Survey Solutions CAPI for surveys/censuses

Nadi, Fiji

Survey Solutions: Advanced Designer

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GPS Location

- GPS location question allows to record the location of the tablet device (typically the interview location).
- GPS question must be "answered" by the interviewer, it is not recorded without the interviewer's knowledge.
- GPS question is anwered by pressing a button, not inputting coordinates directly.
- Capturing GPS location may take several seconds. It is best done before or after the conversation with the respondent, not to interrupt the flow of the interview.
- To capture the location the tablet must have a GPS receiver inside and be receiving the signal.
- One interview may contain multiple GPS location questions, for example a survey of infrastructure of villages may collect location of the bank, post office, bus station, hospital, school, and other infrastructure elements.

GPS on the tablet
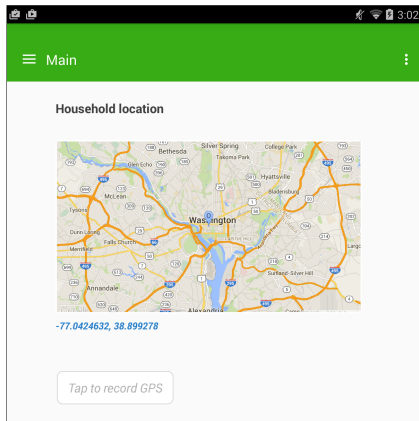
When the tablet is connected, a map of the neighborhood will be shown.
Otherwise only the coordinates will be shown.

Picture

- Picture type question can be used to capture the appearance of the respondent, house, neighborhood, product, etc.

- There are no special settings for the picture type question. The interviewer will capture the image by pressing the button in the questionnaire, pointing the camera at the object, and confirming the image is satisfactory.

- An autofocus lense capability maty be essential for some images. Shooting conditions are not always favorable for simplest lenses of some tablets.

NB: adding images to questionnaire increases the amount of data circulated in the system and may considerably increase the wireless bill.

Barcode

- Barcode question allows to capture barcodes and QRcodes:

- Note that there are many different <u>standards</u> of barcodes, with different capabilities and appearances. Survey Solutions will try to automatically detect the type of the barcode.

- Questionnaire developers need to test the system using an example of the actual barcodes to be scanned to ensure compatibility.

- Autofocus capability on the tablet is essential for barcode recognition to work properly.

- Not all items will have barcodes, and ones that had them may have them damaged and unrecognizable. Consider direct entry to override.

Masked edit

- Masked edit extends functionality of the text question;
- Masked edit allows specifying a pattern (mask) for data entry;
- Rules for mask specification:
    - a tilde (˜) represents one alpha character (A..Za..z);
    - a hash sign (#) represents one numeric character (0..9);
    - a star (*) represents one alphanumeric character in that position;
    - any other characters entered in the pattern will be visible on the screen during data entry, while the mask characters will be rendered as underscores (_).
- Note that:
    - pattern enforces "hard" validation;
    - pattern enforces fixed length of content.
- If using it for e.g. phone numbers, make sure all (potential) phone numbers are of the same length.

    For example: "(###) ###-####" will allow to enter typical USA phone numbers (10 digits) but will not allow entering foreign numbers.

Autocomplete

- Autocomplete question is a particular kind of a single choice categorical question.
- It is convenient when the number of choices is large and cannot be represented on a tablet screen.
- A user makes a selection from the autocomplete control by typing the beginning of the item, then selecting from a short list.

What is the primary occupation?

ch

Directors and Chief Executives

Physicists - Chemists and Related Professionals

Chemical processing plant operators

Chemical-Products Machine Operators

Autocomplete 2

To create an autocomplete question:

- Prepare a file of choices: tab delimited file with two columns numeric code and text label.
- In designer add a categorical single select question.
- Select the checkbox: is filtered combobox.
- Upload the prepared file of options.
- Save your changes.

Cascading selection

Cascading selection
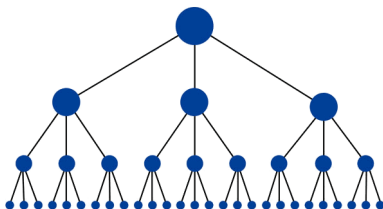
- Cascading selection is used when the number of items is large and there is a certain hierarchy among them.
- For example, administrative divisions:
  - State
  - County
  - Town
- Other examples: industries, occupations, products and goods classifications, etc.

Cascading selection 2

- Cascading selection is implemented as a number of single choice questions, one for each level of selection.
- The first question is a simple single choice question.
- Subsequent single choice questions must have *"is cascading"* flag set and parent question specified.
- Items of these questions must be prepared in a special way. For a normal single choice question the list of items contains only two columns: code and label, but for the cascading choice questions the list of items must contain three columns: code, label, and parent code.
- Items in the list must have unique codes (values), but may have repetitive parent codes (say, all of the districts within one state).

Cascading selection 3

Diverging cascading selection is possible:

For example, first select the state (black selection), then district within the state (blue selection), and select an airport within the state (red selection).

NB:Cascading questions don't have to follow each other immediately in the questionnaire, but it is a good practice to lay them one under another.

Rosters

- Rosters are not a question type, they are a special kind of groups.
- The purpose of the roster is to put structure on the questionnaire and to allow replication of questions and logic.
- Typical roster: demographic section of a household questionnaire, which asks questions about age, gender, relationship, education, etc of household members
- Every time you see a table in the paper style questionnaire, it is likely a rudimentary presentation of a roster.
- On paper the roster is usually a fixed table, with a certain number of rows reserved for the items. Since there is no knowledge about the number of e.g. the household members in a particular household an excessive amount is usually reserved.
- Rosters may sound complicated, but they are very helpful in questionnaire development.

Roster triggers

- In Survey Solutions the rosters can grow or shrink to accommodate the changing number of items to be surveyed.
- This change is triggered by a special question, the trigger question, which can be one of several types:
  - Numeric question: when the number of items to be described is determined by a numeric question somewhere earlier in the questionnaire.
  - Text list question: when there is a list of items already collected earlier in the questionnaire, and additional information about these items is to be acquired.
  - Multiple choice question: when a list of choices is presented first, and then detailed information is acquired about each item that was selected.
- One may use a fixed roster, when the number of items is known at design time.

Numeric roster

- Triggered by a numeric question. The numeric question should precede the roster in the order of the questions in the questionnaire.
- Typical use: *How many people live in this household? Now let me ask about name, age, gender, education, and employment of each of them.*
- When the value of the trigger question increases, the number of lines corresponding to the increase is added by Survey Solutions to the end of the table. If any data was entered regarding any items before the increase it survives.
- When the value of the trigger question decreases, the number of lines corresponding to the decrease is deleted from the end of the table. If any data was entered regarding the items being deleted, it will be forgotten. The user will get a warning.

Text list roster

- Triggered by a text list question. This question should precede the roster in the order of the questions in the questionnaire.

- Typical use: *Tell me the names of the people who live in this household. Now let me ask about the age, gender, education, and employment of each of them.*

- In contrast to the numeric version you already have the names, which can be displayed in the text of the question with an inline substitution *%rostertitle%*.

- Since the text list type question allows deletion of items from the middle, the user can remove exactly the one item she wants, not necessarily the last one.

Multiselect roster

- Triggered by a multiple select categorical question. This question should precede the roster in the order of the questions in the questionnaire.
- Typical use: *Which of the following appliences do you have in this household? (fridge, freezer, electric stove, gaz stove, microwave oven, TV, radio, phone). Now let me ask about the original price and age of of each of the items you mentioned.*
- Item name can be displayed in the text of the question with an inline substitution *%rostertitle%*.
- Since the multiple select type question allows unchecking of any items, including items in the middle, the user can remove exactly the one item she wants, not necessarily the last one.

Fixed roster

- This roster does not change its size, it is not triggered by anything.
- The size of a fixed roster is determined by an internally stored list of items determined by the questionnaire designer. Each item should have a code and a label, of which the label is shown to the interviewer, and the code is stored as a value.
- Typical use: *Tell me about the amount of income that this household derives from the following sources: labor income, rent, domestic transfers, international transfers, other.*
- Item name can be displayed in the text of the question with an inline substitution *%rostertitle%*.
- One can't delete or add items to fixed rosters during an interview. But one can turn on and off questions depending on the situation.

Setting up a roster

- Click the *Add roster* button in the sections list,

ADD QUESTION   ADD SUB-SECTION   ADD ROSTER   ADD STATIC TEXT

  or right-click an item and select *Add roster after* from the menu:

DELETE

CLONE

ADD QUESTION AFTER

ADD ROSTER AFTER

ADD SUB-SECTION AFTER

ADD STATIC TEXT AFTER

- Give roster a title that the interviewer will see, and an identifier, by which you will refer to it at data processing.
- Select roster type (one of the four we discussed).
- Select the trigger question if applicable, or specify the items of the fixed roster.
- Add questions to the roster. An empty roster without any questions makes no sense!

Setting up a roster in designer

Roster conditions

- One can add enabling conditions to any questions in the roster.
- These conditions can refer to all the variables of the questionnaire-level (typically household).
- If a roster variable is mentioned, it is interpreted as the variable referring to the same item. For example, if employment status has a condition age>15 (individual-level variable age is mentioned), the value of age will be taken from the same person.
- One can add a condition on the roster itself. This will determine which items will be included into the roster. For example, one can have a numeric question "Household size", followed by a roster "Household members", then another roster "Adults" triggered by the same question, but with a condition age>15, referring to the variable age from the first roster.

Nested rosters

- Rosters can be nested (included one into another).
- Typical use situations:
  - for every plot that the household owns, ask about which crops are grown on them;
  - for every household member ask about every job the person ever had before;
  - for every production item ask about components, and suppliers of these components, and characteristics of these suppliers;
- One can include rosters of different types one into another, for example, first level roster: list-triggered household members information, second level roster triggered by numeric question *how many university degrees does this person have?* collecting information on each degree (year, country, university name, field, etc);

Linked questions

- Linked categorical questions are a special case of categorical questions.
- Regular categorical questions have a fixed set of choices specified at the time when the questionnaire is designed.
- Linked categorical questions draw their choices from the entries in the roster. This allows to form the list of choices specific to the specific respondent.
- Typical use: selecting <u>one</u> of the household members as an answer to a question, e.g. *"Who of the household members is the household head?"*

Setting up a linked question

- Your questionnaire must already contain a roster with a question that can be used for item names. For example, this may be a roster (driven by a numeric question) containing questions on the name, age and gender of each household member.

- Add new question after the roster. Select for question type: categorical single select.

- Fill out the common properties: variable name, label, and question text.

- Check the *"is linked"* checkbox.

- Select the *name* variable from the household members roster in the *"Bind to question from roster group"* setting.

Macros and Variables

- simplify complex expressions by breaking them down to smaller parts;
- simpify creation of large questionnaires with repetitive condition;
- hint on the meaning of expression by their name (or description);
- simplify changes to parameters and definitions in the survey;
- may be used to hold survey parameters;
- not exported!

Macros and Variables

Macros	Variables
are referred to by *$name*	are referred to by *name*
don't have to be syntactically correct	have to be syntactically correct
fragments of expressions	expressions
don't have a declared type	have a declared type (one of the following: string, long?, double? DateTime?, Boolean?)
computed every time when encountered	computed once every evaluation cycle
have descriptions	don't have descriptions
may not refer to other macros	may refer to other variables
may not be used in text piping	may be used in text piping