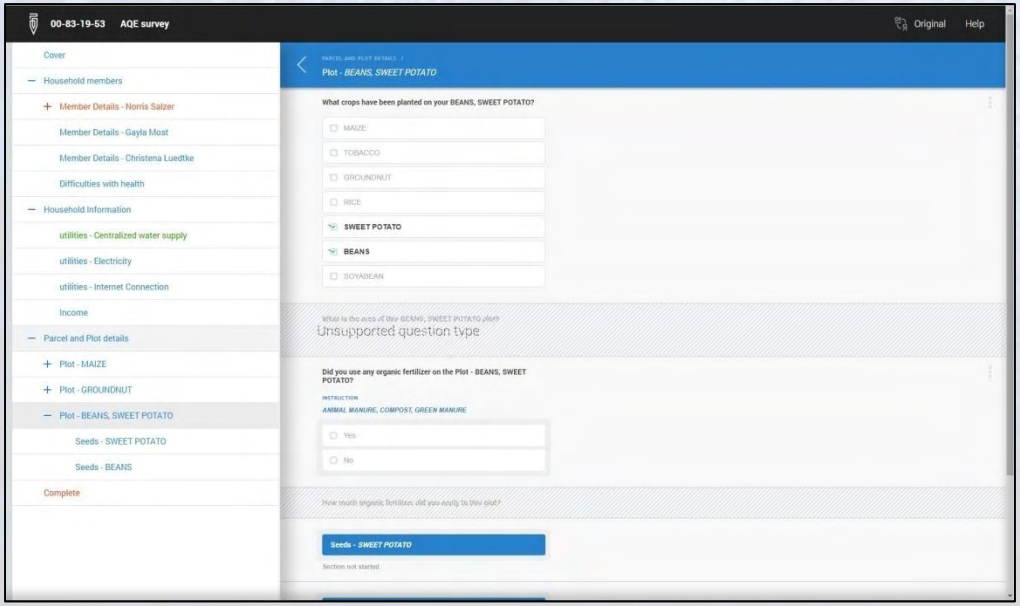


Inputs and Outputs



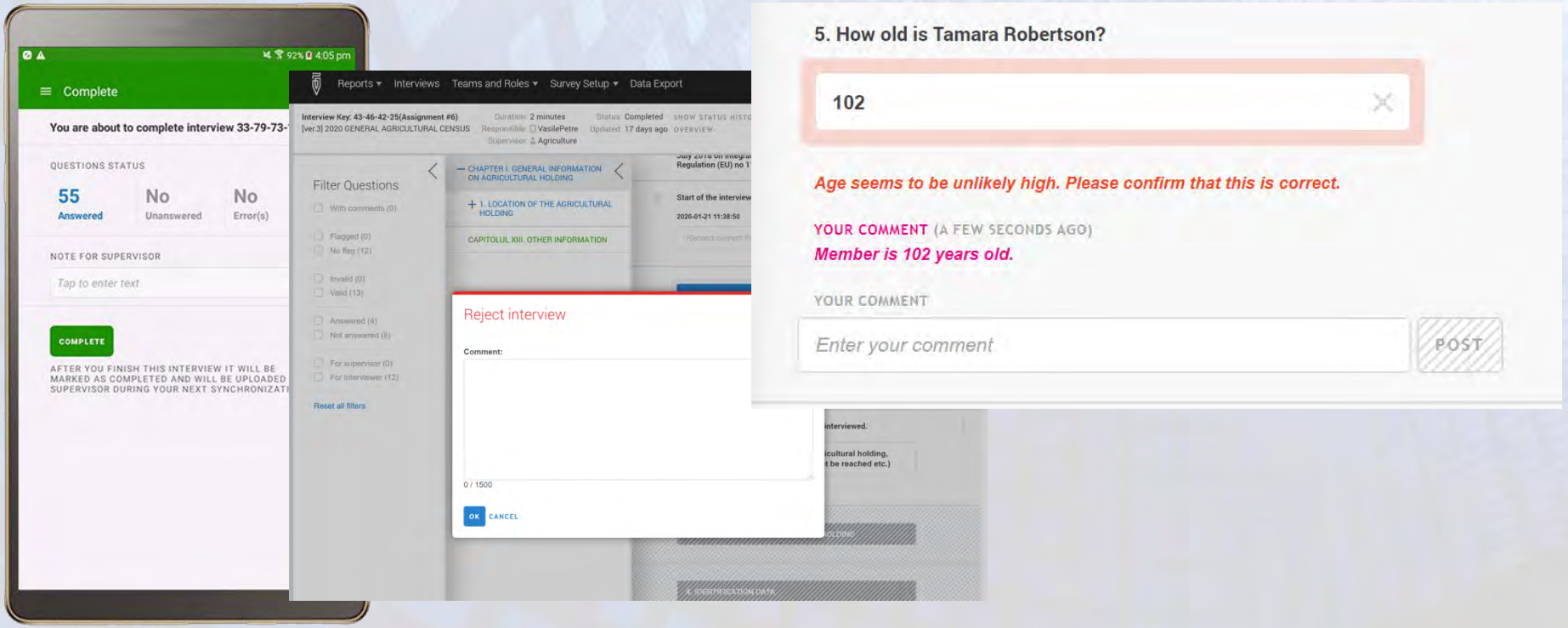
CAPI/CAWI/CATI and mixed modes





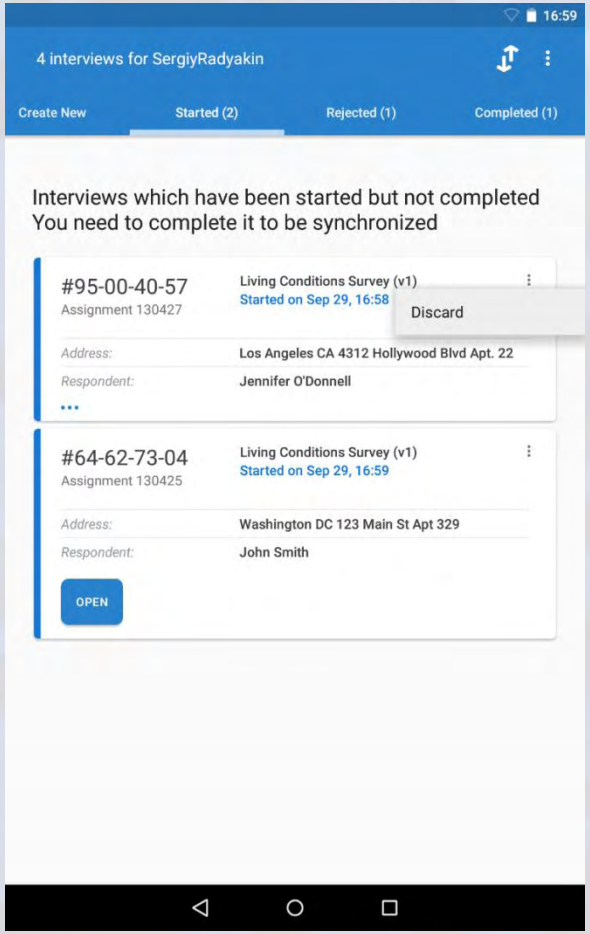
With Survey Solutions you can collect your data offline on tablets (CAPI), online using web-interface (CAWI), capture phone interviews (CATI), and conduct cost efficient mixed mode surveys.

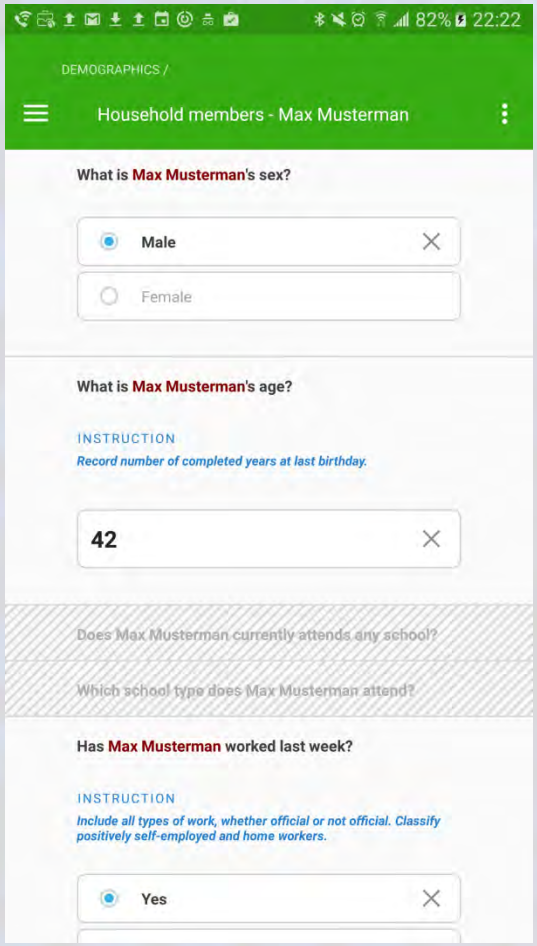
Commentaries

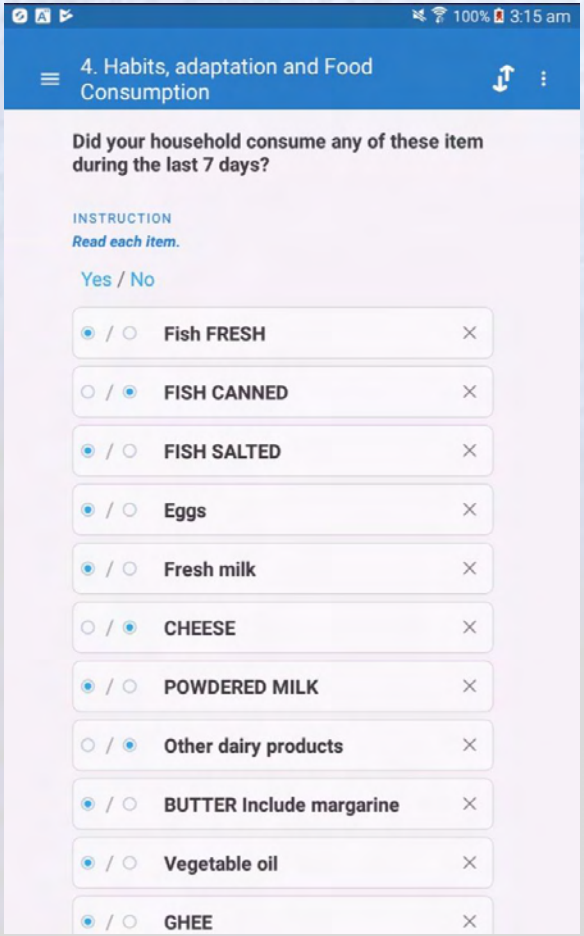


- Throughout the data collection, interviewers and supervisors can use the rich commenting features to exchange notes and requests about the data being collected, and Survey Solutions keeps track of all such communication for audit, training, and quality assurance.
- Commentaries may be question-specific or questionnaire-specific.
- Exported with data, available for analysis after the survey.

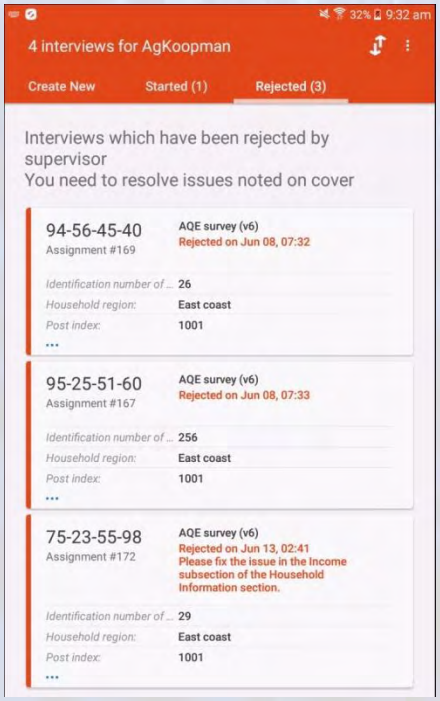
Intuitive User Interface

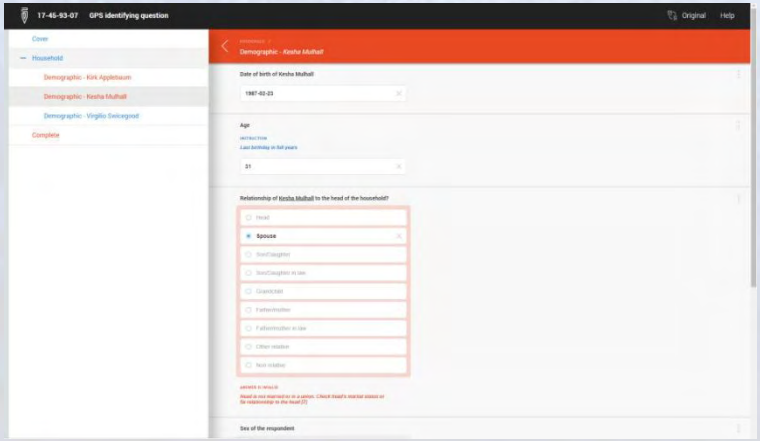






Control quality of your data





Survey Solutions allows you to validate your answers and direct the interview flow; use macros, calculated variables and lookup tables to construct sophisticated data validation algorithms.

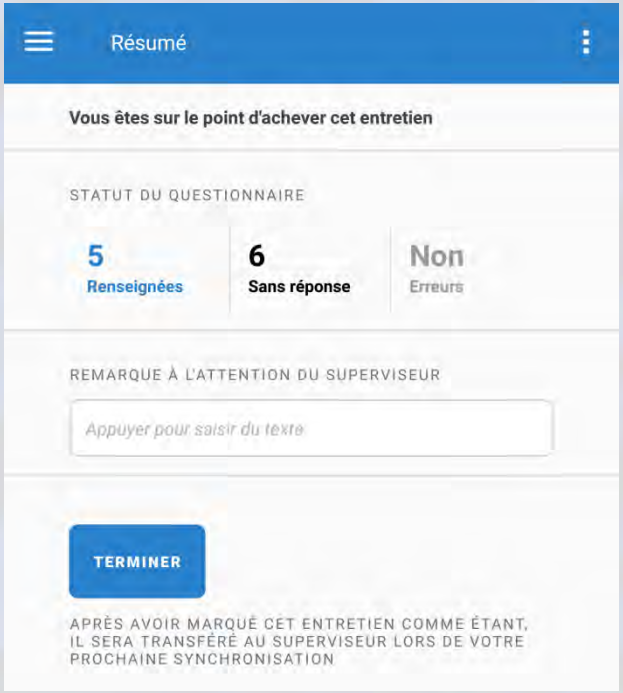
Connectivity

Internet connection is not required during the interview in CAPI mode in the household.

Survey Solutions allows interviewing to be done offline, and the data is synchronized to the remote server when the connection becomes available.

Global Solutions

Writing questions text, options, instructions, error messages in any language/script included in Unicode.



Multiple translations can be prepared by the designer for the same questionnaire, interviewers and supervisors can then switch between them at will.

Capture any type of data with ease

With Survey Solutions you can design your surveys with a full range of standard and novel questions, utilize nested rosters and answer piping, cascading and linked questions and record information from external sensors.

Novel Question Types

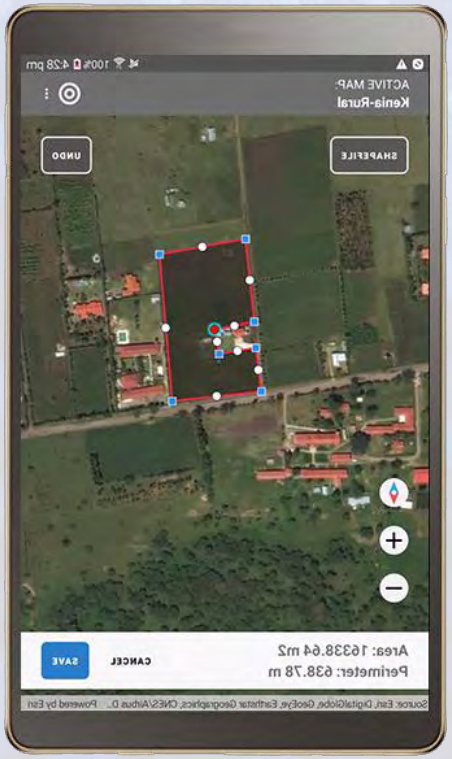
- Novel question types allow capturing information that goes beyond pen and paper, and let the interviewers capture:
  - ✓ Location of the interview;
  - ✓ Map based area estimation;
  - ✓ Audio recording;
  - ✓ Images (of a house, person, document, product and e.c.);
  - ✓ Scan barcodes of various types;

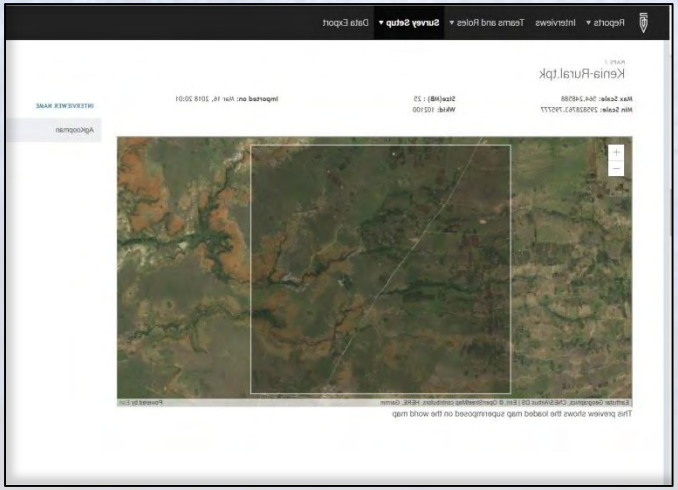
- Cascading selections narrow down the choices for the interviewer;
- Linked questions surve the information captured already in different part of the questionnaire: for example \who is the biological mother of John Smith?", \Who makes decisions on large purchases?"

Rosters

- Questions replication with rosters allow repetition of same questions to each household member or company employee.
- And the validation logic and skips will be automatically replicated too.
- Four types of rosters: fixed, or dynamic, triggered by numeric, multiple choice, or list questions.
- Rosters allow data collection in multiple levels of hierarchy, especially important for agricultural surveys with questions on multiple plots and crops. They can be implemented with nested rosters available in Survey Solutions!

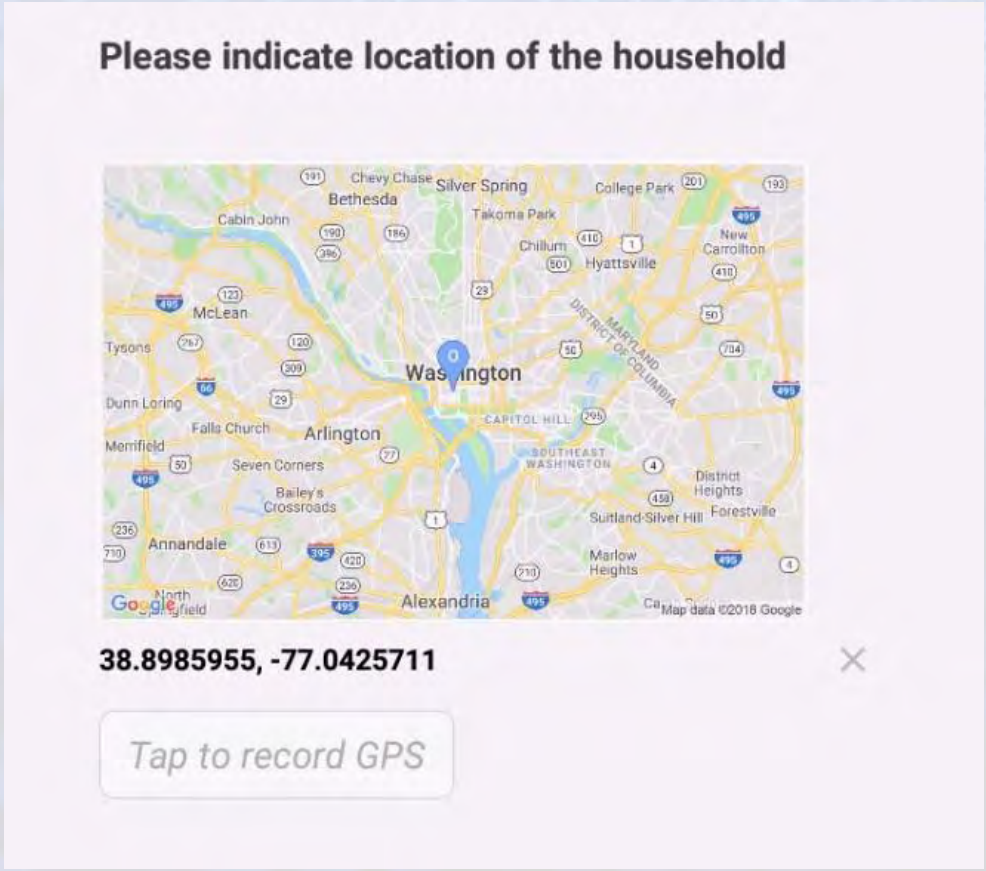
GIS





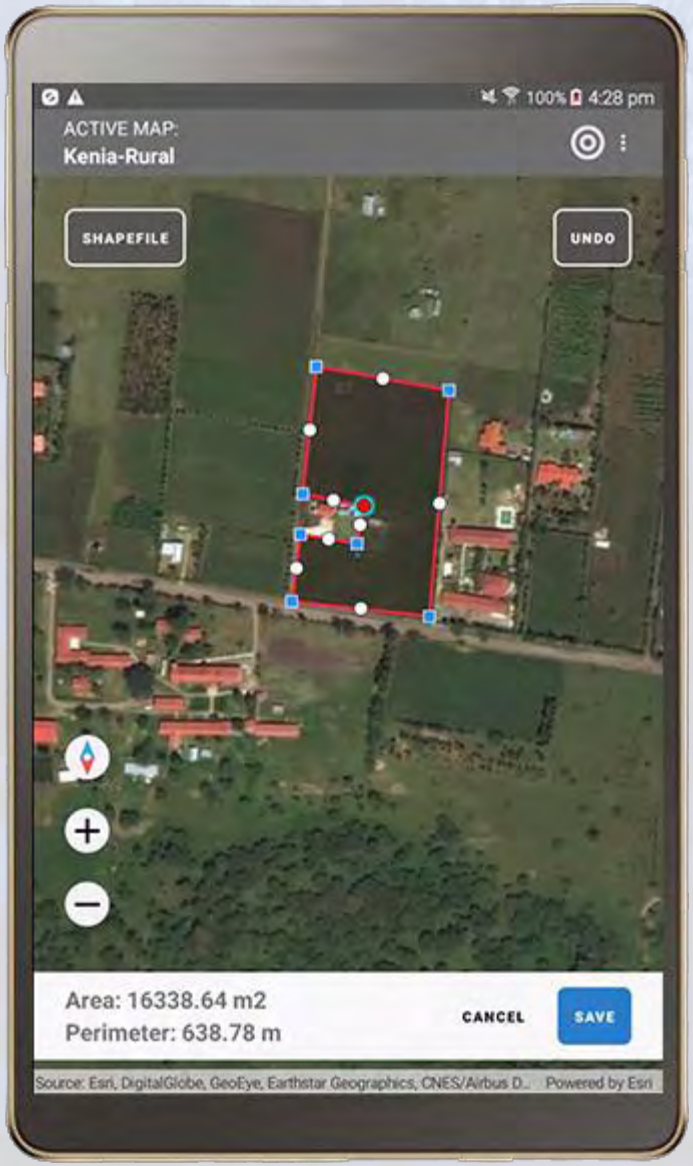
With SuSo you can collect detailed GIS information on locations, distances, and areas, apply geofencing and guide interviewers to the point of interview offline using high resolution satellite images and built-in GPS receivers.

Connectivity GPS



Internet connection is not required for recording location of the households with GPS.

Offline maps



Open Data and Useful Metadata

✓Survey Solutions exports data in tab-delimited data format, which is understood by virtually any major statistical package, spreadsheet or database management application.

✓Data can also be exported for use with Stata and SPSS statistical packages in their native binary formats.

✓Data preloading and creation of assignments in an automatic mode allow facilitation of large surveys and especially panel surveys with ease.

Paradata

- ✓logging information on interview status changes;
- ✓logging individual changes to the interview with timestamps
- ✓ supplement with the GPS location data to discover unusual patterns in enumerators work.

With this information:

- ✓assess performance of the interviewers;
- ✓estimate completion of survey;
- ✓plan field operations and teams;
- ✓creation of custom reports.

Secure and scalable

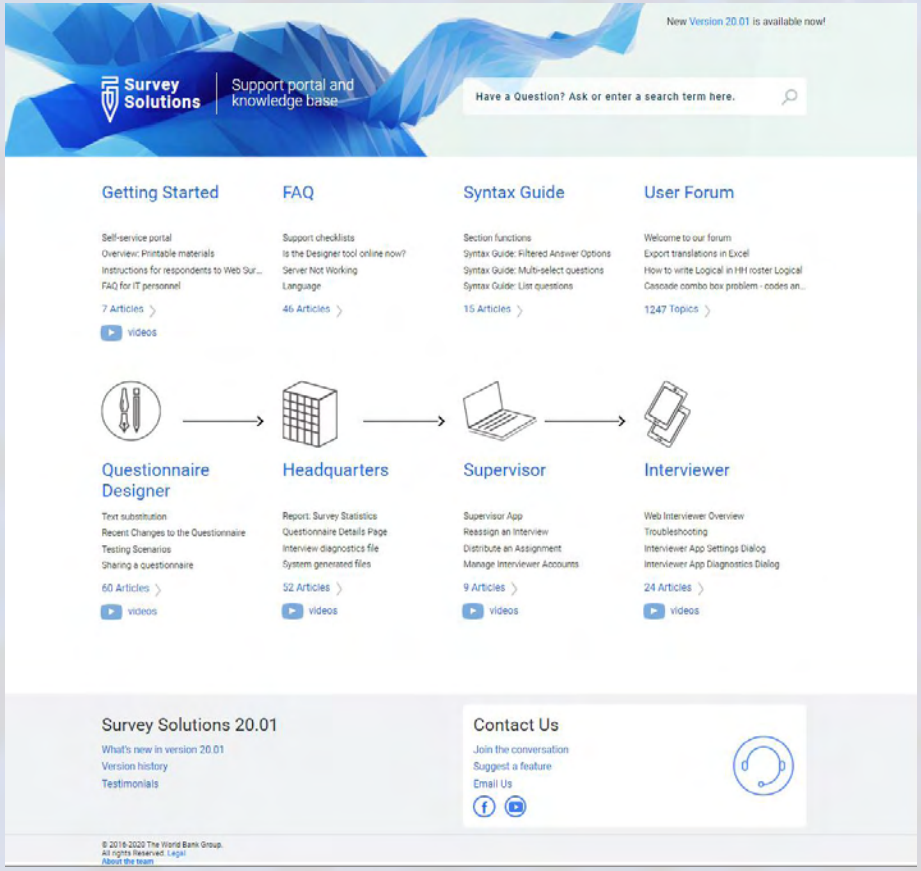
You can run your surveys on highly secure, scalable and free World Bank Cloud or deploy Survey Solutions on your own servers to fully control who and how could access your data.

✓No matter where the server is, Survey Solutions defends your data from unauthorized access and makes data and reports available only to authorized users. As a server administrator you can decide who is performing which role, and the scope of accessible information.

✓Instant data downloads and scheduled backups assure condence in safety and preservation of the collected data.

Supported

Survey Solutions is supported by a team of experts located in different time zones making advising faster and more responsive.



https://support.mysurvey.solutions/

More info

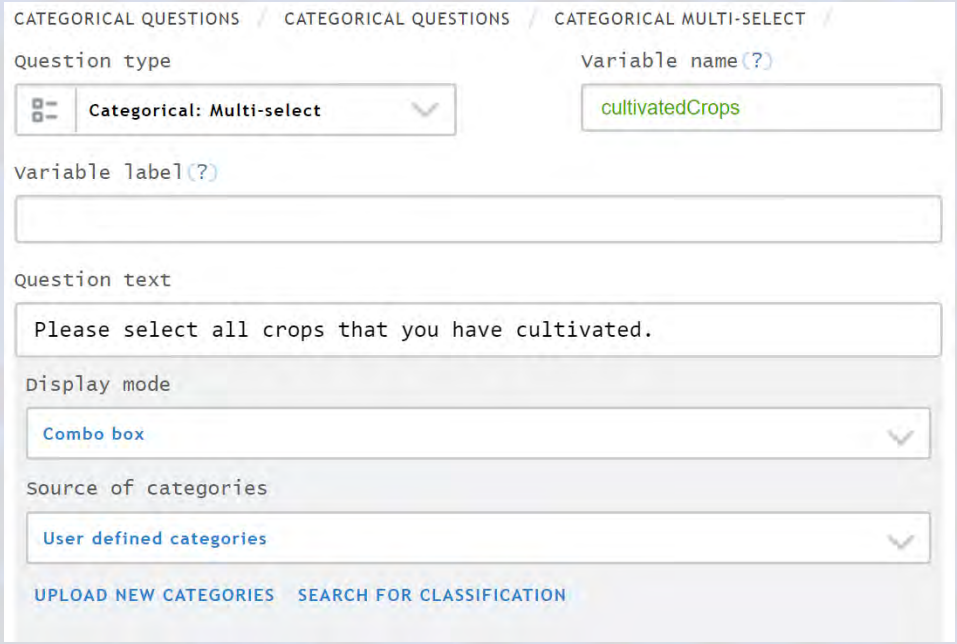
Everyone is welcomed to try Survey Solutions!

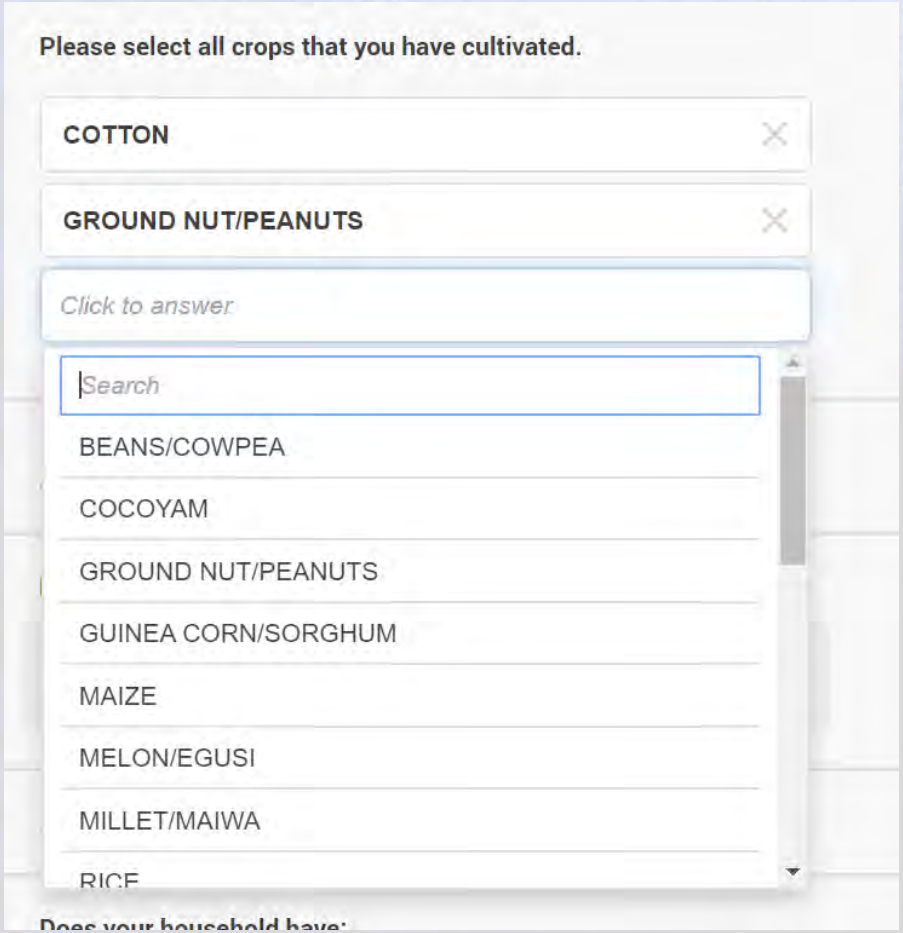
- The documentation for the software:
  http://support.mysurvey.solutions
- User forum:
  http://forum.mysurvey.solutions
- The web-based survey designer tool at:
  http://designer.mysurvey.solutions
- "Survey Solutions Tester" app at Google (TM) Play
- Check for yourself how you can capture and accumulate the data using our 24/7-available demo server:
  https://demo.mysurvey.solutions
- When ready, request and manage your dedicated Survey Solutions server:
  https://mysurvey.solutions

Combobox

Multi-select: Combo box

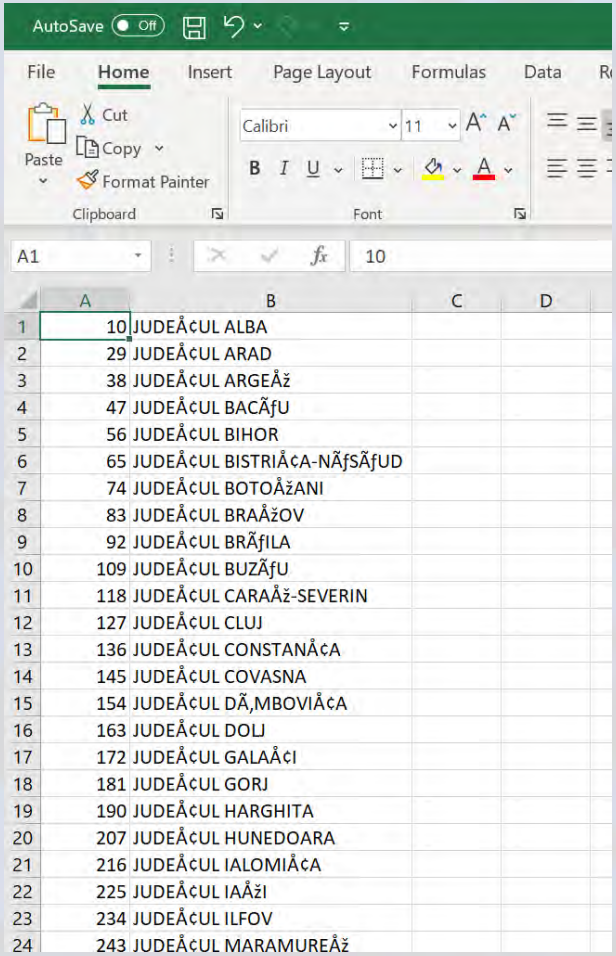
- The typical use of this kind of question is most suitable for, e.g. agricultural surveys, where question like *"What crops do you grow on this plot?"* are common, and simply a large number of possible option categories
- The number of positive selections is still limited up to 200



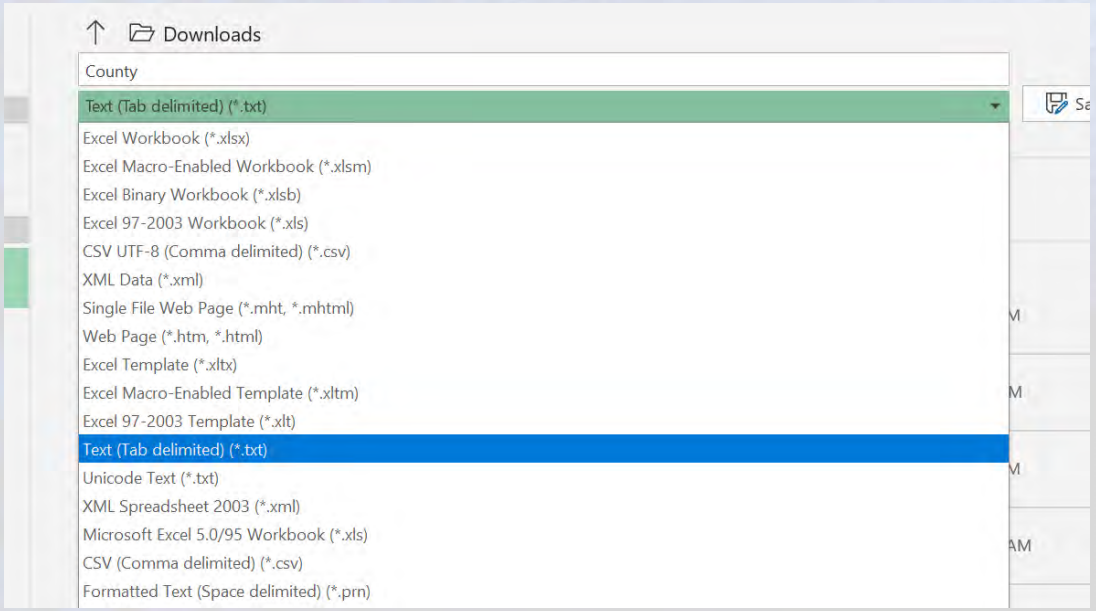


How to createe a Combo box file

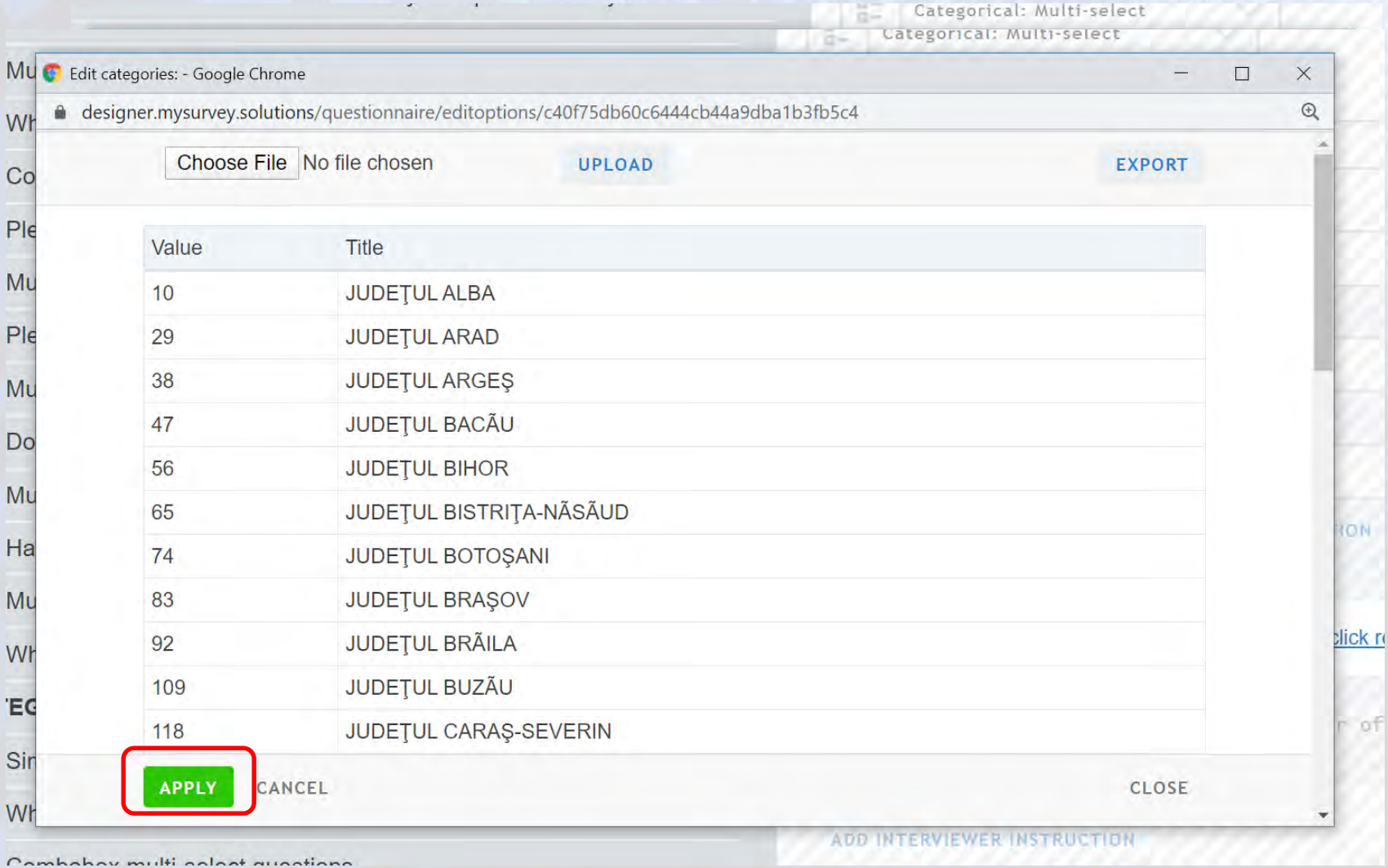
To create an auto complete question:
Prepare a file of choices: tab delimited file with two columns numeric code and text label.



	A	B	C	D
1	10	JUDEÅ¢UL ALBA		
2	29	JUDEÅ¢UL ARAD		
3	38	JUDEÅ¢UL ARGEÅž		
4	47	JUDEÅ¢UL BACÃƒU		
5	56	JUDEÅ¢UL BIHOR		
6	65	JUDEÅ¢UL BISTRIÅ¢A-NÃƒSÃƒUD		
7	74	JUDEÅ¢UL BOTOÅžANI		
8	83	JUDEÅ¢UL BRAÅžOV		
9	92	JUDEÅ¢UL BRÃƒILA		
10	109	JUDEÅ¢UL BUZÃƒU		
11	118	JUDEÅ¢UL CARAÅž-SEVERIN		
12	127	JUDEÅ¢UL CLUJ		
13	136	JUDEÅ¢UL CONSTANÅ¢A		
14	145	JUDEÅ¢UL COVASNA		
15	154	JUDEÅ¢UL DÃ,MBOVIÅ¢A		
16	163	JUDEÅ¢UL DOLJ		
17	172	JUDEÅ¢UL GALAÅ¢I		
18	181	JUDEÅ¢UL GORJ		
19	190	JUDEÅ¢UL HARGHITA		
20	207	JUDEÅ¢UL HUNEDOARA		
21	216	JUDEÅ¢UL IALOMIÅ¢A		
22	225	JUDEÅ¢UL IAÅžI		
23	234	JUDEÅ¢UL ILFOV		
24	243	JUDEÅ¢UL MARAMUREÅž		



How to upload a Combo box file

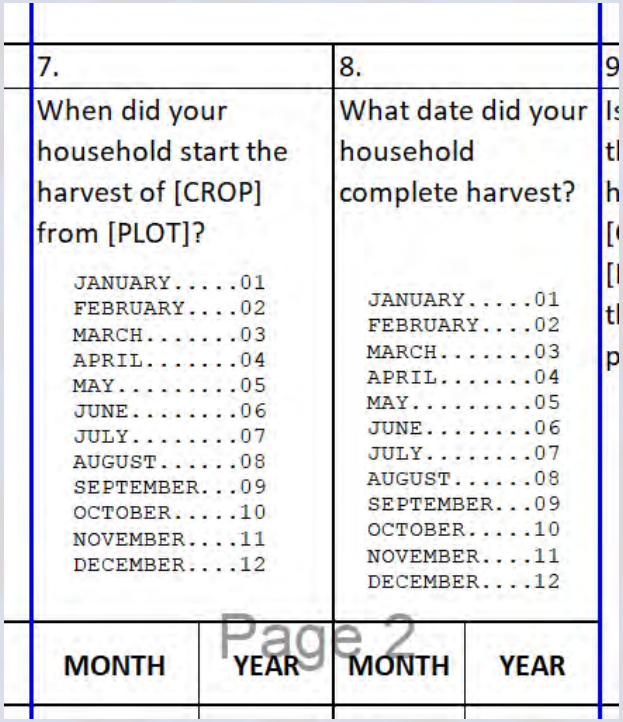


Combo box

LIVE DEMO: how to create combo box file

Reusable categories

A questionnaire designer may define a set of categories and use them multiple times across the questionnaire in different single-select and multi-select questions. For example, the same list of all countries in the world could be reused for questions *“Which countries have you visited?”*, *“Which country did you visit last?”*, *“Which country do you plan to go next?”*.



7.		8.	
When did your household start the harvest of [CROP] from [PLOT]? JANUARY.....01 FEBRUARY....02 MARCH.....03 APRIL.....04 MAY.....05 JUNE.....06 JULY.....07 AUGUST.....08 SEPTEMBER...09 OCTOBER.....10 NOVEMBER....11 DECEMBER....12		What date did your household complete harvest? JANUARY.....01 FEBRUARY....02 MARCH.....03 APRIL.....04 MAY.....05 JUNE.....06 JULY.....07 AUGUST.....08 SEPTEMBER...09 OCTOBER.....10 NOVEMBER....11 DECEMBER....12	
MONTH	YEAR	MONTH	YEAR

There are numerous advantages of this approach:

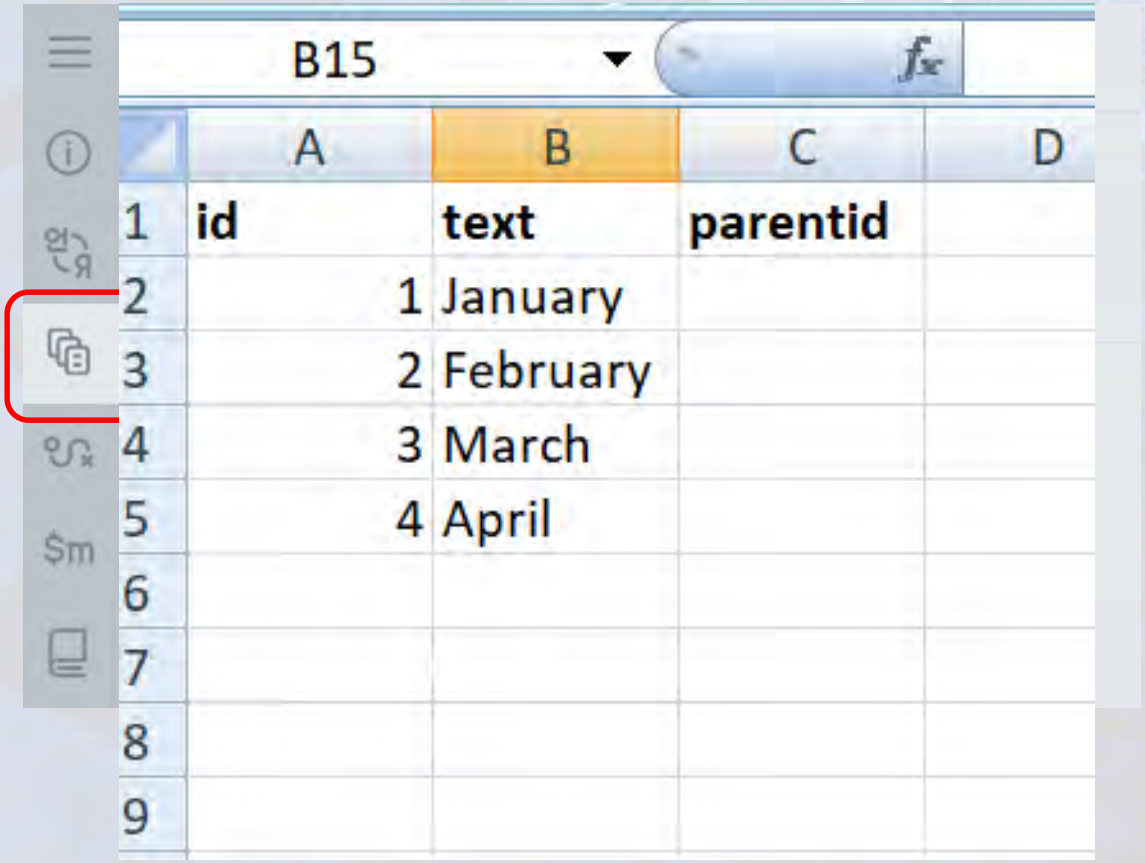
✓Categories are defined once, subsequent reuse is faster for the designer;

✓Any changes in the list immediately affect all questions where these categories are used;

✓The questionnaire becomes more compact (in terms of its size);

✓There is less work for the translator as the translation needs to be supplied only once.

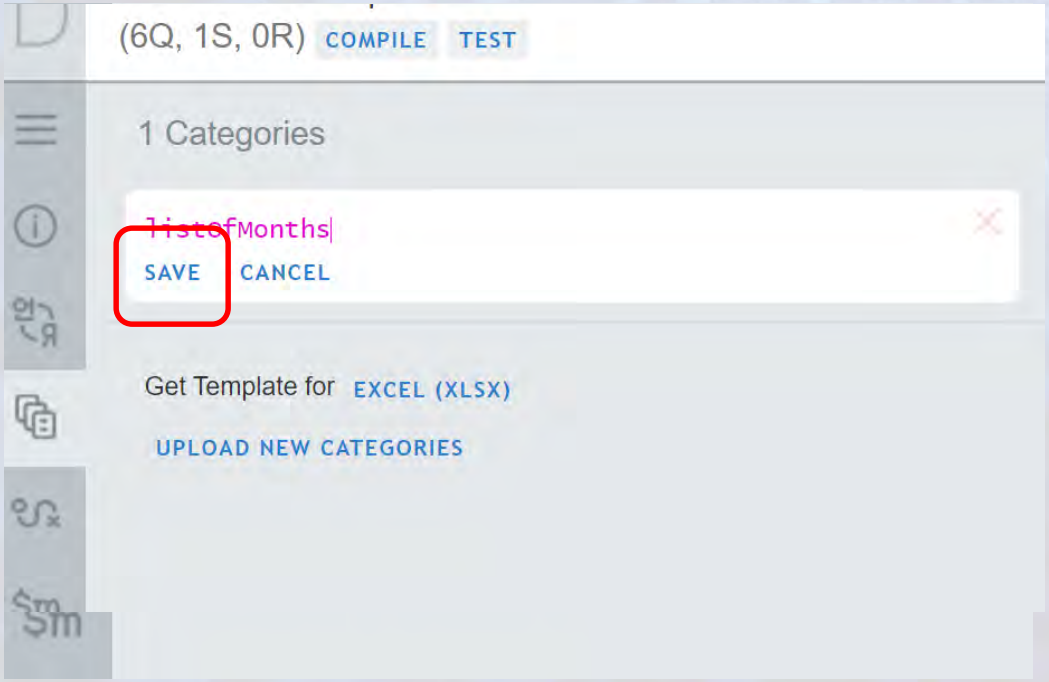
Reusable categories: Step 1



To create a categories file:

1. Click the Categories icon located on advanced panel.
2. Download the template.
3. Add your categories to the file.
    1. ID – value(code) of an option;
    2. Text – Title(text) of an option;
    3. ParentId – used for cascading combo box mode.
4. Safe file as tab delimited.

Reusable categories: Step 2



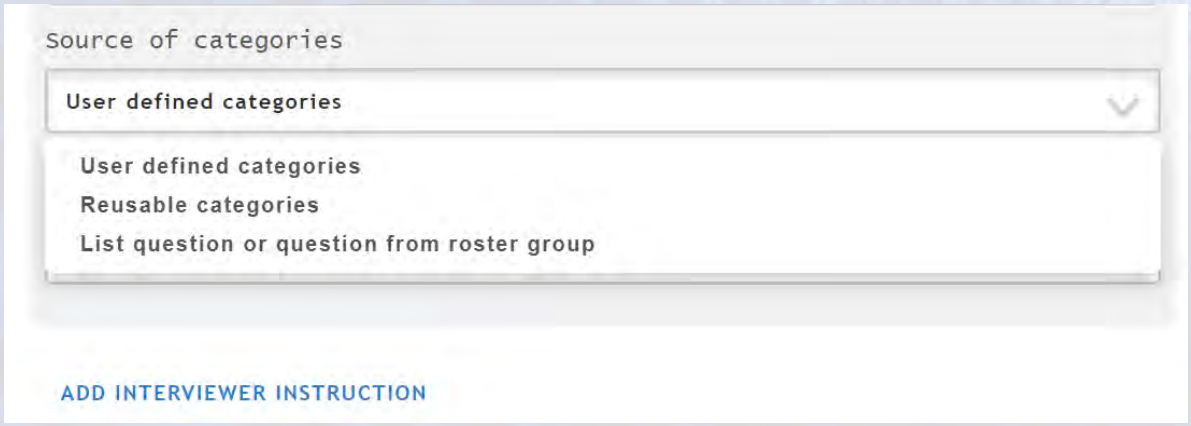
After you created tab file with categories:

1. Click Upload New Categories button.
2. Specify the name of collection and press the Save button

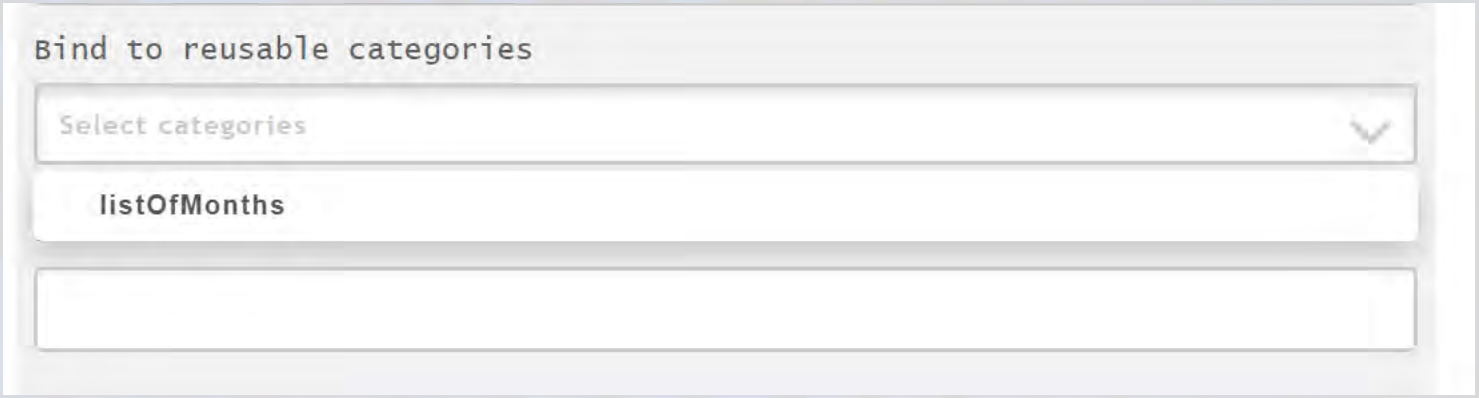
Reusable categories: Step 3

To add a Collection of categories to a categorical question:

1. Open a question properties;
2. Select source of categories “Reusable categories”;



3. Select a Collection.



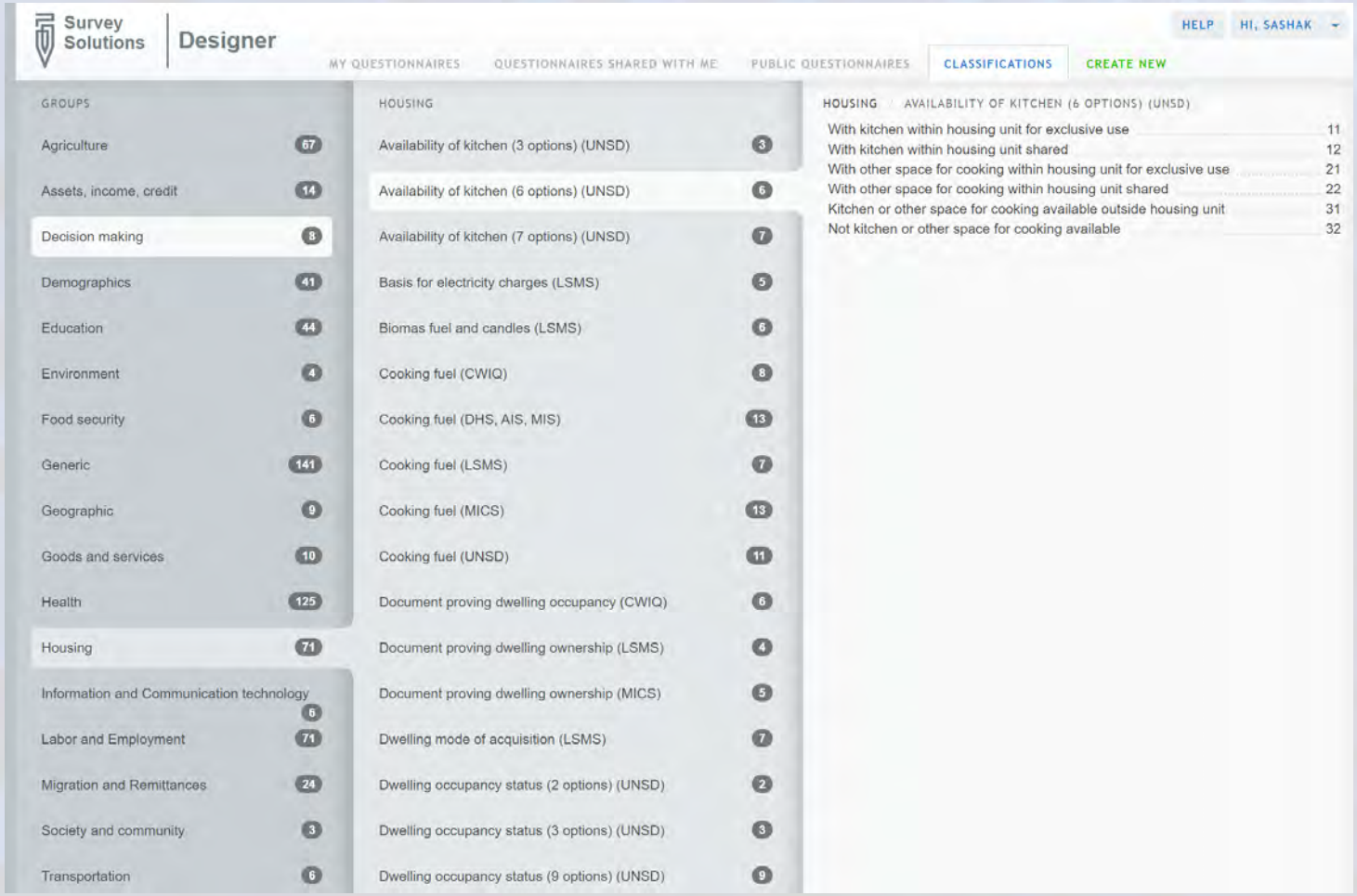
Reusable categories

LIVE DEMO: reusable categories

Classifications

Classifications

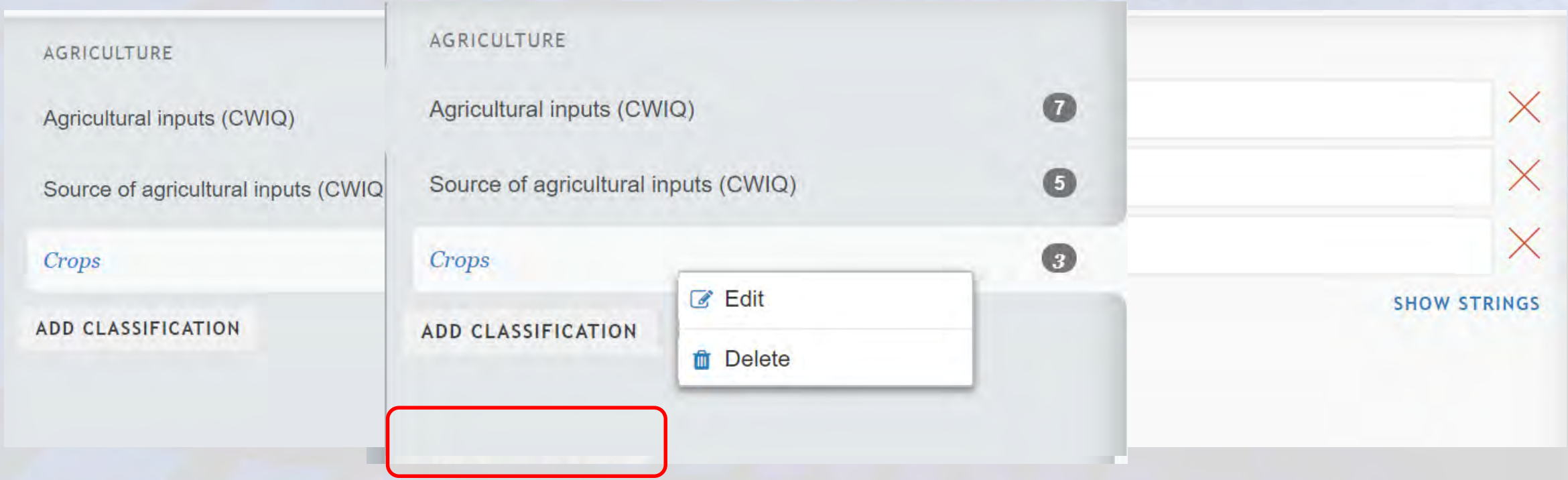
The classification library allows users to draw from a library of public and/or private classifications (answer options). More than a convenience feature, the classification library aids with standardization of classifications–that is, alignment with intenational best practices and/or consistency with internal practices.



How to create a Classifications

You can create a private classification:

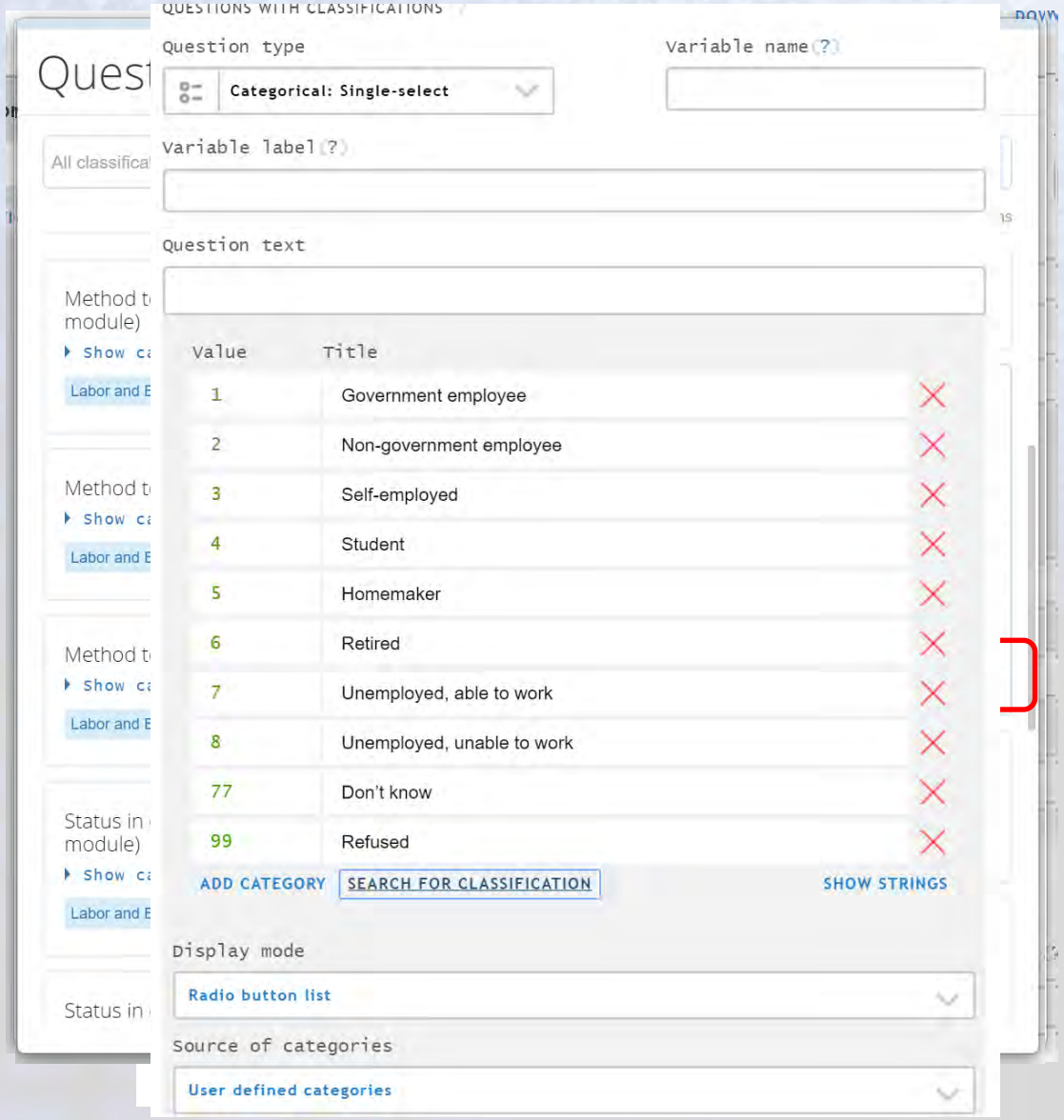
1. Click on the Add classification button and specify the name of the classification and save it.
2. Click on the name of your classification and add list of categories.
3. To Edit/delete a classification name right click on the classification name and select your action.



Add a classification to a questionnaire

Classification could be added to most Categorical questions.
To do that:

1. Create a categorical question;
2. Press Search for Classification button;
3. Click on the drop-down menu, optionally, to restrict search to the selected question bank folder.
4. Enter text in the Search for a question field in order to search for questions that contain that text.
5. Click on the question text in order to open up the question in the source questionnaire. In this way, the user can see question in its original context, see the question's full attributes, etc.
6. Click on ADD button to add categories to your question.



Current limitations

Currently, users cannot:

- Create private groups
- Share private classifications with a user-defined set of other users
- Publish private classifications for all users to access
- Upload “large” classifications via copy-paste. This is a browser limitation rather than a limitation of Desig
- Upload classifications, large or small, via file upload.

Testing scenarios

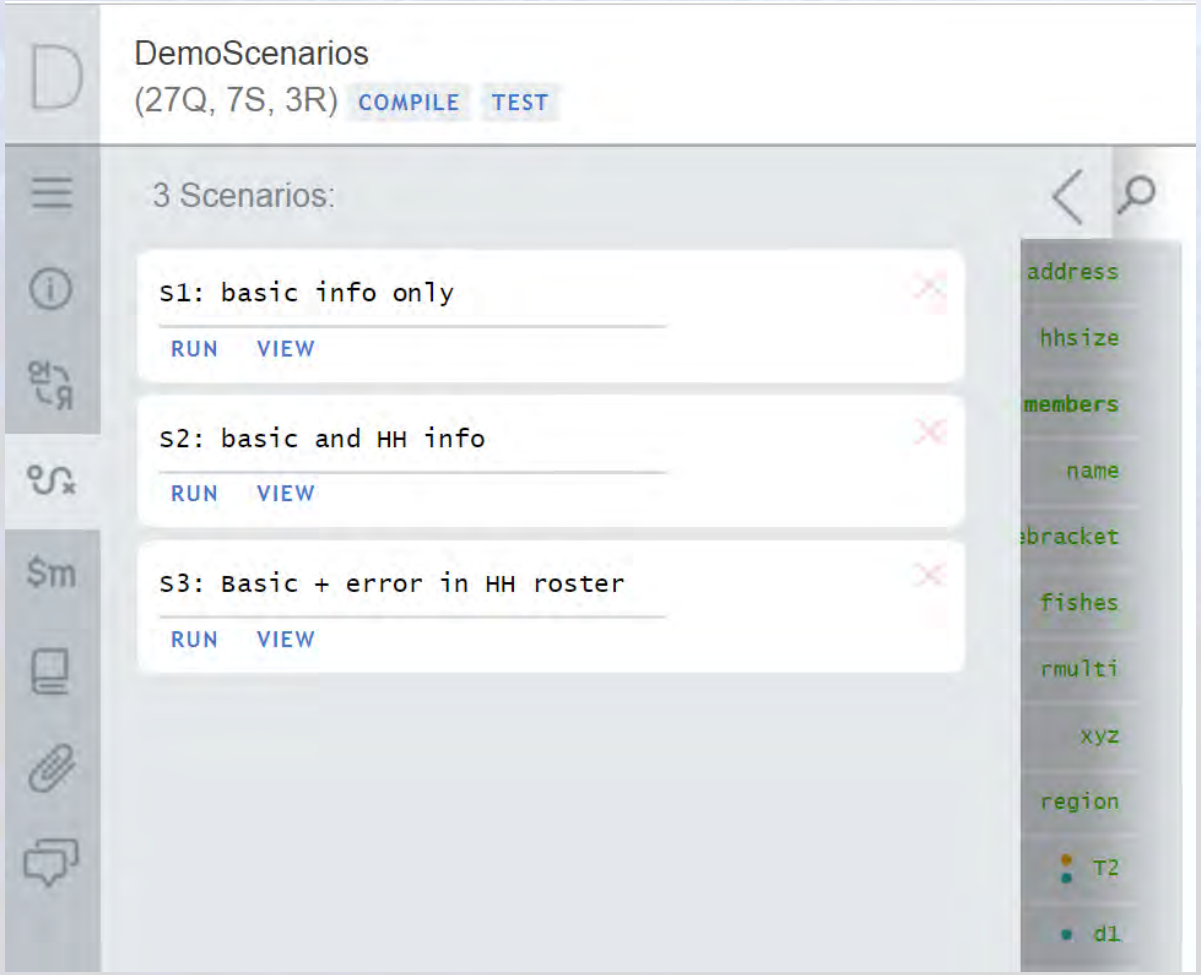
Testing Scenarios

Survey Solutions scenarios represent a storage of responses provided during a testing session.

The objective is **not** to collect the data (use Interviewer App for that), but to simplify testing of complex questionnaires which require a certain time-consuming input.

Two actions are available for a scenario in the Designer:

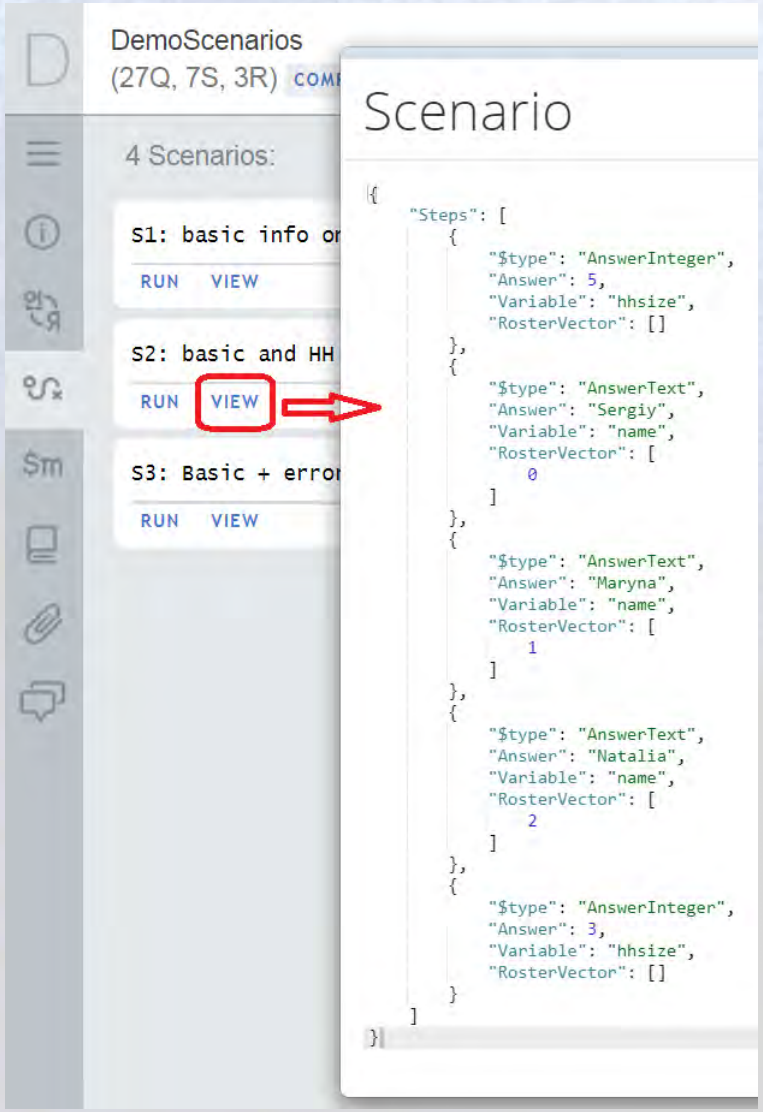
- **view:** review the answers entered in the scenario;
- **run:** start testing and apply the scenario to the questionnaire.



Testing Scenarios

Here is what you need to know about scenarios:

- There can be multiple scenarios for the same questionnaire.
- A scenario doesn't have to cover all.
- A scenario may become **no longer applicable**.
- Scenarios are **not copied** when you copy a section or the whole questionnaire into another questionnaire.
- To edit a scenario, you need to run it first, then make any changes interactively in the WebTester, then save under the same or a different scenario name.
- One **may not** edit scenario steps directly, only view.
- Saving a scenario requires **edit permission** for accessing the questionnaire.
- Creation and changes to scenarios are **not** reflected in the questionnaire history.
- A scenario saves all the steps, how the answers were applied to the questionnaire, not just the resulting final state! This is obvious from the recording of the scenario steps:

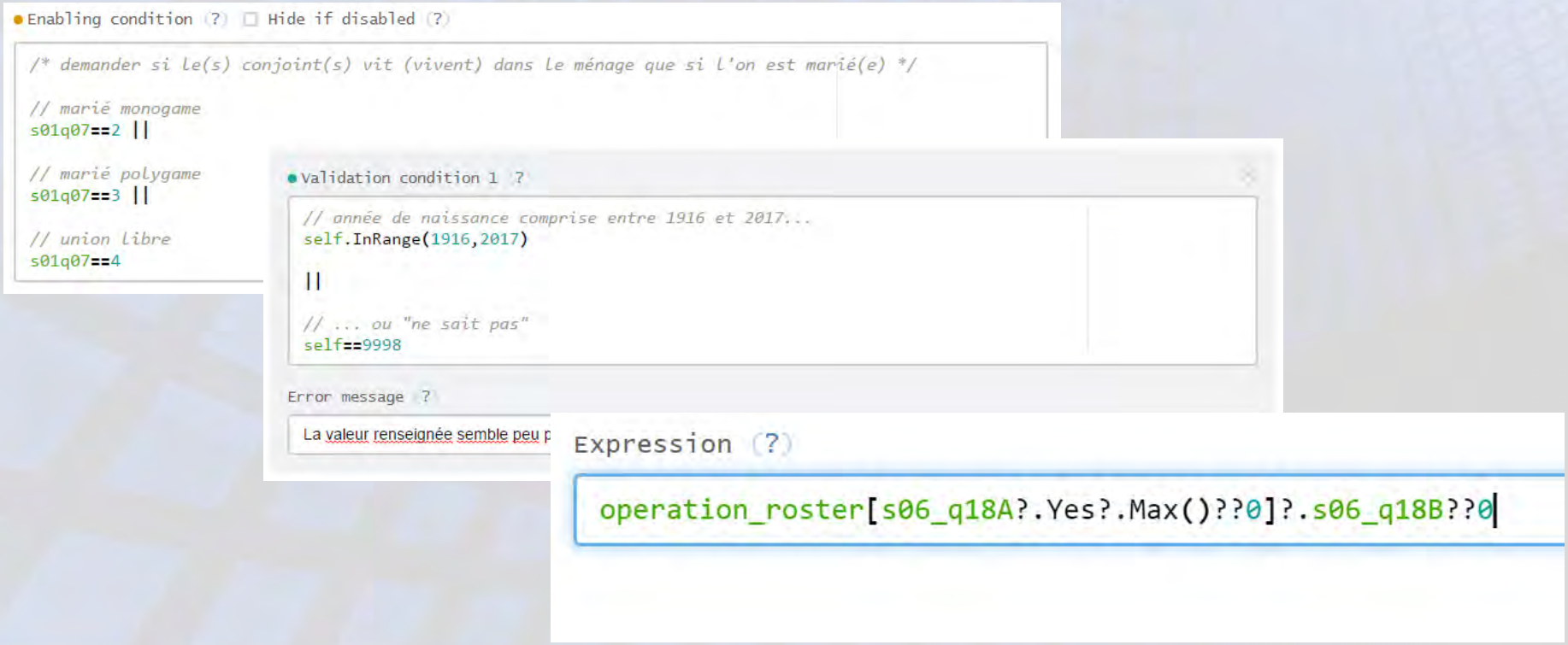


Syntax and Functions

Expressions

Expressions are utilized in Survey Solutions in:

- ✓enabling conditions;
- ✓validation conditions;
- ✓filtering conditions;
- ✓calculated variables' expressions;



Expressions

Writing expressions is different from programming. You don't have to be a programmer to work with Survey Solutions, but there are several simple things every designer needs to know:

- expressions are written in C#;
- C# is a case-sensitive language;
- To refer to the answer of a question, specify the variable name corresponding to that question, like so: age
- To compare strings, enclose string constants in quotes, like so: city=="New York";
- expressions should be free of syntax errors;
- expressions have types.

Expressions

Each expression has a type as per C# reference or Survey Solutions definition. C# language has hundreds of types and allows other composite types to be derived from base types.

In Survey Solutions expressions for **enabling conditions**, validation conditions, and filtering conditions are of Boolean type: Boolean type means only two values are possible: **true** and **false**;

- A question is enabled if the enabling condition is blank or evaluates to true;
- Answer to a question is considered to be valid if the validation condition is blank or evaluates to true;
- An option is included in a categorical question if a filter is blank or evaluates to true.

Data types

Common types used to define calculatable variables are

- **bool?** – Boolean nullable – for logical expressions;
- **long?** – Long nullable – for storing integer values;
- **double?** – Double nullable – for storing fractional values;
- **string** – for storing strings (text);
- **DateTime?** – Date/Time nullable – for storing timestamps with properties: Year, Month, Day, Hour, Minute, Second, and others;

In C# a question mark following the type signifies the type which is nullable, meaning null is a possible value;

Typical use of nullable value type is when needed to represent the undefined value of an underlying value type. For example, a Boolean, or **bool**, variable can only be either true or false. However, in some cases a variable value can be undefined or missing. For example, a database field may contain true or false, or it may contain no value at all, that is, **NULL**. The **bool?** type is used in those scenarios.

Nullable types

Nullable - Each instance of a nullable type has two public read-only properties:

- **HasValue**. HasValue indicates whether an instance of a nullable value type has a value of its underlying type. It is set to *true* when the variable contains a non-null value;
- **Value**. Value is of the same type as the underlying type. If HasValue is true, Value contains a meaningful value.

In Survey Solutions value of **null** is used to indicate a question has not been answered yet.

Survey solutions defined types

GPS question type is defined customly in Survey Solutions:

```
class GeoLocation {
        double Latitude;
        double Longitude;
        double Accuracy;
        double Altitude;
}
```

One can construct a new object of class GeoLocation with the following constructor:

new GeoLocation(lat, long, acc, alt)

Survey solutions defined types

Live Demo: construction of GPS and its use

Survey solutions defined types

Geography question type is defined customly in Survey Solutions:

```
class Geography {
        double Area;
        double Length;
        int PointsCount;
}
```

Check these and other types online: type “data types” in the search box on the support site.

Survey solutions defined types

Text list question type is defined customly in Survey Solutions:

```
TextListAnswerRow[];  // any list question is an array of :

class TextListAnswerRow{
        int Value;
        string Text;
}
```

One can access the items in the list by refering through indexing, refering to code with **.Value** what represent a code which was automatically assigned to each row by Survey Solutions, and **.Text** that was entered by the user.

.Value will be used as @rostercode for roster triggered list rosters.

Live Demo: list

Arithmetic Operators

The following table shows the arithmetic operators supported by Survey Solutions. Arithmetic expressions are evaluated from left to right. For the example, ***assume A = 20 and B = 10***

Operator	Description	Example
+	Addition: returns the sum	A + B = 35
-	Subtraction: returns the difference	A - B = 10
*	Multiplication: returns the product	A * B = 200
/	Division: returns the quotient	B / A = 2
%	Modulus: returns the remainder after an integer division	B % A = 0 (The remainder of 20 divided by 10 is 0)

Relational Operators

These operators compare two values and return either **TRUE** or **FALSE.** The following comparison operators are supported by Survey Solutions:

Operator	Description	Example
==	Checks if the two values are *equal*. If values are equal, then the condition is true	`20 == 10` returns **FALSE**
!=	Checks if the two values are *not equal*. If the values are not equal, then the condition is false	`20 != 10` returns **TRUE**
>	Checks if the left value is *greater than* the right value	`20 > 10` returns **TRUE**
<	Checks if the left value is *less than* the right value	`20 < 10` returns **FALSE**
>=	Checks if the left value is *greater than or equal to* the right value	`20 >= 10` returns **TRUE**. `10 >= 10` returns **TRUE**.
<=	Checks if the left value is *less than or equal to* the right value	`20 <= 10` returns **FALSE**. `10 <= 10` returns **TRUE**.

Relational Operators

Warning!

- Multi-categorical questions' value is a vector(an array), not a scalar (single value);
- never use relational operators with MCQs;
- instead use a function like: .Contains().

Logical operators

Logical values returns either **TRUE** or **FALSE**. The following tables show the logical operators supported by Survey Solutions:

Operator	Description	Example
&&	Logical AND operator. A && B returns true of *both* expression A and B are true.	`(20 == 10) && (10 > 5)` returns **FALSE** `(10 == 10) && (10 > 5)` returns **TRUE**
||	Logical OR operator A || B returns true if *either* expression A or expression B is true	`(20 == 10) || (10 > 5)` returns **TRUE** `(20 == 10) || (10 < 5)` returns **FALSE**
!	Logical NOT operator !A returns true if expression A is false. It returns false if expression A is true.	`!(20 == 10)` returns **TRUE** `!(10 == 10)` returns **FALSE**

Other Useful operators

These are other operators that you might want to use in your Survey Solutions instrument.

Operator	Description	Example
?:	Conditional Expression/ The condition must evaluate to true or false. If condition is true, the *first expression* is evaluated and becomes the result. If condition is false, the *second expression* is evaluated and becomes the result. Only one of the two expressions is evaluated.	`(10 < 2)? a:b` will return b `(10 > 2)? a:b` will return a

Functions

f(x)

In C#, a function is a way of packaging code that does something and then returns the value.

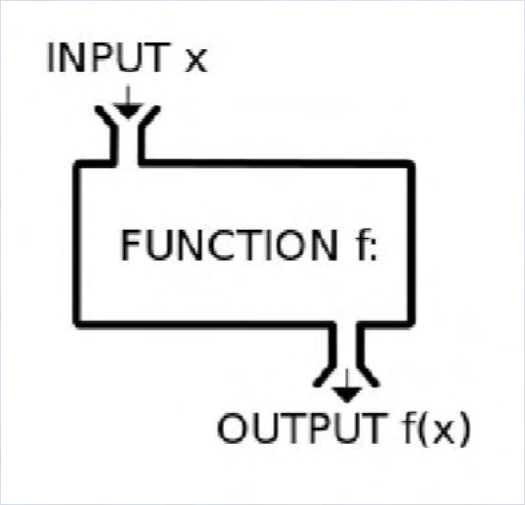
❖Functions are ready-made expression components that can be used by questionnaire designers for common tasks in validation and enabling conditions;

❖Designers don’t have to use them or know all of them; they are shortcuts for common tasks, which in some cases can be done in standard C# (though commonly with longer expressions);

❖Functions allow performing tasks, which would be different to achieve by writing expressions.

Functions

❖Functions transform one kind of information into different, for example dates into number of years, or coordinates into kilometers;



❖Black box concept: most of the users don't care how the function is implemented;

❖Users do need to know the inputs and output of the function!

Functions

f(x)

❖Functions consist of function name and arguments in parentheses, here **f** is a function name, and **x** is one or more arguments (multiple arguments are separated by commas);

❖ Arguments can be questions from the questionnaire, constants.
For example: IsAnswered(variableName), InList(2,9,88).

❖Arguments have types;
For example: variableName.InRange(1900,2016), arguments could be only **long** or **double**.

❖Functions have types (type of result).
For example: variableName.InRange(1900,2016) result of this function is **bool** type

Types compatibility

❖Arguments must match function's requirements.
For example: `FullYearsBetween(date, ~~string~~)`

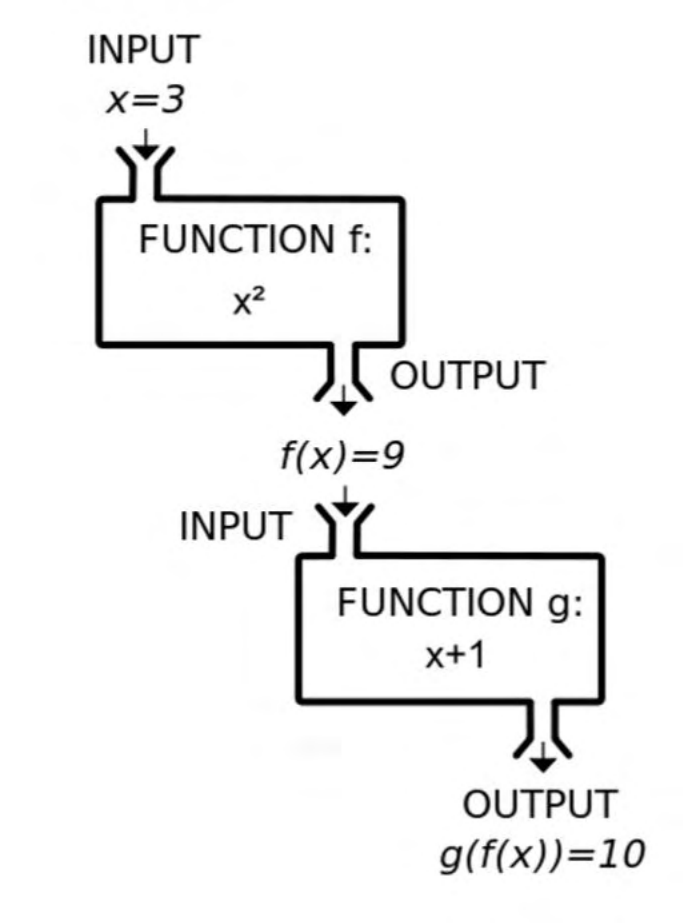
❖In some cases (e.g. constants) types can be converted by the C# automatically, e.g. if the argument must be double, but a long integer is specified.

❖If the argument is of incompatible type, the compilation error will be shown.

❖Explicit types conversion can be used in some cases: `F((type)arg)`.

Functions

Functions have result types, which must be taken into account when the result of the function is used as an argument for another function.



Functions

❖Some functions can be called as extensions to questions (like methods):
variableName.Contains(5) this function checks whether the value ***5*** is among the answers to a **variableName** – that is, is contained in the set of answers.
Returns *true* if ***5*** is contained in **variableName**'s answers. Returns *false* otherwise.

❖Some functions can only be called as standalone:
IsDate(YearDate, MonthDate, DayDate) is *true* if the three specified arguments comprise a valid date.
Example: assume you have a series of 3 numeric questions asking for a household members date of birth, and you want check that the date recorded is a valid date.
The syntax for the validation condition would be:
IsDate(YearDate, MonthDate, DayDate)

Live Demo: IsDate()/new Date()

Functions' groups

- Numeric: InRange(), InList();
- String: Left(), Right(), ConsistsOf();
- Lists: ContainsAll(), ContainsAny(), ContainsOnly(), etc;
- Date and time management: CenturyMonthCode(), FullYearsBetween(), etc
- Geolocation: GpsDistance(), GpsDistanceKm(), etc;
- Other/Miscelleneous

Most functions require arguments, functions listed here are shown without arguments.

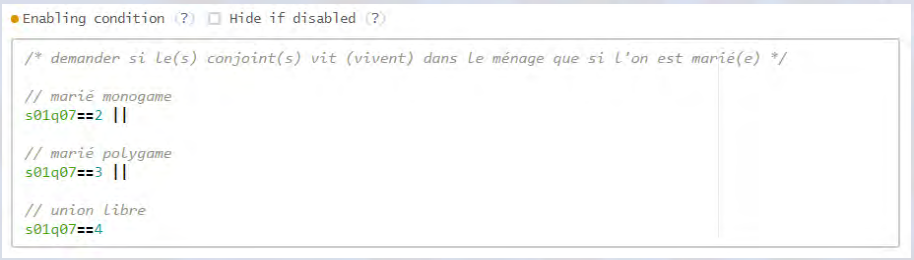
Functions: use

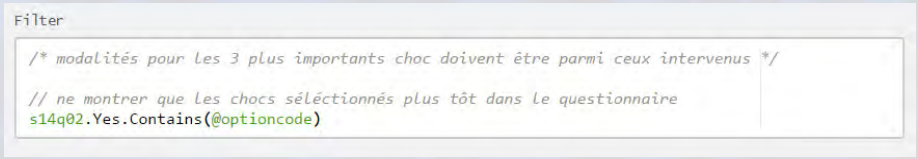
❖Some functions are conveniently of Boolean type: IsAnswered(), IsNumber(), ContainsAny(), etc, which allows them to be used in the expressions for enabling, filtering and validation;

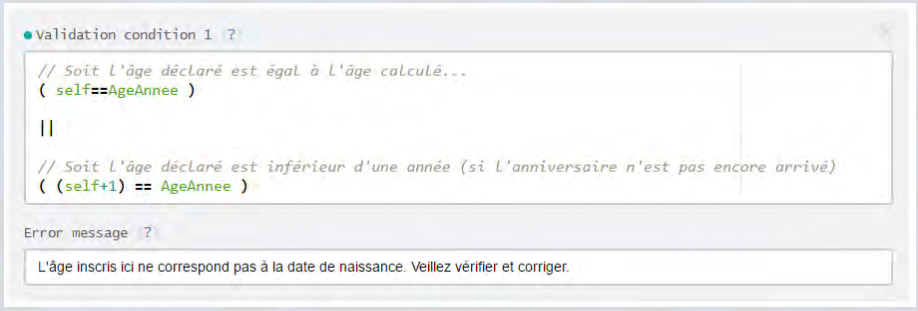
❖Some functions are of other type, and must be used as part of a bigger expression, which must be of Boolean type, for example: poinB.GpsDistanceKm(pointA)<30

Summary

So what does the programming language do?

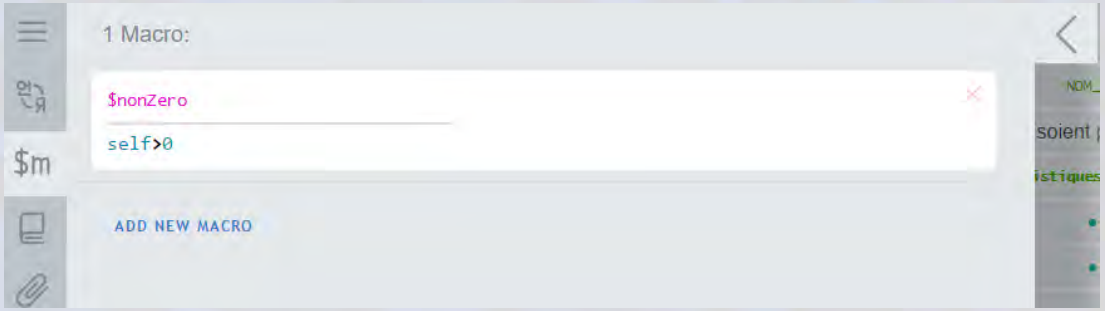






- Enables objects in the questionnaire
  - « Skip » sections, sub-sections, or non-relevant questions
  - Limit available answer options
- Evaluate answers
  - Internal consistency
  - Plausibility
- Accomplish intermediary tasks
  - Consult lookup tables
  - Define the value of variables

Summary




```
// if non-KG unit...
ag_I_02b>1 ?

// ... then find the conversion factor, if it exists
(agConvertFactor.Values.FirstOrDefault(c =>
    c.region == (double) (ihs_region) &&
    c.crop_code == (double) @rowcode &&
    c.unit == (double) ag_I_02b &&
    c.condition == (double) ag_I_02c
)?.conversion) ?? 0 :

// if KG, then assign value of 1
1
```

Where to use it?

- Enablement conditions
  - Of questions
  - Of answer options
  - Of sections
  - Of static text
  - Of rosters
- Validation conditions
- Resources for these conditions
  - Macroses
  - Variables

Dealing with exceptions

Exception

- An **exception** is a situation where the computer can't proceed with a normal flow of commands. A common example is a division by zero.
- The result of this operation is not defined. In statistics a concept of a missing value is introduced, and we normally don't bother about the process. We know the result of X divided by zero ;will be a missing.
- In C# division by zero will cause the program to abort with an exception. The programmer can envelop the risky code into a wrapper, similar to how you capture { } a certain code in Stata.
- In Survey Solutions we always do this behind the scenes for the users, so when an exception occurs:

  In enabling condition the question is considered disabled, and
  In validation condition the answer is considered invalid.

Prevent an exceptions from happening

To prevent an exception from happening you can use the logical conditions.

For example, instead of writing

```
income/numpersons>1000
```

Write:

```
(numpersons>0) &&
(income/numpersons>1000)
```

If numpersons is equal to zero, then the software will not continue evaluating the remainder of the expression as the result is automatically false.

Prevent an exceptions from happening

For example, instead of writing:

```
(income/numpersons<1000) ||
(ispoor==true)
```

Here, if an exception occurs during the evaluation of the first part of the expression, the second doesn't get evaluated.

Write:

```
((numpersons>0) && (income/numpersons<1000))
|| (ispoor==true)
```

The second part of the expression will be evaluated in case numpersons is zero

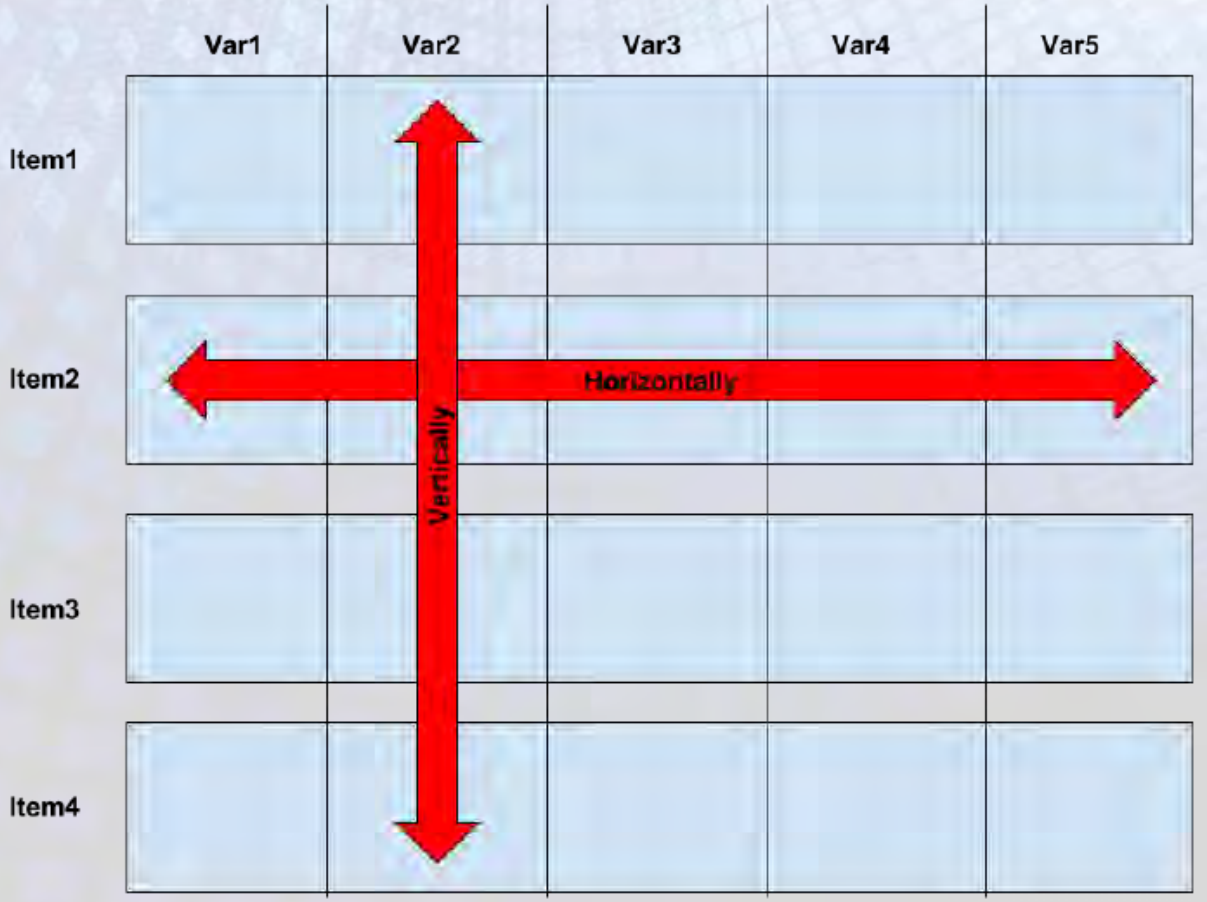
LINQ Expressions

Two types of conditions

As we know rosters are common survey instruments (ie household roster, assets roster, food consumption roster).
Using Language Integrated Query (LINQ) and lambda expressions in the C# language, we are able to code enabling and validation conditions for rosters that can both:

✓Horizontally: Refer to the values of other variables for the current occurrence.

✓Vertically: Refer to the values of the same variable for other items in the roster.



Technical sketch of rosters

General Syntax

RosterID.Operator(x => x.varQuery1 == 1...)

Item	Explanation
RosterID	Name of the roster of interest to query. This is where to find the variables you are interested in.
Operator	Query operator. The action that you want to be performed
x	Anonymous variable that captures the queried content. This is just a place holder and can be anything (eg a, b, person)
x.varQuery	Query variable(s); instance of that (those) variable(s)

The part of the syntax in the parentheses after the operator is called the “lambda expression.” The lambda expression specifies the query criteria for the LINQ expression.
The value that is returned by the statement depends on the operator used.

Lambda expressions

Use lambda expressions to select items in rosters:

@rowcode	name	age	sex
1	John	40	1
2	Jessica	38	2
3	Joseph	18	1
4	Joel	18	1
5	Julia	18	2
6	Jeffrey	14	1
7	Jack	12	1
8	Juan	10	1
9	Justina	1	2
10	James	0	1

members.Where(person=>person.sex==2)

@rowcode	name	age	sex
1	John	40	1
2	Jessica	38	2
3	Joseph	18	1
4	Joel	18	1
5	Julia	18	2
6	Jeffrey	14	1
7	Jack	12	1
8	Juan	10	1
9	Justina	1	2
10	James	0	1

members.Select(person=>person.age)

Comonly Used Operators

.All()

- **Explanation:** Checks that all elements of the expression meet the query criteria
- **Result:** true / false

.Any()

- **Explanation:** Checks that at least one element of the expression meets the query criteria.
- **Result:** true / false

.Count()

- **Explanation:** Counts the number of elements that meet the query criteria.
- **Result:** The count

.FirstOrDefault()

- **Explanation:** Find the first element that meets the criteria
- **Result:** The first element. In most cases, this will be the first row that matches the search criteria If no element matches the query criteria, then it returns null

Comonly Used Operators

.Min()

- **Explanation:** find the minimum of the selected items;
- **Result:** Min number.

.Max()

- **Explanation:** find the maximum of the selected items.
- **Result:** Max number.

.Sum()

- **Explanation:** find the sum of the selected items.
- **Result.** The sum number.

. Average()

- **Explanation:** find the average (mean) of the selected items.
- **Result:** The average number.

Note that Min(), Max(), Sum(), Average() skip null values.

Examples

1. Calculate total number of males in the household;
2. Show the age of the oldest person in the household;
3. Show the age of the youngest female in the household;
4. Average age of males in the household;
5. Average number of hours worked between the 3 oldest males in the household;
6. Total hours worked by all household members except the youngest person;

Number

Exercises

1. Calculate total number of members in the household;
2. Calculate average number of hours worked by all members;
3. Calculate average number of hours worked for males and females members separately.;
4. Age of the youngest married female;
5. Age of the oldest not married male;
6. Calculate number of members below 15;
7. Average age of females above 15;
8. Average salary of household members.

Examples

1. Continue the interview with the youngest female in the household and show the name of selected member.
2. Continue the interview with males only
3. Continue the interview with 3 oldest males from the household
4. Selection of the youngest boy in an alphabetic order in the HH and show the name

Exercises

1. Continue the interview with the oldest married female from the HH;
2. Continue the interview with girls under 14 years old who is currently attending a school;

3. Continue the interview with members of the household whose salary is above average by the HH;
4. Continue the interview with 2 people who receive the biggest salaries in the HH;
5. Continue the interview with female who receives the biggest salary.

Lookup tables

What use for?

- Make sure the wage rate reported by the respondent corresponds to wage structure of the respondent's occupation.
- Validate that the GPS coordinate is recorded in a particular survey region
- Validate that the quantities of various food items are recorded in the right units. For example, liters for milk, kg for rice, and etc.
- Assert that yield per acre falls into expected bounds for each crop that the household grows.
- And e.c.

Lookup tables

On a paper

DE LINE NUMBER	Over the past one week (7 days), did you or others in your household consume any [. . .]? INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND THAT EATEN SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS.	G01 YES..1 NO...2>> **NEXT ITEM**	G02 ITEM CODE	G03 How much in total did your household consume in the past week?		G04 How much came from purchases?		G05 How much did you spend?	G06 How much came from own-production?		G07 How much came from gifts and other sources?		DE LINE NUMBER
				QUANTITY	UNIT	QUANTITY	UNIT	MK	QUANTITY	UNIT	QUANTITY	UNIT	
1	**Cereals, Grains and Cereal Products**												1
2	Maize *ufa mgaiwa* (normal flour) *		101										2
3	Maize *ufa* refined (fine flour) *		102										3
4	Maize *ufa madeya* (bran flour) *		103										4
5	Maize grain (not as *ufa*) *		104										5
6	Green maize *		105										6
7	Rice		106										7
8	Finger millet (*mawere*)		107										8
9	Sorghum (*mapira*)		108										9
10	Pearl millet (*mchewere*)		109										10
11	Wheat flour		110										11
12	Bread		111										12
13	Buns, scones		112										13
14	Biscuits		113										14
15	Spaghetti, macaroni, pasta		114										15
16	Breakfast cereal		115										16
17	Infant feeding cereals		116										17
18	Other (specify)		117										18

CODES FOR UNIT:

KILOGRAMME 1
50 KG. BAG 2
PAIL (SMALL) . . .4
PAIL (LARGE) . . .5
No. 10 PLATE . . .6
No. 12 PLATE . . .7
BUNCH. 8
PIECE. 9
HEAP 10
BALE 11
OX-CART (UNSHELLED) . . 14
LITRE. 15
GRAM 18
MILLILITRE . . . 19
TEASPOON. 20
SATCHET/TUBE. . .22
OTHER (SPECIFY). 23

Lookup tables

One way to implement such validation would be to write a long condition that combines logical operators.

These conditions are difficult to:

- Read;
- Modify;
- Debug.

What are the lookup tables

- Lookup tables are tables of multiple values for a large set of similar items.
- Lookup tables are used to simplify validation and enablement conditions.
- A questionnaire can refer to multiple lookup tables of various sizes.
- Each lookup table must have a unique name.
- The values from lookup tables can be accessed by specifying three coordinates: table name, rowcode, and column name.

Lookup tables restrictions

$rowcode$	$colname_1$	$colname_2$		$colname_k$
C_1	$V_{1,1}$	$V_{1,2}$		$V_{1,k}$
C_2	$V_{2,1}$	$V_{2,2}$		$V_{2,k}$
C_m	$V_{m,1}$	$V_{m,2}$		$V_{m,k}$

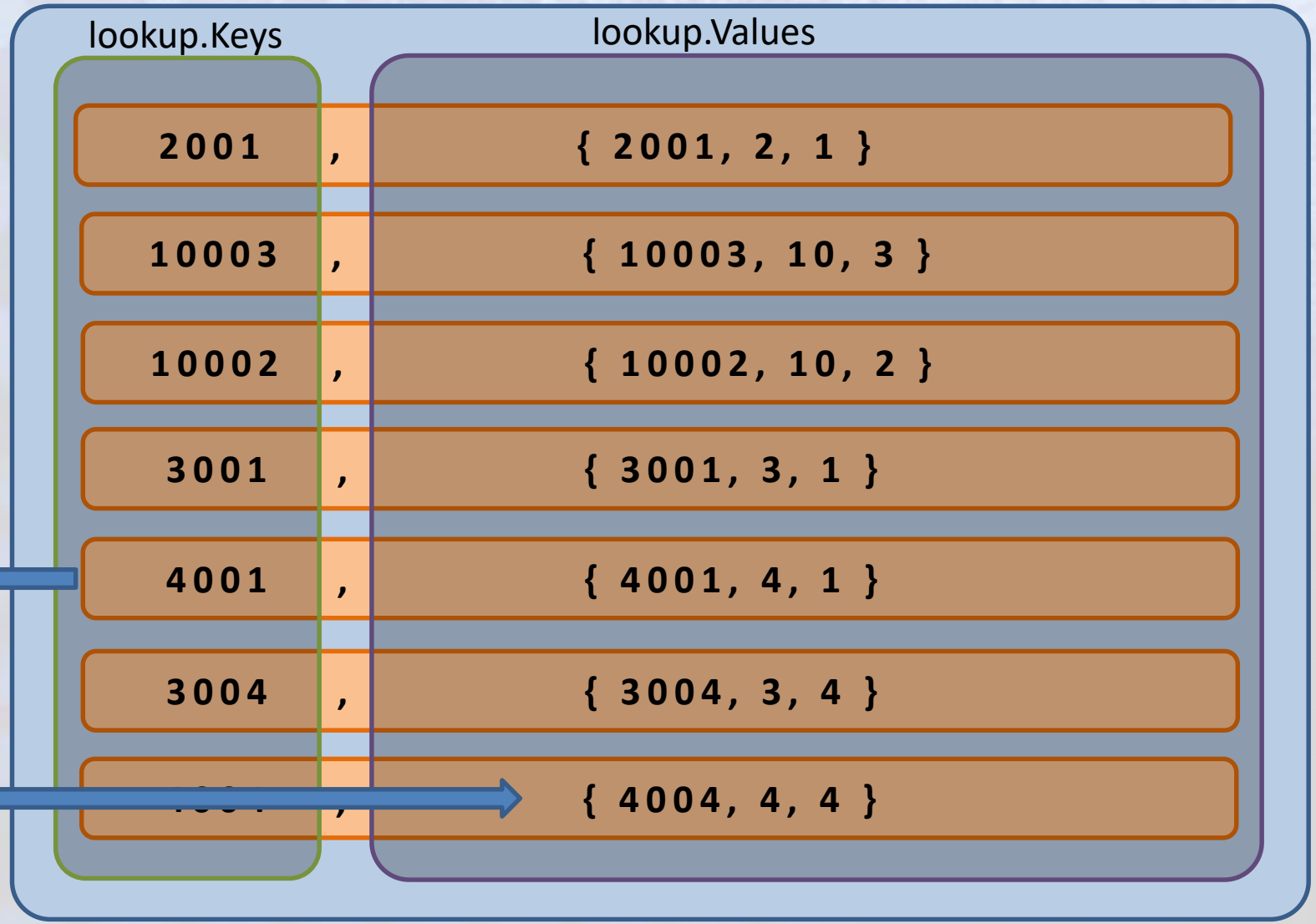
The lookup tables must conform to the following format:

- Contain the “rowcode” column, and up to 10 other numeric columns with reference data.
- Values in “rowcode” column must be integer and unique.
- Other columns may contain repetitive content, as well as fractions(not-integer values).
- Lookup tables may include up to 5,000 rows of reference data.
- Multiple lookup tables may be defined within the same questionnaire.

C# structure of lookup tables

	A	B	C
	rowcode	food_item	unit_code
	10002	10	2
	10003	10	3
	2001	2	1
	3001	3	1
	3004	3	4
	4001	4	1
	4004	4	4

Dictionary – collection of pairs of Key&Value



Pair of Key & Value

<Key, Value>

lookup[4004]

Where *lookup* – name of a lookup table
4004 – key, and ***[]*** – indexer operator

Lookup tables syntax

The values retrieved from a lookup table are of type **double?** and may be used in the syntax wherever constants of type **double?** are permitted.

referencePrices[7].col5

Obtain value from line corresponding to key *7* of the column named *col5* of lookup table *referencePrices*.

referencePrices[(int)itemcode].lastmonth

Obtain value from line corresponding to key *itemcode* of the column named *lastmonth* of lookup table *referencePrices*. Note that we cast the type of the itemcode to *int* to permit search by this code in the lookup table.

referencePrices[@rowcode].minimum

Obtain value from line corresponding to key *@rowcode* (code of the current row in the roster) of the column named *minimum* of lookup table *referencePrices*.

Lookup tables syntax

self.InRange(referencePrices[@rowcode].minimum,
referencePrices[@rowcode].maximum)

Verify the value of the current [numeric or categorical single-select] question is between the minimum and maximum bounds extracted from the lookup table *referencePrices* by key corresponding to the current row code of the roster.

referencePrices.Keys.Contains(self)

Verify that the lookup table *referencePrices* contains a key corresponding to the value of the current [numeric or categorical single-select] question.

referencePrices[107].maximum??300

Verify that the lookup table **referencePrices** retrieves the maximum price for item 107, or 300 if it doesn't.

Lookup tables preparation

To prepare the lookup table file for Survey Solutions Designer we need to make sure that:

1. the file is saved in tab-delimited text format;
2. the key column is called specifically rowcode;
3. other column names are satisfying the variable naming conventions;
4. there are no string columns in the file;
5. number of rows and columns in the file satisfies the limits for lookup tables.

	A	B	C
	rowcode	food_item	unit_code
	10002	10	2
	10003	10	3
	2001	2	1
	3001	3	1
	3004	3	4
	4001	4	1
	4004	4	4

Example 1: Validation of prices

Task: check if a fuel price is in a range for this type of fuel.

Fuel code	Fuel type	Min. price	Max. price
101	Regular	1.65	1.8
102	Plus	1.72	1.82
103	Supreme	1.95	2.15
201	Diesel	1.75	1.99

rowcode	minprice	maxprice
101	1.65	1.80
102	1.72	1.82
103	1.95	2.15
201	1.75	1.99

- Fuel code in this case matches with Lookup table rowcode.
- Fuel type column is omitted.

Example 2.1: Validation of Yields

Code	Name	Dry	Irrigated
101	Wheat	1.75	2.00
102	Corn	1.70	4.70
103	Rye	1.50	1.50
104	Rice	4.62	4.62
105	Barley	2.20	2.20
106	Chickpea	1.80	1.80
107	Drybean	1.50	1.50
108	Lentil	1.00	1.00
109	Potato	13.90	13.90
110	Onion	9.20	18.60
111	Gr.pepper	16.00	16.00
112	Tomato	32.40	32.40
113	Cucumber	16.70	16.70
114	Sunflower	1.15	1.70
115	Groundnut	2.40	2.40
116	Cotton	0.93	0.93
117	Sugarbeet	40.29	40.29
118	Tobacco	0.90	0.90
119	Melon	10.40	18.30
120	Alfalfa	11.00	11.00
121	Fodder	3.10	3.10
122	Soybean	1.60	1.60
123	Sesame	1.25	1.25

Task: verify that the amount of harvested crop yield Tones/Hectar indicated by a respondent in our survey is within 10% of the value indicated in the reference table.

- Crop code in this case matches with Lookup table rowcode.
- Crop Name column is omitted.

rowcode	Dry	Irrigated
101	1.75	2.00
102	1.70	4.70
103	1.50	1.50
104	4.62	4.62
105	2.20	2.20
106	1.80	1.80
107	1.50	1.50
108	1.00	1.00
109	13.90	13.90
110	9.20	18.60
111	16.00	16.00
112	32.40	32.40
113	16.70	16.70
114	1.15	1.70
115	2.40	2.40
116	0.93	0.93
117	40.29	40.29
118	0.90	0.90
119	10.40	18.30
120	11.00	11.00
121	3.10	3.10
122	1.60	1.60
123	1.25	1.25

Example 2.2: conversion of non-standard units

Task: verify that the amount of harvested crop yield Tones/Unit indicated by a respondent in our survey is within 10% of the value Tones/Hectar indicated in the reference table.

unit	code	factor
hectare	101	1
are	102	0.01
acre	103	0.404686
sqkm	104	100
sqm	105	0.0001
sqmile	106	258.999

rowcode	factor
101	1
102	0.01
103	0.404686
104	100
105	0.0001
106	258.999

- Unit code in this case matches with Lookup table rowcode.
- Unit Name column is omitted.

Example 3: Regional bounds

Task: check if an interviewer location is in the designated area

Code	Island	N	E	S	W
101	Santiago	15.346438	-23.420105	14.890378	-23.789520
102	Fogo	15.045920	-24.292351	14.808020	-24.517349
103	Sao Nicolau	16.678801	-24.019751	16.478319	-24.432390
104	Santo Antao	17.197170	-24.970449	16.907089	-25.358740
105	Sao Vicente	16.923808	-24.850388	16.773644	-25.087967
106	Maio	15.341471	-23.083649	15.114884	-23.237457
107	Boa Vista	16.233794	-22.663422	15.964630	-22.971725
108	Sal	16.861720	-22.868042	16.579604	-22.999878
109	Santa Luzia	16.807992	-24.681644	16.733701	-24.792366
110	Brava	14.904976	-24.661560	14.800111	-24.752884

- Area code in this case matches with Lookup table rowcode.
- Area Name column is omitted.

Example 3: Filtered units

Task: show the correct unit for an item and check if the price for 1 item/unit is in a range

Code	Name	minprice	maxprice
10	Milk	3	7
2	Bread	5	10
3	Pea	1	4
4	Banana	1	2.5

rowcode	minprice	maxprice
10	3	7
2	5	10
3	1	4
4	1	2.5

conversion coefficient

Unit	Code
Kg	1
Liters	2
Oz	3
Gr	4

rowcode	cf
1	1
2	1
3	0.028
4	0.001

rowcode	food_item	unit_code
10002	10	2
10003	10	3
2001	2	1
3001	3	1
3004	3	4
4001	4	1
4004	4	4

Exercise :

For food consumption exercise:

1. Show only appropriate units for a product.
2. Check if the spend amount on purchased products is in a range 1/unit

(Lookup tables to be used: consumptionUnits, priceKg, convPurchased)

Education exercise:

1. Check or/and filter if the selected educational level is appropriate for the respondent age.
2. Check or/and filter possible attending levels in current year depending on age restriction +/- 1 year and levels flow.
3. What is better to use in this situation Checks or filters?

(Lookup tables to be used: eduAttendingLevel, eduLevelAge)

Random selection

When to use?

- When we need to select randomly one or more people to continue an interview;
- When we need to select randomly one or more people with a given criteria.

Syntax

Quest.IRnd()

- Function which selects a random number in range 0 to 1;
- Generated number is obtained from an interview number;
- Generated number is the same across the current interview;

Random index of eligible items

(long)Math.Floor(Quest.IRnd()*NumEligible.Value)

- where *NumEligible* is calculated total number of items, for example, rows in a list, or amount of people with specified criteria in a roster.
- *Math.Floor()* Returns the largest integer that is less than or equal to the decimal number

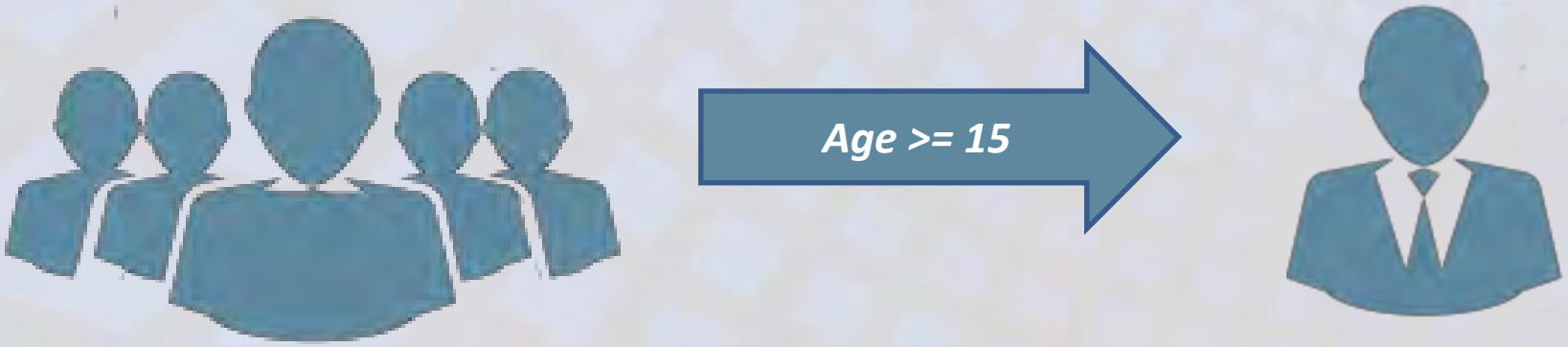
Shuffling

```
.OrderBy(x =>
            new Random(
                        (int)((1000*(x+1)*(1+ Quest.IRnd()))%1000)
            .Next()
).FirstOrDefault()
```

- *.OrderBy() is* shuffling selected array by a criteria,
- random order *new Random()* in our case, within specified way of generation;
- *X+1* excludes multiplying on 0
- *1+Quest.IRnd()* generates random number between 1 and 2
- *%1000* returns the remainder after an integer division
- *.Next()* retrieves the number from new *Random();*
- *.FirstOrDefault() selects first code from the randomly ordered array*

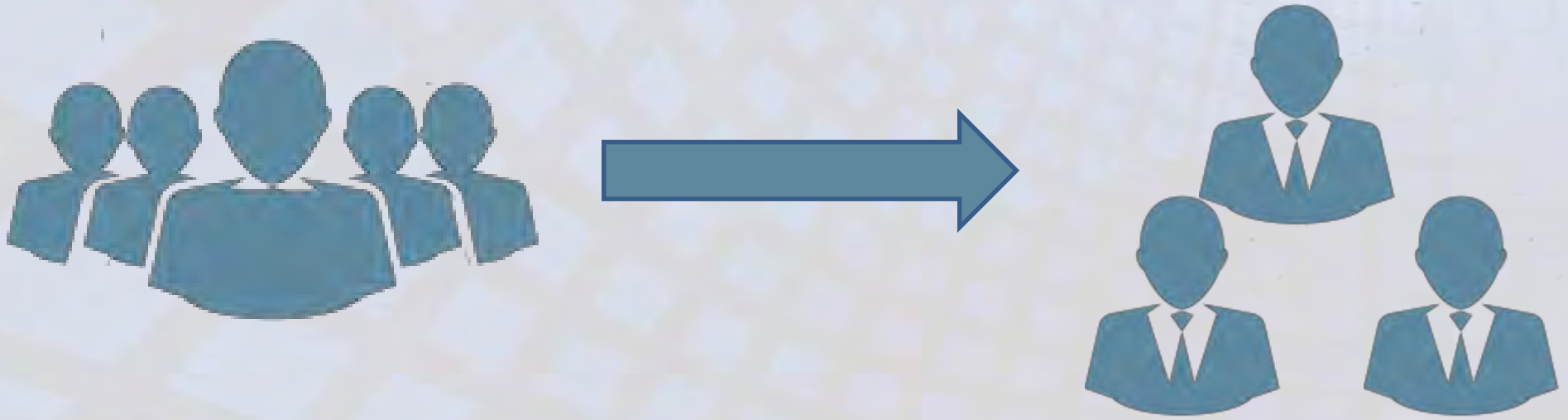
Example 1: Select 1 with a criteria

Task: Randomly select a member from members roster 15 years old or above



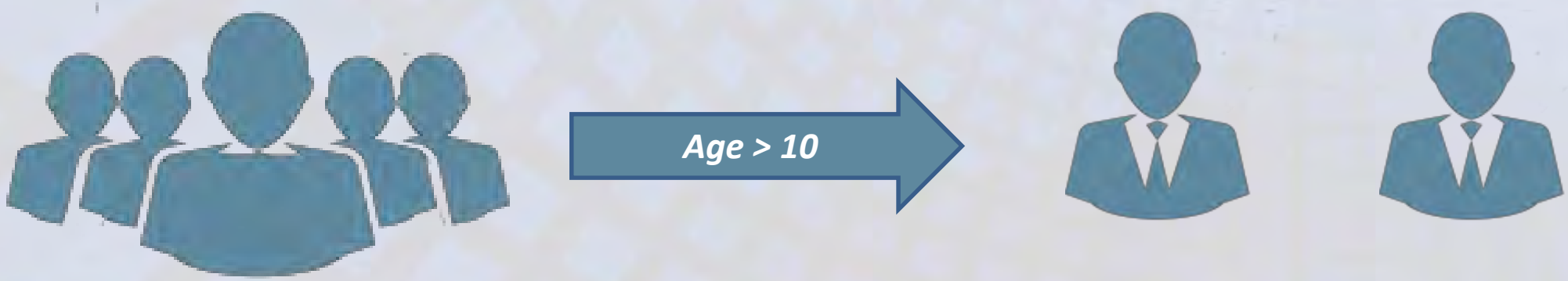
Example 2: Select a few people

Task: Randomly select 3 people from a list



Example 3: Select a few people within a criteria

Task: Randomly select 2 people who is older than 10 from a members roster



Exercise :

For selected price:

1. Randomly select one of the three following amounts in the placeholder ${CF}: 33%, 66%, or 100% of the power generator price in a local currency.
2. Show the percentage from the price in questions and a static text.

To set an array with percentages use: **new [] {0.33, 0.66, 1}**

Roster Vector

Roster Vector

Roster vector is an array of codes of a component.

- All questions have a roster vector.
- If a component is outside of any roster than its array is empty.
- Roster vector's array is not empty if its inside a roster, in this case it shown with blue text in Designer website.
- Roster vector array's length depends on nesting level of a roster.
- Components of the 0-nesting level roster have only one code in its array.

Roster Vector array

Codes in roster vector array of 0 nesting level are:

- generated by the SuSo if a source of the roster is a list or numeric question;
- comes from a multi-select question which is a source of the roster. In this case those codes are specified be the designer as option’s Values codes for each option.
- specified by a Designer as Values for fixed roster items.

Each component in a nested roster inherits codes of the parent rosters to their arrays .

Roster Vector’s array

Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.

- Rebecca Johnson
- Jaison Johnson
- David Johnson
- Gabriella Johnson

Roster Vector's array

Please give me the names of the persons who usu
household and guests of the household who staye
starting with the head of the household.

2	Rebecca Johnson
8	Jaison Johnson
12	David Johnson
13	Gabriella Johnson

Roster Vector's array

[2]
Member - *Rebecca Johnson*
[8]
Member - *Jaison Johnson*
[12]
Member - *David Johnson*
[13]
Member - *Gabriella Johnson*


[2]

[8]

[12]

[13]

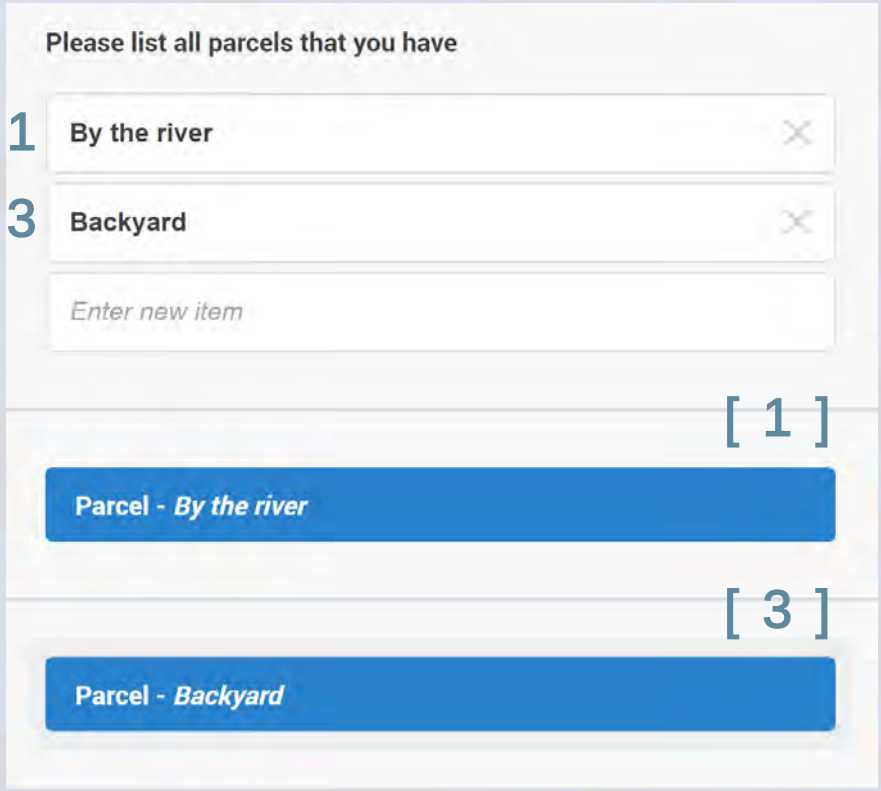
Roster Vector's array

Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.

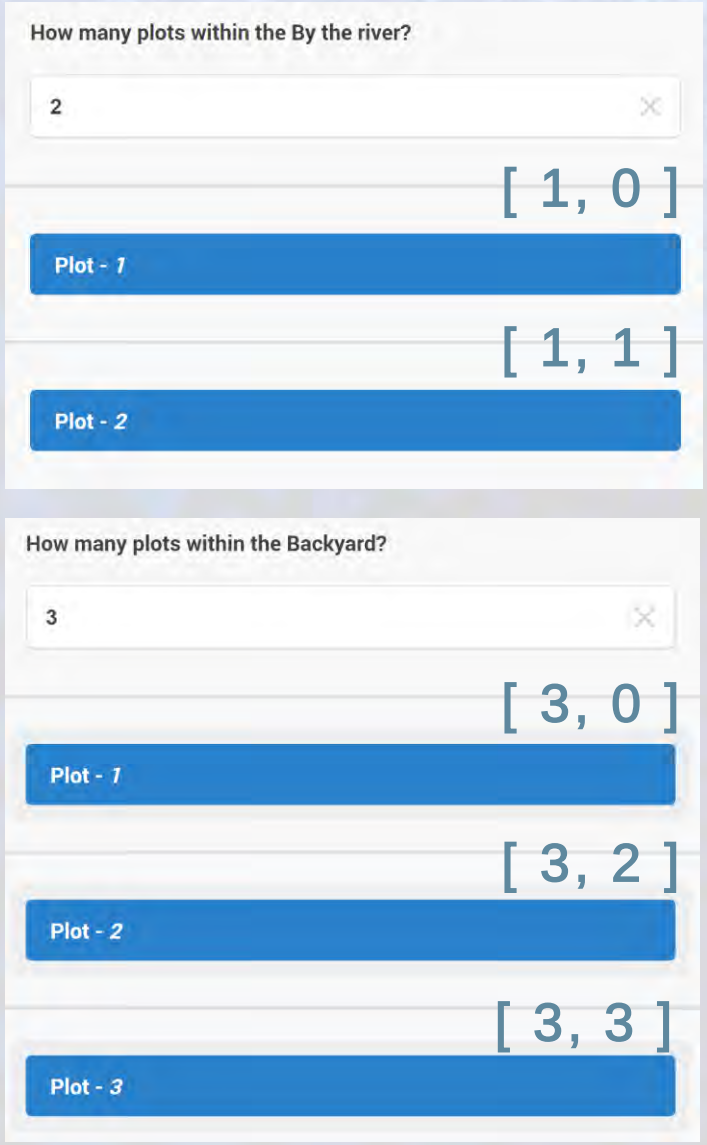
2	Rebecca Johnson
8	Jaison Johnson
12	David Johnson
13	Gabriella Johnson

Roster vector of nested roster components

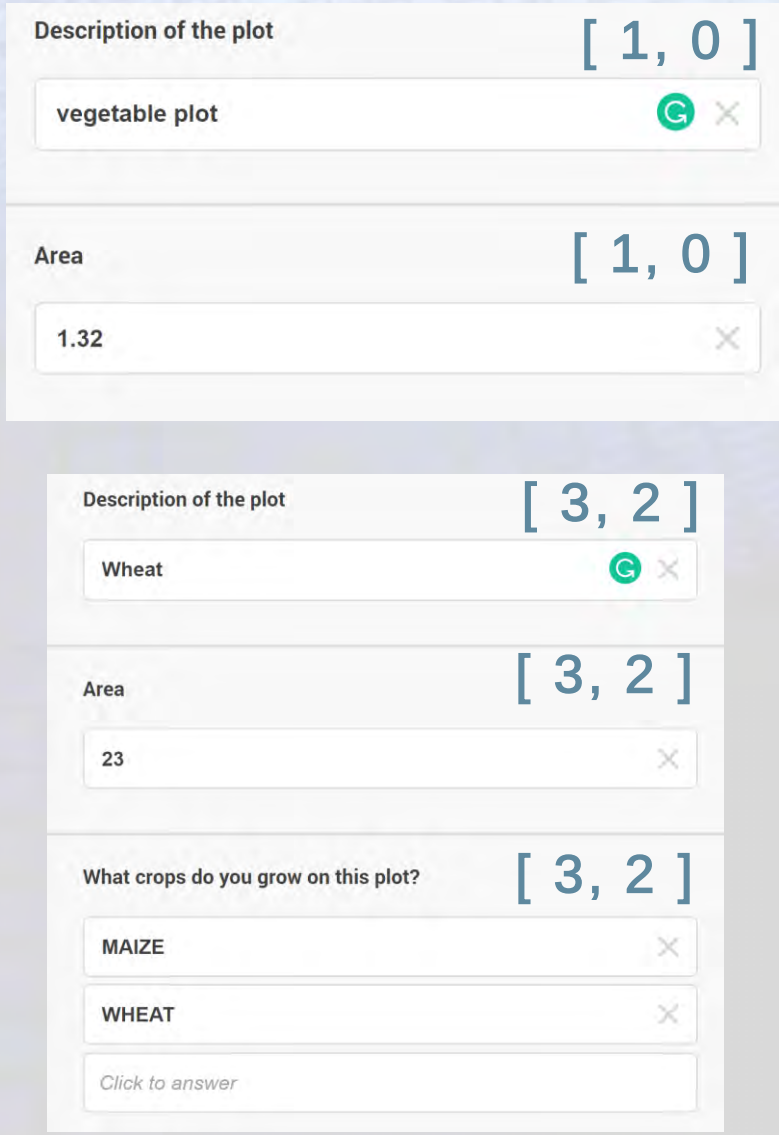
Parcel roster



Nested Plot roster

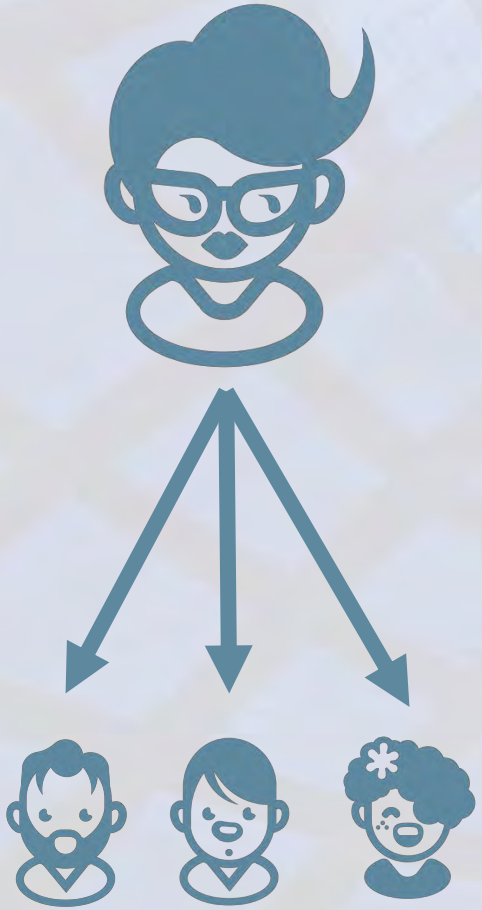


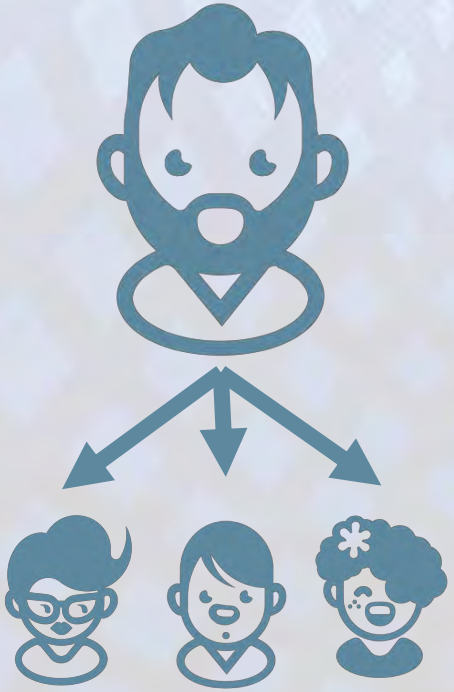
Questions about a Plot

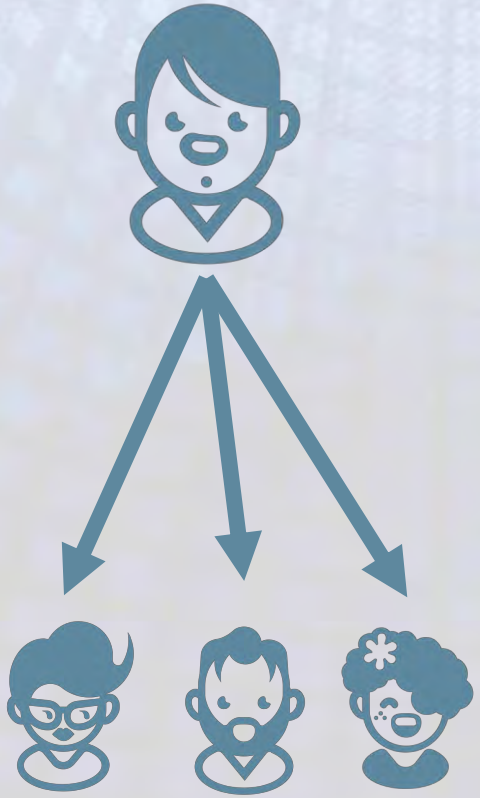


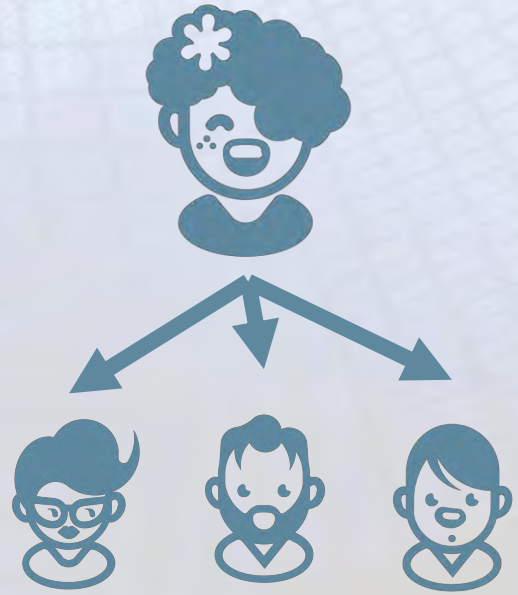
Collect relationship data
between all members in the HH

Relationship between members





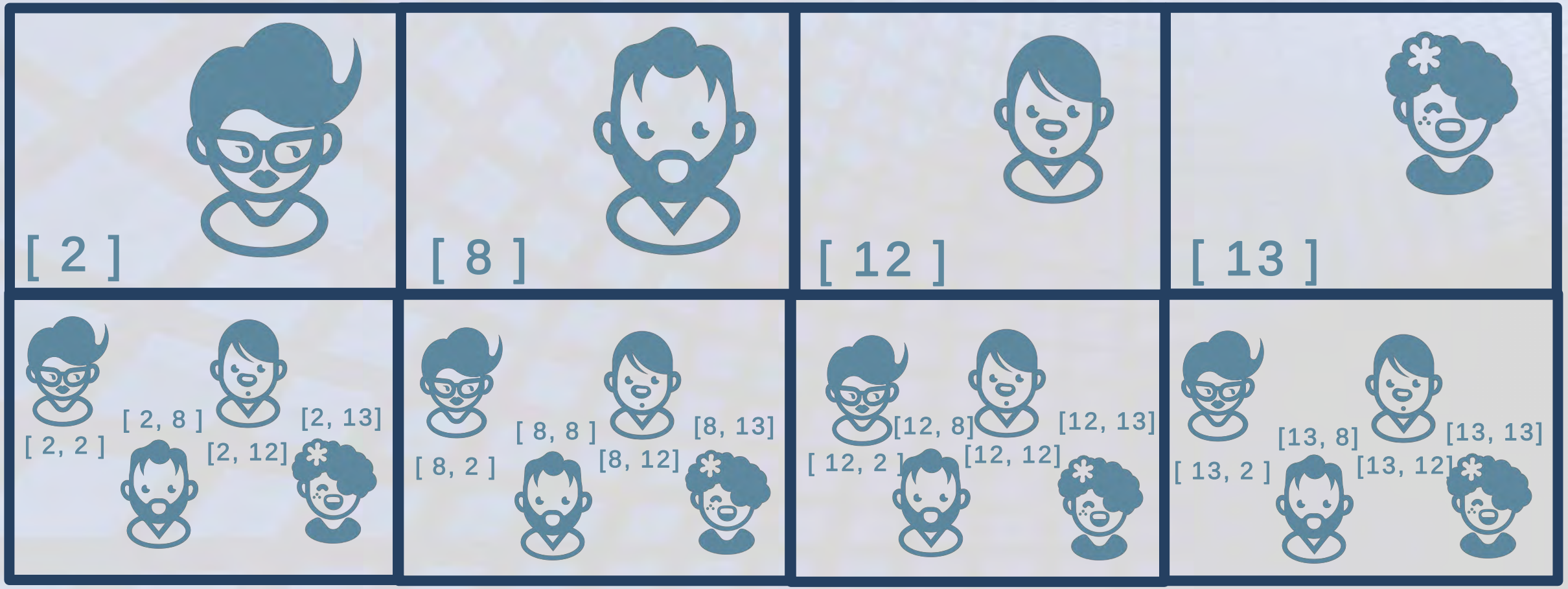




Roster vector of nested roster components

Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.

2	Rebecca Johnson
8	Jaison Johnson
12	David Johnson
13	Gabriella Johnson



Problems

The same list question as for parent roster will be triggering nested roster. Because of that:

1. Each member would be asked about the relationship with him/herself

2. Questions about relationship would be duplicated 2 times.

Solution

To resolve the current problems we will simply need to add enabling condition for the nested roster:

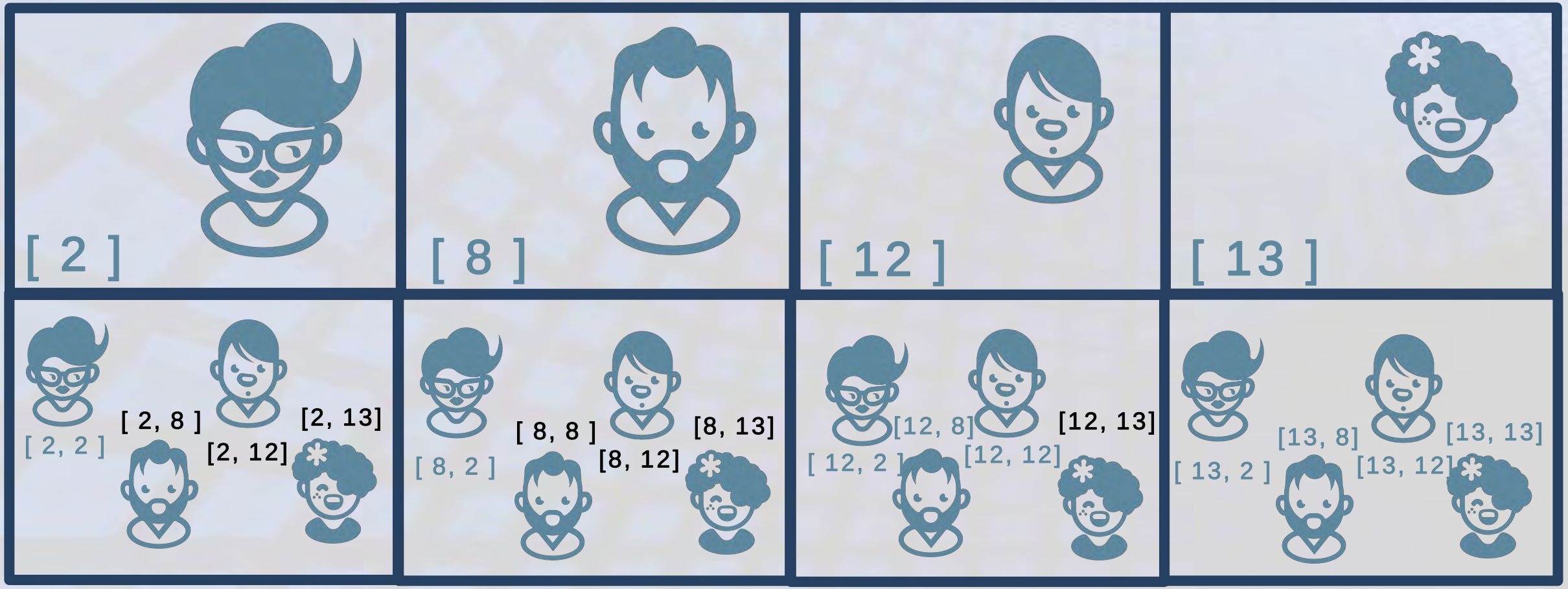
RosterVector[0] < RosterVector[1]

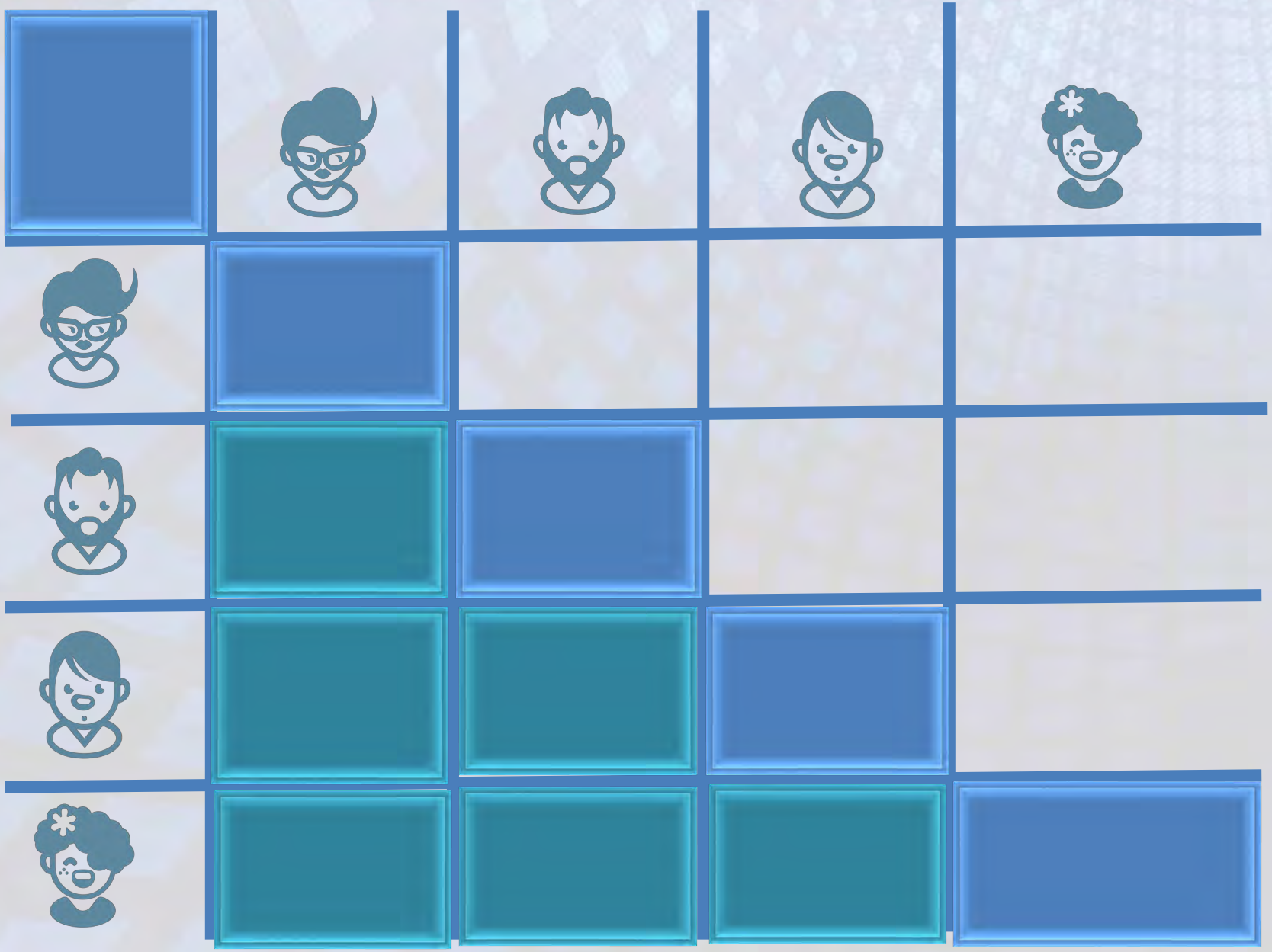
Where RosterVector[**0**]/[**1**] is pointing on a position of the code in the array of the question.

In this case questions with greater code on first position in an array would be omitted.

Roster vector of nested roster components

RosterVector[0] < RosterVector[1]

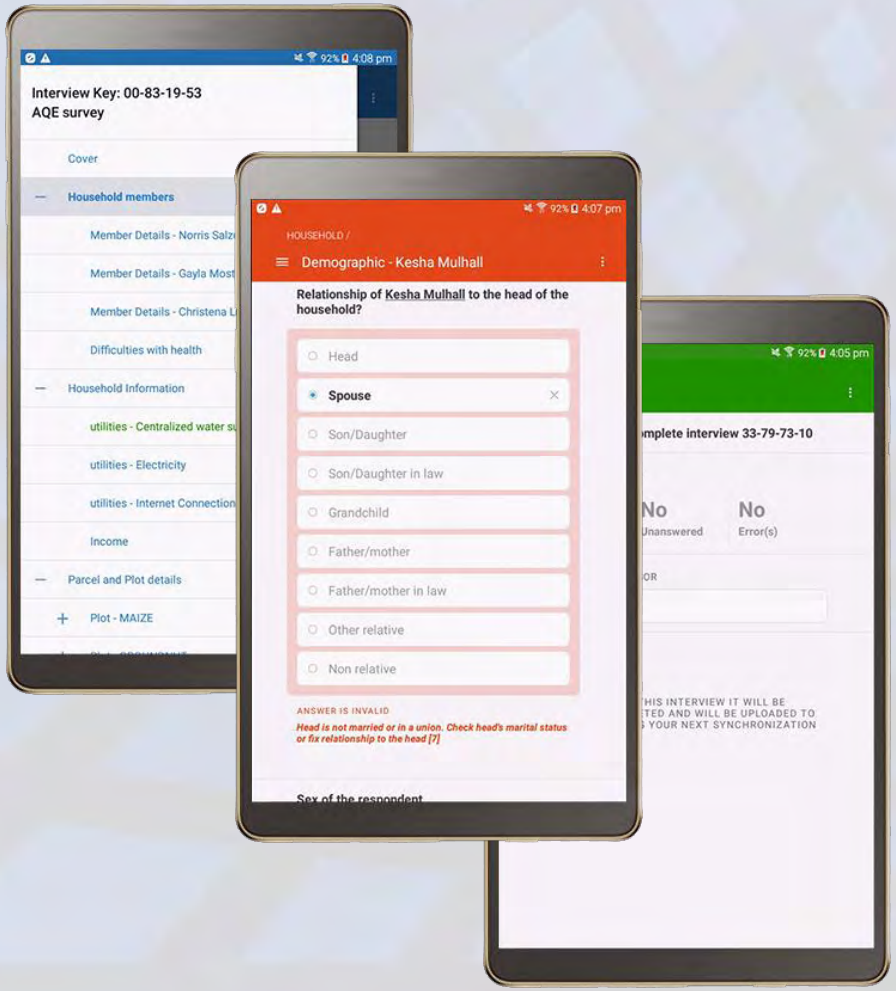


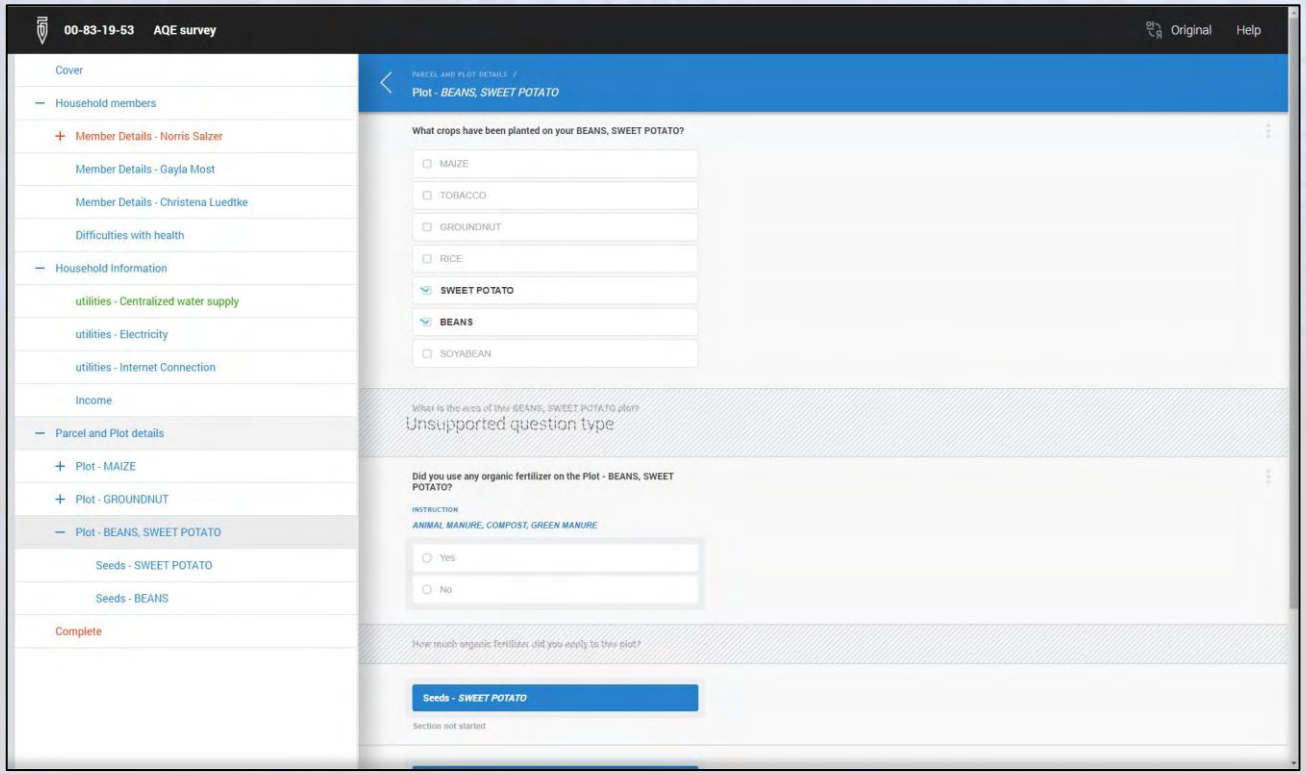


Computer Assisted Web Interviewing (CAWI)

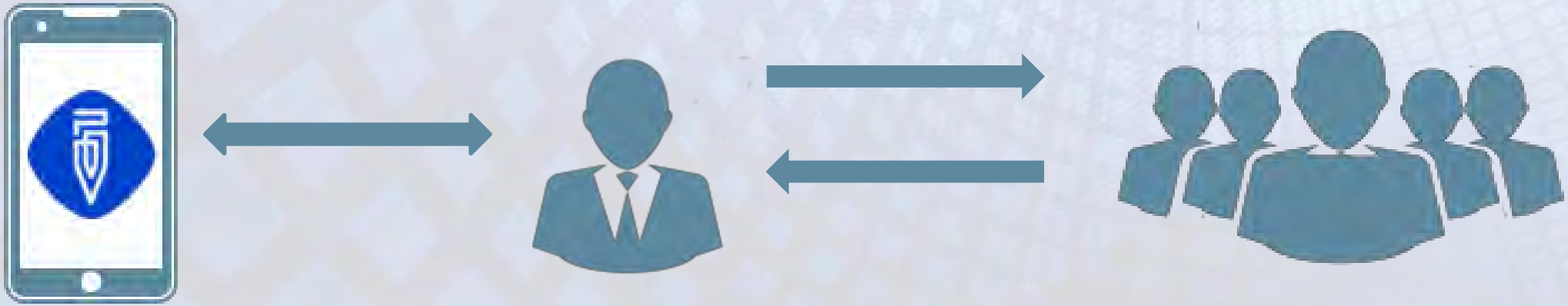
Survey Solutions modes

Survey Solutions supports mixed mode surveys – CAPI, CAWI, CATI





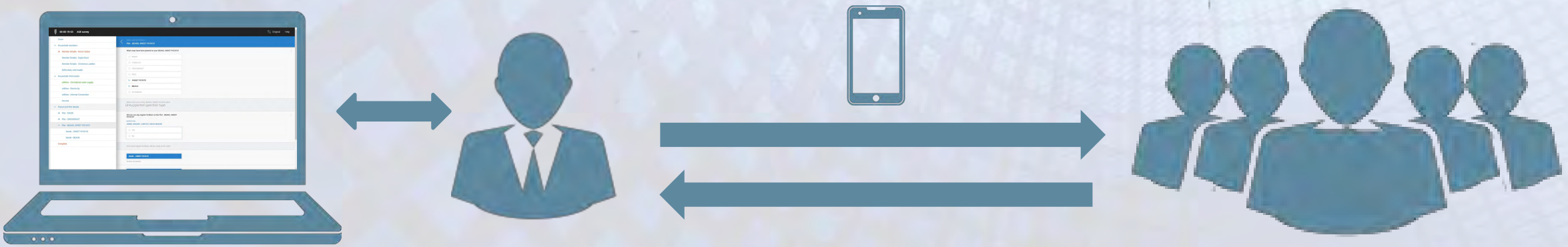
CAPI



Computer-assisted Personal Interviewing (CAPI):

1. Face-to-face data collection;
2. Interviewers should have had some training on the topic;
3. An interviewer conduct the interview and enter answers;
4. Internet connection is not required during the interview;
5. Data will be available to review after synchronizing a tablet with the server.

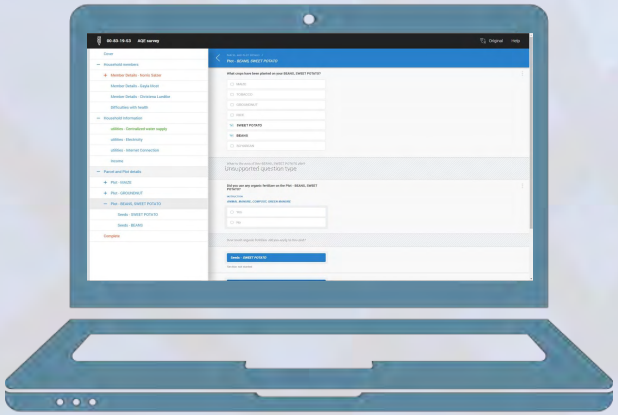
CATI

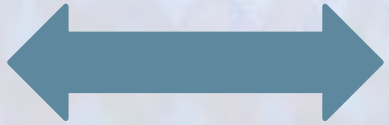


Computer-assisted Telephone Interviewing (CATI):

1. Usually requires a stetted up call center;
2. Requires one or more telephone operators;
3. Operators should have had some training on the topic;
4. An operator conduct the interview throughout the phone and enter answers;

CAWI



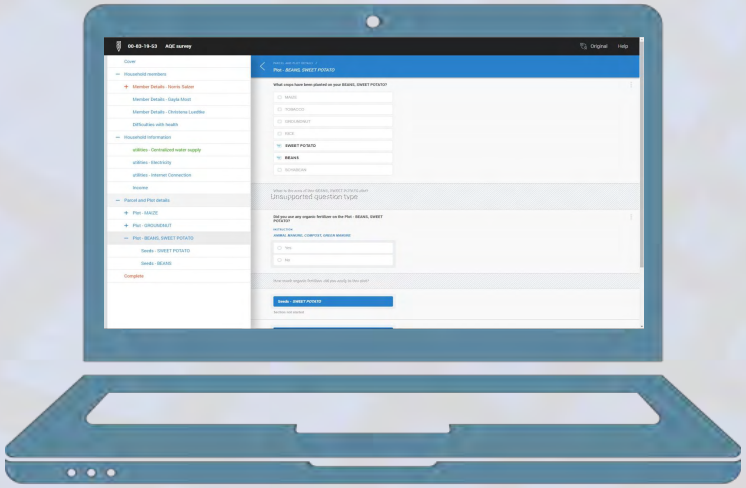


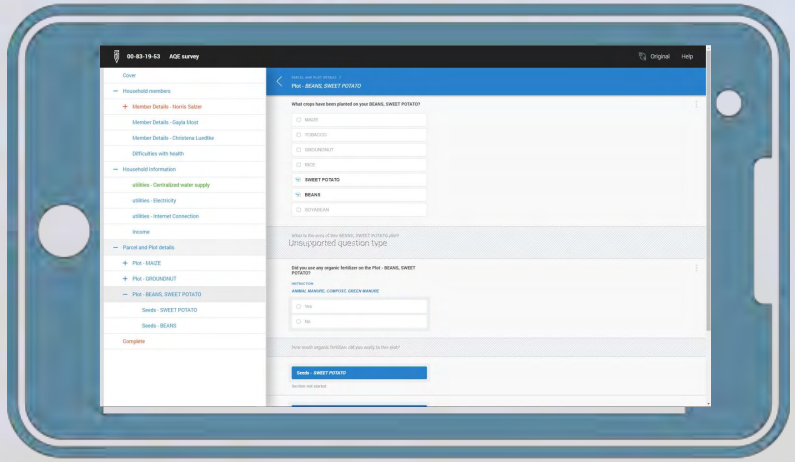
Computer-assisted Web Interviewing (CAWI):

1. Web-interview requires Internet connection;
2. The respondent answers the interview on his/her devise;
3. Respondent is untrained user;
4. An interview could be anonymous
5. Typically only one interview in the survey is filled out by a respondent.

So what is CAWI?

Computer-assisted web interviewing (CAWI) is an Internet surveying technique in which the interviewee follows a script provided in a website. In other words it's the web data collection. Could be collected on wide range of devices which have access to the Internet PCs, laptops, tablets and e.c..





Advantages and disadvantages

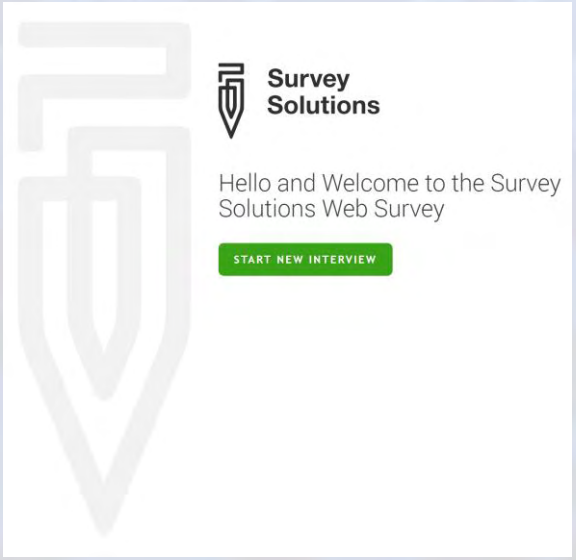
Advantages of CAWI:

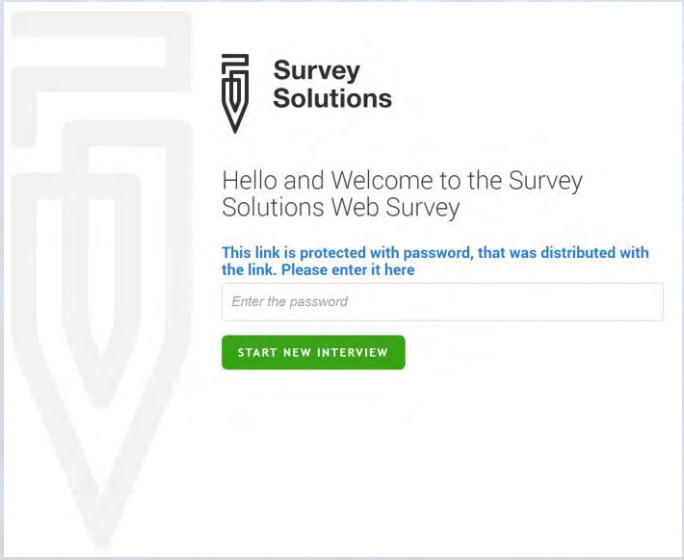
1. doesn’t require interviewers, their training and travel time;
2. doesn’t require interviewer equipment (tablets) as data entry will be performed by the respondent using his/her device;
3. the whole survey can be faster (theoretically can be completed within a day);
4. some sensitive questions may be easier to answer in the absence of interviewer;
5. it may be possible to reach respondents, which would otherwise be not reachable (for example, those living in remote places, or conflict areas) but have Internet connection;
6. Low costs of the survey.

There are equally-important concerns:

1. Survey coordinators must be able to contact respondents to invite them to take a survey (for example, per email);
2. Not everyone has access to the Internet, so the response rate is limited
3. Studies indicate that the demographic that responds to online questionnaire invitations are generally biased to younger people.

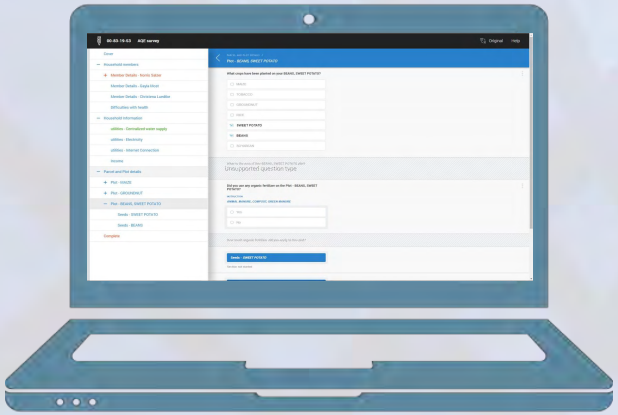
How does CAWI works?





1. Respondents log in to the interview clicking on a link.
2. The link can be published in a website or sent via email.
3. The respondent will display a short text introducing the survey and then he will proceed to answer the survey questions.
4. The survey can be distributed anonymously or with a unique personal links.

Anonymous distribution



- In anonymous distribution there’s no connection between the respondent and the interview.
- This method is used when you have to guarantee anonymity to your respondents. In this case all the contacts will use the same link to log in. It can be published in a website, in social media or sent via email.
- It’s good to remember that anonymous distribution doesn’t prevent the same respondent to answer the questionnaire multiple times corrupting final data.

Personal unique link distribution

- Personal unique link distribution requires a different link for each respondent.
- Link could also be protected by a password.
- The Survey Solutions is then able to link respondents profiles in the database with interviews completed.
- This procedure is useful to get information as who completed the survey and who started the survey but didn’t complete it.
- Tracking survey responses is important to perform mass actions on the database, for example to send a reminder to all those who didn’t answer the questionnaire.

Setting up a CAWI survey in SuSo

Conducting a CAWI survey requires the following:

1. Compose the questionnaire.
2. Test the questionnaire with Web-Tester for CAWI. If you are planning to have a mixed mode, than the questionnaire should be tested with Tester App and Web Tester.
3. Import the questionnaire to the data server.
4. Make web-assignments for the survey.
5. Activate the web-survey mode.
6. Distribute the links.
7. Review incoming data/follow up with the respondents if necessary.
8. De-activate the web-survey mode.

Composing the questionnaire

Because the respondents are untrained users it's important that the questionnaire is as simple as possible and that question texts are perfectly clear.

- The questionnaire should begin with a short introduction that informs the subject why the questionnaire is being conducted.
- Questions for questionnaire should be created in the most appropriate type of format that facilitates understanding.
- In creating the layout of the CAWI questionnaire, should be well structured. For example, if a subject selects "yes" to a question, the questionnaire would automatically jump to the next relevant question and vice versa.
- The questionnaire shouldn't be too big. Generally to answer 4 categorical questions take around 1 minute and one text question could take up to a few minutes. If questionnaire would be too big you risk to have an incorrect data.
- A brief "thank you" note should be included at the end of the questionnaire

Continuing interviews

- Some web interviews may be quite lengthy, difficult to fill out in one seating either because of the respondent not being available for so long, or because of the connectivity issues.
- To continue working on the interview the respondent must open exactly the same URL he/she sees during the interviewing.
- This URL may be different from the one contained in the originally received invitation. The respondent may copy and preserve the URL from his/her browser's address line at any time.
- In addition, if the bulk email service is set up by the server administrator, the user will be asked for the contact email at the beginning of the interview. If the email is provided, a message containing the continuation link will be sent to that email.

Generated by SashaK, Feb 04, 2021 19:52
Questionnaire created by SashaK, Feb 23, 2020 12:34
Last modified by SashaK, Feb 28, 2020 03:09

Shared with:
andoria (never edited)
steluta (never edited)
radub (never edited)
AlexandraIspas (never edited)
marilena (never edited)
ruxandram (never edited)
monicaa (never edited)
bogdang (never edited)
dianapopa (never edited)
mirelaionita (never edited)
doru (never edited)
Ramona (never edited)
alexcipro (never edited)
simona (never edited)
roxana (never edited)
roxanaadam (never edited)
cristinasimion (never edited)
anastegaru (never edited)
mirelapetrache (never edited)
stefanc (never edited)
Valentinab (never edited)
PapaG (never edited)
tiruana (never edited)
iuliap (never edited)
cocojumbo (never edited)
alekskrivtsov last edited 2/27/2020 10:17:25 AM

Sections: 13, Sub-sections: 60,
Questions: 194.
Questions with enabling conditions: 46
Questions with validation conditions:29
Rosters: 38
Variables: 105

Survey Solutions

Example of Training Advanced

SURVEY IDENTIFICATION INFORMATION QUESTIONNAIRE DESCRIPTION

PRACTICE
No sub-sections, No rosters, Questions: 1.

ROSTER DISPLAY MODES + NESTED ROSTER
Sub-sections: 4, Rosters: 6, Questions: 15.

CATEGORICAL QUESTIONS
Sub-sections: 3, No rosters, Questions: 15, Static texts: 15.

SYNTAX AND FUNCTIONS
Sub-sections: 3, No rosters, Questions: 7, Static texts: 3, Variables: 4.

LINQ AND LAMBDA EXPRESSIONS
Sub-sections: 4, Rosters: 2, Questions: 11, Static texts: 2, Variables: 15.

USEFUL EXAMPLES
Sub-sections: 7, Rosters: 2, Questions: 18, Static texts: 5, Variables: 7.

DATE QUESTIONS
Sub-sections: 6, No rosters, Questions: 14, Static texts: 6, Variables: 16.

SELECT BY CATEGORY
Sub-sections: 14, Rosters: 9, Questions: 23, Static texts: 7, Variables: 19.

RANDOM SELECTION
Sub-sections: 6, Rosters: 4, Questions: 14, Static texts: 5, Variables: 15.

HH

Sub-sections: 2, Rosters: 8, Questions: 25, Static texts: 5, Variables: 17.

SURVEY IDENTIFICATION INFORMATION QUESTIONNAIRE DESCRIPTION

Basic information

Title Example of Training Advanced

PRACTICE

Situation	MULTI-SELECT: YES/NO s91
	01 ☐ / ☐ Ναι, μία φορά 02 ☐ / ☐ Ναι, δύο φορές ή περισσότερες 03 ☐ / ☐ Αριθ 04 ☐ / ☐ Δεν συμβαίνει

ROSTER DISPLAY MODES + NESTED ROSTER

ROSTER DISPLAY MODES + NESTED ROSTER
FLAT ROSTER MODE

Do you have bovine animals ..?	MULTI-SELECT: YES/NO FL01 01 ☐ / ☐ Bovine animals less than 1 year old 02 ☐ / ☐ Male, from 1 to 2 years old 03 ☐ / ☐ Heifers, from 1 to 2 years old 04 ☐ / ☐ Male, 2 years old and over 05 ☐ / ☐ Heifers, 2 years old and over 06 ☐ / ☐ Dairy cows, 2 years old and over 07 ☐ / ☐ Dairy Bufalo cows, 2 years old and over 08 ☐ / ☐ Female Non-dairy cows, 2 years old and over 09 ☐ / ☐ Female Non-dairy Bufalo cows, 2 years old and over

ROSTER DISPLAY MODES + NESTED ROSTER / FLAT ROSTER MODE
Roster: ANIMALS
generated by multi-select question FL01 FLRoster

How many %rostertitle% do you have?	NUMERIC: INTEGER FL02
How many %rostertitle% that you have belongs to someone else?	NUMERIC: INTEGER FL03

ROSTER DISPLAY MODES + NESTED ROSTER
TABLE ROSTER MODE

How many people works for you?	NUMERIC: INTEGER T01

ROSTER DISPLAY MODES + NESTED ROSTER / TABLE ROSTER MODE
Roster: WORKER
generated by numeric question T01 workerRoster

Full name of the worker	TEXT T02
Age	NUMERIC: INTEGER T03

ROSTER DISPLAY MODES + NESTED ROSTER
MATRIX ROSTER MODE

ROSTER DISPLAY MODES + NESTED ROSTER / MATRIX ROSTER MODE
Roster: HELMET

generated by fixed list

helmetRoster

01 When riding a bike

02 When driving a motorbike

03 When riding an electric scooter

When you drive or ride a bike, motorcycle, or electric scooter, how often do you wear a helmet?	SINGLE-SELECT MT01 001 ○ Always 002 ○ Often 003 ○ Sometimes 004 ○ Rarely 005 ○ Never 999 ○ N/A

ROSTER DISPLAY MODES + NESTED ROSTER

NESTED ROSTER

Please list all parcels that you have	LIST NE01

ROSTER DISPLAY MODES + NESTED ROSTER / NESTED ROSTER

Roster: PARCEL

generated by list question NE01

NE02

What is the area of %rostertitle%? (Hectares)	NUMERIC: DECIMAL NE03
Who owns this parcel?	TEXT NE04
How many plots within the %rostertitle%?	NUMERIC: INTEGER NE05

ROSTER DISPLAY MODES + NESTED ROSTER / NESTED ROSTER / PARCEL

Roster: PLOT

generated by numeric question NE05

NE06

Description of the plot	TEXT NE07

What crops do you grow on this plot?	MULTI-SELECT NE08 1010 ☐ BEANS/COWPEA 1040 ☐ COCOYAM 1050 ☐ COTTON 1060 ☐ GROUND NUT/PEANUTS 1070 ☐ GUINEA CORN/SORGHUM 1080 ☐ MAIZE 1090 ☐ MELON/EGUSI 1100 ☐ MILLET/MAIWA 1110 ☐ RICE 1121 ☐ WHITE YAM 1122 ☐ YELLOW YAM 1123 ☐ WATER YAM 1124 ☐ THREE LEAVE YAM 2010 ☐ ACHA 2020 ☐ BAMBARA NUT 2040 ☐ BEENI-SEED/SESAME And 24 other symbols [5]

ROSTER DISPLAY MODES + NESTED ROSTER / NESTED ROSTER / PARCEL / PLOT

Roster: CROP

generated by multi-select question NE08

NE09

Did you apply pesticides on this %rostertitle%	SINGLE-SELECT NE10 01 ○ Yes 02 ○ No
Did your household sell any unprocessed %rostertitle% since the harvest?	SINGLE-SELECT NE11 01 ○ Yes 02 ○ No

CATEGORICAL QUESTIONS

CATEGORICAL QUESTIONS
CATEGORICAL SINGLE-SELECT

STATIC TEXT

Single-select questions capture the answers to close-ended questions with pre-coded options. The variants of this question type concern how the answer options are selected and whether answers to one single-select question affect the possible answers to a subsequent single-select question.

STATIC TEXT

Simple single-select with radio button answer selection

Gender	SINGLE-SELECT `gender` 01 ○ Male 02 ○ Female

STATIC TEXT

Single-select with combo box answer selection

What is the main crop on this plot?	SINGLE-SELECT: COMBO BOX `mainCrop` 1010 ○ BEANS/COWPEA 1040 ○ COCOYAM 1050 ○ COTTON 1060 ○ GROUND NUT/PEANUTS 1070 ○ GUINEA CORN/SORGHUM 1080 ○ MAIZE 1090 ○ MELON/EGUSI 1100 ○ MILLET/MAIWA 1110 ○ RICE 1121 ○ WHITE YAM 1122 ○ YELLOW YAM 1123 ○ WATER YAM 1124 ○ THREE LEAVE YAM 2010 ○ ACHA 2020 ○ BAMBARA NUT 2040 ○ BEENI-SEED/SESAME And 51 other symbols [6]

CATEGORICAL QUESTIONS
CATEGORICAL MULTI-SELECT

STATIC TEXT

Simple multi-select question

What type of documents does your household have for the land?

MULTI-SELECT doc

- 01 ☐ TITLE DEED
- 02 ☐ CERTIFICATE OF CUSTOMARY OWNERSHIP
- 03 ☐ CERTIFICATE OF OCCUPANCY
- 04 ☐ CERTIFICATE OF HEREDITARY ACQUISITION LISTED IN REGISTRY
- 05 ☐ SURVEY PLAN
- 06 ☐ RENTAL CONTRACT, REGISTERED
- 07 ☐ LEASE, REGISTERED

STATIC TEXT

Multi-select where answer order is recorded

What are the main difficulties that you axperienced at your main work?

I Start from the most major one.

MULTI-SELECT: ORDERED difficulties

- 01 ☐ Difficulty getting a promotion
- 02 ☐ Difficulty getting a raise in salary
- 03 ☐ Being harassed at work
- 04 ☐ Difficulty traveling to/from work
- 05 ☐ Being assisgned tasks below level of education

STATIC TEXT

Multi-select with only designer-specified maximum number of answers possible

What do you usually do to make the water safer to drink?

I Select up to 3.

MULTI-SELECT safeWater

- 01 ☐ BOIL
- 02 ☐ ADD BLEACH/CHORINE
- 03 ☐ STRAIN THROUGH A CLOTH
- 04 ☐ USE WATER FILTER (CERAMIC/SAND/COMPOSITE/ETC.)
- 05 ☐ SOLAR DISINFECTION
- 06 ☐ LET IT STAND AND SETTLE
- 07 ☐ ALUM

STATIC TEXT

Combobox multi-select questions

Please select all crops that you have cultivated.	MULTI-SELECT `cultivatedCrops` 1010 ☐ BEANS/COWPEA 1040 ☐ COCOYAM 1050 ☐ COTTON 1060 ☐ GROUND NUT/PEANUTS 1070 ☐ GUINEA CORN/SORGHUM 1080 ☐ MAIZE 1090 ☐ MELON/EGUSI 1100 ☐ MILLET/MAIWA 1110 ☐ RICE 1121 ☐ WHITE YAM 1122 ☐ YELLOW YAM 1123 ☐ WATER YAM 1124 ☐ THREE LEAVE YAM 2010 ☐ ACHA 2020 ☐ BAMBARA NUT 2040 ☐ BEENI-SEED/SESAME And 51 other symbols [7]

STATIC TEXT

Multi-select with only designer-specified maximum number of answers possible

Please select two main crops that grow.	MULTI-SELECT `twoMainCrops` 1010 ☐ BEANS/COWPEA 1040 ☐ COCOYAM 1050 ☐ COTTON 1060 ☐ GROUND NUT/PEANUTS 1070 ☐ GUINEA CORN/SORGHUM 1080 ☐ MAIZE 1090 ☐ MELON/EGUSI 1100 ☐ MILLET/MAIWA 1110 ☐ RICE 1121 ☐ WHITE YAM 1122 ☐ YELLOW YAM 1123 ☐ WATER YAM 1124 ☐ THREE LEAVE YAM 2010 ☐ ACHA 2020 ☐ BAMBARA NUT 2040 ☐ BEENI-SEED/SESAME And 51 other symbols [8]

STATIC TEXT

Multi-select represented as a series of yes/no questions

Does your household have:

MULTI-SELECT: YES/NO — assets

- 01 ☐ / ☐ Radio
- 02 ☐ / ☐ Television
- 03 ☐ / ☐ Mobile telephone
- 04 ☐ / ☐ Non-mobile telephone
- 05 ☐ / ☐ Refrigerator
- 06 ☐ / ☐ Cable TV
- 07 ☐ / ☐ Generating set
- 08 ☐ / ☐ Air conditioner
- 09 ☐ / ☐ Computer
- 10 ☐ / ☐ Electric iron
- 11 ☐ / ☐ Fan

STATIC TEXT

Multi-select represented as a series of yes/no questions where answer order is recorded

Has ... livestock has died in the last 12 month in your holding?

I Please start from bigger amount of a livestock that you lost

MULTI-SELECT: ORDERED, YES/NO — livestock

- 10 ☐ / ☐ Bulls
- 11 ☐ / ☐ Oxen
- 12 ☐ / ☐ Cows
- 13 ☐ / ☐ Steers/Heifers
- 14 ☐ / ☐ Calves - Males/Females
- 15 ☐ / ☐ Buffaloes
- 20 ☐ / ☐ Goats - He/She/Kids
- 21 ☐ / ☐ Sheep - Rams/Ewes/Lambs
- 31 ☐ / ☐ Camels - He/She/Kids
- 41 ☐ / ☐ Pigs - Boar/Sow/Piglets
- 51 ☐ / ☐ Chicken - cocks / broilers
- 52 ☐ / ☐ Chicken - hens / layers
- 53 ☐ / ☐ Pullets/DOCs
- 54 ☐ / ☐ Other - Ducks, Geese, Guineafowls, etc
- 61 ☐ / ☐ Horses
- 62 ☐ / ☐ Mules / Donkeys

STATIC TEXT

Multi-select with only designer-specified maximum number of answers possible

What type of heat source do you use to heat your house?

I Select up to 3

MULTI-SELECT: YES/NO — heatSource

- 01 ☐ / ☐ Central heating
- 02 ☐ / ☐ Electricity
- 03 ☐ / ☐ Natural gas
- 04 ☐ / ☐ Liquefied gas
- 05 ☐ / ☐ Oil and diesel
- 06 ☐ / ☐ Wood
- 07 ☐ / ☐ Manure

CATEGORICAL QUESTIONS

CATEGORICAL QUESTIONS WITH COLLECTION OF CATEGORIES

STATIC TEXT

Simple single-select with radio button answer selection

What is your favorite fruit?

SINGLE-SELECT Q1

01 ○ Apple
02 ○ Orange
04 ○ Peach
05 ○ Apricot
06 ○ Tangerine
07 ○ Papaya
08 ○ Plum
09 ○ Grapefruit

STATIC TEXT

Combobox multi-select questions

What fruit does your family consume most of the time?

MULTI-SELECT fruitConsumption

01 ☐ Apple
02 ☐ Orange
04 ☐ Peach
05 ☐ Apricot
06 ☐ Tangerine
07 ☐ Papaya
08 ☐ Plum
09 ☐ Grapefruit

STATIC TEXT

Combobox multi-select questions with maximum number of answers

What juice do you like?

I Select up to 2

MULTI-SELECT juice

01 ☐ Apple
02 ☐ Orange
04 ☐ Peach
05 ☐ Apricot
06 ☐ Tangerine
07 ☐ Papaya
08 ☐ Plum
09 ☐ Grapefruit

STATIC TEXT

Multi-select represented as a series of yes/no questions

Do you grove any ... trees?

MULTI-SELECT: YES/NO fruitTrees

01 ☐ / ☐ Apple
02 ☐ / ☐ Orange
04 ☐ / ☐ Peach
05 ☐ / ☐ Apricot
06 ☐ / ☐ Tangerine
07 ☐ / ☐ Papaya
08 ☐ / ☐ Plum
09 ☐ / ☐ Grapefruit

dfdf

SINGLE-SELECT dfdfdf

01 ○ ???
02 ○ ??????? ?????
04 ○ ?????
05 ○ ????

SYNTAX AND FUNCTIONS

SYNTAX AND FUNCTIONS

GPS CONSTUCTOR

Current location

V1 `distance <= 300`

M1 You are too far

GPS `locationCurrent`

N

W

A

VARIABLE

`(long)(new GeoLocation(44.429717, 26.093319, 0, 0) .GpsDistance(locationCurrent))`

LONG `distance`

STATIC TEXT

Distance from National Statistics Office %distance%m

SYNTAX AND FUNCTIONS

OPERATIONS WITH LIST TYPE

Respondent name

TEXT `respondent`

Head of household

TEXT `head`

Make a complete list of household members. Start with the household head

W1 `IsAnswered(respondent) ? (SYMembersList.Any(x=>x.Text == respondent)) :true`

M1 The respondent (%respondent%) isn't listed or is missing. Please revise or leave a comment

V2 `IsAnswered(head) ? (self[0].Text == head) : true`

M2 The HH (%head%) isn't in the list of members. Please revise or leave a comment

LIST `SYMembersList`

VARIABLE

`true`

BOOLEAN `headName`

STATIC TEXT

First person from the list %headName%

SYNTAX AND FUNCTIONS

ISDATE FUNCTION

year

NUMERIC: INTEGER `SYyear`

month

NUMERIC: INTEGER `SYmonth`

day	NUMERIC: INTEGER SYday
VARIABLE IsDate(SYyear, SYmonth, SYday)	BOOLEAN SYisItDate
VARIABLE new DateTime(SYyear??1900, ((SYmonth??1).InRange(1,12) ? SYmonth??1 :1), SYday??1)	DATETIME SYnewDate

STATIC TEXT

Can be date created from numbers ? - %SYisItDate%

Created date or default - %SYnewDate%

LINQ AND LAMBDA EXPRESSIONS

LINQ AND LAMBDA EXPRESSIONS
EXAMPLES

LINQ AND LAMBDA EXPRESSIONS / EXAMPLES
LAMBDA EXPRESSIONS

Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	LIST L01

LINQ AND LAMBDA EXPRESSIONS / EXAMPLES / LAMBDA EXPRESSIONS
Roster: MEMBER
generated by list question L01 — HouseholdRoster

Sex	SINGLE-SELECT L02 01 ○ Male 02 ○ Female
How old is %rostertitle%?	NUMERIC: INTEGER L03
What is %rostertitle%'s present marital status?	SINGLE-SELECT L04 01 ○ MONOGAMOUS MARRIED OR NON-FORMAL UNION 02 ○ SEPARATED 03 ○ DIVORCED 04 ○ WIDOW OR WIDOWER 05 ○ NEVER MARRIED
What is the average number of hours do you work per day	NUMERIC: INTEGER L05
VARIABLE `//HouseholdRoster.Count(x=>x.L02==1) //HouseholdRoster.Select(x=>x.L02==1).Count() HouseholdRoster.Count(x=>x.L02!=2 && IsAnswered(x.L02))`	LONG totalMale
VARIABLE `//HouseholdRoster.Max(x=>x.L03) HouseholdRoster.Select(x=>x.L03).Max()`	LONG maxAge
VARIABLE `//HouseholdRoster.Where(x=>x.L02==2).Min(x=>x.L03) HouseholdRoster.Where(u=>u.L02==2).Select(y=>y.L03).Min()`	LONG youngestFeAge
VARIABLE `(long)HouseholdRoster.Where(z=>z.L02==1).Average(x=>x.L03)`	LONG averAgeMales
VARIABLE `Math.Round(HouseholdRoster.Where(x=>x.L02==1) .OrderByDescending(x=>x.L03) .Take(3) .Average(x=>x.L05)??0,2)`	DOUBLE averHoursOldest

VARIABLE

```
//Order members by age starting from the lowest Household
dRoster.OrderBy(x=>x.L03) // select hours worked .Select
(x=>x.L05) //skip first number .Skip(1) // calculate tot
al of the rest .Sum()
```

LONG totalHoursExcYoungest

STATIC TEXT

Total number of males in the household is - %totalMale%

Age of the oldest person is - %maxAge%

Age of the youngest female in the household is - %youngestFeAge%

Average age of males in the household is - %averAgeMales%

Average number of hours worked between 3 oldest malest in the household is - %averHoursOldest%

Age of the oldest person is - %maxAge%

Total hours worked be all household members except the youngest person is - %totalHoursExcYoungest%

LINQ AND LAMBDA EXPRESSIONS

EXERCISE

LINQ AND LAMBDA EXPRESSIONS / EXERCISE

LAMBDA EXPRESSIONS

Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.

LIST EL01

LINQ AND LAMBDA EXPRESSIONS / EXERCISE / LAMBDA EXPRESSIONS

Roster: MEMBER

generated by list question EL01

EHouseholdRoster

Sex

SINGLE-SELECT EL02

01 ○ Male
02 ○ Female

How old is %rostertitle%?

NUMERIC: INTEGER EL03

What is %rostertitle%'s present marital status?

SINGLE-SELECT EL04

01 ○ MONOGAMOUS MARRIED OR NON-FORMAL UNION
02 ○ SEPARATED
03 ○ DIVORCED
04 ○ WIDOW OR WIDOWER
05 ○ NEVER MARRIED

What is the average number of hours do you work per day

NUMERIC: INTEGER EL05

Monthly salary

NUMERIC: DECIMAL EL06

VARIABLE EHouseholdRoster.Count() //EL01.Length	LONG	totalMembers
VARIABLE //(long)Math.Floor(EHouseholdRoster.Average(x=>x.EL05)??0) (long)Math.Floor(EHouseholdRoster .Select(x=>x.EL05) .Average()??0)	LONG	AverageHours
VARIABLE (long)Math.Floor(EHouseholdRoster.Where(x=>x.EL02==1) .Average(x=>x.EL05)??0)	LONG	AverageHoursMales
VARIABLE (long)Math.Floor(EHouseholdRoster.Where(x=>x.EL02==2) .Average(x=>x.EL05)??0)	LONG	AverageHoursFemales
VARIABLE /*EHouseholdRoster .Where(x=>x.EL02==2 && x.EL04== 1) .Min(x=>x.EL03)*/ EHouseholdRoster.Where(x=>x.EL02==2 && x.EL04 ==1) .Select(x=>x.EL03).Min()??0	LONG	ageYounMarrF
VARIABLE EHouseholdRoster.Where(x=>x.EL02==1 && x.EL04.InRange(2, 5)) .Max(x=>x.EL03)??0	LONG	ageOldNMarrM
VARIABLE //EHouseholdRoster.Count(x=>x.EL03<15) EHouseholdRoster.Where(x=>x.EL03<15).Count()	LONG	nMembBelow15
VARIABLE (long)Math.Floor(EHouseholdRoster.Where(x=>x.EL03>15 && x.EL02==2) .Average(x=>x.EL03)??0) /*(long)Math.Floor(EHouseholdRoster.Where(x=>x.EL03>15 && x.EL02==2).Select(x=>x.EL03).Average()??0)*/	LONG	averFemAb15
VARIABLE Math.Round(EHouseholdRoster.Average(z=>z.EL06)??0,2)	DOUBLE	averSalary

STATIC TEXT

Total number of members in the household is - %totalMembers%

Average hours worked is - %AverageHours%

Average hours worked by males is - %AverageHoursMales%

Average hours worked by females is - %AverageHoursFemales%

Age of the oldest not married maled is - %ageOldNMarrM%

Age of the youngest married female is - %ageYounMarrF%

Number of members below 15 is - %nMembBelow15%

Average age of females above 15 is - %averFemAb15%

Average salary in the household is - %averSalary%

USEFUL EXAMPLES

USEFUL EXAMPLES
EXAMPLES

USEFUL EXAMPLES / EXAMPLES
TOTALS

USEFUL EXAMPLES / EXAMPLES / TOTALS
QUICK SUM OF ANSWERED QUESTIONS

Price of A	NUMERIC: INTEGER a SPECIAL VALUES -08 I don't know -09 Can't find it
Price of B	NUMERIC: INTEGER b SPECIAL VALUES -08 I don't know -09 Can't find it
Price of C	NUMERIC: INTEGER c SPECIAL VALUES -08 I don't know -09 Can't find it
Price of D	NUMERIC: INTEGER d SPECIAL VALUES -08 I don't know -09 Can't find it
VARIABLE `/*((a??0)>0 ? a : 0) + ((b??0)>0 ? b : 0) + ((c??0)>0 ? c : 0) + ((d??0)>0 ? d : 0)*/ new [] {a, b, c, d}.Sum(x=> (x ?? 0) > 0 ? x : 0)`	LONG sum

STATIC TEXT

Total is: %sum%

USEFUL EXAMPLES / EXAMPLES / TOTALS
TOTAL SQUARE WITH PLANT PLANTATION

Total area	NUMERIC: INTEGER totalArea
6. Which kind of fruit in plantations is cultivated by HH	MULTI-SELECT UEfruit 01 ☐ Apple 02 ☐ Plum 03 ☐ Raspberry 04 ☐ Table grapes 05 ☐ Pear 06 ☐ Quince 07 ☐ Medlar 08 ☐ Cherry 10 ☐ Peach 11 ☐ Apricot 12 ☐ Nuts 13 ☐ Hazelnuts 14 ☐ Blackberry 15 ☐ Blueberry 16 ☐ Aronia

USEFUL EXAMPLES / EXAMPLES / TOTALS / TOTAL SQUARE WITH PLANT PLANTATION

Roster: TYPE OF FRUIT

generated by multi-select question UEfruit

rosterfruits

Total cultivated area	NUMERIC: DECIMAL fruitarea
VARIABLE `rosterfruits.Sum(x=>x.fruitarea??0)`	DOUBLE totalFruits

STATIC TEXT

Total CA %totalFruits% ha

USEFUL EXAMPLES / EXAMPLES

SET OF QUESTIONS

Are you or any member of your household growing crops during the referenceAgSeason?	SINGLE-SELECT s00_q15 01 ○ Yes 02 ○ No
Do you or any member of the household intend to grow crops in the next agricultural season?	SINGLE-SELECT s00_q16 01 ○ Yes 02 ○ No
Have you or any member of your household raised livestock in the past 12 monhts?	SINGLE-SELECT s00_q17a 01 ○ Yes 02 ○ No
Do you or any member of the household intend to raised livestock in the next 12 monhts?	SINGLE-SELECT s00_q17b 01 ○ Yes 02 ○ No

Have you or any member of your household practiced aquaculture in the past 12 monhts?	SINGLE-SELECT s00_q17c 01 ○ Yes 02 ○ No
Have you or any member of your household practiced fishery in the past 12 monhts?	SINGLE-SELECT s00_q17d 01 ○ Yes 02 ○ No
VARIABLE `new []{s00_q15,s00_q16,s00_q17a,s00_q17b,s00_q17c,s00_q17d} //.All(x=>x.IsNoneOf(2)) .All(x=>x==1)`	BOOLEAN allYes

STATIC TEXT

Are all questions yes --- %allYes%

USEFUL EXAMPLES / EXAMPLES

TOTAL FROM THE ROSTER WITHIN A CRETERIA

What UTILISED AGRICULTURAL AREA UNDER GLASS OR HIGH ACCESIBLE COVER does your holding have .... ? I Provide answers for all options	MULTI-SELECT: YES/NO C02P13 74 ☐ / ☐ Vegetables, including melons and strawberries under glass or high accessible cover 75 ☐ / ☐ Flowers and ornamental plants (nurseries excluded) 76 ☐ / ☐ Other arable land crops, under glass or high accessible cover 77 ☐ / ☐ Permanent crops, under glass or high accessible cover 78 ☐ / ☐ Other utilised agricultural areas under glass or high accesible cover not mentioned elsewhere

USEFUL EXAMPLES / EXAMPLES / TOTAL FROM THE ROSTER WITHIN A CRETERIA

Roster: AREA -

generated by multi-select question C02P13 — C02P13_roster

%rostertitle% (Hectares)	NUMERIC: DECIMAL C02P13_area -
VARIABLE `Math.Round(C02P13_roster.Sum(x=>x.C02P13_area??0),2)`	DOUBLE calcTotalUAAUnderGlass
VARIABLE `C02P13_roster.Where(x=>x.@rowcode.InRange(76,77)) .Sum(x=>x.C02P13_area??0)`	DOUBLE calcTotalPermAndOther
VARIABLE `C02P13_roster.FirstOrDefault(x=>x.@rowcode==74).C02P13_area??0 //C02P13_roster[74].C02P13_area??0`	DOUBLE vegetables

STATIC TEXT

Total area under glass --- %calcTotalUAAUnderGlass%

Total of permanent and other crops --- %calcTotalPermAndOther%

Vegetables - %vegetables%

USEFUL EXAMPLES

EXERCISE

Did your household produce any of these goods?	MULTI-SELECT b5 01 ☐ Wheat Flour 02 ☐ Corn Flour 03 ☐ Veal meat 04 ☐ Beaf meat 05 ☐ Pork meat 06 ☐ Lamb meat 07 ☐ Chicken meat 08 ☐ Fish/Fresh trout 09 ☐ Milk 10 ☐ Yoghurt 11 ☐ Curd cheese 12 ☐ Eggs (piece) 13 ☐ Cheese 14 ☐ Apple 15 ☐ Grapes 16 ☐ Cherry And 27 other symbols [9]
Did your household buy any of these goods?	MULTI-SELECT b6 01 ☐ Wheat Flour 02 ☐ Corn Flour 03 ☐ Veal meat 04 ☐ Beaf meat 05 ☐ Pork meat 06 ☐ Lamb meat 07 ☐ Chicken meat 08 ☐ Fish/Fresh trout 09 ☐ Milk 10 ☐ Yoghurt 11 ☐ Curd cheese 12 ☐ Eggs (piece) 13 ☐ Cheese 14 ☐ Apple 15 ☐ Grapes 16 ☐ Cherry And 27 other symbols [10]

Did your household gave away any of these goods as a gift?

MULTI-SELECT b7

- 01 ☐ Wheat Flour
- 02 ☐ Corn Flour
- 03 ☐ Veal meat
- 04 ☐ Beaf meat
- 05 ☐ Pork meat
- 06 ☐ Lamb meat
- 07 ☐ Chicken meat
- 08 ☐ Fish/Fresh trout
- 09 ☐ Milk
- 10 ☐ Yoghurt
- 11 ☐ Curd cheese
- 12 ☐ Eggs (piece)
- 13 ☐ Cheese
- 14 ☐ Apple
- 15 ☐ Grapes
- 16 ☐ Cherry

And 27 other symbols [11]

VARIABLE

```
/*b5.ContainsAny(24,25,26,27) || b6.ContainsAny(24,25,26
,27) || b7.ContainsAny(24,25,26,27) */ new []{b5,b6,b7}
.Any(x=>x.ContainsAny(24,25,26,27))
```

BOOLEAN anyOfAnswers

STATIC TEXT

Has any question have options 24-27 as an answer? -- %anyOfAnswers%

DATE QUESTIONS

DATE QUESTIONS
EXAMPLES

DATE QUESTIONS / EXAMPLES
CURRENT DATE

Date of the interview	DATE: CURRENT TIME `currentDate`
VARIABLE `currentDate.Value.AddMonths(-12)`	DATETIME `dateYearAgo`

STATIC TEXT

Date a year ago --- %dateYearAgo%

VARIABLE `currentDate.Value.AddMonths(-12).ToString("MMMM, yyy")`	STRING `dateYearAgoS`
Have you been away from this household during the past 12 monhts (since %dateYearAgoS%)?	SINGLE-SELECT `q111` 01 ○ Yes 02 ○ No
VARIABLE `currentDate.Value.AddMonths(-1)`	DATETIME `lastMonth`

STATIC TEXT

Last month date --- %lastMonth%

VARIABLE `long.Parse(currentDate.Value.AddMonths(-12).ToString("yyMM"))`	LONG `yearAgo_month`
VARIABLE `long.Parse(currentDate.Value.ToString("yyMM"))`	LONG `current_month`

STATIC TEXT

Code for the last year month YYMM --- %yearAgo_month%

Code for the current month YYMM --- %current_month%

During the past 12 months, was this enterprise operational in the month of...?

F @optioncode >= yearAgo_month && @optioncode < current_month

MULTI-SELECT q112

1811 ☐ November 2018
1812 ☐ December 2018
1901 ☐ January 2019
1902 ☐ February 2019
1903 ☐ March 2019
1904 ☐ April 2019
1905 ☐ May 2019
1906 ☐ June 2019
1907 ☐ July 2019
1908 ☐ August 2019
1909 ☐ September 2019
1910 ☐ October 2019
1911 ☐ November 2019
1912 ☐ December 2019
2001 ☐ January 2020
2002 ☐ February 2020

And 7 other symbols [12]

DATE QUESTIONS / EXAMPLES

EXACT DATE IS KNOWN

Date of the interview 1

DATE currDate1

Date of the interview 2

DATE currDate2

Date of the interview 3

DATE: CURRENT TIME currDate3

VARIABLE

```
IsAnswered(currDate3) ? currDate3 : IsAnswered(currDate2
) ? currDate2 : IsAnswered(currDate1) ? currDate1 : new
DateTime(2020,1,1)
```

DATETIME currDate

STATIC TEXT

%currDate%

Date of Birth

E IsAnswered(currDate1)

DATE birthDate

VARIABLE

```
IsAnswered(birthDate) ? FullYearsBetween(birthDate, curr
Date) : -9999
```

LONG ageCalc

STATIC TEXT

E IsAnswered(currDate1) && IsAnswered(birthDate)

Age is --- %ageCalc%

VARIABLE

```
birthDate.Value.Year
```

LONG bYear

VARIABLE

```
birthDate.Value.Month
```

LONG bMonth

VARIABLE	LONG
`birthDate.Value.Day`	`bDay`

DATE QUESTIONS / EXAMPLES

COMPOSE A DATE

Month	SINGLE-SELECT `month`
	01 ○ January 02 ○ February 03 ○ March 04 ○ April 05 ○ May 06 ○ June 07 ○ July 08 ○ August 09 ○ September 10 ○ October 11 ○ November 12 ○ December 99 ○ Don't know
Year	NUMERIC: INTEGER `year`
VARIABLE `IsDate(year, month, 1)`	BOOLEAN `isItDate`
VARIABLE `new DateTime(year??2000, month.InRange(1,12)? (int)month : 1, 1)`	DATETIME `newDate`

STATIC TEXT

Can be date created from numbers ? - %isItDate%

Created date or default - %newDate%

DATE QUESTIONS / EXAMPLES

TEXT QUESTION WITH PATERN

What was the official time school classes started?	TEXT `txp`
I Record in military time throughout, e.g. if it starts at 7:30am, record 07:30; if it starts at 7:30pm, record 19:30. V1 `IsMilitaryTime(self.Replace(":",""))` M1 Error! Invalid time entry!!! V2 `start_sch_hours.InRange(7, 17) && (start_sch_hours == 17 ? start_sch_minutes==0 : true)` M2 Time school started must be between 07:00 and 17:00	
VARIABLE `int.Parse(txp.Left(2))`	LONG `start_sch_hours`
VARIABLE `int.Parse(txp.Right(2))`	LONG `start_sch_minutes`

DATE QUESTIONS

EXERCICE

	Start	DATE: CURRENT TIME	fd0
	VARIABLE fd0.Value.Year	LONG	curYear
	VARIABLE fd0 >= new DateTime((int)curYear, 9, 1) ? new DateTime((int)curYear, 9, 1) : new DateTime((int)curYear-1, 9, 1)	DATETIME	sept1st
	When was your first day at school in the current school year?	DATE	fd1
V1	fd0>fd1		
M1	Date couldn't be in the future		
	Why have you started earlier than September 1st?	TEXT	fd2
E	fd1 < sept1st		
	Why have you started the school later than September 1st?	TEXT	fd3
E	fd1 > sept1st		

SELECT BY CATEGORY

SELECT BY CATEGORY
EXAMPLES

SELECT BY CATEGORY / EXAMPLES
SELECTING PEOPLE WITH A CRETARIA

List all people	LIST `listPeople`

SELECT BY CATEGORY / EXAMPLES / SELECTING PEOPLE WITH A CRETARIA
Roster: MEMBER
generated by list question `listPeople` `RosterList`

Age	NUMERIC: INTEGER `ageM`
Sex	SINGLE-SELECT `sexM` 01 ○ Male 02 ○ Female
What is yor salary?	NUMERIC: INTEGER `salaryMon`

SELECT BY CATEGORY / EXAMPLES / SELECTING PEOPLE WITH A CRETARIA
CONTINUE THE INTERVIEW WITH THE YOUNGEST FEMALE IN THE HOUSEHOLD

E `RosterList.Any(x=>x.sexM==2 && IsAnswered(x.ageM))`

VARIABLE `RosterList.Where(y=>y.sexM==2).Min(x=>x.ageM)`	LONG `youngestFeAgeList`
VARIABLE `RosterList.FirstOrDefault(y=>y.ageM==youngestFeAgeList && y.sexM==2).@rowcode`	LONG `codeYoungest`
VARIABLE `listPeople.FirstOrDefault(y=>y.Value==codeYoungest).Text`	STRING `nameOfYoungest`

STATIC TEXT

Continue interview with %nameOfYoungest%
Rowcode of selected person is %codeYoungest%

SELECT BY CATEGORY / EXAMPLES / SELECTING PEOPLE WITH A CRETARIA
CONTINUE INTERVIEW WITH MALES ONLY

E `RosterList.Any(x=>x.sexM==1)`

VARIABLE `RosterList.Count(x=>x.sexM==1)`	LONG `totalMales`

STATIC TEXT

Continue interview with males, total number of males within the household is - %totalMales%

SELECT BY CATEGORY / EXAMPLES / SELECTING PEOPLE WITH A CRETARIA / CONTINUE INTERVIEW WITH MALES ONLY

Roster: MALE MEMBER

generated by list question listPeople

maleRoster

E sexM==1

How many hours per day do you work?	NUMERIC: INTEGER workHours

SELECT BY CATEGORY / EXAMPLES / SELECTING PEOPLE WITH A CRETARIA

CONTINUE THE INTERVIEW WITH 3 OLDEST MALES IN THE HH

E RosterList.Any(x=>x.sexM==1 && IsAnswered(x.ageM))

VARIABLE // Join names to a string string.Join(", ", // male members RosterList.Where(x=>x.sexM==1) //sort by decedency of age and select their rowcodes .OrderByDescending(x=>x.ageM).Select(x=>x.@rowcode) // t And 161 other symbols [2]	STRING namesOldestM

STATIC TEXT

Continu interview whith 3 Oldest males from the household %namesOldestM%

SELECT BY CATEGORY / EXAMPLES / SELECTING PEOPLE WITH A CRETARIA / CONTINUE THE INTERVIEW WITH 3 OLDEST MALES IN THE HH

Roster: OLDEST MALE -

generated by list question listPeople

oldestMaleMember

E // among all males in the household RosterList.Where(a=>a.sexM==1) // ordered by descending of ages .OrderByDescending(b=>b.ageM) // selecting their codes .Select(a=>a.@rowcode) // select first 3 .Tak And 77 other symbols [1]

How long have you been living in this house? (years)	NUMERIC: INTEGER yli

SELECT BY CATEGORY / EXAMPLES

SELECTING A NAME OF YOUNGEST BOY IN RANGE (5 TO 15) IN AN ALPHABETIC ORDER IN THE HH

How many people lives in the HH	NUMERIC: INTEGER nPeople

SELECT BY CATEGORY / EXAMPLES / SELECTING A NAME OF YOUNGEST BOY IN RANGE (5 TO 15) IN AN ALPHABETIC ORDER IN THE HH

Roster: MEMBER

generated by numeric question nPeople

listMemRoster

Name	TEXT nameMem
Age	NUMERIC: INTEGER ageMem
Sex	SINGLE-SELECT sexMem 01 ○ Male 02 ○ Female

VARIABLE

```
//Find a member listMemRoster.Where(s=> // male, with an
swered name and age in the range IsAnswered(s.nameMem) &
& s.ageMem.InRange(5, 15) && s.sexMem==1) // order by ag
e .OrderBy(x=>x.ageMem) // with
```

And 126 other symbols [1]

LONG `selectedMemCode`

VARIABLE

```
listMemRoster[(int)selectedMemCode].nameMem
```

STRING `selectedMem`

STATIC TEXT

Continue interview with %selectedMem%
Rowcode of selected person is %selectedMemCode%

SELECT BY CATEGORY

EXERCISES

SELECT BY CATEGORY / EXERCISES

EXERCISE 1, 2

List all members

LIST `qa01`

SELECT BY CATEGORY / EXERCISES / EXERCISE 1, 2

Roster: MEMBER

generated by list question qa01 `qa_roster`

Sex

SINGLE-SELECT `qa02`

01 ○ Male
02 ○ Female

Age

NUMERIC: INTEGER `qa03`

Marital status

E `qa03 > 12`

SINGLE-SELECT `qa04`

01 ○ Never married
02 ○ Married
03 ○ Consensual union
04 ○ Separated
05 ○ Divorced
06 ○ Widowed

Are currently attending school?

E `qa03 <= 16`

SINGLE-SELECT `qa05`

01 ○ Yes
02 ○ No

SELECT BY CATEGORY / EXERCISES / EXERCISE 1, 2

SECTION TO BE ASKED FOR THE OLDEST MARRIED FEMALE IN THE HOUSEHOLD

E `qa_roster.Any(x=>x.qa02==2 && IsAnswered(x.qa03))`

VARIABLE `// among members who match criterias qa_roster.Where(x=> x.qa02==2 && x.qa04 == 2) // order by age, starting from the bigger number .OrderByDescending(x=>x.qa03) // selec t first object .First() // sel` And 36 other symbols [3]	LONG `codeOMF2`
VARIABLE `// in the list question qa01.FirstOrDefault(x=> //find a row where value matches to the selected rowcode x.Value == codeOMF2) // take a name .Text`	STRING `nameOMF2`
VARIABLE `qa_roster.Where(x=>x.qa02==2 && x.qa04 == 2).Max(x=>x.qa03)`	LONG `ageOMF`
VARIABLE `qa_roster.FirstOrDefault(x=>x.qa03 == ageOMF).@rowcode`	LONG `codeOMF`
VARIABLE `// in the list question qa01.FirstOrDefault(x=> //find a row where value matches to the selected rowcode x.Value == codeOMF) // take a name .Text`	STRING `nameOMF`

STATIC TEXT

Please continue the interview with %nameOMF%, %nameOMF2%

SELECT BY CATEGORY / EXERCISES / EXERCISE 1, 2

ROSTER TO BE ASKED FOR GIRLS UNDER 14 WHO IS CURRENTLY ATTENDING A SCHOOL

E `qa_roster.Any(x=>x.qa02 == 2 && x.qa03<14 && x.qa05==1)`

SELECT BY CATEGORY / EXERCISES / EXERCISE 1, 2 / ROSTER TO BE ASKED FOR GIRLS UNDER 14 WHO IS CURRENTLY ATTENDING A SCHOOL

Roster: GIRL

generated by list question qa01 — `eduRoster`

E `qa02 == 2 && qa03<14 && qa05==1`

What school are you currently attending?	TEXT `ed01`

SELECT BY CATEGORY / EXERCISES

EXERCISE 3, 4

How many people in the HH	NUMERIC: INTEGER `qb00`

SELECT BY CATEGORY / EXERCISES / EXERCISE 3, 4

Roster: MEMBER

generated by numeric question qb00 — `qb_roster`

Name	TEXT `qb01`
Sex	SINGLE-SELECT `qb02` 01 ○ Male 02 ○ Female

Age	NUMERIC: INTEGER qb03
What is your monthly salary? E qb03 > 12	NUMERIC: INTEGER qb04
VARIABLE true	BOOLEAN averageSal

SELECT BY CATEGORY / EXERCISES / EXERCISE 3, 4

SECTION TO BE ASKED FOR MEMBERS WHOS SALARY IS ABOVE THE AVERAGE (%AVERAGESAL%) BY THE HH IN THE HH

E true

SELECT BY CATEGORY / EXERCISES / EXERCISE 3, 4 / SECTION TO BE ASKED FOR MEMBERS WHOS SALARY IS ABOVE THE AVERAGE (%AVERAGESAL%) BY THE HH IN THE HH

Roster: MEMBER WITH SALARY ABOVE AVERAGE

generated by numeric question qb00

abAvSal

E true

What do you do?	TEXT aa01

SELECT BY CATEGORY / EXERCISES / EXERCISE 3, 4

SECTION TO BE ASKED FOR 2 PEOPLE WHO RECEIVE THE BIGGEST SALARIES IN THE HH;

E true

VARIABLE true	BOOLEAN qb09

STATIC TEXT

Continue interview with %qb09% who recieves the biggest salary in the household

SELECT BY CATEGORY / EXERCISES / EXERCISE 3, 4 / SECTION TO BE ASKED FOR 2 PEOPLE WHO RECEIVE THE BIGGEST SALARIES IN THE HH;

Roster: MEMBER

generated by numeric question qb00

qb10

E true

Who do you work for?	TEXT qb11

SELECT BY CATEGORY / EXERCISES / EXERCISE 3, 4

SECTION TO BE ASKED FOR FEMALE WHO HAVE THE BIGGEST SALARY

E true

VARIABLE true	BOOLEAN qb20
VARIABLE true	BOOLEAN qb21
VARIABLE true	BOOLEAN qb22

VARIABLE true	BOOLEAN	qb23
VARIABLE true	BOOLEAN	qb24

STATIC TEXT

Continue the interview with %qb21%, %qb24%, female who has the biggest salary in the household (%qb22%) among the other female members

RANDOM SELECTION

RANDOM SELECTION
RANDOM SELECTION EXAMPLES

RANDOM SELECTION / RANDOM SELECTION EXAMPLES
RANDOM SELECTION OF ONE PERSON WITH THE CRITERIA

STATIC TEXT

Random selection based on characteristics demonstration.

A random member older than 15 will be selected.

Members	LIST	membersList

RANDOM SELECTION / RANDOM SELECTION EXAMPLES / RANDOM SELECTION OF ONE PERSON WITH THE CRITERIA
Roster: MEMBER
generated by list question membersList — MRoster

Age of %rostertitle%	NUMERIC: INTEGER	ageR
VARIABLE `// count members who is 15 or older MRoster.Count(x=>x.ageR>=15)`	LONG	numEligible
VARIABLE `//return the largest integer that is less than or equal to the decimal number (long)Math.Floor( // generate random number between 0 and 1 Quest.IRnd() // miltiplied by amound of people >= 15 *numEligi` And 10 other symbols [4]	LONG	rnd
VARIABLE `// select rowcode of members who is 15 or older MRoster.Where(x=>x.ageR>=15) .Select(z=>z.@rowcode) // join codes to an array .ToArray() // selection of random position in the array [rnd.Value]`	LONG	randomRowcode
VARIABLE `membersList.FirstOrDefault(x=>x.Value==randomRowcode).Text`	STRING	selectedName
VARIABLE `/*Select a person from the roter with selected code and show his/her age*/ MRoster[(int)randomRowcode].ageR`	LONG	selectedAge

STATIC TEXT

Continue the interview with: %selectedName% who is %selectedAge% years old.

RANDOM SELECTION / RANDOM SELECTION EXAMPLES / RANDOM SELECTION OF ONE PERSON WITH THE CRITERIA
Roster: MEMBER'S DETAILS
generated by list question membersList — details

E `@rowcode == randomRowcode`

What is your marital status?	SINGLE-SELECT mStatus 01 ○ Never married 02 ○ Married 03 ○ Consensual union 04 ○ Separated 05 ○ Divorced 06 ○ Widowed

RANDOM SELECTION / RANDOM SELECTION EXAMPLES

RANDOM SELECTING A FEW PEOPLE

List	LIST list
VARIABLE `// selecting all codes from the list list.Select(x=>(lon g)x.Value) // order codes .OrderBy(x=> // in randomly ge nerated order new Random( // specification of the way of generation pseu` And 181 other symbols [5]	LONG r1
VARIABLE `// selecting all codes from the list list.Select(x=>(lon g?)x.Value) //exclude already selected r1 .Except(new [] {r1}) // order codes .OrderBy(x=> // in randomly generat ed order new Random(` And 264 other symbols [6]	LONG r2
VARIABLE `// selecting all codes from the list list.Select(x=>(lon g?)x.Value) //exclude already selected r1 .Except(new [] {r1, r2}) // order codes .OrderBy(x=> // in randomly gen erated order new Random(` And 267 other symbols [7]	LONG r3
VARIABLE `list.FirstOrDefault(x=>x.Value==r1).Text`	STRING name_r1
VARIABLE `// is more than 1 person in the list? list.Length > 1 ? //select first person's code and sow name within the sel ection list.FirstOrDefault(x=>x.Value==r2).Text // if no , display : "N/A"`	STRING name_r2
VARIABLE `// is more than 1 person in the list? list.Length > 2 ? //select first person's code and sow name within the sel ection list.FirstOrDefault(x=>x.Value==r3).Text // if no , display : "N/A"`	STRING name_r3

STATIC TEXT

1st randomly selected member is - %name_r1% with code %r1%,
2nd randomly selected member is - %name_r2% with code %r2%,
3d randomly selected member is - %name_r3% with code %r3%

RANDOM SELECTION / RANDOM SELECTION EXAMPLES

RANDOM SELECTION OF 2 PEOPLE WITH THE GIVEN CRITERIA

Names	LIST names

Roster: MEMBERS

generated by list question names

membersR

Age	NUMERIC: INTEGER — age_r
Profession	SINGLE-SELECT: COMBO BOX — profession 01 Physician/Medical Doctor (Specialist) 02 Physician/Medical Doctor(Generalist) 03 Medical Officer 04 Medical Assistant 05 Clinical Officer 07 Registered Nurse Midwife 08 Community Health Nurse 09 Auxiliary nurse 10 Lab/Pharmacy 11 Nurse/Midwife Technician 12 Community Midwife Assistant 13 Patient Aide 14 Rural Medical Aides 15 Environmental health officer 16 Matron 17 Nurse technician And 2 other symbols [13]
Job	SINGLE-SELECT: COMBO BOX — job 01 Director 02 Deputy/assistant director 03 In-charge 04 Nursing officer 05 Chief nursing officer 06 Senior nursing officer 07 Chief technical Officer 08 Supervisor 09 Agent 10 Other
VARIABLE `// joint to the string string.Join(", ", // selecting al l codes from the roster with age >10 membersR.Where(x=> (x.age_r??0) > 10) // select their rowcodes .Select(x=>x .@rowcode) // order codes .Order` And 413 other symbols [8]	STRING — test

STATIC TEXT

Please continue interview with: %test%

RANDOM SELECTION / RANDOM SELECTION EXAMPLES / RANDOM SELECTION OF 2 PEOPLE WITH THE GIVEN CRITERIA

Roster: EXTENDED INTERVIEW

generated by list question names

extended

E `// selecting all codes from the roster with age >10 membersR.Where(x=> (x.age_r??0) > 10) // select their rowcodes . Select(x=>x.@rowcode) // order codes .OrderBy(x=> // in randomly generated order` And 284 other symbols [2]

Are you happy?	TEXT happy

RANDOM SELECTION

RANDOM SELECTION EXERCISE

RANDOM SELECTION / RANDOM SELECTION EXERCISE

RANDOM PERCENTAGE

What power generator would you like to buy?	SINGLE-SELECT tier 009000 ○ Tier 100000 ○ Tier 2
VARIABLE `// from the array new[] {0.33, 0.66, 1} // select an element in posion [ new Random( // specification of the way of generation pseudo random number (int)Math.Floor((100* Quest.IRnd` And 129 other symbols [9]	DOUBLE randomPr1
VARIABLE `// from the array new[] {0.33, 0.66, 1} // select an element in posion [(long)Math.Floor(Quest.IRnd()*3)] // multiply the selected % by selected price *tier`	DOUBLE randomPr2
VARIABLE `// from the array new[] {0.33, 0.66, 1} // select an element in posion .OrderBy(x=> // in randomly generated order new Random( // specification of the way of generation pseudo random n` And 225 other symbols [10]	DOUBLE randomPr3

STATIC TEXT

E `IsAnswered(tier)`

The random price is - %randomPr1%. %randomPr2% %randomPr3%

3. Would you be willing to pay %randomPr3% upfront for this power generator? E `IsAnswered(tier)`	SINGLE-SELECT E03 01 ○ Yes 00 ○ No
4. Would you be willing to pay %randomPr3% for this power generator, if you were given 6 months to make the payment? E `E03==0`	SINGLE-SELECT E04 001 ○ Yes 000 ○ No 888 ○ Don't Know
5. Would you be willing to pay %randomPr3% for this power generator, if you were given 12 months to make the payment? E `E04.InList(0, 888)`	SINGLE-SELECT E05 001 ○ Yes 000 ○ No 888 ○ Don't Know
6. Would you be willing to pay %randomPr3% for this power generator, if you were given 24 months to make the payment? E `E05.InList(0, 888)`	SINGLE-SELECT E06 001 ○ Yes 000 ○ No 888 ○ Don't Know

HH

HH

HHQ - CORE DEMOGRAPHICS

Name and Surname of the household head	TEXT HH_head
Name and Surname of the main respondent	TEXT respondent_name
Please give me the full names of household members. I Please start with the head of household. W1 `self.Select(x=>x.Text .Trim() .ToLower()) .Distinct().Count()==self.Count()` M1 Use unique names. Add Jr or Sr, or called names if members have the same name. W2 `IsAnswered(respondent_name) ? (self.Any(x=>x.Text.ToLower() == respondent_name.ToLower())) : true` M2 The main respondent (%respondent_name%) isn't in the list of members. Please revise. W3 `self.All(x=>x.Text.Trim().Contains(" "))` M3 Specify both first name and surname! W4 `IsAnswered(HH_head) ? (self[0].Text.ToLower() == HH_head.ToLower()) : true` M4 The Household head (%HH_head%) isn't in the list of members. Please revise or leave a comment	LIST HH_list_of_names
VARIABLE `true`	BOOLEAN head_name

HH / HHQ - CORE DEMOGRAPHICS

Roster: HOUSEHOLD ROSTER

generated by list question `HH_list_of_names` — HH_roster

How old is %rostertitle%? V1 `self.InRange(0,100)` M1 The age recorded seems to be unlikely high. Please confirm that this is correct.	NUMERIC: INTEGER age_HH
Sex of the %rostertitle% V1 `/*// if head of household, check that no spouse has the same srx (relationship ==1 && (HH_roster.Count(x=>x.relationship==2 && x.sex == sex) == 0)) || // if spouse of head, check that no head has the` And 385 other symbols [1] M1 It is unlikely the household head is the same gender as his/her spouse. Please revise.	SINGLE-SELECT sex 01 ○ MALE 02 ○ FEMALE

What is the relationship of %rostertitle% to the head of household?

SINGLE-SELECT relationship

01 ○ HEAD OF HOUSEHOLD
02 ○ WIFE OR HUSBAND
03 ○ SON OR DAUGHTER
04 ○ SON-IN-LAW/DAUGHTER-IN-LAW
05 ○ GRANDCHILD
06 ○ PARENT
07 ○ PARENT-IN-LAW
08 ○ BROTHER/SISTER
09 ○ BROTHER-IN-LAW/ SISTER-IN-LAW
10 ○ NIECE/NEPHEW BY BLOOD
11 ○ NIECE/NEPHEW BY MARRIAGE
12 ○ OTHER RELATIVE
13 ○ ADOPTED/FOSTER/STEPCHILD
14 ○ NOT RELATED, DOMESTIC HELP
15 ○ NOT RELATED, OTHER

V1 `HH_roster.Any(x=>x.relationship==1)`
M1 The first person listed should be the Head of household.
V2 `// check if the current person is the head self == 1 ? // check how many heads in the household the number should be = 1 HH_roster.Count(x=>x.relationship==1) == 1 // if current person isn't the head` And 8 other symbols [2]
M2 Only one person can be the household head (You mentioned earlier %head_name% as the head of the household). Please check the code or the information with the respondent.
W3 `//(self == 1 && age_HH >= 15) || self!=1 relationship == 1 ? age_HH >= 15 : true`
M3 Head of the Household (%head_name%) age must be 15 years or more
V4 `(self == 2 && age_HH >= 14) || self!=2`
M4 Respondent (%rostertitle%) is too young to be the wife/husband of the head of the household. Please go back and fix that
V5 `self==6 && HH_roster.Any(x=>x.relationship==1)? //age_HH >= head_final_age + 12 HH_roster.Any(x=>x.relationship==1 && ((age_HH - x.age_HH)>=12)) : true`
M5 Parent of the head must be at least 12 years older than the head (%head_name%). Please go back and fix that.
V6 `self==3 && HH_roster.Any(x=>x.relationship==1)? //age_HH <= head_final_age -12 HH_roster.Any(x=>x.relationship==1 && ((x.age_HH - age_HH)>=12)) : true`
M6 Child (%rostertitle%) must be at least 12 years younger than parent (%head_name%). Please revise.
W7 `self==4 && HH_roster.Any(x=>x.relationship==2)? HH_roster.Any(x=>x.relationship==2 && ((x.age_HH - age_HH)>=12)) : true`
M7 Child-in-law (%rostertitle%) of the head must be at least 12 years younger than the wife/husband. Please revise.
W8 `self==7 && HH_roster.Any(x=>x.relationship==2)? HH_roster.Any(x=>x.relationship==2 && ((age_HH - x.age_HH)>=12)) : true`
M8 Parent-in-law of the head must be at least 12 years older than the wife /husband. Please go back and fix that.
V9 `self==5 && HH_roster.Any(x=>x.relationship==1)? HH_roster.Any(x=>x.relationship==1 && ((x.age_HH - age_HH)>=24)) : true`
M9 Grandchild (%rostertitle%) of the head must be at least 24 years younger than the head (%head_name%). Please revise.
V10 `self == 2 && IsAnswered(HH_roster.First(x => x.relationship==1).F01A007) ? HH_roster.First(x => x.relationship==1).F01A007 == 1 : true`
M10 Head is not married. Check head's marital status or fix relationship to the head

What is %rostertitle%'s current marital status?

SINGLE-SELECT F01A007

01 ○ Married or living together
02 ○ Divorced or separated
03 ○ Widowed
04 ○ Never married or never lived together

E `age_HH>$ageDifferenceChild`
V1 `relationship == 1 && HH_roster.Any(x=>x.relationship==2) ? self == 1 : true`
M1 Head of the household cannot have a spouse and do not be Married/In a union. Please revise
V2 `(relationship == 2 && self == 1) || relationship !=2`
M2 Respondent has indicated as a spouse. He cannot have different marital statuses. Please revise.

VARIABLE

`HH_roster.FirstOrDefault(x=>x.relationship==1).age_HH??0`

LONG head_final_age

HH

HH ROSTERVECTOR

List

LIST RV1

Who is the head of household?

SINGLE-SELECT: LINKED RV2

E `RV1.Length >0`

HH / HH ROSTERVECTOR

Roster: MEMBER

generated by list question RV1 — RV_roster_1

sex	SINGLE-SELECT — RV3 01 ○ Male 02 ○ Female
Age	NUMERIC: INTEGER — RV4

HH / HH ROSTERVECTOR / MEMBER

Roster: RELATIONS TO

generated by list question RV1 — grid

E `RosterVector[0] > RosterVector[1]`

Who is %RV_roster_1% to %rostertitle% W1 `self.InRange(10,12)? RV_roster_1[@rowcode].RV3 != RV3 : true` M1 It's rare that spouses have the same sex V2 `// if member selected as a child self== 20 ? // age of parent should be at least 14 years more (RV_roster_1[@rowcode].RV4 - RV4) >=14 : self== 50 ? (RV4 - RV_roster_1[@rowcode].RV4) >=14 : true` M2 Age difference betwen a child and a parent should be at least 14 years V3 `self== 70 ? RV4 - (RV_roster_1[@rowcode].RV4) >=28 : self== 40 ? (RV_roster_1[@rowcode].RV4 - RV4) >=28 : true` M3 Age difference betwen a grandparent and a grandchild should be at least 28 years	SINGLE-SELECT — G1 10 ○ Partner 11 ○ Husband/wife/civil partner 12 ○ Partner/cohabitee 20 ○ Son/Daughter 21 ○ Natural/adopted son/daughter 22 ○ Stepson/stepdaughter 30 ○ Son/daughter-in-law 40 ○ Grand-child 50 ○ Parent 51 ○ Natural/adoptive parent 52 ○ Stepparents 60 ○ Parent-in-law 70 ○ Grand-parent 80 ○ Brother sister 81 ○ Natural brother/sister 82 ○ Step brother/sister And 3 other symbols [14]
VARIABLE `grid.FirstOrDefault(x => x.G1==20 && RV_roster_1[x.@rowcode].RV3 == 1)?.@rowcode ?? RV_roster_1.FirstOrDefault(x => x.RV3 == 1 && x.grid[@rowcode].G1 == 50)?.@rowcode`	LONG — A27
VARIABLE `RV1.FirstOrDefault(x=>x.Value==A27)?.Text ?? "N/A"`	STRING — A27_1
VARIABLE `grid.FirstOrDefault(x => x.G1==20 && RV_roster_1[x.@rowcode].RV3 == 2)?.@rowcode ?? RV_roster_1.FirstOrDefault(x => x.RV3 == 2 && x.grid[@rowcode].G1 == 50)?.@rowcode`	LONG — A28
VARIABLE `RV1.FirstOrDefault(x=>x.Value == A28)?.Text ?? "N/A"`	STRING — A28_1
VARIABLE `grid.FirstOrDefault(x => x.G1==10)?.@rowcode ?? RV_roster_1.FirstOrDefault(x => x.grid[@rowcode].G1==10)? .@rowcode`	LONG — A29
VARIABLE `RV1.FirstOrDefault(x=>x.Value == A29)?.Text ?? "N/A"`	STRING — A29_1

STATIC TEXT

Father of %rostertitle% is %A27_1%

Mother of %rostertitle% is %A28_1%

Spouse of %rostertitle% is %A29_1%

HH / HH ROSTERVECTOR

Roster: INCOME

generated by list question RV1

IN_roster

E RV4>=16

Vă rugăm să precizaţi care au fost veniturile realizate de dumneavoastră în perioada ianuarie – decembrie 2018, pe luni şi surse de proveniență, precum şi eventualele impozite şi contribuţii aferente lor. Dacă nu puteţi preciza suma exactă, vă rugăm să indicaţi intervalul în care s-a încadrat categoria respectivă de venit realizat (folosind codurile intervalelor din caseta 2).	MULTI-SELECT: YES/NO table_1 01 ☐ / ☐ VENITURI BĂNEŞTI DIN ACTIVITĂŢI SALARIALE 02 ☐ / ☐ VENITURI ÎN NATURĂ DIN ACTIVITĂŢI SALARIALE 03 ☐ / ☐ VENITURI BĂNEŞTI DIN AGRICULTURĂ 04 ☐ / ☐ VENITURI BĂNEŞTI DIN ACTIVITĂŢI NEAGRICOLE INDEPENDENTE 05 ☐ / ☐ VENITURI BĂNEŞTI DIN PRESTAŢII SOCIALE 06 ☐ / ☐ VENITURI ÎN NATURĂ (altele decât cele provenite din activităţi salariale) 07 ☐ / ☐ VENITURI DIN VÂNZAREA DE BUNURI DIN PATRIMONIUL GOSPODĂRIEI 08 ☐ / ☐ ALTE VENITURI BĂNEŞTI 09 ☐ / ☐ SURSE ATRASE
Venituri banesti din activitati salariale E table_1.Yes.Contains(1)	MULTI-SELECT: YES/NO RV10 01 ☐ / ☐ Salari 02 ☐ / ☐ Plata orelor suplimentare 03 ☐ / ☐ Al 13-lea salariu 04 ☐ / ☐ Indemnizatii de conducere 05 ☐ / ☐ Drepturi salariale încasate pentru timpul nelucrat plătit 06 ☐ / ☐ Prime şi alte beneficii plătite în bani 07 ☐ / ☐ Comisioane sau bacşiş 08 ☐ / ☐ Plata transportului de la/ către casă 09 ☐ / ☐ Indemnizaţii pentru incapacitate temporară de muncă 10 ☐ / ☐ Indemnizaţia de maternitate 11 ☐ / ☐ Indemnizaţii pentru creşterea copiilor 53 ☐ / ☐ Stimulent de inserție
VENITURI ÎN NATURĂ DIN ACTIVITĂŢI SALARIALE E table_1.Yes.Contains(2)	MULTI-SELECT: YES/NO RV30 12 ☐ / ☐ Venituri în natură sub formă de salarii 13 ☐ / ☐ Contravaloarea produselor şi serviciilor primite de salariaţi de la agenţii economici, în contul unor drepturi legate de locul de muncă

HH / HH ROSTERVECTOR / INCOME

Roster: FROM

generated by multi-select question RV10

RV11_roster

Număr de luni în care s-a primit venitul NRL

NUMERIC: INTEGER RV12

VARIABLE

```
Month_Roster.Count(x=>new [] {x.RV16,x.RV17,x.RV18,x.RV19,x.RV20}.Any(y=>y>0))
```

LONG monthsTot

STATIC TEXT

Calculated Număr de luni în care s-a primit venitul NRL %monthsTot%

VARIABLE

```
@rowcode
```

LONG RV_rowcode

Categoria de venit -

F incomeCat.Keys.Contains(1000 *@rowcode + @optioncode)
E !RV_rowcode.InList(4,7,8,11,53)
V1 self.Yes.Count()>=1
M1 At least one category should be "Yes"

MULTI-SELECT: YES/NO RV13

- 04 ☐ / ☐ deduceri personale
- 05 ☐ / ☐ contribuţii (contribuții CAS, sănătate)
- 06 ☐ / ☐ alte reţineri
- 08 ☐ / ☐ profit
- 09 ☐ / ☐ pierdere
- 10 ☐ / ☐ impozit anticipat
- 11 ☐ / ☐ contribuţii (sănătate şi pensie)

HH / HH ROSTERVECTOR / INCOME / FROM

Roster: %ROSTERTITLE%

generated by fixed list Month_Roster

- 01 January
- 02 February
- 03 March
- 04 April
- 05 May
- 06 June
- 07 July
- 08 August
- 09 September
- 10 October
- 11 November
- 12 December

Suma netă lunară

E !RV_rowcode.InList(4, 11, 53)

NUMERIC: DECIMAL RV16

Deduceri personale

E RV13.Yes.Contains(4)

NUMERIC: DECIMAL RV17

Contribuţii (contribuții CAS, sănătate)

E RV13.Yes.Contains(5)

NUMERIC: DECIMAL RV18

Alte reţineri

E RV13.Yes.Contains(6)

NUMERIC: DECIMAL RV19

Suma lunară

E `RV_rowcode.InList(4,11,53)`

NUMERIC: DECIMAL — RV20

S-a plătit impozit?

E `!RV_rowcode.InList(4,7,8,11,53)`

SINGLE-SELECT — RV21

01 ○ DA
02 ○ NU
03 ○ Nu ştiu/ Refuz

VARIABLE

```
Month_Roster.All(x=>IsAnswered(x.RV16)) ? Month_Roster.Sum(x=>x.RV16) : -9999
```

DOUBLE — RV16_total

VARIABLE

```
Month_Roster.All(x=>IsAnswered(x.RV17)) ? Month_Roster.Sum(x=>x.RV17) : -9999
```

DOUBLE — RV17_total

VARIABLE

```
Month_Roster.All(x=>IsAnswered(x.RV18)) ? Month_Roster.Sum(x=>x.RV18) : -9999
```

DOUBLE — RV18_total

VARIABLE

```
Month_Roster.All(x=>IsAnswered(x.RV19)) ? Month_Roster.Sum(x=>x.RV19) : -9999
```

DOUBLE — RV19_total

VARIABLE

```
Month_Roster.All(x=>IsAnswered(x.RV20)) ? Month_Roster.Sum(x=>x.RV20) : -9999
```

DOUBLE — RV20_total

STATIC TEXT

E `(Month_Roster.All(x=>IsAnswered(x.RV16)) ? RV16_total == 0 : false) || (Month_Roster.All(x=>IsAnswered(x.RV17)) ? RV17_total == 0 : false) || (Month_Roster.All(x=>IsAnswered(x.RV18)) ? RV18_total =` And 157 other symbols [3]

V1 `Month_Roster.All(x=>IsAnswered(x.RV16)) ? RV16_total > 0 : true`

M1 The Total Suma netă lunară cannot be 0

V2 `Month_Roster.All(x=>IsAnswered(x.RV17)) ? RV17_total > 0 : true`

M2 The Total Deduceri personale cannot be 0

V3 `Month_Roster.All(x=>IsAnswered(x.RV18)) ? RV18_total > 0 : true`

M3 The Total Contribuţii (contribuţii CAS, sănătate) cannot be 0

V4 `Month_Roster.All(x=>IsAnswered(x.RV19)) ? RV19_total > 0 : true`

M4 The Total Alte reţineri cannot be 0

V5 `Month_Roster.All(x=>IsAnswered(x.RV20)) ? RV20_total > 0 : true`

M5 The Total Suma lunară cannot be 0

Error

HH / HH ROSTERVECTOR / INCOME

Roster: FROM

generated by multi-select question RV30 — RV31_roster

Număr de luni în care s-a primit venitul NRL

NUMERIC: INTEGER — RV32

VARIABLE

```
RV34.Count(x=>x.RV35>0)
```

LONG — RV33

STATIC TEXT

Calculated Număr de luni în care s-a primit venitul NRL %RV33%

HH / HH ROSTERVECTOR / INCOME / FROM

Roster: %ROSTERTITLE%

generated by fixed list — RV34

01 January
02 February

03 March

04 April

05 May

06 June

07 July

08 August

09 September

10 October

11 November

12 December

Contravaloarea lunară	NUMERIC: DECIMAL RV35
VARIABLE RV34.All(x=>IsAnswered(x.RV35)) ? RV34.Sum(x=>x.RV35) : -9999	DOUBLE RV35_total

STATIC TEXT

E RV34.All(x=>IsAnswered(x.RV35)) ? RV35_total == 0 : false

V1 RV34.All(x=>IsAnswered(x.RV35)) ? RV35_total > 0 : true

M1 Total Contravaloarea lunară cannot be 0

Error

LOOKUP TABLES

LOOKUP TABLES
LOOKUP TABLES EXAMPLES

LOOKUP TABLES / LOOKUP TABLES EXAMPLES
VALIDATION OF PRICES

What type of main fuel do you usually use?

SINGLE-SELECT `type_of_fuel`

101 ○ Regular
102 ○ Plus
103 ○ Supreme
201 ○ Diesel

How much does a liter of gasoline cost?

E `IsAnswered(type_of_fuel)`
V1 `true`
M1 Error. Fuel price is out of range.

NUMERIC: DECIMAL `fuel_price`

What type of fuel do you usually use?

MULTI-SELECT `fuel`

101 ☐ Regular
102 ☐ Plus
103 ☐ Supreme
201 ☐ Diesel

LOOKUP TABLES / LOOKUP TABLES EXAMPLES / VALIDATION OF PRICES
Roster: FUEL TYPES
generated by multi-select question `fuel` `fuel_types`

How often do you buy %rostertitle%?

SINGLE-SELECT `frequency_buy`

101 ○ often
102 ○ sometimes
103 ○ hardly ever

How much does a liter of %rostertitle% cost?

V1 `self.InRange( refPrices[@rowcode].minprice, refPrices[@rowcode].maxprice )`
M1 Error. Fuel price is out of range.

NUMERIC: DECIMAL `fuelCost`

LOOKUP TABLES / LOOKUP TABLES EXAMPLES
VALIDATION OF YIELDS

Select crops that you grove	MULTI-SELECT crops 01 ☐ Wheat 02 ☐ Corn 03 ☐ Rye 04 ☐ Rice 05 ☐ Barley 06 ☐ Chickpea 07 ☐ Drybean 08 ☐ Lentil 09 ☐ Potato 10 ☐ Onion 11 ☐ Gr. pepper 12 ☐ Tomato 14 ☐ Sunflower 13 ☐ Cucumber 15 ☐ Groundnut 16 ☐ Cotton And 7 other symbols [15]

LOOKUP TABLES / LOOKUP TABLES EXAMPLES / VALIDATION OF YIELDS

Roster: CROP

generated by multi-select question crops

cropRoster

Is the field where %rostertitle% grows irrigated?	SINGLE-SELECT irrigField 01 ○ Yes 02 ○ No
VARIABLE `irrigField == 1? /*Use refYield lookup table, with key which is equal to lcurrent cropRoster @rowcode, select the value for irrigField mulitiply by 0.9 (-10%) if no Value take 0*/ Math.Round(ref` And 113 other symbols [11]	DOUBLE minAmount
VARIABLE `irrigField == 1? Math.Round(refYield[@rowcode].irrigated * 1.1??100, 2) : irrigField == 2 ? Math.Round(refYield[@rowcode].dry * 1.1??100, 2) : 0`	DOUBLE maxAmount
What amount of %rostertitle% crop have you harvested from one hectar? (Tonne) V1 `self.InRange(minAmount,maxAmount)` M1 Harvested amount is out or average range from %minAmount% to %maxAmount% tonnes/Hectar	NUMERIC: DECIMAL harvCrop

LOOKUP TABLES / LOOKUP TABLES EXAMPLES / VALIDATION OF YIELDS / CROP

CONVERSION OF NON-STANDARD UNITS

What amount of %rostertitle% crop have you harvested? (Tonne) V1 `amountPerHectar.InRange(minAmount,maxAmount)` M1 Amount per Hectar is %amountPerHectar% Our of range [%minAmount%, %maxAmount%]	NUMERIC: DECIMAL harvTotal

From what area?

E harvTotal >0
V1 self>0
M1 Area couldn't be equal 0

NUMERIC: DECIMAL area

Units

E area > 0

SINGLE-SELECT areaUnit

101 ○ Hectare
102 ○ Are
103 ○ Acre
104 ○ Sqkm
105 ○ Sqm
106 ○ Sqmile

VARIABLE
area.Value * areaConv[areaUnit.Value].factor

DOUBLE areaHectares

VARIABLE
Math.Round(harvTotal.Value/areaHectares.Value,2)

DOUBLE amountPerHectar

LOOKUP TABLES / LOOKUP TABLES EXAMPLES
REGIONAL BOUNDS

Where are you now?

SINGLE-SELECT City

25 ○ Vancouver
36 ○ Bucharest
41 ○ Frankfurt
02 ○ Rome
01 ○ Washington DC

Location

V1 IsAnswered(City) ? // check if the current location is in the rectangle currentLocation.InRectangle(/*use myLocation lookup table, find a key ==n to CityV take value from a column.*/ And 171 other symbols [3]
M1 Cheater you mentioned the wrong city!

GPS currentLocation

N

W

A

LOOKUP TABLES / LOOKUP TABLES EXAMPLES
FILTERED UNITS

Food

MULTI-SELECT food_items

10 ☐ Milk
02 ☐ Bread
03 ☐ Pea
04 ☐ Banana

LOOKUP TABLES / LOOKUP TABLES EXAMPLES / FILTERED UNITS
Roster: FOOD
generated by multi-select question food_items

foods

Quantity

NUMERIC: INTEGER quantity

Unit F //1 st approach /* Use lookap, table Units, check if values collection ha s a comination , where unitcode == to current code and food item code is equaal to current roster code, show an unit*/ /*unit And 262 other symbols [4] E `quantity > 0`	SINGLE-SELECT 01 ○ Kg 02 ○ Liters 03 ○ Oz 04 ○ Gr	`unit`
VARIABLE `quantity * cf_lookup[unit.Value].cf`	DOUBLE	`std_unit`
VARIABLE `prices[@rowcode].minprice`	DOUBLE	`min_price`
VARIABLE `prices[@rowcode].maxprice`	DOUBLE	`max_price`
Price %asasa% E `IsAnswered(unit)` V1 `(self/std_unit).InRange(min_price, max_price)` M1 Our of range [%min_price%, %max_price%] V2 `self > 0` M2 Price should be more than 0	NUMERIC: DECIMAL _	`price`
VARIABLE `Math.Round(price.Value/std_unit.Value, 2)`	DOUBLE	`asasa`

LOOKUP TABLES / LOOKUP TABLES EXAMPLES

LOOKUP TABLE FILTERS FOR COMBOBOX IN ISIC REV.4

STATIC TEXT

Resources used

Detailed structure and explanatory notes ISIC Rev 4. https://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27&Lg=1

Option filters have been added. Accordingly, please refer to the lookup table named isictable to see how the filter operates.

Note that the alpha codes for the Main Category have been replaced with numeric values in order to be compatiable with the software framework.

Section - Level 0	SINGLE-SELECT: COMBO BOX isic_section 01 ○ Agriculture, forestry and fishing 02 ○ Mining and quarrying 03 ○ Manufacturing 04 ○ Electricity, gas, steam and air conditioning supply 05 ○ Water supply; sewerage, waste management and remediation activities 06 ○ Construction 07 ○ Wholesale and retail trade; repair of motor vehicles and motorcycles 08 ○ Transportation and storage 09 ○ Accommodation and food service activities 10 ○ Information and communication 11 ○ Financial and insurance activities 12 ○ Real estate activities 13 ○ Professional, scientific and technical activities 14 ○ Administrative and support service activities 15 ○ Public administration and defence; compulsory social security 16 ○ Education And 5 other symbols [16]

STATIC TEXT

E `//Use function IsAnswered to enable a static text re:remarks when the previous question has a recorded answer IsAnswered(isic_section)`

Remarks on Subcategory Level 1: Use function IsAnswered to enable a static text re:remarks when the previous question has a recorded answer

Division - Subcategory Level 1

F /* Use lookup table "isictable" to only show divison codes that are appli able to the chosen section code in the previous question Search for val ues from the table named: isictable, where the value
And 352 other symbols [1]

E `IsAnswered(isic_section)`

SINGLE-SELECT: COMBO BOX `isic_division`

- 01 ○ Crop and animal production, hunting and related service activities
- 02 ○ Forestry and logging
- 03 ○ Fishing and aquaculture
- 05 ○ Mining of coal and lignite
- 06 ○ Extraction of crude petroleum and natural gas
- 07 ○ Mining of metal ores
- 08 ○ Other mining and quarrying
- 09 ○ Mining support service activities
- 10 ○ Manufacture of food products
- 11 ○ Manufacture of beverages
- 12 ○ Manufacture of tobacco products
- 13 ○ Manufacture of textiles
- 14 ○ Manufacture of wearing apparel
- 15 ○ Manufacture of leather and related products
- 16 ○ Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
- 17 ○ Manufacture of paper and paper products

And 72 other symbols [17]

Group - Subcategory Level 2

F /* Use lookup table "isictable" to only show group codes that are appli able to the chosen division code in the previosu question */ //Search fo r values from the table named:isictable (meanwhile tranfo
And 392 other symbols [2]

E `IsAnswered(isic_division)`

SINGLE-SELECT: COMBO BOX `isic_group`

- 011 ○ Growing of non-perennial crops
- 012 ○ Growing of perennial crops
- 013 ○ Plant propagation
- 014 ○ Animal production
- 015 ○ Mixed farming
- 016 ○ Support activities to agriculture and post-harvest crop activities
- 017 ○ Hunting, trapping and related service activities
- 021 ○ Silviculture and other forestry activities
- 022 ○ Logging
- 023 ○ Gathering of non-wood forest products
- 024 ○ Support services to forestry
- 031 ○ Fishing
- 032 ○ Aquaculture
- 051 ○ Mining of hard coal
- 052 ○ Mining of lignite
- 061 ○ Extraction of crude petroleum

And 222 other symbols [18]

Class - Subcategory Level 3

F /* Use lookup table "isictable" to only show class codes that are applia ble to the chosen group code in the previosu question */ //Search for v alues from the table named:isictable (meanwhile tranformi
And 374 other symbols [3]

E `IsAnswered(isic_group)`

SINGLE-SELECT: COMBO BOX `isic_class`

- 0111 ○ Growing of cereals (except rice), leguminous crops and oil seeds
- 0112 ○ Growing of rice
- 0113 ○ Growing of vegetables and melons, roots and tubers
- 0114 ○ Growing of sugar cane
- 0115 ○ Growing of tobacco
- 0116 ○ Growing of fibre crops
- 0119 ○ Growing of other non-perennial crops
- 0121 ○ Growing of grapes
- 0122 ○ Growing of tropical and subtropical fruits
- 0123 ○ Growing of citrus fruits
- 0124 ○ Growing of pome fruits and stone fruits
- 0125 ○ Growing of other tree and bush fruits and nuts
- 0126 ○ Growing of oleaginous fruits
- 0127 ○ Growing of beverage crops
- 0128 ○ Growing of spices, aromatic, drug and pharmaceutical crops
- 0129 ○ Growing of other perennial crops

And 403 other symbols [19]

LOOKUP TABLES
EXCERSISES

LOOKUP TABLES / EXCERSISES
FOOD CONSUMPTION EXERCISE

G01. Over the past one week (7 days), did you or others in your household consume any ...?

I INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AN D THAT EATEN SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS.

MULTI-SELECT: YES/NO `hh_g01`

- 101 ☐ / ☐ Maize ufa mgaiwa (normal flour)
- 102 ☐ / ☐ Maize ufa refined (fine flour)
- 103 ☐ / ☐ Maize ufa madeya (bran flour)
- 104 ☐ / ☐ Maize grain (not as ufa)
- 105 ☐ / ☐ Green Maize
- 106 ☐ / ☐ Rice
- 107 ☐ / ☐ Finger millet (mawere)
- 108 ☐ / ☐ Sorghum (mapira)
- 109 ☐ / ☐ Pearl millet (mchewere)
- 110 ☐ / ☐ Wheat flour
- 111 ☐ / ☐ Bread
- 112 ☐ / ☐ Buns, scones
- 113 ☐ / ☐ Biscuits
- 114 ☐ / ☐ Spaghetti, macaroni, pasta
- 115 ☐ / ☐ Breakfast cereals
- 116 ☐ / ☐ Infant feeding cereals

And 5 other symbols [20]

LOOKUP TABLES / EXCERSISES / FOOD CONSUMPTION EXERCISE
Roster: PRODUCT

G01_oth. Specify the other product.

E @rowcode==117

TEXT g01_oth

G03a. How much in total did your household consume in the past week?

QUANTITY

V1 self>0

M1 Total quantity consumed must be greater than 0.

NUMERIC: DECIMAL g03a

UNIT

E g03a>0

SINGLE-SELECT g03b

01 ○ Grams
02 ○ Kgs
03 ○ Millilitres
04 ○ Litres
05 ○ Piece/unit

G03b_oth. Specify the UNIT for How much in total did your household consume in the past week.

E g03b==23

TEXT g03b_oth

G04a. How much came from purchases?

QUANTITY

NUMERIC: DECIMAL g04a

UNIT

E g04a > 0

SINGLE-SELECT g04b

01 ○ Grams
02 ○ Kgs
03 ○ Millilitres
04 ○ Litres
05 ○ Piece/unit

G04b_oth. Specify the UNIT for how much came from purchases.

E g04b==23

TEXT g04b_oth

VARIABLE
true

BOOLEAN convPurchased

VARIABLE
true

BOOLEAN minProductPrice

VARIABLE
true

BOOLEAN maxProductPrice

VARIABLE
true

BOOLEAN priceKg

G05. How much did you spend?

E g04a > 0

V1 true

M1 Price seems to be unusual for this product. Price should be in range fro m %minProductPrice% to %maxProductPrice%

V2 self > 0

M2 Purchase price couldn't be equal to 0

NUMERIC: DECIMAL g05

STATIC TEXT

E IsAnswered(g05)

Price per kg is %priceKg%

G06a. How much came from own- production?

QUANTITY

NUMERIC: DECIMAL g06a

SPECIAL VALUES
00 None

UNIT

E g06a>0

SINGLE-SELECT g06b
01 ○ Grams
02 ○ Kgs
03 ○ Millilitres
04 ○ Litres
05 ○ Piece/unit

G06b_oth. Specify the UNIT for how much came from own- production.

E g06b==23

TEXT g06b_oth

G07a. How much came from gifts and other sources?

QUANTITY

NUMERIC: DECIMAL g07a

SPECIAL VALUES
00 None

UNIT

E g07a>0

SINGLE-SELECT g07b
01 ○ Grams
02 ○ Kgs
03 ○ Millilitres
04 ○ Litres
05 ○ Piece/unit

G07b_oth. Specify the UNIT for how much came from gifts and other sources

E g07b==23

TEXT g07b_oth

LOOKUP TABLES / EXCERSISES
EDUCATION EXERCISE

Please list all members who is younger than 23

LIST members

LOOKUP TABLES / EXCERSISES / EDUCATION EXERCISE
Roster: HH MEMBER
generated by list question members

membersRoster

Age

V1 self.InRange(0,23)
M1 Listed members should be up to 23 years old

NUMERIC: INTEGER age

What is the highest class %rostertitle% completed?

E `IsAnswered(age)`
V1 `true`
M1 Member is too young to have the level be completed

SINGLE-SELECT `highestClass`

000 ○ None
001 ○ KG
002 ○ N1
003 ○ N2
004 ○ N3
011 ○ P1
012 ○ P2
013 ○ P3
014 ○ P4
015 ○ P5
016 ○ P6
021 ○ JS1
022 ○ JS2
023 ○ JS3
024 ○ SS1
025 ○ SS2

And 16 other symbols [21]

Is %rostertitle% curently attending a school?

E `age >=3`

SINGLE-SELECT `schoolCurrentYear`

01 ○ Yes
02 ○ No

During current school year, what level/class is %rostertitle% attending?

E `schoolCurrentYear == 1`
V1 `true`
M1 Member is too young to have the level be completed
V2 `eduAttendingLevel.Values.Any(x=>x.completedLevel == highestClass && x.attendingLevel == self)`
M2 It's impossible to attend selected level after %highestClass%

SINGLE-SELECT `levelAttending`

001 ○ KG
002 ○ N1
003 ○ N2
004 ○ N3
011 ○ P1
012 ○ P2
013 ○ P3
014 ○ P4
015 ○ P5
016 ○ P6
021 ○ JS1
022 ○ JS2
023 ○ JS3
024 ○ SS1
025 ○ SS2
026 ○ SS3

And 13 other symbols [22]

LINKED QUESTIONS

LINKED QUESTIONS

Roster: PARENTS OF

generated by list question `HH_list_of_names` — parents

E `age_HH.InRange(4,16)`

Is %rostertitle%'s natural mother alive?

SINGLE-SELECT — F01A012

01 ○ Yes
02 ○ No

V1 `relationship == 3 ? ($head.sex==2 ? self==1 : true) : true`

M1 %rostertitle% was reported as son/daugter of the head, answer cannot be negative

---

Does %rostertitle%'s natural mother usually live in this household?

SINGLE-SELECT — F01A013

01 ○ Yes
02 ○ No

E `F01A012 == 1`

V1 `relationship == 3 ? ($head.sex==2 ? self == 1 : true) : true`

M1 %rostertitle% was reported as son/daugter of the head, answer cannot be negative

---

Who is %rostertitle%'s natural mother?

SINGLE-SELECT: LINKED — F01A014

I SELECT A VALID NAME FROM THE LIST OR BACK UP AND ADD THE NAME TO THE HOUSEHOLD ROSTER OR CONTINUE

F // Show only females sex==2 && @current.@rowcode!=@rowcode && // And person's age is 12 years older than current person's age ((age_HH - 12)>= @current.age_HH)

E `F01A013 == 1`

V1 `true`

M1 %rostertitle% was reported as son/daugter of the head (%head_name%), another person cannot be mother

---

Is %rostertitle%'s natural father alive?

SINGLE-SELECT — F01A015

01 ○ Yes
02 ○ No

V1 `true`

M1 %rostertitle% was reported as son/daugter of the head, answer cannot be negative

---

Does %rostertitle%'s natural father usually live in this household?

SINGLE-SELECT — F01A016

01 ○ Yes
02 ○ No

E `F01A015 == 1`

V1 `true`

M1 %rostertitle% was reported as son/daugter of the head, answer cannot be negative

---

Who is %rostertitle%'s natural father?

SINGLE-SELECT: LINKED — F01A017

I SELECT A VALID NAME FROM THE LIST OR BACK UP AND ADD THE NAME TO THE HOUSEHOLD ROSTER OR CONTINUE

E `F01A016 == 1`

V1 `true`

M1 %rostertitle% was reported as son/daugter of the head, another person cannot be father

---

Who primarily takes care of %rostertitle%?

SINGLE-SELECT: LINKED — F01A018

I Select a valid name from the list or BACKUP and add the name to the household roster

F (@current.@rowcode!=@rowcode || @current.relationship == 1) && (age_HH >= $ageDifferenceChild)

ROSTER FOR LINKED MULTI-SELECT QUESTION

Members	LIST	membersRLM
Linked to members	MULTI-SELECT: LINKED	linked

Roster: MEMBERS ROSTER

generated by list question membersRLM

members_roster

E `linked.Contains(@rowcode)`

Some question inside	TEXT	some_question

MATERIALS

STATIC TEXT

[Most common expressions, functions, operators](https://docs.google.com/document/d/1cvuZ-RCJlFuNBG1oHVXDqzORP_IMpQ9ENNm1s5xSy1Y/edit?usp=sharing)

STATIC TEXT

[Assesment](https://krivtsov.mysurvey.solutions/WebInterview/VJ4AT28D/Start)

APPENDIX A — ENABLING CONDITIONS

[1] : Oldest male -

Enablement Condition:

```
// among all males in the household
RosterList.Where(a=>a.sexM==1)
// ordered by descending of ages
.OrderByDescending(b=>b.ageM)
// selecting their codes
.Select(a=>a.@rowcode)
// select first 3
.Take(3)
// check if it contsins the current member's rowcode
.Contains(@rowcode)
```

[2] : Extended interview

Enablement Condition:

```
// selecting all codes from the roster with age >10
membersR.Where(x=> (x.age_r??0) > 10)
// select their rowcodes
.Select(x=>x.@rowcode)
// order codes
.OrderBy(x=>
    // in randomly generated order
    new Random(
        // specification of the way of generation pseudo random number
        (int)((1000*(x+1)*(1+Quest.IRnd()))%1000)
    )
    // retrieving the number
    .Next()
)
//take 2 first
.Take(2)
//enable roster if rowcode of the member was selected
.Contains(@rowcode)
```

[3] : Error

Enablement Condition:

```
(Month_Roster.All(x=>IsAnswered(x.RV16)) ?
RV16_total == 0 : false) ||
(Month_Roster.All(x=>IsAnswered(x.RV17)) ?
RV17_total == 0 : false) ||
(Month_Roster.All(x=>IsAnswered(x.RV18)) ?
RV18_total == 0 : false) ||
(Month_Roster.All(x=>IsAnswered(x.RV19)) ?
RV19_total == 0 : false) ||
(Month_Roster.All(x=>IsAnswered(x.RV20)) ?
RV20_total == 0 : false)
```

APPENDIX B — VALIDATION CONDITIONS AND MESSAGES

[1] sex: Sex of the %rostertitle%

Validation Condition:

```
/*// if head of household, check that no spouse has the same srx
(relationship ==1 &&
(HH_roster.Count(x=>x.relationship==2 && x.sex == sex) == 0))
||
// if spouse of head, check that no head has the same gender
(relationship == 2 &&
(HH_roster.Count(x=>x.relationship==1 && x.sex == sex) == 0))
||
// If neither head or spouse, nothing to check
(!relationship.InList(1,2))*/



relationship.InList(1,2) ?
   (relationship == 1
   ?
       (HH_roster.Count(x=>x.relationship==2 && x.sex == sex) == 0)
    :
        (HH_roster.Count(x=>x.relationship==1 && x.sex == sex) == 0))
: true
```

Validation Message: It is unlikely the household head is the same gender as his/her spouse. Please revise.

[2] relationship: What is the relationship of %rostertitle% to the head of household?

Validation Condition:

```
HH_roster.Any(x=>x.relationship==1)
```

Validation Message: The first person listed should be the Head of household.

Validation Condition:

```
// check if the current person is the head
self == 1 ?
// check how many heads in the household the number should be = 1
HH_roster.Count(x=>x.relationship==1) == 1
// if current person isn't the head
: true
```

Validation Message: Only one person can be the household head (You mentioned earlier %head_name% as the head of the household). Please c heck the code or the information with the respondent.

Validation Condition:

```
//(self == 1 && age_HH >= 15) || self!=1

relationship == 1 ?
    age_HH >= 15
: true
```

Validation Message: Head of the Household (%head_name%) age must be 15 years or more

Validation Condition:

```
(self == 2 && age_HH >= 14) || self!=2
```

Validation Message: Respondent (%rostertitle%) is too young to be the wife/husband of the head of the household. Please go back and fix that

Validation Condition:

```
self==6 && HH_roster.Any(x=>x.relationship==1)?
    //age_HH >= head_final_age + 12
    HH_roster.Any(x=>x.relationship==1 &&
    ((age_HH - x.age_HH)>=12))
: true
```

Validation Message: Parent of the head must be at least 12 years older than the head (%head_name%). Please go back and fix that.

Validation Condition:

```
self==3 && HH_roster.Any(x=>x.relationship==1)?
    //age_HH <= head_final_age -12
    HH_roster.Any(x=>x.relationship==1 &&
    ((x.age_HH - age_HH)>=12))
: true
```

Validation Message: Child (%rostertitle%) must be at least 12 years younger than parent (%head_name%). Please revise.

Validation Condition:

```
self==4 && HH_roster.Any(x=>x.relationship==2)?
    HH_roster.Any(x=>x.relationship==2 &&
    ((x.age_HH - age_HH)>=12))
: true
```

Validation Message: Child-in-law (%rostertitle%) of the head must be at least 12 years younger than the wife/husband. Please revise.

Validation Condition:

```
self==7 && HH_roster.Any(x=>x.relationship==2)?
    HH_roster.Any(x=>x.relationship==2 &&
    ((age_HH - x.age_HH)>=12))
: true
```

Validation Message: Parent-in-law of the head must be at least 12 years older than the wife/husband. Please go back and fix that.
Validation Condition:

```
self==5 && HH_roster.Any(x=>x.relationship==1)?
    HH_roster.Any(x=>x.relationship==1 &&
    ((x.age_HH - age_HH)>=24))
: true
```

Validation Message: Grandchild (%rostertitle%) of the head must be at least 24 years younger than the head (%head_name%). Please revise.
Validation Condition:

```
self == 2 &&
IsAnswered(HH_roster.First(x => x.relationship==1).F01A007)
?
HH_roster.First(x => x.relationship==1).F01A007 == 1
: true
```

Validation Message: Head is not married. Check head's marital status or fix relationship to the head

[3] currentLocation: Location
Validation Condition:

```
IsAnswered(City) ?
// check if the current location is in the rectangle
    currentLocation.InRectangle(
    /*use myLocation lookup table, find a key ==n to CityV
    take value from a column.*/
       myLocation[City.Value].N.Value,
       myLocation[City.Value].W.Value,
       myLocation[City.Value].S.Value,
       myLocation[City.Value].E.Value
    )
    :
    true
```

Validation Message: Cheater you mentioned the wrong city!

APPENDIX C — CATEGORIES

[1] Fruit
Categories: 1:Apple, 2:Orange, 4:Peach, 5:Apricot, 6:Tangerine, 7:Papaya, 8:Plum, 9:Grapefruit

[2] ffff
Categories: 1:???, 2:??????? ?????, 4:?????, 5:????

[3] greek
Categories: 1:Ναι, μία φορά, 2:Ναι, δύο φορές ή περισσότερες, 3:Αριθ, 4:Δεν συμβαίνει

[4] venit
Categories: 4:deduceri personale, 5:contribuţii (contribuții CAS, sănătate), 6:alte reţineri, 8:profit, 9:pierdere, 10:impozit anticipat, 11:contribuţii (sănătate şi pensie)

[5] NE08: What crops do you grow on this plot?
Categories: 1010:BEANS/COWPEA, 1040:COCOYAM, 1050:COTTON, 1060:GROUND NUT/PEANUTS, 1070:GUINEA CORN/SORGHUM, 1080:MAIZE, 1090:MELON/EGUSI, 1100:MILLET/MAIWA, 1110:RICE, 1121:WHITE YAM, 1122:YELLOW YAM, 1123:WATER YAM, 1124:THREE LEAVE YAM, 2010:ACHA, 2020:BAMBARA NUT, 2040:BEENI-SEED/SESAME, 2050:CARROT, 2060:CUCUMBER, 2070:CABBAGE, 2071:LETTUCE, 2080:GARDEN EGG, 2090:GARLIC, 2100:GINGER, 2120:OKRO, 2130:ONION, 2141:SWEET/BELL PEPPER (TATASHE), 2142:SMALL PEPPER (RODO), 3030:CHILLI PEPPER (SHOMBO), 2150:PIGEON PEA, 2180:IRISH POTATO, 2181:SWEET POTATO, 2190:PUMPKIN, 2194:GREEN VEGETABLE, 2220:SOYA BEANS, 2230:SUGAR CANE, 2250:TOBACCO, 2260:TOMATO, 2280:WHEAT, 2290:ZOBO, 9998:OTHER, TEMPORARY CROP (SPECIFY)

[6] mainCrop: What is the main crop on this plot?
Categories: 1010:BEANS/COWPEA, 1040:COCOYAM, 1050:COTTON, 1060:GROUND NUT/PEANUTS, 1070:GUINEA CORN/SORGHUM, 1080:MAIZE, 1090:MELON/EGUSI, 1100:MILLET/MAIWA, 1110:RICE, 1121:WHITE YAM, 1122:YELLOW YAM, 1123:WATER YAM, 1124:THREE LEAVE YAM, 2010:ACHA, 2020:BAMBARA NUT, 2040:BEENI-SEED/SESAME, 2050:CARROT, 2060:CUCUMBER, 2070:CABBAGE, 2071:LETTUCE, 2080:GARDEN EGG, 2090:GARLIC, 2100:GINGER, 2120:OKRO, 2130:ONION, 2141:SWEET/BELL PEPPER (TATASHE), 2142:SMALL PEPPER (RODO), 3030:CHILLI PEPPER (SHOMBO), 2150:PIGEON PEA, 2180:IRISH POTATO, 2181:SWEET POTATO, 2190:PUMPKIN, 2194:GREEN VEGETABLE, 2220:SOYA BEANS, 2230:SUGAR CANE, 2250:TOBACCO, 2260:TOMATO, 2280:WHEAT, 2290:ZOBO, 9998:OTHER, TEMPORARY CROP (SPECIFY), 1020:CASSAVA, 2030:BANANA, 2160:PINEAPPLE, 2170:PLANTAIN, 2240:TEA, 2270:WALNUT, 3010:APPLE, 3020:CASHEW, 3040:COCOA, 3050:COCONUT, 3060:COFFEE, 3080:GRAPE FRUIT, 3090:GUAVA, 3110:KOLANUT, 3120:LEMON, 3130:LIME, 3150:MANDARIN/TANGERINE, 3160:MANGO, 3170:ORANGE, 3180:OIL PALM TREE, 3190:AGBONO(ORO SEED), 3200:OIL BEAN, 3210:PAWPAW, 3220:PEAR, 3221:AVOCADO PEAR, 3230:RUBBER, 9999:OTHER, PERMANENT CROP (SPECIFY)

[7] cultivatedCrops: Please select all crops that you have cultivated.
Categories: 1010:BEANS/COWPEA, 1040:COCOYAM, 1050:COTTON, 1060:GROUND NUT/PEANUTS, 1070:GUINEA CORN/SORGHUM, 1080:MAIZE, 1090:MELON/EGUSI, 1100:MILLET/MAIWA, 1110:RICE, 1121:WHITE YAM, 1122:YELLOW YAM, 1123:WATER YAM, 1124:THREE LEAVE YAM, 2010:ACHA, 2020:BAMBARA NUT, 2040:BEENI-SEED/SESAME, 2050:CARROT, 2060:CUCUMBER, 2070:CABBAGE, 2071:LETTUCE, 2080:GARDEN EGG, 2090:GARLIC, 2100:GINGER, 2120:OKRO, 2130:ONION, 2141:SWEET/BELL PEPPER (TATASHE), 2142:SMALL PEPPER (RODO), 3030:CHILLI PEPPER (SHOMBO), 2150:PIGEON PEA, 2180:IRISH POTATO, 2181:SWEET POTATO, 2190:PUMPKIN, 2194:GREEN VEGETABLE, 2220:SOYA BEANS, 2230:SUGAR CANE, 2250:TOBACCO, 2260:TOMATO, 2280:WHEAT, 2290:ZOBO, 9998:OTHER, TEMPORARY CROP (SPECIFY), 1020:CASSAVA, 2030:BANANA, 2160:PINEAPPLE, 2170:PLANTAIN, 2240:TEA, 2270:WALNUT, 3010:APPLE, 3020:CASHEW, 3040:COCOA, 3050:COCONUT, 3060:COFFEE, 3080:GRAPE FRUIT, 3090:GUAVA, 3110:KOLANUT, 3120:LEMON, 3130:LIME, 3150:MANDARIN/TANGERINE, 3160:MANGO, 3170:ORANGE, 3180:OIL PALM TREE, 3190:AGBONO(ORO SEED), 3200:OIL BEAN, 3210:PAWPAW, 3220:PEAR, 3221:AVOCADO PEAR, 3230:RUBBER, 9999:OTHER, PERMANENT CROP (SPECIFY)

[8] twoMainCrops: Please select two main crops that grow.
Categories: 1010:BEANS/COWPEA, 1040:COCOYAM, 1050:COTTON, 1060:GROUND NUT/PEANUTS, 1070:GUINEA CORN/SORGHUM, 1080:MAIZE, 1090:MELON/EGUSI, 1100:MILLET/MAIWA, 1110:RICE, 1121:WHITE YAM, 1122:YELLOW YAM, 1123:WATER YAM, 1124:THREE LEAVE YAM, 2010:ACHA, 2020:BAMBARA NUT, 2040:BEENI-SEED/SESAME, 2050:CARROT, 2060:CUCUMBER, 2070:CABBAGE, 2071:LETTUCE, 2080:GARDEN EGG, 2090:GARLIC, 2100:GINGER, 2120:OKRO, 2130:ONION, 2141:SWEET/BELL PEPPER (TATASHE), 2142:SMALL PEPPER (RODO), 3030:CHILLI PEPPER (SHOMBO), 2150:PIGEON PEA, 2180:IRISH POTATO, 2181:SWEET POTATO, 2190:PUMPKIN, 2194:GREEN VEGETABLE, 2220:SOYA BEANS, 2230:SUGAR CANE, 2250:TOBACCO, 2260:TOMATO, 2280:WHEAT, 2290:ZOBO, 9998:OTHER, TEMPORARY CROP (SPECIFY), 1020:CASSAVA, 2030:BANANA, 2160:PINEAPPLE, 2170:PLANTAIN, 2240:TEA, 2270:WALNUT, 3010:APPLE, 3020:CASHEW, 3040:COCOA, 3050:COCONUT, 3060:COFFEE, 3080:GRAPE FRUIT, 3090:GUAVA, 3110:KOLANUT, 3120:LEMON, 3130:LIME, 3150:MANDARIN/TANGERINE, 3160:MANGO, 3170:ORANGE, 3180:OIL PALM TREE, 3190:AGBONO(ORO SEED), 3200:OIL BEAN, 3210:PAWPAW, 3220:PEAR, 3221:AVOCADO PEAR, 3230:RUBBER, 9999:OTHER, PERMANENT CROP (SPECIFY)

[9] b5: Did your household produce any of these goods?
Categories: 1:Wheat Flour, 2:Corn Flour, 3:Veal meat, 4:Beaf meat, 5:Pork meat, 6:Lamb meat, 7:Chicken meat, 8:Fish/Fresh trout, 9:Milk, 10:Yoghurt, 11:Curd cheese, 12:Eggs (piece), 13:Cheese, 14:Apple, 15:Grapes, 16:Cherry, 17:Strawberry, 18:Berries, 19:Raspberries, 20:Apricot, 21:Peache, 22:Plum, 23:Watermelon, 24:Wine, 25:Naturay grape brandy, 26:Natural quince brandy, 27:Naturay plumb brandy, 28:Potato, 29:Beans, 30:Onion, 31:Garlic, 32:Carrots, 33:Spinach, 34:Lettuce, 35:Cabbage, 36:Cucumber, 37:Peas, 38:String beans, 39:Tomato, 40:Peppers, 41:Leek, 42:Honey, 43:Mushrooms

[10] b6: Did your household buy any of these goods?
Categories: 1:Wheat Flour, 2:Corn Flour, 3:Veal meat, 4:Beaf meat, 5:Pork meat, 6:Lamb meat, 7:Chicken meat, 8:Fish/Fresh trout, 9:Milk, 10:Yoghurt, 11:Curd cheese, 12:Eggs (piece), 13:Cheese, 14:Apple, 15:Grapes, 16:Cherry, 17:Strawberry, 18:Berries, 19:Raspberries, 20:Apricot, 21:Peache, 22:Plum, 23:Watermelon, 24:Wine, 25:Naturay grape brandy, 26:Natural quince brandy, 27:Naturay plumb brandy, 28:Potato, 29:Beans, 30:Onion, 31:Garlic, 32:Carrots, 33:Spinach, 34:Lettuce, 35:Cabbage, 36:Cucumber, 37:Peas, 38:String beans, 39:Tomato, 40:Peppers, 41:Leek, 42:Honey, 43:Mushrooms

[11] b7: Did your household gave away any of these goods as a gift?
Categories: 1:Wheat Flour, 2:Corn Flour, 3:Veal meat, 4:Beaf meat, 5:Pork meat, 6:Lamb meat, 7:Chicken meat, 8:Fish/Fresh trout, 9:Milk, 10:Yoghurt, 11:Curd cheese, 12:Eggs (piece), 13:Cheese, 14:Apple, 15:Grapes, 16:Cherry, 17:Strawberry, 18:Berries, 19:Raspberries, 20:Apricot, 21:Peache, 22:Plum, 23:Watermelon, 24:Wine, 25:Naturay grape brandy, 26:Natural quince brandy, 27:Naturay plumb brandy, 28:Potato, 29:Beans, 30:Onion, 31:Garlic, 32:Carrots, 33:Spinach, 34:Lettuce, 35:Cabbage, 36:Cucumber, 37:Peas, 38:String beans, 39:Tomato, 40:Peppers, 41:Leek, 42:Honey, 43:Mushrooms

[12] q112: During the past 12 months, was this enterprise operational in the month of...?
Categories: 1811:November 2018, 1812:December 2018, 1901:January 2019, 1902:February 2019, 1903:March 2019, 1904:April 2019, 1905:May 2019, 1906:June 2019, 1907:July 2019, 1908:August 2019, 1909:September 2019, 1910:October 2019, 1911:November 2019, 1912:December 2019, 2001:January 2020, 2002:February 2020, 2003:March 2020, 2004:April 2020, 2005:May 2020, 2006:June 2020, 2007:July 2020, 2008:August 2020, 2009:September 2020

[13] profession: Profession
Categories: 1:Physician/Medical Doctor (Specialist), 2:Physician/Medical Doctor(Generalist), 3:Medical Officer, 4:Medical Assistant, 5:Clinical Officer, 7:Registered Nurse Midwife, 8:Community Health Nurse, 9:Auxiliary nurse, 10:Lab/Pharmacy, 11:Nurse/Midwife Technician, 12:Community Midwife Assistant, 13:Patient Aide, 14:Rural Medical Aides, 15:Environmental health officer, 16:Matron, 17:Nurse technician, 18:Health surveillance assistant, 19:Other (specify)

[14] G1: Who is %RV_roster_1% to %rostertitle%
Categories: 10:Partner, 11:Husband/wife/civil partner, 12:Partner/cohabitee, 20:Son/Daughter, 21:Natural/adopted son/daughter, 22:Stepson/stepdaughter, 30:Son/daughter-in-law, 40:Grand-child, 50:Parent, 51:Natural/adoptive parent, 52:Stepparents, 60:Parent-in-law, 70:Grand-parent, 80:Brother sister, 81:Natural brother/sister, 82:Step brother/sister, 90:Other relative, 95:Other non-relative, -1:Not stated

[15] crops: Select crops that you grove
Categories: 1:Wheat, 2:Corn, 3:Rye, 4:Rice, 5:Barley, 6:Chickpea, 7:Drybean, 8:Lentil, 9:Potato, 10:Onion, 11:Gr. pepper, 12:Tomato, 14:Sunflower, 13:Cucumber, 15:Groundnut, 16:Cotton, 17:Sugar-beet, 18:Tobacco, 19:Melon, 20:Alfalfa, 21:Fodder, 22:Soybean, 23:Sesame

[16] isic_section: Section - Level 0
Categories: 1:Agriculture, forestry and fishing, 2:Mining and quarrying, 3:Manufacturing, 4:Electricity, gas, steam and air conditioning supply, 5:Water supply; sewerage, waste management and remediation activities, 6:Construction, 7:Wholesale and retail trade; repair of motor vehicles and motorcycles, 8:Transportation and storage, 9:Accommodation and food service activities, 10:Information and communication, 11:Financial and insurance activities, 12:Real estate activities, 13:Professional, scientific and technical activities, 14:Administrative and support service activities, 15:Public administration and defence; compulsory social security, 16:Education, 17:Human health and social work activities, 18:Arts, entertainment and recreation, 19:Other service activities, 20:Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use, 21:Activities of extraterritorial organizations and bodies

[17] isic_division: Division - Subcategory Level 1
Categories: 01:Crop and animal production, hunting and related service activities, 02:Forestry and logging, 03:Fishing and aquaculture, 05:Mining of coal and lignite, 06:Extraction of crude petroleum and natural gas, 07:Mining of metal ores, 08:Other mining and quarrying, 09:Mining support service activities, 10:Manufacture of food products, 11:Manufacture of beverages, 12:Manufacture of tobacco products, 13:Manufacture of textiles, 14:Manufacture of wearing apparel, 15:Manufacture of leather and related products, 16:Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials, 17:Manufacture of paper and paper products, 18:Printing and reproduction of recorded media, 19:Manufacture of coke and refined petroleum products, 20:Manufacture of chemicals and chemical products, 21:Manufacture of basic pharmaceutical products and pharmaceutical preparations, 22:Manufacture of rubber and plastics products, 23:Manufacture of other non-metallic mineral products, 24:Manufacture of basic metals, 25:Manufacture of fabricated metal products, except machinery and equipment, 26:Manufacture of computer, electronic and optical products, 27:Manufacture of electrical equipment, 28:Manufacture of machinery and equipment n.e.c., 29:Manufacture of motor vehicles, trailers and semi-trailers, 30:Manufacture of other transport equipment, 31:Manufacture of furniture, 32:Other manufacturing, 33:Repair and installation of machinery and equipment, 35:Electricity, gas, steam and air conditioning supply, 36:Water collection, treatment and supply, 37:Sewerage, 38:Waste collection, treatment and disposal activities; materials recovery, 39:Remediation activities and other waste management services, 41:Construction of buildings, 42:Civil engineering, 43:Specialized construction activities, 45:Wholesale and retail trade and repair of motor vehicles and motorcycles, 46:Wholesale trade, except of motor vehicles and motorcycles, 47:Retail trade, except of motor vehicles and motorcycles, 49:Land transport and transport via pipelines, 50:Water transport, 51:Air transport, 52:Warehousing and support activities for transportation, 53:Postal and courier activities, 55:Accommodation, 56:Food and beverage service activities, 58:Publishing activities, 59:Motion picture, video and television programme production, sound recording and music publishing activities, 60:Programming and broadcasting activities, 61:Telecommunications, 62:Computer programming, consultancy and related activities, 63:Information service activities, 64:Financial service activities, except insurance and pension funding, 65:Insurance, reinsurance and pension funding, except compulsory social security, 66:Activities auxiliary to financial service and insurance activities, 68:Real estate activities, 69:Legal and accounting activities, 70:Activities of head offices; management consultancy activities, 71:Architectural and engineering activities; technical testing and analysis, 72:Scientific research and development, 73:Advertising and market research, 74:Other professional, scientific and technical activities, 75:Veterinary activities, 77:Rental and leasing activities, 78:Employment activities, 79:Travel agency, tour operator, reservation service and related activities, 80:Security and investigation activities, 81:Services to buildings and landscape activities, 82:Office administrative, office support and other business support activities, 84:Public administration and defence; compulsory social security, 85:Education, 86:Human health activities, 87:Residential care activities, 88:Social work activities without accommodation, 90:Creative, arts and entertainment activities, 91:Libraries, archives, museums and other cultural activities, 92:Gambling and betting activities, 93:Sports activities and amusement and recreation activities, 94:Activities of membership organizations, 95:Repair of computers and personal and household goods, 96:Other personal service activities, 97:Activities of households as employers of domestic personnel, 98:Undifferentiated goods- and services-producing activities of private households for own use, 99:Activities of extraterritorial organizations and bodies

[18] isic_group: Group - Subcategory Level 2
Categories: 011:Growing of non-perennial crops, 012:Growing of perennial crops, 013:Plant propagation, 014:Animal production, 015:Mixed farming, 016:Support activities to agriculture and post-harvest crop activities, 017:Hunting, trapping and related service activities, 021:Silviculture and other forestry activities, 022:Logging, 023:Gathering of non-wood forest products, 024:Support services to forestry, 031:Fishing, 032:Aquaculture, 051:Mining of hard coal, 052:Mining of lignite, 061:Extraction of crude petroleum, 062:Extraction of natural gas, 071:Mining of iron ores, 072:Mining of non-ferrous metal ores, 081:Quarrying of stone, sand and clay, 089:Mining and quarrying n.e.c., 091:Support activities for petroleum and natural gas extraction, 099:Support activities for other mining and quarrying, 101:Processing and preserving of meat, 102:P

rocessing and preserving of fish, crustaceans and molluscs, 103:Processing and preserving of fruit and vegetables, 104:Manufacture of vegeta ble and animal oils and fats, 105:Manufacture of dairy products, 106:Manufacture of grain mill products, starches and starch products, 107:M anufacture of other food products, 108:Manufacture of prepared animal feeds, 110:Manufacture of beverages, 120:Manufacture of tobacco p roducts, 131:Spinning, weaving and finishing of textiles, 139:Manufacture of other textiles, 141:Manufacture of wearing apparel, except fur ap parel, 142:Manufacture of articles of fur, 143:Manufacture of knitted and crocheted apparel, 151:Tanning and dressing of leather; manufactur e of luggage, handbags, saddlery and harness; dressing and dyeing of fur, 152:Manufacture of footwear, 161:Sawmilling and planing of wood, 162:Manufacture of products of wood, cork, straw and plaiting materials, 170:Manufacture of paper and paper products, 181:Printing and ser vice activities related to printing, 182:Reproduction of recorded media, 191:Manufacture of coke oven products, 192:Manufacture of refined p etroleum products, 201:Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms, 20 2:Manufacture of other chemical products, 203:Manufacture of man-made fibres, 210:Manufacture of pharmaceuticals, medicinal chemical a nd botanical products, 221:Manufacture of rubber products, 222:Manufacture of plastics products, 231:Manufacture of glass and glass produ cts, 239:Manufacture of non-metallic mineral products n.e.c., 241:Manufacture of basic iron and steel, 242:Manufacture of basic precious and other non-ferrous metals, 243:Casting of metals, 251:Manufacture of structural metal products, tanks, reservoirs and steam generators, 252: Manufacture of weapons and ammunition, 259:Manufacture of other fabricated metal products; metalworking service activities, 261:Manufact ure of electronic components and boards, 262:Manufacture of computers and peripheral equipment, 263:Manufacture of communication equi pment, 264:Manufacture of consumer electronics, 265:Manufacture of measuring, testing, navigating and control equipment; watches and clo cks, 266:Manufacture of irradiation, electromedical and electrotherapeutic equipment, 267:Manufacture of optical instruments and photograp hic equipment, 268:Manufacture of magnetic and optical media, 271:Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus, 272:Manufacture of batteries and accumulators, 273:Manufacture of wiring and wiring devices, 274:Manuf acture of electric lighting equipment, 275:Manufacture of domestic appliances, 279:Manufacture of other electrical equipment, 281:Manufact ure of general-purpose machinery, 282:Manufacture of special-purpose machinery, 291:Manufacture of motor vehicles, 292:Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers, 293:Manufacture of parts and accessories for motor vehicles, 301:Building of ships and boats, 302:Manufacture of railway locomotives and rolling stock, 303:Manufacture of air and spacecraft and related machinery, 304:Manufacture of military fighting vehicles, 309:Manufacture of transport equipment n.e.c., 310:Manufacture of furniture, 321: Manufacture of jewellery, bijouterie and related articles, 322:Manufacture of musical instruments, 323:Manufacture of sports goods, 324:Man ufacture of games and toys, 325:Manufacture of medical and dental instruments and supplies, 329:Other manufacturing n.e.c., 331:Repair of f abricated metal products, machinery and equipment, 332:Installation of industrial machinery and equipment, 351:Electric power generation, tr ansmission and distribution, 352:Manufacture of gas; distribution of gaseous fuels through mains, 353:Steam and air conditioning supply, 360: Water collection, treatment and supply, 370:Sewerage, 381:Waste collection, 382:Waste treatment and disposal, 383:Materials recovery, 390 :Remediation activities and other waste management services, 410:Construction of buildings, 421:Construction of roads and railways, 422:Co nstruction of utility projects, 429:Construction of other civil engineering projects, 431:Demolition and site preparation, 432:Electrical, plumbing and other construction installation activities, 433:Building completion and finishing, 439:Other specialized construction activities, 451:Sale of motor vehicles, 452:Maintenance and repair of motor vehicles, 453:Sale of motor vehicle parts and accessories, 454:Sale, maintenance and r epair of motorcycles and related parts and accessories, 461:Wholesale on a fee or contract basis, 462:Wholesale of agricultural raw materials and live animals, 463:Wholesale of food, beverages and tobacco, 464:Wholesale of household goods, 465:Wholesale of machinery, equipment and supplies, 466:Other specialized wholesale, 469:Non-specialized wholesale trade, 471:Retail sale in non-specialized stores, 472:Retail sale of food, beverages and tobacco in specialized stores, 473:Retail sale of automotive fuel in specialized stores, 474:Retail sale of information and communications equipment in specialized stores, 475:Retail sale of other household equipment in specialized stores, 476:Retail sale of cultural and recreation goods in specialized stores, 477:Retail sale of other goods in specialized stores, 478:Retail sale via stalls and markets, 479:Ret ail trade not in stores, stalls or markets, 491:Transport via railways, 492:Other land transport, 493:Transport via pipeline, 501:Sea and coastal water transport, 502:Inland water transport, 511:Passenger air transport, 512:Freight air transport, 521:Warehousing and storage, 522:Supp ort activities for transportation, 531:Postal activities, 532:Courier activities, 551:Short term accommodation activities, 552:Camping grounds, recreational vehicle parks and trailer parks, 559:Other accommodation, 561:Restaurants and mobile food service activities, 562:Event caterin g and other food service activities, 563:Beverage serving activities, 581:Publishing of books, periodicals and other publishing activities, 582:So ftware publishing, 591:Motion picture, video and television programme activities, 592:Sound recording and music publishing activities, 601:Ra dio broadcasting, 602:Television programming and broadcasting activities, 611:Wired telecommunications activities, 612:Wireless telecommu nications activities, 613:Satellite telecommunications activities, 619:Other telecommunications activities, 620:Computer programming, consult ancy and related activities, 631:Data processing, hosting and related activities; web portals, 639:Other information service activities, 641:Mon etary intermediation, 642:Activities of holding companies, 643:Trusts, funds and similar financial entities, 649:Other financial service activities, except insurance and pension funding activities, 651:Insurance, 652:Reinsurance, 653:Pension funding, 661:Activities auxiliary to financial ser vice activities, except insurance and pension funding, 662:Activities auxiliary to insurance and pension funding, 663:Fund management activitie s, 681:Real estate activities with own or leased property, 682:Real estate activities on a fee or contract basis, 691:Legal activities, 692:Account ing, bookkeeping and auditing activities; tax consultancy, 701:Activities of head offices, 702:Management consultancy activities, 711:Architect ural and engineering activities and related technical consultancy, 712:Technical testing and analysis, 721:Research and experimental develop ment on natural sciences and engineering, 722:Research and experimental development on social sciences and humanities, 731:Advertising, 7 32:Market research and public opinion polling, 741:Specialized design activities, 742:Photographic activities, 749:Other professional, scientifi c and technical activities n.e.c., 750:Veterinary activities, 771:Renting and leasing of motor vehicles, 772:Renting and leasing of personal and h ousehold goods, 773:Renting and leasing of other machinery, equipment and tangible goods, 774:Leasing of intellectual property and similar p roducts, except copyrighted works, 781:Activities of employment placement agencies, 782:Temporary employment agency activities, 783:Oth er human resources provision, 791:Travel agency and tour operator activities, 799:Other reservation service and related activities, 801:Privat e security activities, 802:Security systems service activities, 803:Investigation activities, 811:Combined facilities support activities, 812:Cleani ng activities, 813:Landscape care and maintenance service activities, 821:Office administrative and support activities, 822:Activities of call cen tres, 823:Organization of conventions and trade shows, 829:Business support service activities n.e.c., 841:Administration of the State and the economic and social policy of the community, 842:Provision of services to the community as a whole, 843:Compulsory social security activities, 851:Pre-primary and primary education, 852:Secondary education, 853:Higher education, 854:Other education, 855:Educational support acti vities, 861:Hospital activities, 862:Medical and dental practice activities, 869:Other human health activities, 871:Residential nursing care facili ties, 872:Residential care activities for mental retardation, mental health and substance abuse, 873:Residential care activities for the elderly an d disabled, 879:Other residential care activities, 881:Social work activities without accommodation for the elderly and disabled, 889:Other soci al work activities without accommodation, 900:Creative, arts and entertainment activities, 910:Libraries, archives, museums and other cultural activities, 920:Gambling and betting activities, 931:Sports activities, 932:Other amusement and recreation activities, 941:Activities of busines s, employers and professional membership organizations, 942:Activities of trade unions, 949:Activities of other membership organizations, 95 1:Repair of computers and communication equipment, 952:Repair of personal and household goods, 960:Other personal service activities, 97 0:Activities of households as employers of domestic personnel, 981:Undifferentiated goods-producing activities of private households for own use, 982:Undifferentiated service-producing activities of private households for own use, 990:Activities of extraterritorial organizations and bo dies

[19] isic_class: Class - Subcategory Level 3

Categories: 0111 : Growing of cereals (except rice), leguminous crops and oil seeds, 0112 : Growing of rice, 0113 : Growing of vegetables and me lons, roots and tubers, 0114 : Growing of sugar cane, 0115 : Growing of tobacco, 0116 : Growing of fibre crops, 0119 : Growing of other non-peren nial crops, 0121 : Growing of grapes, 0122 : Growing of tropical and subtropical fruits, 0123 : Growing of citrus fruits, 0124 : Growing of pome fruit s and stone fruits, 0125 : Growing of other tree and bush fruits and nuts, 0126 : Growing of oleaginous fruits, 0127 : Growing of beverage crops, 0 128 : Growing of spices, aromatic, drug and pharmaceutical crops, 0129 : Growing of other perennial crops, 0130 : Plant propagation, 0141 : Raisi ng of cattle and buffaloes, 0142 : Raising of horses and other equines, 0143 : Raising of camels and camelids, 0144 : Raising of sheep and goats, 0 145 : Raising of swine/pigs, 0146 : Raising of poultry, 0149 : Raising of other animals, 0150 : Mixed farming, 0161 : Support activities for crop produ ction, 0162 : Support activities for animal production, 0163 : Post-harvest crop activities, 0164 : Seed processing for propagation, 0170 : Hunting, t rapping and related service activities, 0210 : Silviculture and other forestry activities, 0220 : Logging, 0230 : Gathering of non-wood forest product s, 0240 : Support services to forestry, 0311 : Marine fishing, 0312 : Freshwater fishing, 0321 : Marine aquaculture, 0322 : Freshwater aquaculture, 0510 : Mining of hard coal, 0520 : Mining of lignite, 0610 : Extraction of crude petroleum, 0620 : Extraction of natural gas, 0710 : Mining of iron ore s, 0721 : Mining of uranium and thorium ores, 0729 : Mining of other non-ferrous metal ores, 0810 : Quarrying of stone, sand and clay, 0891 : Mini ng of chemical and fertilizer minerals, 0892 : Extraction of peat, 0893 : Extraction of salt, 0899 : Other mining and quarrying n.e.c., 0910 : Support activities for petroleum and natural gas extraction, 0990 : Support activities for other mining and quarrying, 1010 : Processing and preserving of meat, 1020 : Processing and preserving of fish, crustaceans and molluscs, 1030 : Processing and preserving of fruit and vegetables, 1040 : Manuf acture of vegetable and animal oils and fats, 1050 : Manufacture of dairy products, 1061 : Manufacture of grain mill products, 1062 : Manufactur e of starches and starch products, 1071 : Manufacture of bakery products, 1072 : Manufacture of sugar, 1073 : Manufacture of cocoa, chocolate and sugar confectionery, 1074 : Manufacture of macaroni, noodles, couscous and similar farinaceous products, 1075 : Manufacture of prepared meals and dishes, 1079 : Manufacture of other food products n.e.c., 1080 : Manufacture of prepared animal feeds, 1101 : Distilling, rectifying and blending of spirits, 1102 : Manufacture of wines, 1103 : Manufacture of malt liquors and malt, 1104 : Manufacture of soft drinks; production of mi neral waters and other bottled waters, 1200 : Manufacture of tobacco products, 1311 : Preparation and spinning of textile fibres, 1312 : Weaving of textiles, 1313 : Finishing of textiles, 1391 : Manufacture of knitted and crocheted fabrics, 1392 : Manufacture of made-up textile articles, except apparel, 1393 : Manufacture of carpets and rugs, 1394 : Manufacture of cordage, rope, twine and netting, 1399 : Manufacture of other textiles n. e.c., 1410 : Manufacture of wearing apparel, except fur apparel, 1420 : Manufacture of articles of fur, 1430 : Manufacture of knitted and crochete d apparel, 1511 : Tanning and dressing of leather; dressing and dyeing of fur, 1512 : Manufacture of luggage, handbags and the like, saddlery an d harness, 1520 : Manufacture of footwear, 1610 : Sawmilling and planing of wood, 1621 : Manufacture of veneer sheets and wood-based panels, 1622 : Manufacture of builders' carpentry and joinery, 1623 : Manufacture of wooden containers, 1629 : Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials, 1701 : Manufacture of pulp, paper and paperboard, 1702 : Manufacture of corrugat ed paper and paperboard and of containers of paper and paperboard, 1709 : Manufacture of other articles of paper and paperboard, 1811 : Prin ting, 1812 : Service activities related to printing, 1820 : Reproduction of recorded media, 1910 : Manufacture of coke oven products, 1920 : Manuf acture of refined petroleum products, 2011 : Manufacture of basic chemicals, 2012 : Manufacture of fertilizers and nitrogen compounds, 2013 : Manufacture of plastics and synthetic rubber in primary forms, 2021 : Manufacture of pesticides and other agrochemical products, 2022 : Manuf acture of paints, varnishes and similar coatings, printing ink and mastics, 2023 : Manufacture of soap and detergents, cleaning and polishing pre parations, perfumes and toilet preparations, 2029 : Manufacture of other chemical products n.e.c., 2030 : Manufacture of man-made fibres, 210 0 : Manufacture of pharmaceuticals, medicinal chemical and botanical products, 2211 : Manufacture of rubber tyres and tubes; retreading and r ebuilding of rubber tyres, 2219 : Manufacture of other rubber products, 2220 : Manufacture of plastics products, 2310 : Manufacture of glass and glass products, 2391 : Manufacture of refractory products, 2392 : Manufacture of clay building materials, 2393 : Manufacture of other porcelain a nd ceramic products, 2394 : Manufacture of cement, lime and plaster, 2395 : Manufacture of articles of concrete, cement and plaster, 2396 : Cutt ing, shaping and finishing of stone, 2399 : Manufacture of other non-metallic mineral products n.e.c., 2410 : Manufacture of basic iron and steel, 2420 : Manufacture of basic precious and other non-ferrous metals, 2431 : Casting of iron and steel, 2432 : Casting of non-ferrous metals, 2511 : Manufacture of structural metal products, 2512 : Manufacture of tanks, reservoirs and containers of metal, 2513 : Manufacture of steam genera tors, except central heating hot water boilers, 2520 : Manufacture of weapons and ammunition, 2591 : Forging, pressing, stamping and roll-formi ng of metal; powder metallurgy, 2592 : Treatment and coating of metals; machining, 2593 : Manufacture of cutlery, hand tools and general hard ware, 2599 : Manufacture of other fabricated metal products n.e.c., 2610 : Manufacture of electronic components and boards, 2620 : Manufactur e of computers and peripheral equipment, 2630 : Manufacture of communication equipment, 2640 : Manufacture of consumer electronics, 2651 : Manufacture of measuring, testing, navigating and control equipment, 2652 : Manufacture of watches and clocks, 2660 : Manufacture of irradia tion, electromedical and electrotherapeutic equipment, 2670 : Manufacture of optical instruments and photographic equipment, 2680 : Manufact ure of magnetic and optical media, 2710 : Manufacture of electric motors, generators, transformers and electricity distribution and control appa ratus, 2720 : Manufacture of batteries and accumulators, 2731 : Manufacture of fibre optic cables, 2732 : Manufacture of other electronic and ele ctric wires and cables, 2733 : Manufacture of wiring devices, 2740 : Manufacture of electric lighting equipment, 2750 : Manufacture of domestic a ppliances, 2790 : Manufacture of other electrical equipment, 2811 : Manufacture of engines and turbines, except aircraft, vehicle and cycle engin es, 2812 : Manufacture of fluid power equipment, 2813 : Manufacture of other pumps, compressors, taps and valves, 2814 : Manufacture of beari ngs, gears, gearing and driving elements, 2815 : Manufacture of ovens, furnaces and furnace burners, 2816 : Manufacture of lifting and handling equipment, 2817 : Manufacture of office machinery and equipment (except computers and peripheral equipment), 2818 : Manufacture of power-driven hand tools, 2819 : Manufacture of other general-purpose machinery, 2821 : Manufacture of agricultural and forestry machinery, 2822 : M anufacture of metal-forming machinery and machine tools, 2823 : Manufacture of machinery for metallurgy, 2824 : Manufacture of machinery fo r mining, quarrying and construction, 2825 : Manufacture of machinery for food, beverage and tobacco processing, 2826 : Manufacture of machi nery for textile, apparel and leather production, 2829 : Manufacture of other special-purpose machinery, 2910 : Manufacture of motor vehicles, 2 920 : Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers, 2930 : Manufacture of parts and accessor ies for motor vehicles, 3011 : Building of ships and floating structures, 3012 : Building of pleasure and sporting boats, 3020 : Manufacture of railw ay locomotives and rolling stock, 3030 : Manufacture of air and spacecraft and related machinery, 3040 : Manufacture of military fighting vehicle s, 3091 : Manufacture of motorcycles, 3092 : Manufacture of bicycles and invalid carriages, 3099 : Manufacture of other transport equipment n.e. c., 3100 : Manufacture of furniture, 3211 : Manufacture of jewellery and related articles, 3212 : Manufacture of imitation jewellery and related art icles, 3220 : Manufacture of musical instruments, 3230 : Manufacture of sports goods, 3240 : Manufacture of games and toys, 3250 : Manufactur e of medical and dental instruments and supplies, 3290 : Other manufacturing n.e.c., 3311 : Repair of fabricated metal products, 3312 : Repair of machinery, 3313 : Repair of electronic and optical equipment, 3314 : Repair of electrical equipment, 3315 : Repair of transport equipment, except motor vehicles, 3319 : Repair of other equipment, 3320 : Installation of industrial machinery and equipment, 3510 : Electric power generation, tra nsmission and distribution, 3520 : Manufacture of gas; distribution of gaseous fuels through mains, 3530 : Steam and air conditioning supply, 360 0 : Water collection, treatment and supply, 3700 : Sewerage, 3811 : Collection of non-hazardous waste, 3812 : Collection of hazardous waste, 382 1 : Treatment and disposal of non-hazardous waste, 3822 : Treatment and disposal of hazardous waste, 3830 : Materials recovery, 3900 : Remedi ation activities and other waste management services, 4100 : Construction of buildings, 4210 : Construction of roads and railways, 4220 : Constru ction of utility projects, 4290 : Construction of other civil engineering projects, 4311 : Demolition, 4312 : Site preparation, 4321 : Electrical installati on, 4322 : Plumbing, heat and air-conditioning installation, 4329 : Other construction installation, 4330 : Building completion and finishing, 4390 : Other specialized construction activities, 4510 : Sale of motor vehicles, 4520 : Maintenance and repair of motor vehicles, 4530 : Sale of motor veh icle parts and accessories, 4540 : Sale, maintenance and repair of motorcycles and related parts and accessories, 4610 : Wholesale on a fee or c ontract basis, 4620 : Wholesale of agricultural raw materials and live animals, 4630 : Wholesale of food, beverages and tobacco, 4641 : Wholesal e of textiles, clothing and footwear, 4649 : Wholesale of other household goods, 4651 : Wholesale of computers, computer peripheral equipment

and software, 4652: Wholesale of electronic and telecommunications equipment and parts, 4653: Wholesale of agricultural machinery, equipment and supplies, 4659: Wholesale of other machinery and equipment, 4661: Wholesale of solid, liquid and gaseous fuels and related products, 4662: Wholesale of metals and metal ores, 4663: Wholesale of construction materials, hardware, plumbing and heating equipment and supplies, 4669: Wholesale of waste and scrap and other products n.e.c., 4690: Non-specialized wholesale trade, 4711: Retail sale in non-specialized stores with food, beverages or tobacco predominating, 4719: Other retail sale in non-specialized stores, 4721: Retail sale of food in specialized stores, 4722: Retail sale of beverages in specialized stores, 4723: Retail sale of tobacco products in specialized stores, 4730: Retail sale of automotive fuel in specialized stores, 4741: Retail sale of computers, peripheral units, software and telecommunications equipment in specialized stores, 4742: Retail sale of audio and video equipment in specialized stores, 4751: Retail sale of textiles in specialized stores, 4752: Retail sale of hardware, paints and glass in specialized stores, 4753: Retail sale of carpets, rugs, wall and floor coverings in specialized stores, 4759: Retail sale of electrical household appliances, furniture, lighting equipment and other household articles in specialized stores, 4761: Retail sale of books, newspapers and stationary in specialized stores, 4762: Retail sale of music and video recordings in specialized stores, 4763: Retail sale of sporting equipment in specialized stores, 4764: Retail sale of games and toys in specialized stores, 4771: Retail sale of clothing, footwear and leather articles in specialized stores, 4772: Retail sale of pharmaceutical and medical goods, cosmetic and toilet articles in specialized stores, 4773: Other retail sale of new goods in specialized stores, 4774: Retail sale of second-hand goods, 4781: Retail sale via stalls and markets of food, beverages and tobacco products, 4782: Retail sale via stalls and markets of textiles, clothing and footwear, 4789: Retail sale via stalls and markets of other goods, 4791: Retail sale via mail order houses or via Internet, 4799: Other retail sale not in stores, stalls or markets, 4911: Passenger rail transport, interurban, 4912: Freight rail transport, 4921: Urban and suburban passenger land transport, 4922: Other passenger land transport, 4923: Freight transport by road, 4930: Transport via pipeline, 5011: Sea and coastal passenger water transport, 5012: Sea and coastal freight water transport, 5021: Inland passenger water transport, 5022: Inland freight water transport, 5110: Passenger air transport, 5120: Freight air transport, 5210: Warehousing and storage, 5221: Service activities incidental to land transportation, 5222: Service activities incidental to water transportation, 5223: Service activities incidental to air transportation, 5224: Cargo handling, 5229: Other transportation support activities, 5310: Postal activities, 5320: Courier activities, 5510: Short term accommodation activities, 5520: Camping grounds, recreational vehicle parks and trailer parks, 5590: Other accommodation, 5610: Restaurants and mobile food service activities, 5621: Event catering, 5629: Other food service activities, 5630: Beverage serving activities, 5811: Book publishing, 5812: Publishing of directories and mailing lists, 5813: Publishing of newspapers, journals and periodicals, 5819: Other publishing activities, 5820: Software publishing, 5911: Motion picture, video and television programme production activities, 5912: Motion picture, video and television programme post-production activities, 5913: Motion picture, video and television programme distribution activities, 5914: Motion picture projection activities, 5920: Sound recording and music publishing activities, 6010: Radio broadcasting, 6020: Television programming and broadcasting activities, 6110: Wired telecommunications activities, 6120: Wireless telecommunications activities, 6130: Satellite telecommunications activities, 6190: Other telecommunications activities, 6201: Computer programming activities, 6202: Computer consultancy and computer facilities management activities, 6209: Other information technology and computer service activities, 6311: Data processing, hosting and related activities, 6312: Web portals, 6391: News agency activities, 6399: Other information service activities n.e.c., 6411: Central banking, 6419: Other monetary intermediation, 6420: Activities of holding companies, 6430: Trusts, funds and similar financial entities, 6491: Financial leasing, 6492: Other credit granting, 6499: Other financial service activities, except insurance and pension funding activities, n.e.c., 6511: Life insurance, 6512: Non-life insurance, 6520: Reinsurance, 6530: Pension funding, 6611: Administration of financial markets, 6612: Security and commodity contracts brokerage, 6619: Other activities auxiliary to financial service activities, 6621: Risk and damage evaluation, 6622: Activities of insurance agents and brokers, 6629: Other activities auxiliary to insurance and pension funding, 6630: Fund management activities, 6810: Real estate activities with own or leased property, 6820: Real estate activities on a fee or contract basis, 6910: Legal activities, 6920: Accounting, bookkeeping and auditing activities; tax consultancy, 7010: Activities of head offices, 7020: Management consultancy activities, 7110: Architectural and engineering activities and related technical consultancy, 7120: Technical testing and analysis, 7210: Research and experimental development on natural sciences and engineering, 7220: Research and experimental development on social sciences and humanities, 7310: Advertising, 7320: Market research and public opinion polling, 7410: Specialized design activities, 7420: Photographic activities, 7490: Other professional, scientific and technical activities n.e.c., 7500: Veterinary activities, 7710: Renting and leasing of motor vehicles, 7721: Renting and leasing of recreational and sports goods, 7722: Renting of video tapes and disks, 7729: Renting and leasing of other personal and household goods, 7730: Renting and leasing of other machinery, equipment and tangible goods, 7740: Leasing of intellectual property and similar products, except copyrighted works, 7810: Activities of employment placement agencies, 7820: Temporary employment agency activities, 7830: Other human resources provision, 7911: Travel agency activities, 7912: Tour operator activities, 7990: Other reservation service and related activities, 8010: Private security activities, 8020: Security systems service activities, 8030: Investigation activities, 8110: Combined facilities support activities, 8121: General cleaning of buildings, 8129: Other building and industrial cleaning activities, 8130: Landscape care and maintenance service activities, 8211: Combined office administrative service activities, 8219: Photocopying, document preparation and other specialized office support activities, 8220: Activities of call centres, 8230: Organization of conventions and trade shows, 8291: Activities of collection agencies and credit bureaus, 8292: Packaging activities, 8299: Other business support service activities n.e.c., 8411: General public administration activities, 8412: Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security, 8413: Regulation of and contribution to more efficient operation of businesses, 8421: Foreign affairs, 8422: Defence activities, 8423: Public order and safety activities, 8430: Compulsory social security activities, 8510: Pre-primary and primary education, 8521: General secondary education, 8522: Technical and vocational secondary education, 8530: Higher education, 8541: Sports and recreation education, 8542: Cultural education, 8549: Other education n.e.c., 8550: Educational support activities, 8610: Hospital activities, 8620: Medical and dental practice activities, 8690: Other human health activities, 8710: Residential nursing care facilities, 8720: Residential care activities for mental retardation, mental health and substance abuse, 8730: Residential care activities for the elderly and disabled, 8790: Other residential care activities, 8810: Social work activities without accommodation for the elderly and disabled, 8890: Other social work activities without accommodation, 9000: Creative, arts and entertainment activities, 9101: Library and archives activities, 9102: Museums activities and operation of historical sites and buildings, 9103: Botanical and zoological gardens and nature reserves activities, 9200: Gambling and betting activities, 9311: Operation of sports facilities, 9312: Activities of sports clubs, 9319: Other sports activities, 9321: Activities of amusement parks and theme parks, 9329: Other amusement and recreation activities n.e.c., 9411: Activities of business and employers membership organizations, 9412: Activities of professional membership organizations, 9420: Activities of trade unions, 9491: Activities of religious organizations, 9492: Activities of political organizations, 9499: Activities of other membership organizations n.e.c., 9511: Repair of computers and peripheral equipment, 9512: Repair of communication equipment, 9521: Repair of consumer electronics, 9522: Repair of household appliances and home and garden equipment, 9523: Repair of footwear and leather goods, 9524: Repair of furniture and home furnishings, 9529: Repair of other personal and household goods, 9601: Washing and (dry-) cleaning of textile and fur products, 9602: Hairdressing and other beauty treatment, 9603: Funeral and related activities, 9609: Other personal service activities n.e.c., 9700: Activities of households as employers of domestic personnel, 9810: Undifferentiated goods-producing activities of private households for own use, 9820: Undifferentiated service-producing activities of private households for own use, 9900: Activities of extraterritorial organizations and bodies

[20] hh_g01: G01. Over the past one week (7 days), did you or others in your household consume any ...?

Categories: 101: Maize ufa mgaiwa (normal flour), 102: Maize ufa refined (fine flour), 103: Maize ufa madeya (bran flour), 104: Maize grain (not as ufa), 105: Green Maize, 106: Rice, 107: Finger millet (mawere), 108: Sorghum (mapira), 109: Pearl millet (mchewere), 110: Wheat flour, 111: Bread, 112: Buns, scones, 113: Biscuits, 114: Spaghetti, macaroni, pasta, 115: Breakfast cereals, 116: Infant feeding cereals, 701: Fresh milk, 702: Powdered milk, 703: Margarine - Blue band, 704: Butter, 117: Other (specify)

[21] highestClass: What is the highest class %rostertitle% completed?
Categories: 0:None, 1:KG, 2:N1, 3:N2, 4:N3, 11:P1, 12:P2, 13:P3, 14:P4, 15:P5, 16:P6, 21:JS1, 22:JS2, 23:JS3, 24:SS1, 25:SS2, 26:SS3, 27:Lower 6, 28:Upper 6, 31:Teacher training, 321:Secondary Vocational/Technical/COMMERCIAL, 322:Tertiary Vocational/Technical/COMMERCIAL, 33:Modern school, 34:NCE, 41:Poly/prof, 42:1st degree, 43:Higher degree, 511:ISLAMIYYA, 512:TSANGAYA, 513:QURANIC, 52:Integrated Quaranic, 61:Adult Education

[22] levelAttending: During current school year, what level/class is %rostertitle% attending?
Categories: 1:KG, 2:N1, 3:N2, 4:N3, 11:P1, 12:P2, 13:P3, 14:P4, 15:P5, 16:P6, 21:JS1, 22:JS2, 23:JS3, 24:SS1, 25:SS2, 26:SS3, 31:Teacher training, 321:Secondary Vocational/Technical/COMMERCIAL, 322:TertiaryVocational/Technical/COMMERCIAL, 33:Modern school, 34:NCE, 41:Poly/prof, 42:1st degree, 43:Higher degree, 511:ISLAMIYYA, 512:TSANGAYA, 513:QURANIC, 52:Integrated Quaranic, 61:Adult Education

APPENDIX D — VARIABLES

[1] selectedMemCode:

//Find a member listMemRoster.Where(s=> // male, with answered name and age in the range IsAnswered(s.nameMem) && s.ageMem.InRange(5, 15) && s.sexMem==1) // order by age .OrderBy(x=>x.ageMem) // within the ordered array by age, order by .ThenBy(x=>x.nameMem) // retrive a code of first person from the list .First().@rowcode

[2] namesOldestM:

// Join names to a string string.Join('', '', // male members RosterList.Where(x=>x.sexM==1) //sort by decedency of age and select their rowcodes .OrderByDescending(x=>x.ageM).Select(x=>x.@rowcode) // take first 3 .Take(3) // from the list of listPeople .Select(y=> listPeople // find a name of person with selected @rowcode .FirstOrDefault(z=>z.Value==y).Text))

[3] codeOMF2:

// among members who match criterias qa_roster.Where(x=>x.qa02==2 && x.qa04 == 2) // order by age, starting from the bigger number .OrderByDescending(x=>x.qa03) // select first object .First() // select the code of the person .@rowcode

[4] rnd:

//return the largest integer that is less than or equal to the decimal number (long)Math.Floor(// generate random number between 0 and 1 Quest.IRnd() // miltiplied by amound of people >= 15 *numEligible.Value)

[5] r1:

// selecting all codes from the list list.Select(x=>(long)x.Value) // order codes .OrderBy(x=> // in randomly generated order new Random(// specification of the way of generation pseudo random number (int)((1000*(x+1)*(1+Quest.IRnd()))%1000)) // retrieving the number .Next()) // select the first code from the ordered array .FirstOrDefault()

[6] r2:

// selecting all codes from the list list.Select(x=>(long?)x.Value) //exclude already selected r1 .Except(new []{r1}) // order codes .OrderBy(x=> // in randomly generated order new Random(// specification of the way of generation pseudo random number (int)((2000*(x+1)*(2+Quest.IRnd()))%2000)) // retrieving the number .Next()) // select the first code from the ordered array .FirstOrDefault() // if empty take -9999 ?? -9999

[7] r3:

// selecting all codes from the list list.Select(x=>(long?)x.Value) //exclude already selected r1 .Except(new []{r1, r2}) // order codes .OrderBy(x=> // in randomly generated order new Random(// specification of the way of generation pseudo random number (int)((1500*(x+1)*(2+Quest.IRnd()))%900)) // retrieving the number .Next()) // select the first code from the ordered array .FirstOrDefault() // if empty take -9999 ?? -9999

[8] test:

// joint to the string string.Join('', '', // selecting all codes from the roster with age >10 membersR.Where(x=> (x.age_r??0) > 10) // select their rowcodes .Select(x=>x.@rowcode) // order codes .OrderBy(x=> // in randomly generated order new Random(// specification of the way of generation pseudo random number (int)((1000*(x+1)*(1+Quest.IRnd()))%1000)) // retrieving the number .Next()) //take 2 first .Take(2) // select from the list question .Select(x=> // member with selected code names.FirstOrDefault(y=>y.Value == x) //show the name .Text))

[9] randomPr1:

// from the array new[] {0.33, 0.66, 1} // select an element in posion [new Random(// specification of the way of generation pseudo random number (int)Math.Floor((100*Quest.IRnd())%100)) // retrieving the number .Next(0,3)] // multiply the selected % by selected price *tier

[10] randomPr3:

// from the array new[] {0.33, 0.66, 1} // select an element in posion .OrderBy(x=> // in randomly generated order new Random(// specification of the way of generation pseudo random number (int)((1000*(x+1)*(1+Quest.IRnd()))%1000)) // retrieving the number .Next()) // select the first code from the ordered array .FirstOrDefault() // multiply the selected % by selected price *tier

[11] minAmount:

irrigField == 1? /*Use refYield lookup table, with key which is equal to lcurrent cropRoster @rowcode, select the value for irrigField mulitiply by 0.9 (-10%) if no Value take 0*/ Math.Round(refYield[@rowcode].irrigated * 0.9??0, 2) : irrigField == 2 ? Math.Round(refYield[@rowcode].dry * 0.9??0, 2) : 0

APPENDIX E — CATEGORIES FILTERS

[1] isic_division: Division - Subcategory Level 1

/* Use lookup table "isictable" to only show divison codes that are appliable to the chosen section code in the previous question Search for values from the table named: isictable, where the value in the column lableled sectioncode matches t he code selected in question isic_section*/ isictable.Values.Any(x=>x.sectioncode==isic_section /*And where values from the column divisioncode matches values in this question as optioncodes; thus showing only division codes that are appliable to the section code chosen*/ && x.divisioncode==@optioncode)

[2] isic_group: Group - Subcategory Level 2

/* Use lookup table "isictable" to only show group codes that are appliable to the chosen division code in the previosu question */ //Search for values from the table named:isictable (meanwhile tranforming the data types to decimal?), where the value in the column lableled divisioncode matches the code selected in question isic_division isictable.Values.Any(x=>x.divisioncode==isic_division //And where values from the column groupcode matches values in this question as optioncodes; thus showing only group codes that are appliable to the division code chosen && x.groupcode==@optioncode)

[3] isic_class: Class - Subcategory Level 3

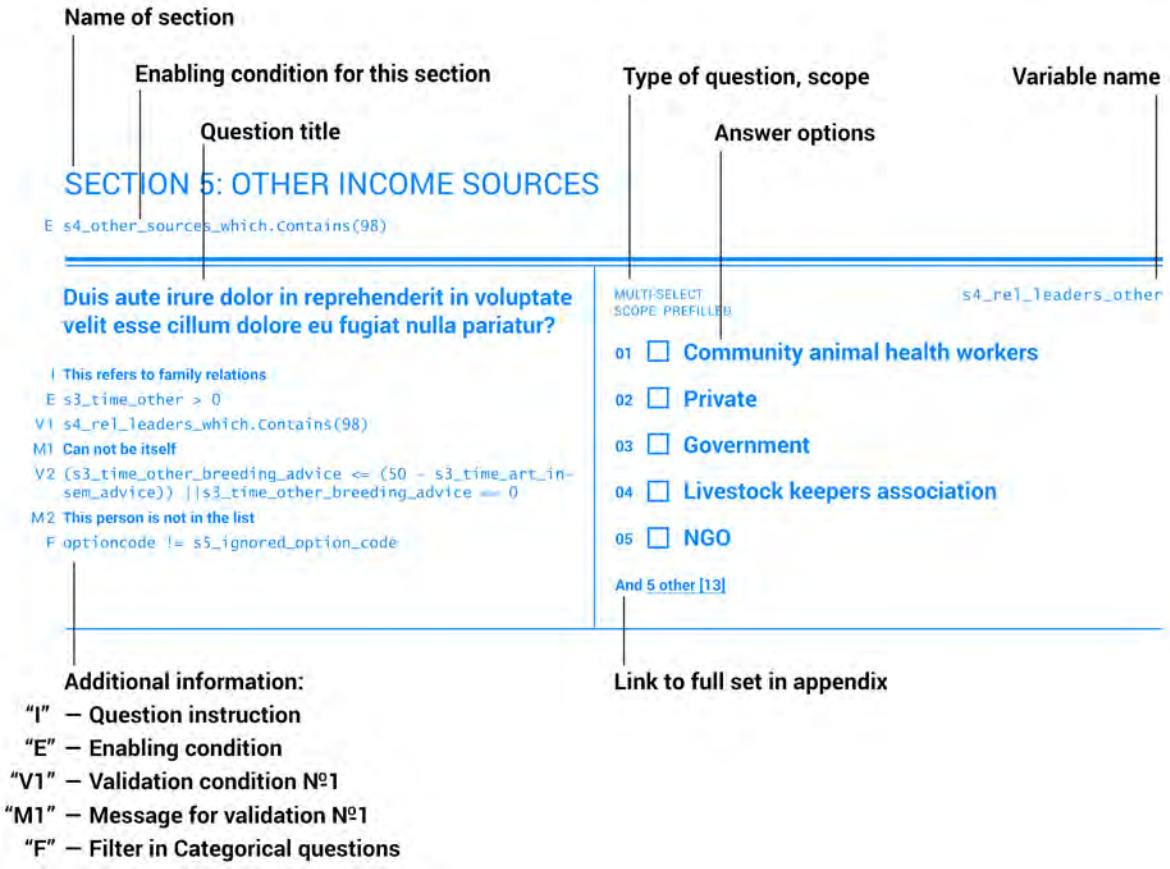
/* Use lookup table "isictable" to only show class codes that are appliable to the chosen group code in the previosu question */ //Search for values from the table named:isictable (meanwhile tranforming the data types to decimal?), where the value in the column lableled groupcode matches the code selected in question isic_class isictable.Values.Any(x=>x.groupcode==isic_group //And where values from the column classcode matches values in this question as optioncodes; thus showing only class codes that are appliable to the group code chosen && x.classcode==@optioncode)

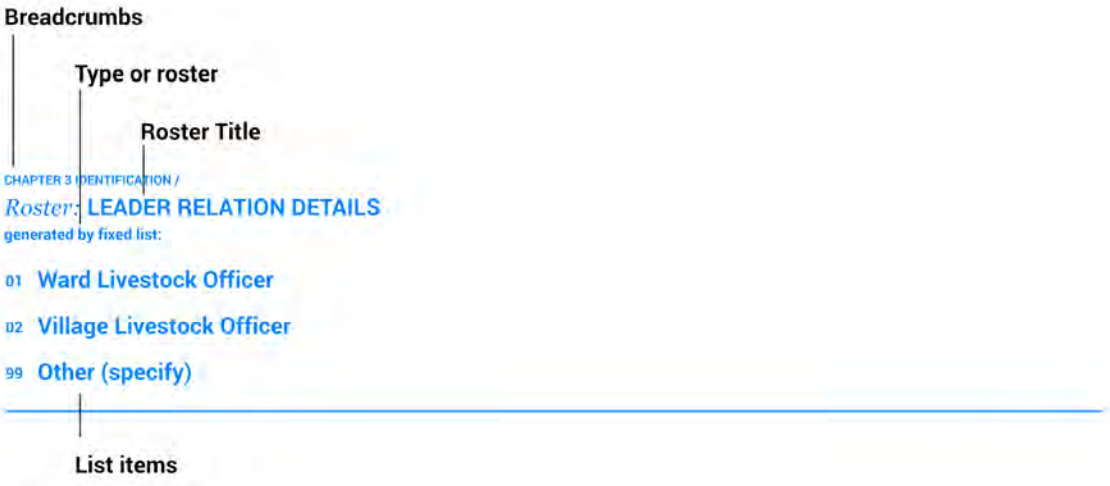
[4] unit: Unit

//1 st approach /* Use lookap, table Units, check if values collection has a comination , where unitcode == to current code and food item code is equaal to current roster code, show an unit*/ /*units.Values.Any(x=>x.unit_code == @optioncode && x.food_item == @rowcode)*/ // 2nd approach /*Use lookap table units, check if keys collection has a key corresponding to the value of the combination, show the value*/ units.Keys.Contains(1000*@rowcode+ @optioncode)

LEGEND

Legend and structure of information in this file





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Instrumente Structurale 2014-2020

Survey Solutions

Workshop - methods and tools for transforming questionnaires in intelligent statistical e-questionnaires - level very advanced

11 - 15 October 2021 - Online, Bucharest, Romania

Programul **Operaţional** Capacitate **Administrativă** 2014-2020
CONRENA – **„**Consolidarea Sistemului Statistic Naţional şi modernizare a proceselor de producţie statistică pentru efectuarea recensămintelor naţionale”
Beneficiar: Lider de parteneriat: Institutul Național de Statistică
Cod SIPOCA 598/ Cod MySMIS 127577/ Nr. contract finanțare 430/17.09.2019

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Workshop Agenda

Day 1 - New features in the most recent versions of Survey Solutions

Day 2 - LFS questionnaire and its representation in CAWI

Day 3 - EU SILC and its representation on CAPI

Day 4 - ICT questionnaire and its representation in CAWI

Day 5 - Round up based on previous days topics

Daily Agenda

Time	Activities
08.30 – 09.15	Validation of participants and other technical issues (1)
09.15 – 09.30	Break
09.30 – 10.15	Validation of participants and other technical issues (2) / Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	**Topics**
11.15 – 11.30	Break
11.30 – 12.15	**Topics**
12.15 – 14.00	Break
14.00– 14.45	**Topics**
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 1 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 1 (2)

Day 1

Time	Activities
08.30 – 09.15	Validation of participants and other technical issues (1)
09.15 – 09.30	Break
09.30 – 10.15	Validation of participants and other technical issues (2)
10.15 – 10.30	Break
10.30 – 11.15	New features in the most recent versions of Survey Solutions: - Separation of different data collection operations in different workspaces
11.15 – 11.30	Break
11.30 – 12.15	New features in the most recent versions of Survey Solutions: - CAPI/CAWI Switch
12.15 – 14.00	Break
14.00– 14.45	New features in the most recent versions of Survey Solutions, like: - Dynamic filters - Calendar events
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 1 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 1 (2)

Day 2

Time	Activities
08.30 – 09.15	Validation of participants
09.15 – 09.30	Break
09.30 – 10.15	Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	LFS questionnaire and its representation in CAWI: - Particular aspects of CAWI - Design & validation questions
11.15 – 11.30	Break
11.30 – 12.15	LFS questionnaire and its representation in CAWI: - Particular aspects of CAWI - Design & validation questions
12.15 – 14.00	Break
14.00– 14.45	LFS questionnaire and its representation in CAWI: - Particular aspects of CAWI - Design & validation questions
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 2 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 2 (2)

Day 3

Time	Activities
08.30 – 09.15	Validation of participants and other technical issues
09.15 – 09.30	Break
09.30 – 10.15	Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	EU SILC and its representation on CAPI: - Better design for questionnaire optimization - Balancing of complexity & quality
11.15 – 11.30	Break
11.30 – 12.15	EU SILC and its representation on CAPI: - Better design for questionnaire optimization - Balancing of complexity & quality
12.15 – 14.00	Break
14.00– 14.45	EU SILC and its representation on CAPI: - Better design for questionnaire optimization - Balancing of complexity & quality
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 3 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 3 (2)

Day 4

Time	Activities
08.30 – 09.15	Validation of participants and other technical issues
09.15 – 09.30	Break
09.30 – 10.15	Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	ICT questionnaire and its representation in CAWI - Particular aspects of CAWI - Design & validation questions
11.15 – 11.30	Break
11.30 – 12.15	ICT questionnaire and its representation in CAWI - Particular aspects of CAWI - Design & validation questions
12.15 – 14.00	Break
14.00– 14.45	ICT questionnaire and its representation in CAWI - Particular aspects of CAWI - Design & validation questions
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 4 (1)
15.45 – 16.00	Break
16.00 - 16.30	Questions and answers Day 4 (2)

Day 5

Time	Activities
08.30 – 09.15	Validation of participants and other technical issues
09.15 – 09.30	Break
09.30 – 10.15	Technical issues and individual exercises
10.15 – 10.30	Break
10.30 – 11.15	Round up based on previous days topics (1)
11.15 – 11.30	Break
11.30 – 12.15	Round up based on previous days topics (2)
12.15 – 14.00	Break
14.00– 14.45	Questions and answers Day 5 (1)
14.45 – 15.00	Break
15.00 – 15.45	Questions and answers Day 5 (2)
15.45 – 16.00	Break
16.00 - 16.30	Conclusions

Day 1

New features in the most recent versions of Survey Solutions:

- Separation of different data collection operations in different workspaces,
  Survey Solutions 21.01, 22.Jan.2021
- CAPI/CAWI Switch
  Survey Solutions 21.05, 11.May.2021
- Dynamic filters
  Survey Solutions 21.05, 11.May.2021
- Exposed variables
  Survey Solutions 21.05, 11.May.2021
- Calendar events
  Survey Solutions 20.12, 14.Dec.2020

Survey Solutions - Components and Roles

SuSo components

- ✓ Designer - https://designer.mysurvey.solutions/
- ✓ Tester – Survey Solutions Tester App on Android
- ✓ SuSo Data Server - https://demo.mysurvey.solutions/ (doc_link) or your SuSo server

Roles in SuSo Data Server

- ✓ Administrator - manages the server, creates workspaces, user accounts.
- ✓ Headquarter – import questionnaires, starts/stops surveys, creates assignments, conducts top-level quality review of interviews, exports data
- ✓ Supervisor - manages teams if interviewers, distributes work between interviewers, quality check of interviews
- ✓ Interviewer - conducts interviews
- ✓ Observer - observes operations on the server, as a role of headquarter or supervisor
- ✓ API user - user account for user-written extensions accessing the server

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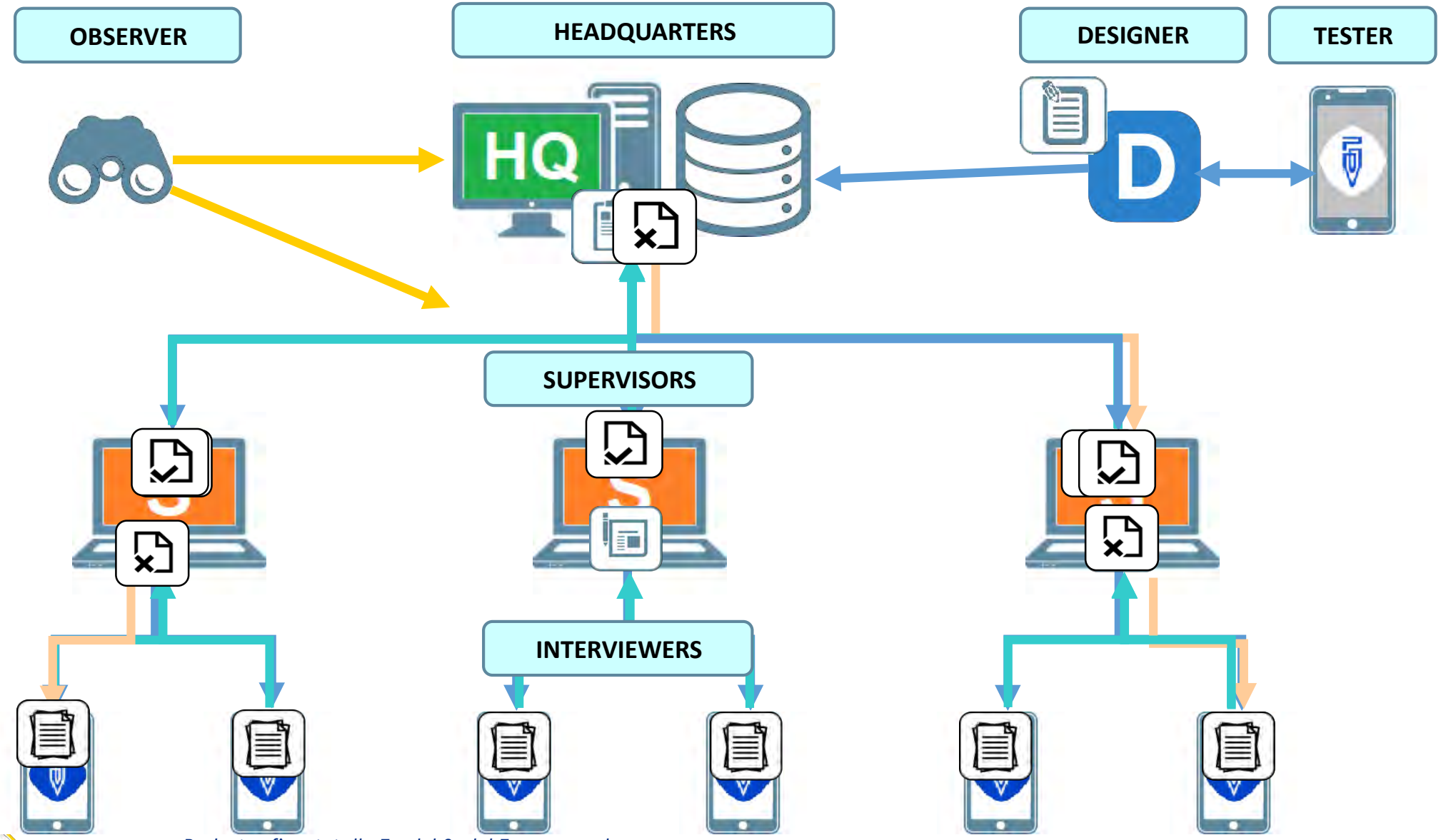
Survey Solutions Flow



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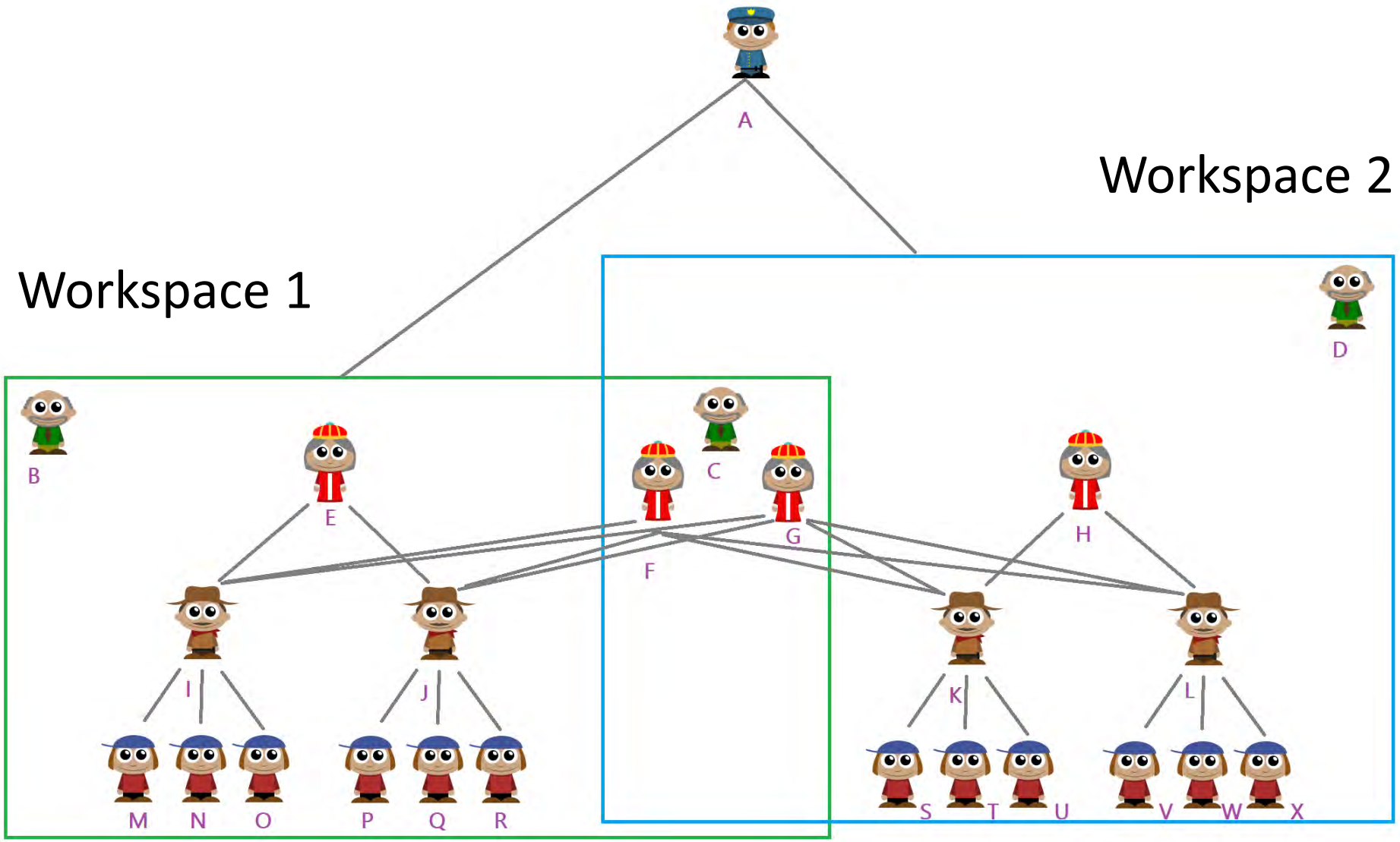
LIVE DEMO: Survey teams

Divide the participants in roles:

- Headquarters (4)
- Supervisors (4)
- Observers (3)
- Interviewers (4..n)

SuSo Server: https://alexcipro-demo.mysurvey.solutions/

Workspaces


A
Workspace 2
Workspace 1
D
B
E
C
G
H
F
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X


Administrator
Observer
Headquarters user
Supervisor
Interviewer

Workspaces - 1

Workspaces allow partitioning of a single server into multiple compartments that have limited impact on each other.

The following are the rules guiding the use and functioning of the workspaces:

1. An administrator has access to all workspaces.

2. A user with an HQ and observer accounts may belong to one, some, or all workspaces, as designated by the administrator.

3. ~~Each interviewer and supervisor account may log in to a single workspace.~~

4. User names are unique across all workspaces.

Workspaces - 2

The following are the rules guiding the use and functioning of the workspaces:

5. Questionnaires are imported into workspaces. Same questionnaire may be imported into different workspaces if necessary and their version numbering is independent.

6. Workspaces may be created, disabled, and deleted.

7. Disabling a workspace locks all activity in the workspace (stops web interviews, does not allow any user to log in). Users attempting to access a disabled workspace will receive a “Workspace Disabled” error page and must contact their survey coordinator for further instructions.

8. A workspace may be deleted only if it doesn’t have any surveys/questionnaires.

9. Deleting a workspace actually deletes (not archives) all the user accounts (interviewer/ supervisor) and all the maps that were part of that workspace.

10. Deletion of a workspace is irreversible.

11. Administrator configures each workspace settings separately (logo, global message, export password, email providers, etc).

12. The troubleshooting tools available for administrator (audit log, device logs, tablet information packages, etc) are separated by workspaces.

Workspaces - 3

The following are the rules guiding the use and functioning of the workspaces:

workspaces.

13. Users having access to multiple workspaces may switch between them using a workspace selector without the need to log in to each workspace separately.

14. Reports are built based on the content of a single workspace.

15. A special workspace named ‘primary’ is always defined and can not be disabled or deleted. Any server updated from earlier Survey Solutions versions will place all the earlier entered data (including survey data, user accounts, maps, etc) into the primary workspace.

16. An observer may observe only in the workspaces in which he is permitted by the administrator, even if impersonating users that have access to other workspaces.

17. Each workspace is assigned an identifier and a text label. The text label is shown to the users when they switch between the workspaces, while the identifier is used for forming the URLs in API calls.

Workspaces - 4

To manage workspaces, the menu item server administration (available for administrators only) now leads to the list of the workspaces defined on the server. The settings and troubleshooting tools collected in the context menu were previously relevant for the whole server, but now are attributable to a particular workspace. For each enabled workspace the following actions are provided in the workspace context menu:

- Edit,
- Settings,
- Email providers,
- Device logs,
- Audit log,
- Tablet information packages,
- Disable*
- Delete*

*) The actions to disable and delete a workspace do not apply to the primary workspace.

Disabled workspaces may only be turned back on or deleted, so their context menu is smaller:

- Enable
- Delete

Workspaces - List of users on the server

Users on the server are distinguished by the accounts and the full list of all accounts on the server is available by accessing the Server administration -> Users Management page.

The list supports filtering by workspace and role of the user, as well as narrowing down the users to a particular group:

- ‘missing workspaces’ - users not assigned to any workspace.
- ‘with disabled workspaces only’ - users that don’t have access to any enabled workspace.
- ‘locked users’ - users with an account lock placed on them.
- ‘archived users’ - users that have been archived.

A search box allows to seek the list for a user with a particular account name or a full name.

Workspaces - Important

Since the interviewer is now part of several workspaces, no workspace staff may fully block them. This means for example, that the interviewer account may no longer be locked (or unlocked) by the supervisor. Instead, the management of the accounts is a privilege of the administrator.

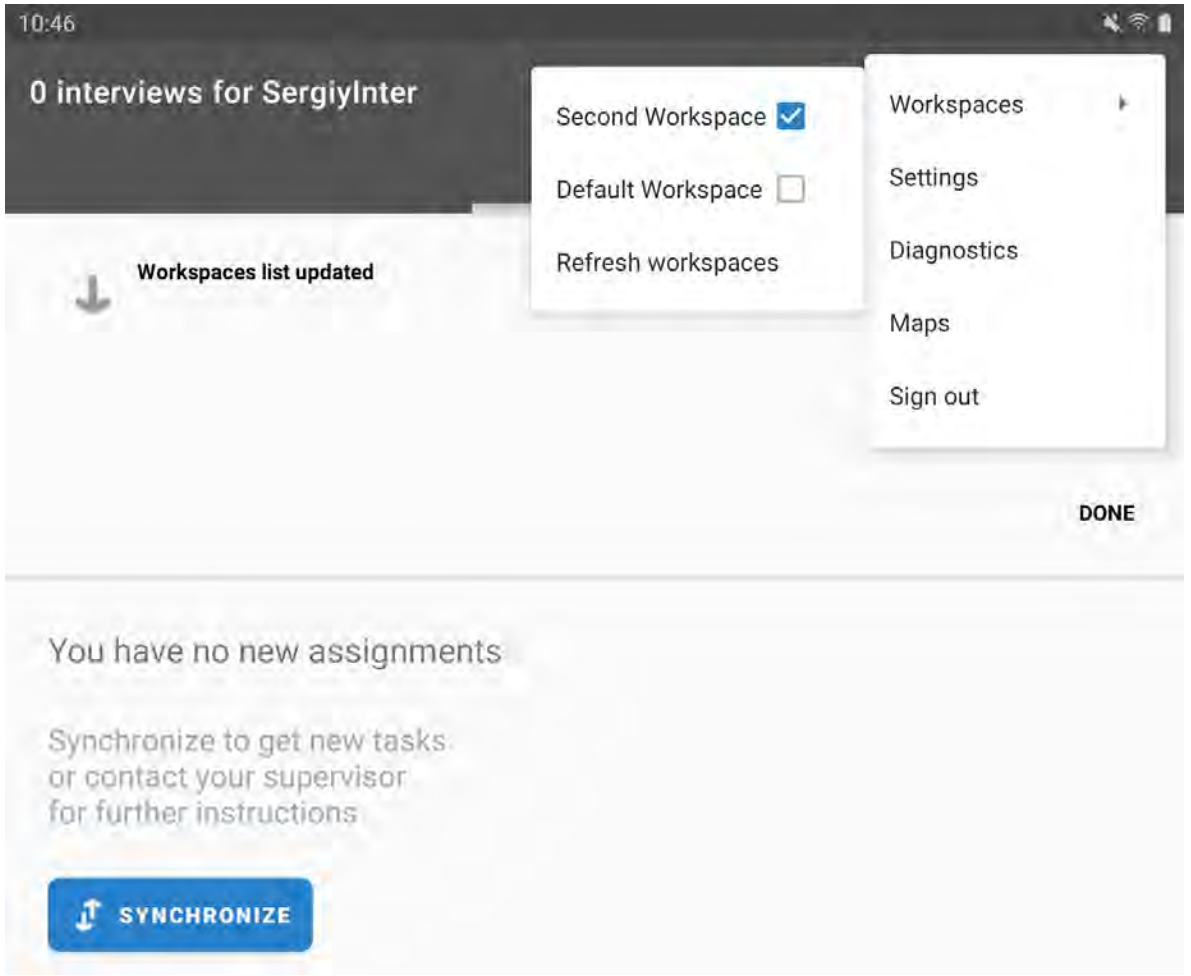
For transitioning from earlier versions, any users with locks imposed on them will remain locked, but unlocking must now be performed by the administrator.

When a workspace is deleted, the accounts that were only members of that workspace are left without any workspace, until the admin places them into some other workspace. Users that are not assigned to any active workspace can’t log in to the server or perform synchronization from tablets.

Multiple workspaces on the tablets - 1

Following the above changes, an interviewer may be part of several workspaces (on the same server). This interviewer when working on the tablet will be able to contribute to multiple surveys and also report to different supervisors (each interviewer reports to only one supervisor in each workspace).

On the tablet a new switch has been added to the main menu to facilitate the switch between the workspaces:

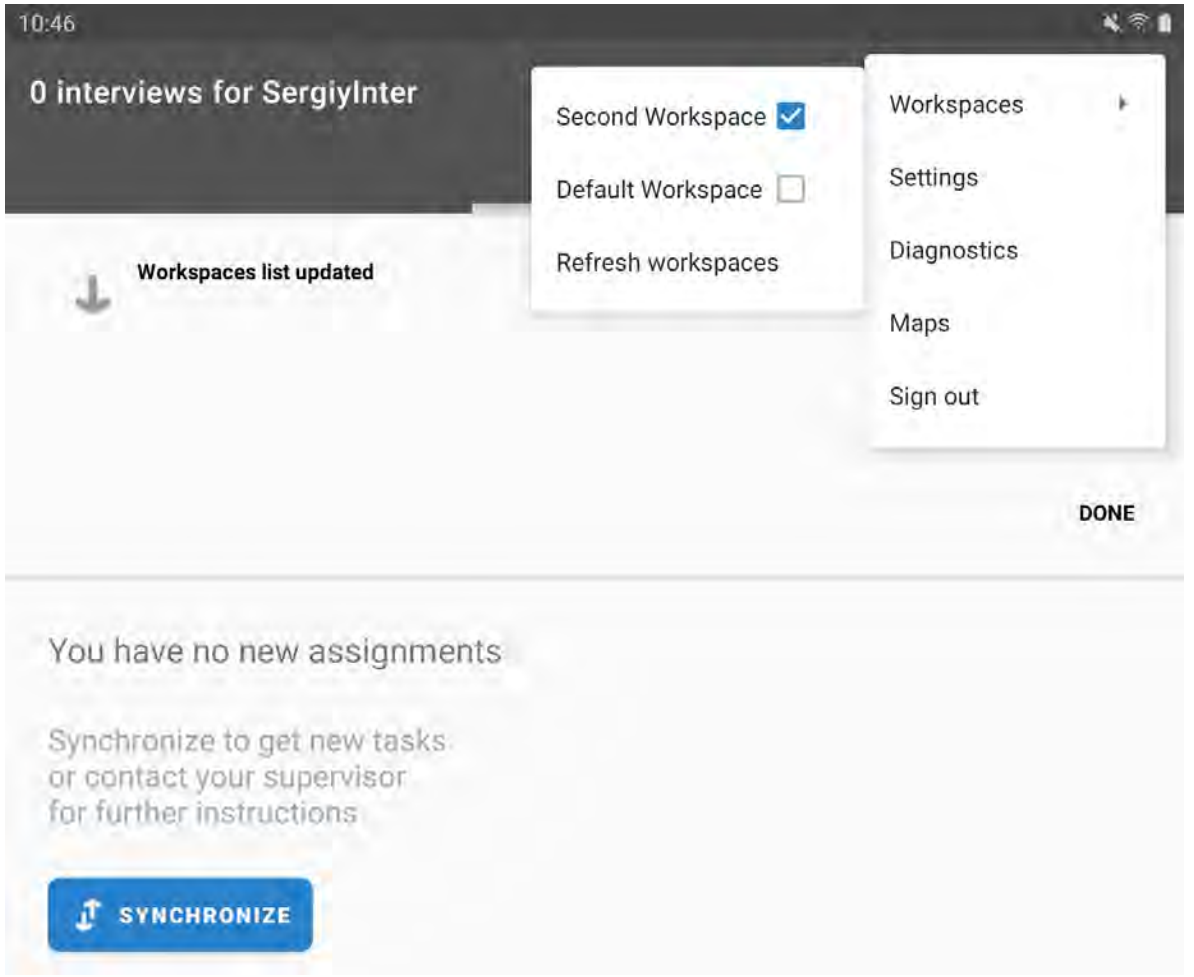


Multiple workspaces on the tablets - 2

The menu shows the list of the workspaces to which the interviewer has access. The currently active workspace is checked. The list can be actualized with the *Refresh workspaces* menu item. This is needed when the interviewer is added to a workspace after the initialization of the account on the tablet.

The synchronization in each of the workspaces is performed independently: when the interviewer synchronizes in workspace 1, this does not send out or receive any of the assignments/interviews in workspace 2. Same applies to maps, the maps within each workspace are synchronized independently.

The dashboard (the regular card view and the map view) only shows the interviews/assignments of the currently active workspace.



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LIVE DEMO: Workspaces

SuSo Server: https://alexcipro-demo.mysurvey.solutions/

Administrator role

Create multiple Workspaces

Create users

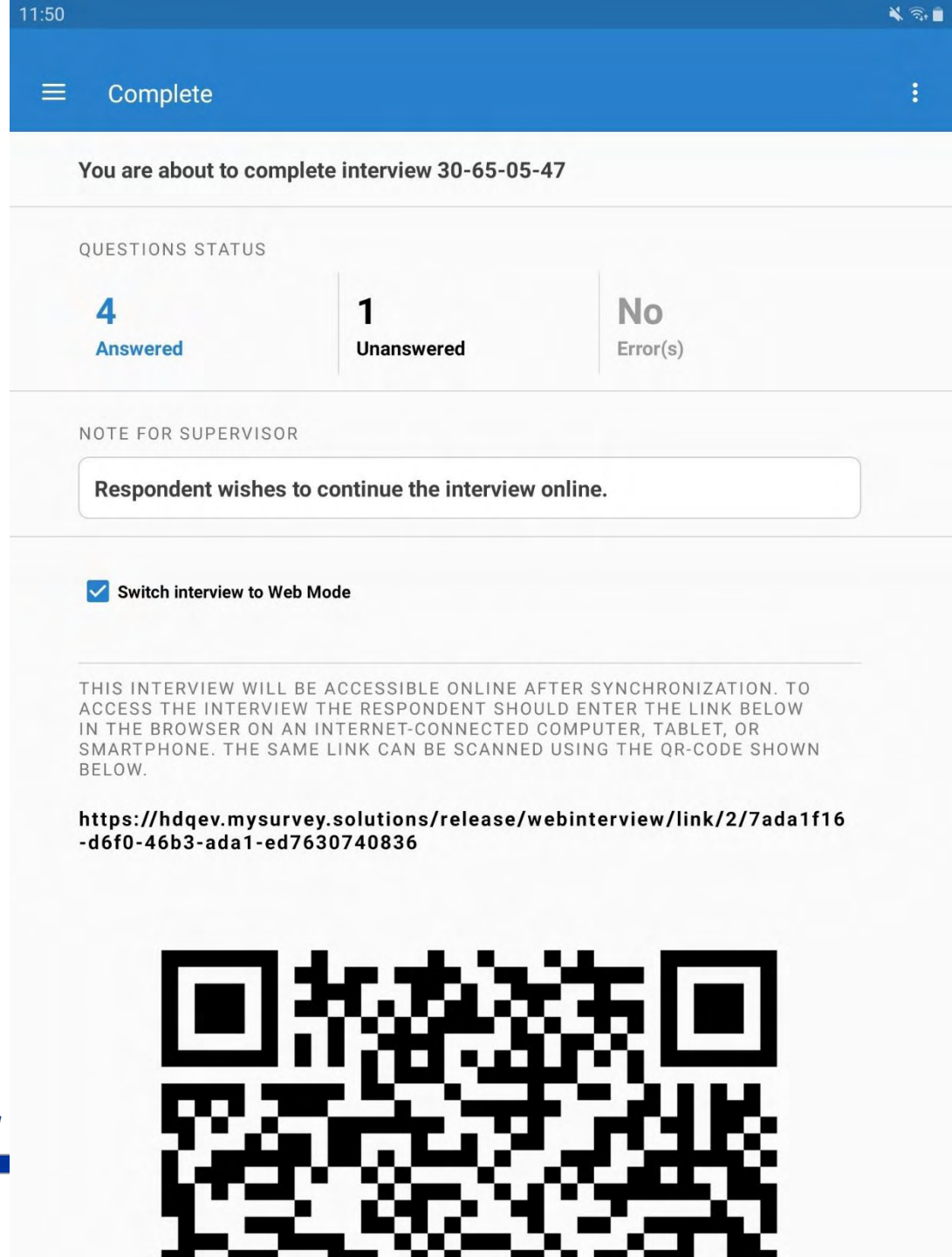
CAPI/CAWI Switch

The interviews can be switched between CAPI and CAWI modes regardless whether they originated from regular or web assignments.

Supervisory staff (supervisor, headquarters, or admin users) can see the current status (CAPI or CAWI) of each interview in the *Interview mode* column of the interviews list. The context menu provides the Switch to… item to switch to the mode opposite the current (if the current mode is CAPI then 'Switch to CAWI' and the other way around).

CAPI/CAWI Switch - 2

The switch can also be done by the interviewers on the tablets: if the interviewer encounters a respondent that wishes to finish the interview via the internet himself/herself, then the interviewer shall complete the interview with a mark that the interview is to be switched to the CAWI mode on the completion screen (*Switch interview to Web Mode*). When the interview is so marked, it will show a QR-code with the link that should be issued to the respondent. The respondent may either read the QR-code with a smartphone, or copy the accompanying textual link for use on a computer.



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CAPI/CAWI Switch - 3

Interviews completed in such a manner will not appear on the *Completed* page, but instead will appear on the new *Web interviews* page until the next synchronization. Cards corresponding to interviews switched to CAWI mode will contain an additional button *Show QR code* to display the QR-code/link to be shared with the respondent to that interview. After a successful synchronization the cards will disappear from the *Web interviews* page.

Note, that if the switch has been done on the tablet, the respondent will be able to continue the interview online after that tablet is synchronized with the server.

For the interviewers to be able to switch the interviews from CAPI to CAWI mode, the survey must have the web mode activated and the checkbox *Allow Interviewer to switch to CAWI mode must be checked*.

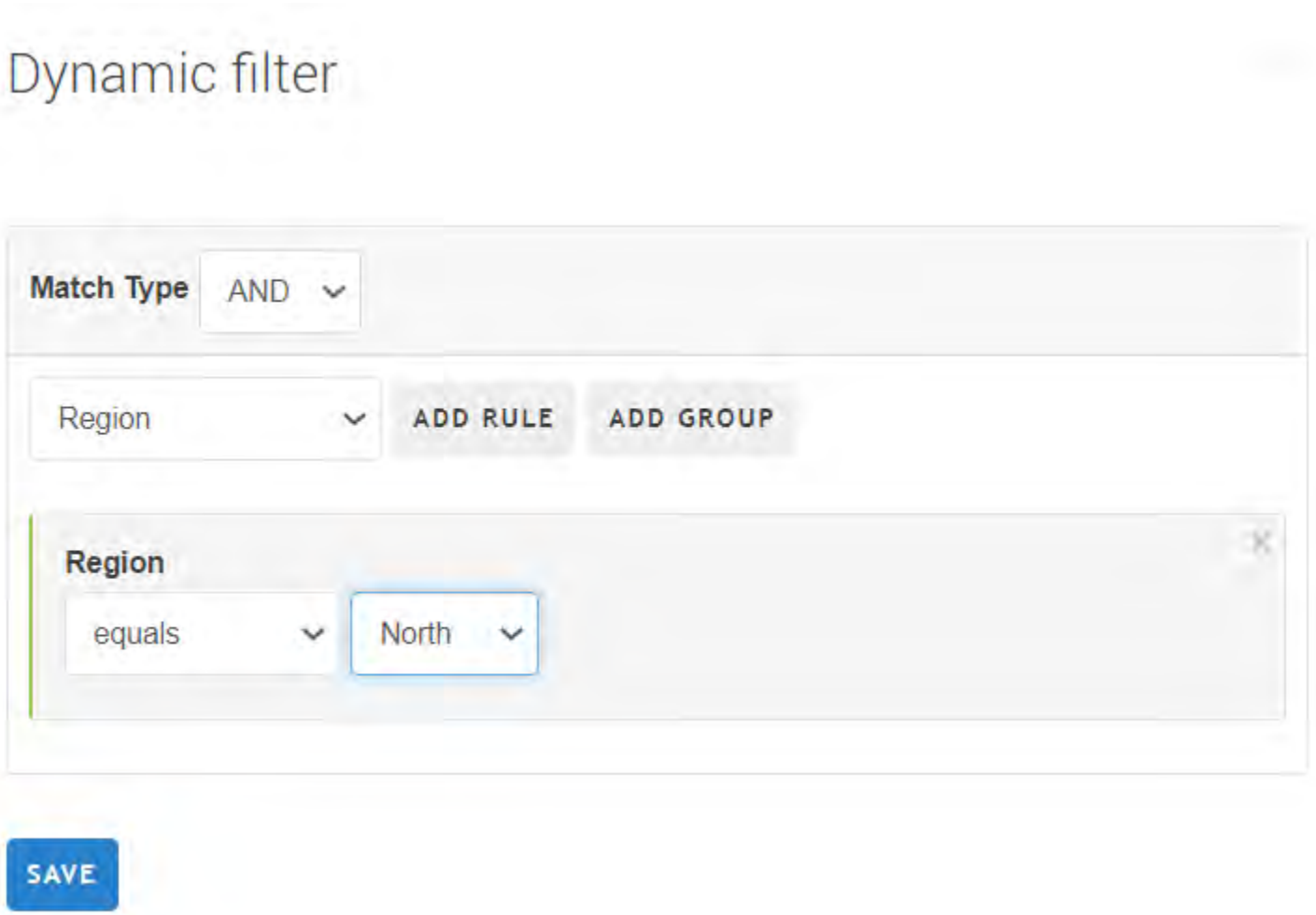
LIVE DEMO: CAPI/CAWI Switch

Install the Interviewer App and setup the server:

SuSo Data Server: https://alexcipro-demo.mysurvey.solutions/

Dynamic filters

Dynamic filters are used to filter responses in the interviews list and in the map report. The filters can be formulated based on the variables belonging to the cover page (identifying questions) and/or exposed variables.



Rules

Rules utilize comparative operators, that are logical operators for comparing the value to a constant. Which operators are available depends on the type of the question/variable:

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Dynamic filters - 2

- For categorical single-select: **equals**, **not equals**.
- For numeric: **=**, **<>**, **<**, **<=**, **>**, **>=**.
- For text: **equals**, **not equals**, **contains**, **not contains**, **starts with**, **not starts with**.
- For date:
    - **on** - event occurred specifically on that date;
    - **not on** - event didn't occur on the specified date;
    - **before** - event occurred before the specified date;
    - **not later than** - event occurred before or on the specified date;
    - **after** - event occurred after the specified date;
    - **on or after** - event occurred on or after the specified date.

For all types of questions one can apply unary logical operators **answered** and **not answered**.

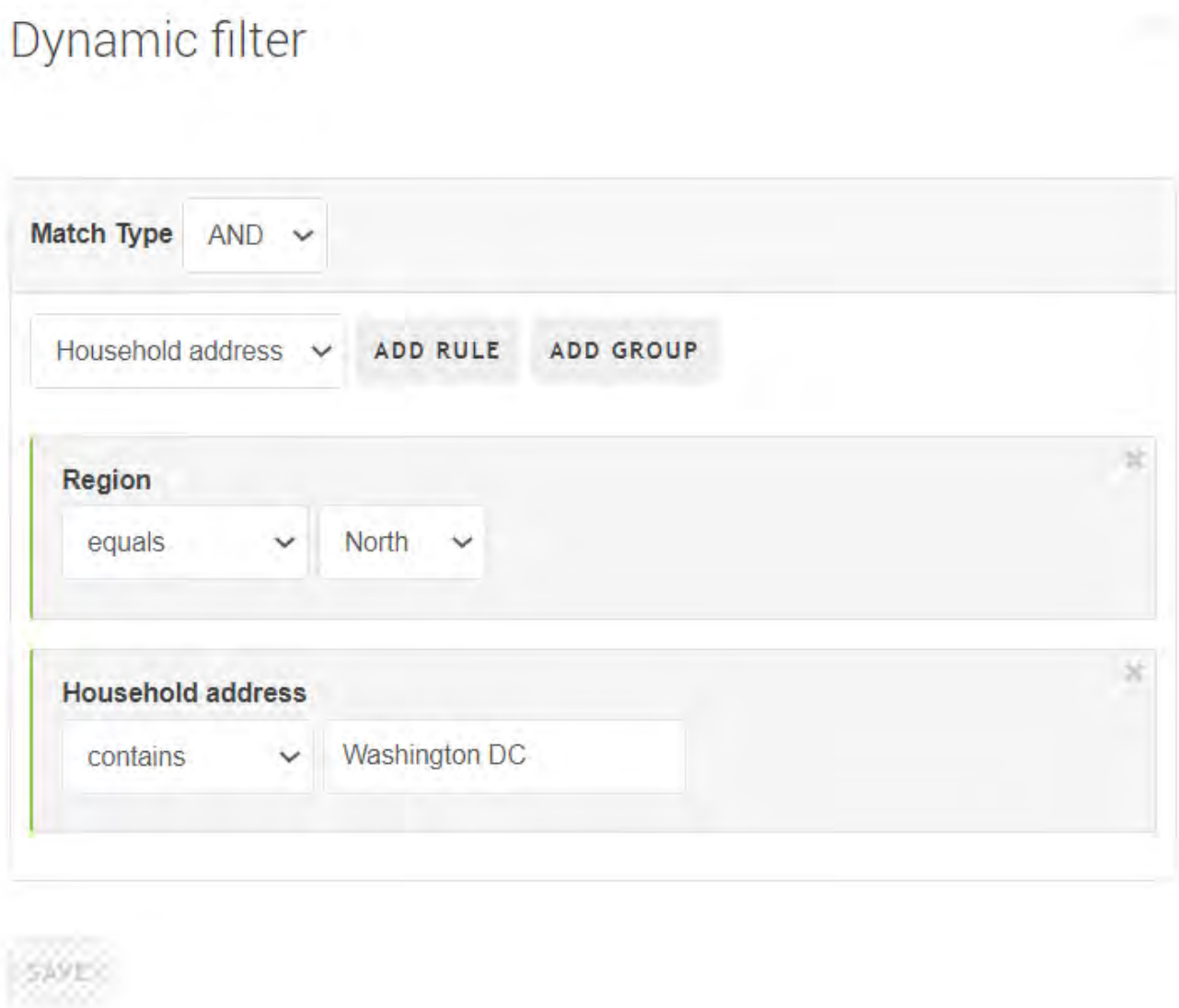
Dynamic filters - examples

Condition	Matches	Does not match
Address contains Washington DC	123 Main St, Washington DC, USA 4567 Washington St, Washington DC, USA	175 Washington Rd, Seattle WA, USA 1212 5th Ave, New York NY, USA
EmployeesCount >=100	100	99, Null
RegistrationDate on or after 2001-01-01	2001-01-01 2001-02-02	2000-12-31 1980-07-03
Region equals North	North	South East West Null
EmployeesCount Answered	....-1, 0, 1, 2, 3, ….100...1000...	Null

Dynamic filters - Match types - 1

Multiple rules or several groups, or a rule and a group may be combined (within a higher level group) with one of the logical operators:

📷 AND - observations pass the filter if they satisfy ALL of the specified criteria.

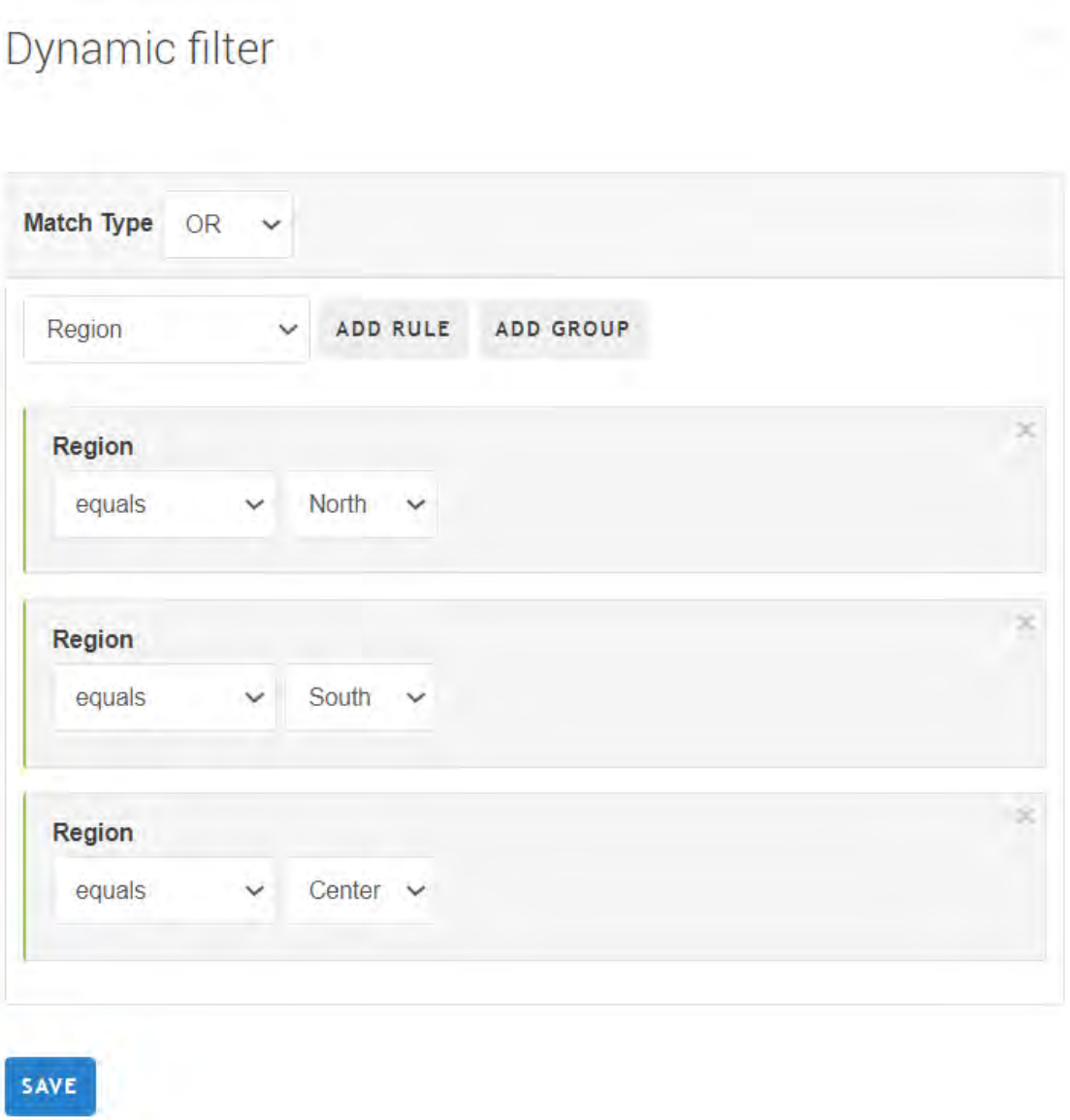


Dynamic filters - Match types - 2

Multiple rules or several groups, or a rule and a group may be combined (within a higher level group) with one of the logical operators:

📷 OR - observations pass the filter if they satisfy ANY of the specified criteria.

Any expression is contained within at least one group.



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Dynamic filters - Use of match types - 1

We are using *OR* to identify observations from one of several groups: This is commonly utilizing a single variable and equality, with different constants. For example, we might want to highlight observations from e.g. districts 1, 2, 3, 4, 5 or 6 (of 1..10). Conceptually it is *district.InList(1,2,3,4,5,6)*, which is same as:

district==1 || district==2 || district==3 || district==4 || district ==5 || district==6

which we can construct as a single *OR* group with 6 rules, each singling out a particular district from 1 to 6.

Dynamic filters - Use of match types - 2

Different variables may still be used in a group of *OR*. For example, to identify skilled employees we may come up with a criterion:

educYears>=12 OR tenure>=8

Dynamic filters - Use of match types - 3

We use *AND* to identify observations that satisfy several conditions simultaneously. For example, in an enterprise survey, we might be interested in finding all companies that are from the private sector, have more than 1 owner, more than 100 employees, located in the South. We describe such criteria as individual rules united in a group with an *AND* operator:

sector = Private AND NumOwners > 1 AND NumEmployees > 100 AND region == South.

Dynamic filters - Use of match types - 4

A single variable may also be used within the *AND* group. This is commonly used for range checks:

age >= 18 AND age <= 65

Dynamic filters - Writing complex expressions - 1

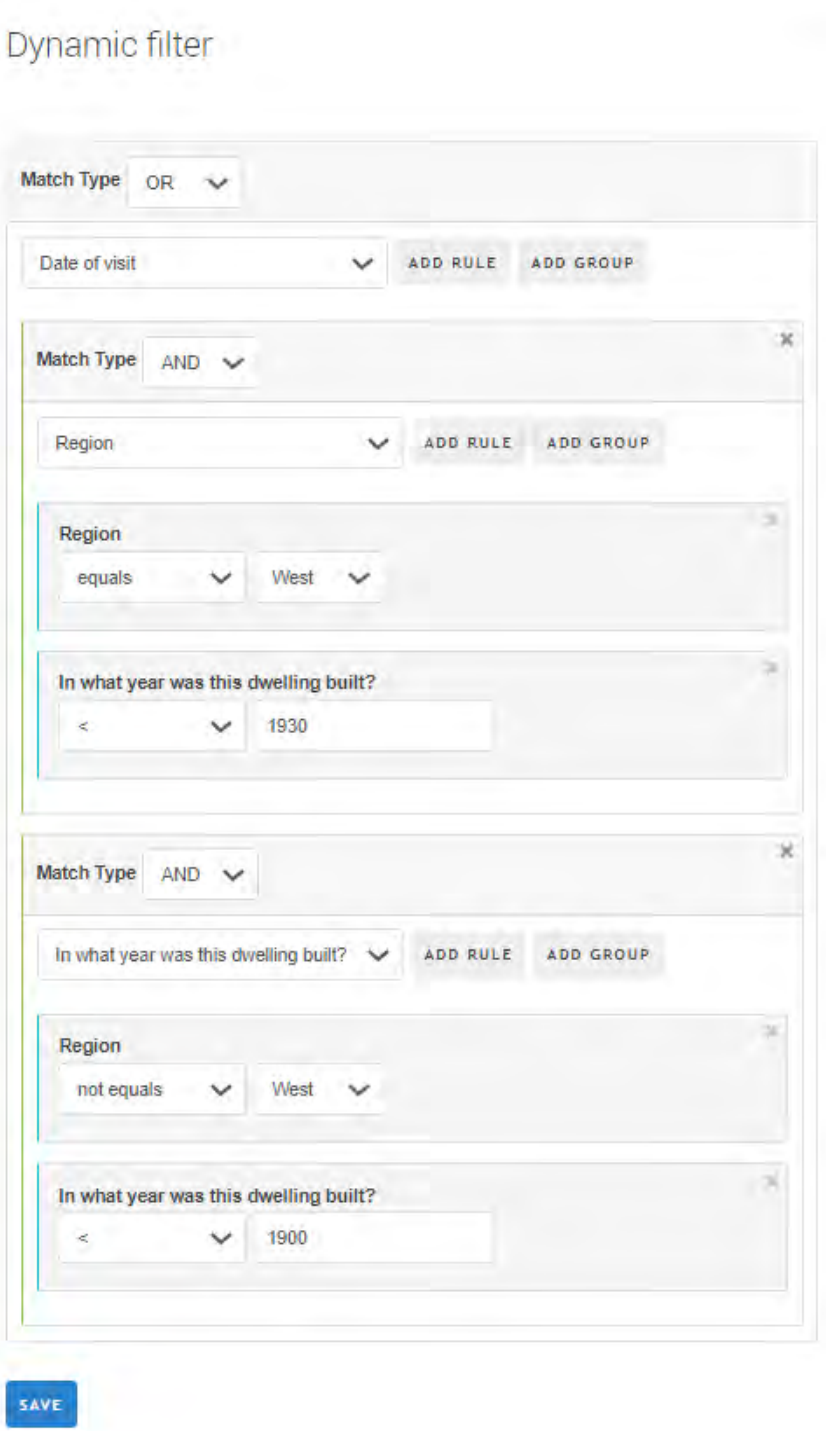
Suppose we are interested in finding interviews obtained from "*old dwellings*". And our definition of "*old dwellings*" varies by region. Specifically, in the West it is all buildings built before 1930, while in all other regions before 1900.

We construct the following dynamic filter. First we realize that our observations come from two principally different locations, they can be from West or from Not-West. So we will have a top level group with an *OR* operator. We will then describe what we want to be true about the first location: *West*. We want that observations carry the region specifically West: *Region equals West*, and at the same time the year must be earlier than 1930: *yearbuilt < 1930*. We reflect the simultaneity of these conditions by selecting the *AND* operator to unite them in a group.

Dynamic filters - Writing complex expressions - 2

Similarly we construct the conditions for selection from the Non-West:

Region not equals West AND yearbuilt < 1900.



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Dynamic filters - Writing complex expressions - 3

As we formulate more and more complex expressions involving more operators, their level of nesting goes deeper. We can see the nesting by different indentation of the cards corresponding to individual rules in the dynamic filter, and the different colors of their tabs. Tabs at the same level of nesting are getting the same color of the tab.

Different users may construct different dynamic filters. They are not affecting each other and are not saved. Yet changing the set of the exposed variables does affect all the users utilizing dynamic filters.

CONRENA

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Dynamic filters - Use with filter by questions

The dynamic filter may be utilized simultaneously with the filter by questions. In this case the observations shown are only those that satisfy both the filter by questions and the dynamic filter.

Note that this may result in incompatible choices, e.g. if the user selects *REGION=5* in the filter by questions and *REGION=7* in the dynamic filter. A single variable may not be equal 5 and 7 at the same time, so the resulting set of interviews will be empty.

Exposed variables

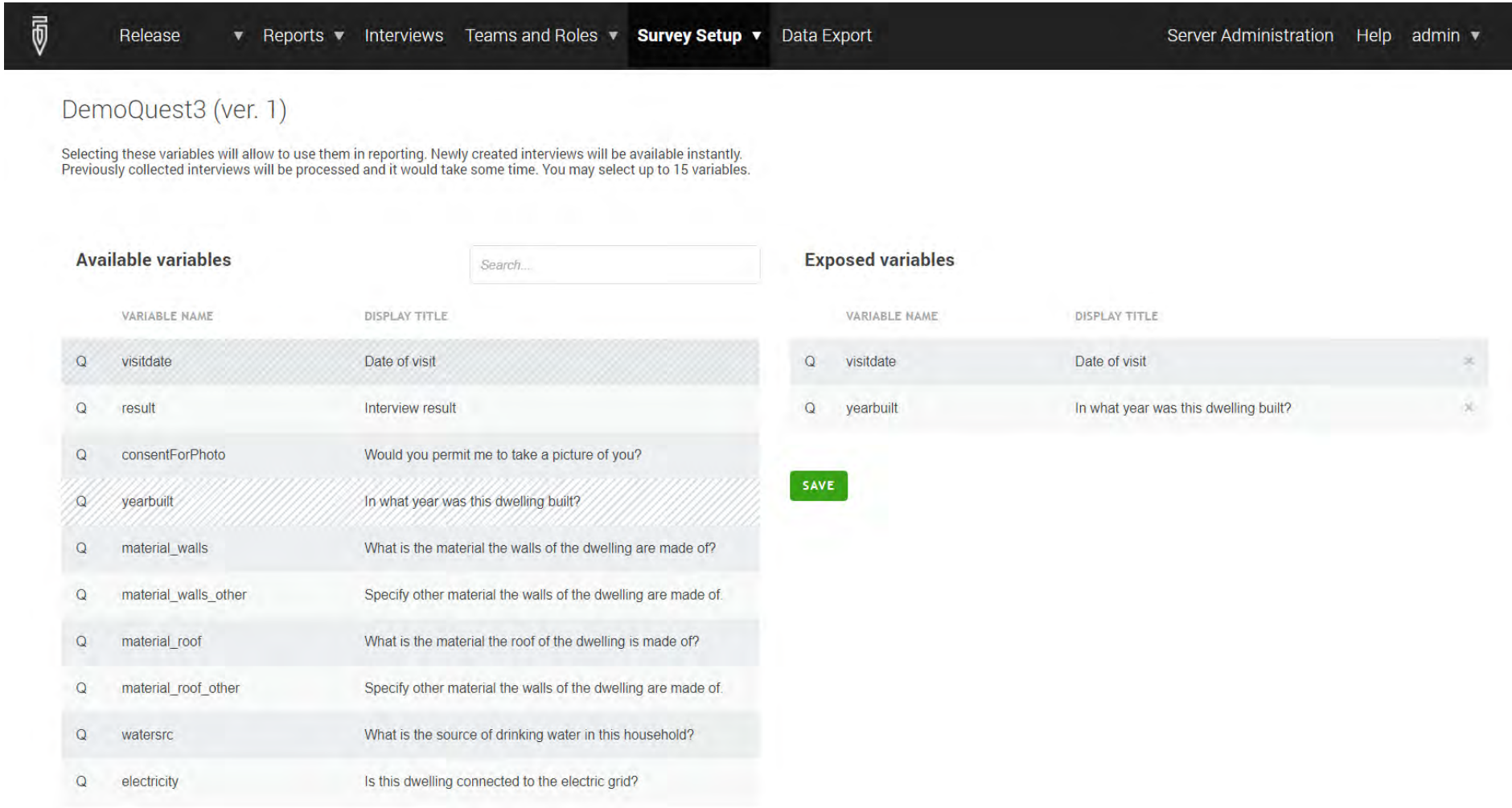
Exposed variables is a new feature in Survey Solutions Headquarters that allows using of questions and variables from interviews in dynamic filters.

Exposed variables are special variables that are made available by Survey Solutions for speedy access that can be utilized for the filtering of observations in the interviews lists and map reports.

All questions and variables from the cover page of any questionnaire are automatically considered to be exposed and no action needs to be undertaken by the user to expose them. In addition, the user may expose up to 15 questions or variables from the main level of the questionnaire (the interview level). These questions must be of the types that are acceptable for questions at the cover page.

Exposed variables - 2

To expose questions/variables the user needs to go to the list of the questionnaires at the server, open the questionnaire details, click on the link *edit* for exposed variables.



Exposed variables - 3

The user will be presented with a two panel dialog where she can click on the questions in the list of available (left panel) and they will be added to the list of exposed variables (right panel). If the question or variable were added by mistake or no longer needed, they can be removed by clicking the *X*-button next to it.

A search box at the top of the total list allows a quick filtering of the list to entries with specified sequence of characters in the variable name or question text.

Actualization of the exposed variables begins when the user clicks *SAVE* and confirms. The process may take considerable time depending on the size of the survey and server performance.

Exposed variables are a property of a survey. Changing the set of exposed variables affects all the users making use of the filters based on exposed variables. It is best to decide early, which variables will be needed for monitoring and designate them as exposed before a significant amount of data accumulates.

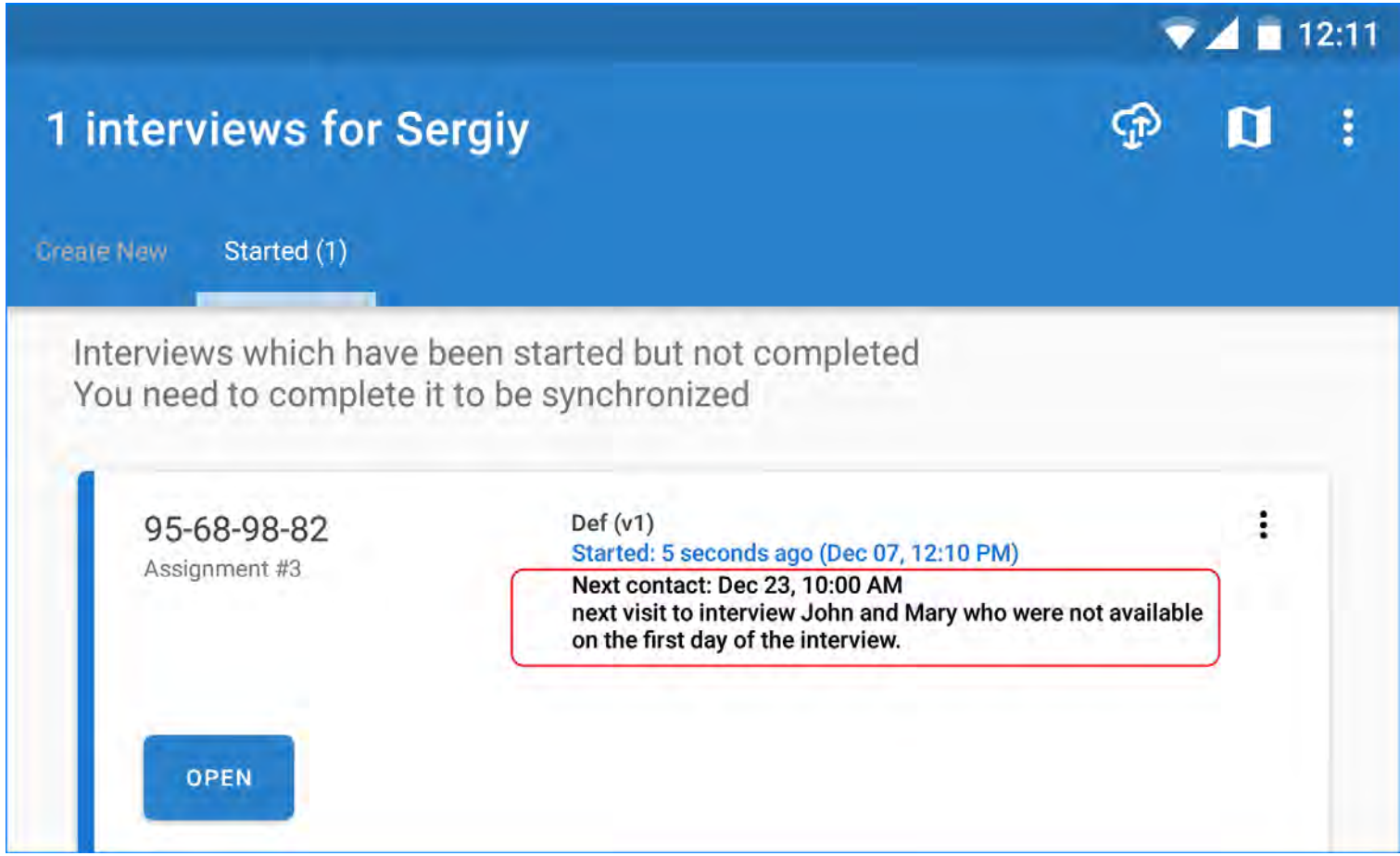
Until the actualization of the exposed variables is completed, the map report and interview selection may show incomplete sets of interviews for a filter making use of the variables that haven’t been processed yet.

Calendar events

Calendar events is a new feature of Survey Solutions, which allows the interviewer to assign a calendar event to a certain assignment or an interview. This is useful if the interview can't be completed on the spot and requires scheduling for another visit.

The calendar event consists of a date, time and an optional message.

The entered information will be shown on the interview/assignment card after the '*next contact*' prompt:



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Calendar events - 2

The event marker is automatically shown in red color if it is in the past. The interviewer may adjust the calendar event's properties (date, time, comment) or delete it.

During the synchronization the information on the calendar events is also sent to the server. If the interviewer logs in to the web interface, he/she will find the left reminders attached to assignments there.

The headquarters/supervisors will be able to find the information about the calendar events in the grids showing the lists of assignments and interviews, as well as in the detailed view of the assignment properties.

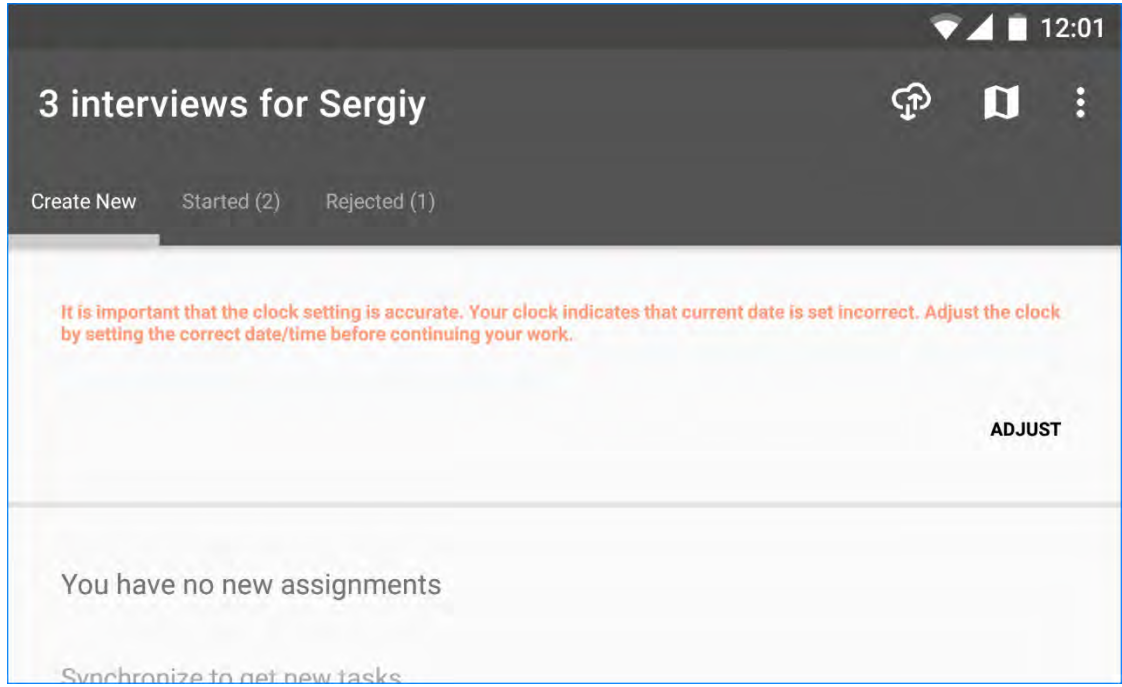
The same information is available through API queries to help automated systems that may reflect this information in the form of calendars or schedules.

Alert interviewers of wrong clock settings

Complete discharge of a tablet may lead to reset of the built-in clock to some default value, such as the date of manufacturing of the tablet, or date of the compilation of the Android OS, or another constant, for example January 01, 2011. If the interviewer continues operation with a wrong clock setting, this will corrupt timestamps of answers and make paradata unusable.

Most tablets/phones would automatically adjust the clock settings when connecting to mobile or Wi-Fi networks. Yet, if the device is working disconnected there is usually no opportunity for such automatic clock correction.

The new version will automatically notify the interviewer if it detects the clock setting is obviously wrong indicating time earlier than known actual time. The message serves as a warning, but it is recommended that the interviewers immediately check their clock and time zone settings.



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Day 2 - LFS questionnaire and its representation in CAWI

Real time discussions on characteristics of LFS questionnaires,
https://designer.mysurvey.solutions/questionnaire/details/f8fb25deea664dac9421cdc33f6656bb

- Identifying variables – a tradeoff between what is important for the survey and optimization of visualization on the screen of the tablet is good to take into consideration
- Static text – includes detailed instructions for Interviewer and hyperlinks for detailed information in PDF files
- More variables collected in previous waves of the survey could be prefilled in the questionnaires
- GPS coordinates could be prefilled and included in the Cover section, as identifying question
- The *Question text* in some questions is established within a variable in order to have less questions and/or to collect different answer in one variable which will goes in microdata files as it is, without too much transformation.

Day 3 - EU SILC and its representation on CAPI

Real time discussions on EU SILC and its representation on CAPI

https://designer.mysurvey.solutions/questionnaire/details/87738f41ec8347539acdd378c2115cd8

Day 4 - ICT questionnaire and its representation in CAWI

Real time discussions on ICT questionnaire and its representation in CAWI

https://designer.mysurvey.solutions/questionnaire/details/4cddeb8181394c40b4ea759a4f4dffcb

Day 5 - Round up based on previous days topics

Examples and discussions on exercises solved by participants.

API demonstration on automation of approvals or rejections of the Interviews.

Survey Solutions - More info

- General website & request and manage your dedicated Survey Solutions server https://mysurvey.solutions/en/
- Implementing a CAPI survey with Survey Solutions https://docs.mysurvey.solutions/getting-started/implementing-a-capi-survey/
- Computer Assisted Web Interviewing (CAWI) https://docs.mysurvey.solutions/headquarters/cawi/
- The web-based survey designer tool https://designer.mysurvey.solutions/
- Demo server https://demo.mysurvey.solutions/
- Support forum: https://forum.mysurvey.solutions/
- Survey Solutions | Documentation and knowledge base https://docs.mysurvey.solutions/
- Suport eMail: support@mysurvey.solutions

Trainers

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- Sasha (Oleksandr Krivtsov) – especially for questionnaires
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- Michael Wild – coordinator
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