Dear friends of Survey Solutions,

In version 5.9.0 that we have released on May 31, 2016 you will find the following useful new features:

- Variables
- Substitution in static text
- Access to Math library
- Show variable names in question selectors
- Other changes to Designer
- Changes to export file format
- Cloning questionnaires at Headquarters
- Translation of interface

## Variables

Variables are computable expressions, which can be added to a questionnaire for convenience when operating with large and/or complex expressions.

Variables is a powerful addition to the functionality of Survey Solutions. Variables can be used to simplify and improve the validation and enabling conditions. Content of variables can be used in the question text or in static text to provide more informative, dynamic questions or static text.

Variables have a type, name, and an expression. The type of a variable determines what content it stores and how it can be used in expressions.

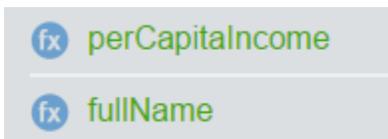A variable's type can be one of the following C# types:

Variable name is an identifier, which can be mentioned in any other expressions: enabling conditions, validation conditions, or other variables' expressions. Notably variables may refer one to another in their expressions, which allows building complex expressions in series of small computable operations

Variables appear in the tree alongside the questions and are designated the fx-icon:



To setup a variable, click "*Add variable after*" in the context menu of the questionnaire tree, then specify a type, name, and expression for the variable. For example, we may want to define variable `fullName` as a combination of the person's first name (stored in `firstName`) and last name (stored in `lastName`):



Here `firstName` and `lastName` could each be text questions or other variables.

Similarly, for numerical variables we can select type Double, and compute `perCapitaIncome` in the household as total income (question `Income`) divided by the household size (question `hhSize`).

DEMOGRAPHICS

Variable type

| Double | ∨ |

Variable name (?)

perCapitaIncome

Expression (?)

Income/hhSize

Note that the variables do not have enabling or validation conditions, but a variable may still be disabled if it is part of the disabled section or sub-section. In that case the value of the variable is C#'s `null`

## Substitution in static text

Static texts can now use inline substitutions to display the values stored in questions and variables of the questionnaire. This mechanism was previously available only in question's text, and not applicable to static text elements. To refer to a value of a question or variable in the questionnaire, envelop the corresponding identifier in the %-signs, like so:

*INTERVIEWER: Now we will talk about the health status of each of the %HouseholdSize% members of your household.*

Next version of Survey Solutions will expand the substitution of values stored in questions and variables to error messages and section and sub-sections.
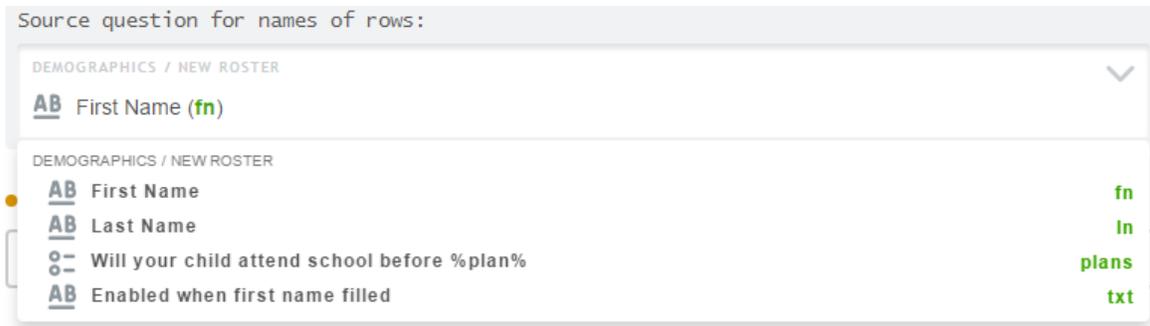
## Access to the Math library

Version 5.9 supports the Math library of C#. That library contains more than 70 functions to perform mathematical transformations in expressions. For example, functions like *Math.Round(), Math.Floor(), Math.Ceiling()* can be used for rounding fractions to integer values, *Math.Abs()* can be used to obtain an absolute value, etc. The full description of the Math library functions is available from Microsoft at the following address:

https://msdn.microsoft.com/en-us/library/system.math(v=vs.110).aspx

## Show variable names in question selectors

This improvement allows more comfortable work with questions selectors by displaying variable names along with question's text in a selector.

This prevents mistakes of source question selection in cases when multiple questions with exactly the same question text exist in the same section or roster. While the question text may be duplicated, the variable names are unique within the questionnaire, and hence the selection is now unambiguous.

The improvement is applicable to source question selectors in:
- rosters;
- linked questions;
- cascading questions.

## Other changes to Designer
- Questionnaires can no longer be made public: as part of the earlier announced changes plan the public status of the questionnaire is being out phased. Existing questionnaires can no longer be declared public. Users can still share their questionnaires with specific other users by inviting them as collaborators with view or edit permissions.
- Fonts have changed in the PDF preview to accommodate more languages and present information more compactly in the preview document.
- Changes made to the properties of a question are automatically saved when you click on the Compile button.

## Changes to export file format

Multiple-select categorical questions will be now exported as series of dummy variables (variables with values 0/1/missing) when order of selection is not recorded. Previously the variables contained selection order even if question was declared non-ordered in the Designer. This change should simplify subsequent processing of data.

## Cloning questionnaires at Headquarters

Cloning questionnaires on headquarters allows users to start a new survey using the questionnaire already imported to the HQ earlier without having to access the Designer site. This is particularly helpful for the periodic (monthly, quarterly, etc.) surveys where isolation from the changes to the Designer is desirable.

To clone a questionnaire at headquarter, an HQ user will use the newly added clone button in
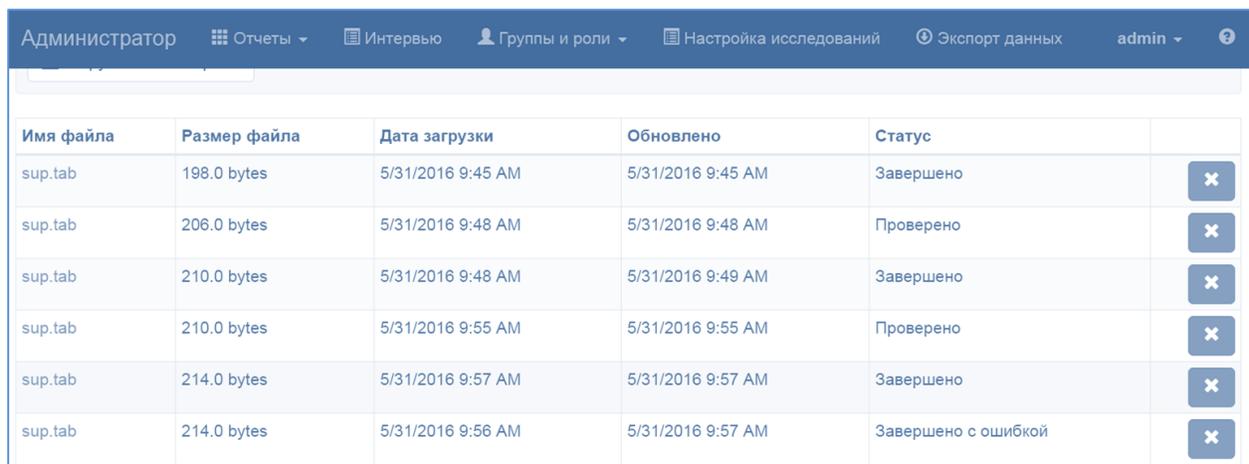the survey setup screen:

If necessary, a new name can be given to the survey initiated from a cloned questionnaire, such as LFS June 2016, LFS July 2016, and so on.

## Translation of interface

The Survey Solutions tablet components' interface has been translated to multiple languages in earlier releases, and in v5.9 we added the translation of the Interviewer and Tester into Vietnamese. We continue collaboration with volunteers contributing translations to their native languages. In the next release we will integrate translation into Khmer.

In v5.9 we also added the localization of the headquarters and supervisor applications. These applications will respond to the browser language preference settings and present the interface in the local language if available.

| Администратор | ▦ Отчеты ▾ | 🗏 Интервью | 👤 Группы и роли ▾ | 🗏 Настройка исследований | ⊕ Экспорт данных | admin ▾ | ❓ |
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Instructions for adjusting browser preferences are browser-specific. Here is a link for configuring Internet Explorer:
http://windows.microsoft.com/en-us/windows-vista/change-your-internet-explorer-language-settings
other browsers provide similar settings[1].

If you wish to volunteer and translate Survey Solutions to your language, please contact support team: support@mysurvey.solutions.

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[1] http://www.w3.org/International/questions/qa-lang-priorities