



DX App Form Generator  
User's Guide



# Acknowledgement

This database software has been developed with the cooperation of the UN system. The product has been adapted from UNICEF ChildInfo technology.

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# INTRODUCTION

The **DX App Form Generator** data exchange application enables you to compose and edit rapid assessment forms. This data exchange application is available under the **EmergencyInfo** module in the DevInfo 6.0 Data Administration application.

Rapid assessment forms are used to collect the critical data in a standardized and accelerated fashion. These forms are then imported into a DevInfo 6.0 database, which can then be queried by the DevInfo User application to generate situation assessment reports in emergencies like natural disasters. These reports are used to make informed and quick decisions in various emergency situations using tables, graphs, and maps.

This data exchange application accepts a reference DevInfo 6.0 template or database, enabling you to compose questions with various possible answers and in various formats which are directly linked to the I-U-S combinations of the specified reference template.

Once the survey forms are populated using a mobile survey device (such as a PDA), they can be imported into a DevInfo 6.0 database using the **DX App Import XML** data exchange application.

## Content Overview

This guide contains two chapters:

Chapter 1, “**Getting Started**,” outlines the system requirements, starting procedures, and the user interface of this data exchange application.

Chapter 2, “**Using the DX App Form Generator Application**,” describes the steps that enable you to use this data exchange application.

# CHAPTER 1

## Getting Started

This chapter explains the system requirements needed to run the application as well as how to launch it.

### System requirements

The recommended minimum hardware requirements to install and run the DevInfo 6.0 application are as follows:

- Pentium IV
- 512 MB of RAM
- 1 GB of free hard disk space
- Display resolution 1024 x 768
- Microsoft Windows XP or above
- Microsoft Internet Explorer
- Microsoft Office XP is recommended but not required



## Starting the DX App Form Generator application

Follow the steps given below to start this data exchange application:

- Launch the DevInfo 6.0 Database Administration application.
- To start, click **DX App Form Generator.exe** under the **EmergencyInfo** module (Fig. 1.1).

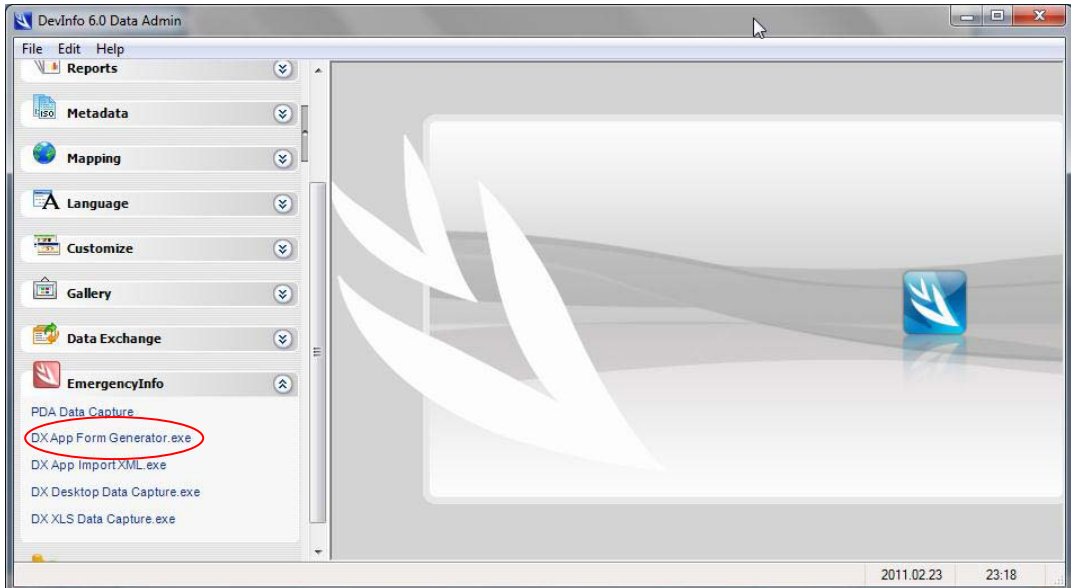


Fig. 1.1 – DevInfo 6.0 Data Admin – DX App Form Generator.exe selection

# CHAPTER 2

## Using the DX App Form Generator Application

This chapter explains how to use the DX App Form Generator data exchange application to generate XML-based rapid assessment forms from a reference DevInfo 6.0 template or database.

### Generating a new rapid assessment form

Generating a rapid assessment form is a six-step process.

#### Step 1 – Selecting the file

In step 1, select **New** to generate a new rapid assessment form or select **Open** to edit an existing file (Fig. 2.1).



Fig. 2.1 – DX App Form Generator– Step 1 – Select File

Click **Next** to continue to step 2.

## Step 2 – Selecting the template file

In step 2, select the reference template or database for creating I-U-S combinations against the rapid assessment form questions (Fig. 2.2).

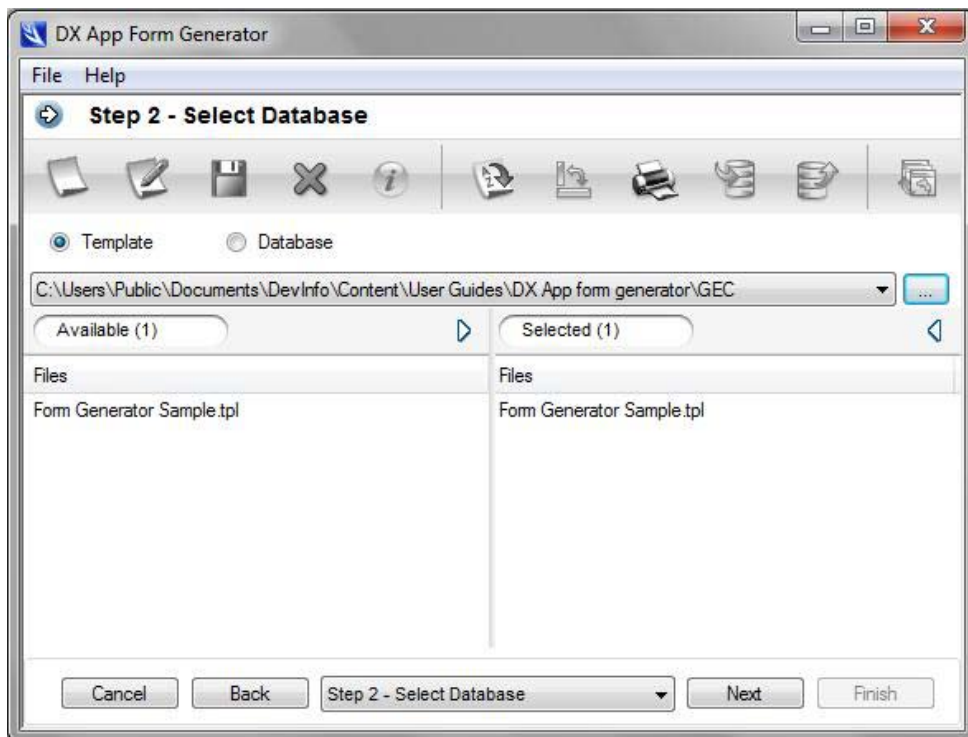



Fig. 2.2 – DX App Form Generator – Step 2 – Select Template File

Click  **Browse** to specify the location of the desired file.

Select the required template or database by either double-clicking it or by dragging it from the **Available** pane to the **Selected** pane.

Click **Next** to continue to step 3.

### Step 3 – Selecting the font

In step 3, select the desired font in which the questions will appear in the rapid assessment form (Fig. 2.3).

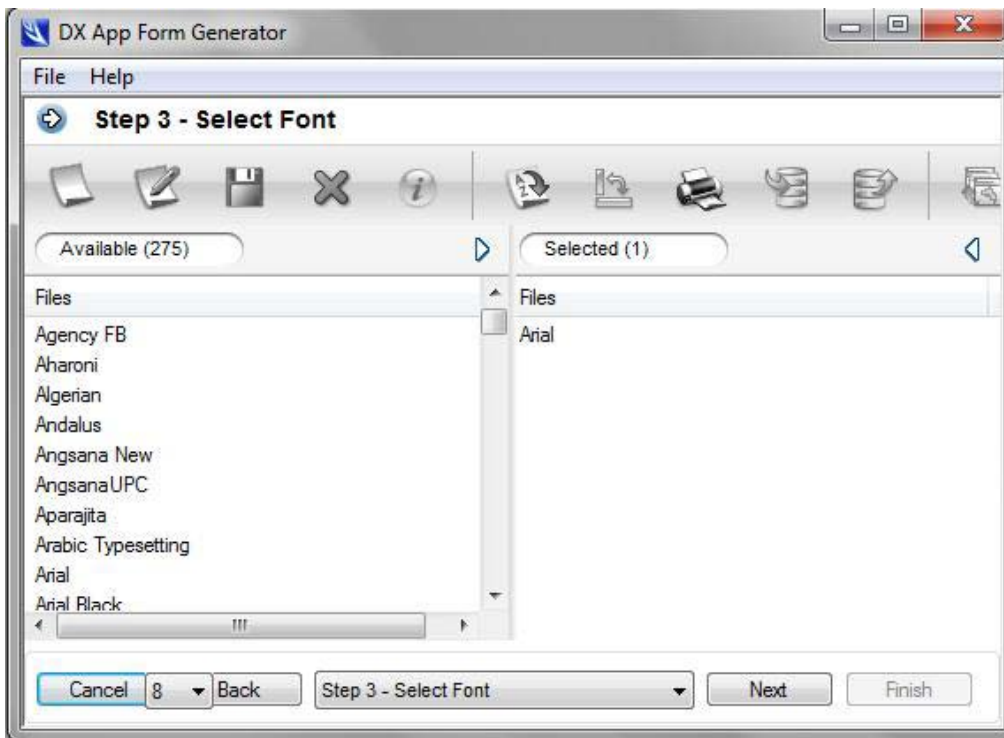


Fig. 2.3 – DX App Form Generator – Step 3 –Select Font

The **Arial** font is selected by default.

Click **Next** to continue to step 4.

## Step 4 – Translate required questions

In step 4, translate the questions of the rapid assessment form into the language which will be used to conduct the survey (Fig. 2.4).

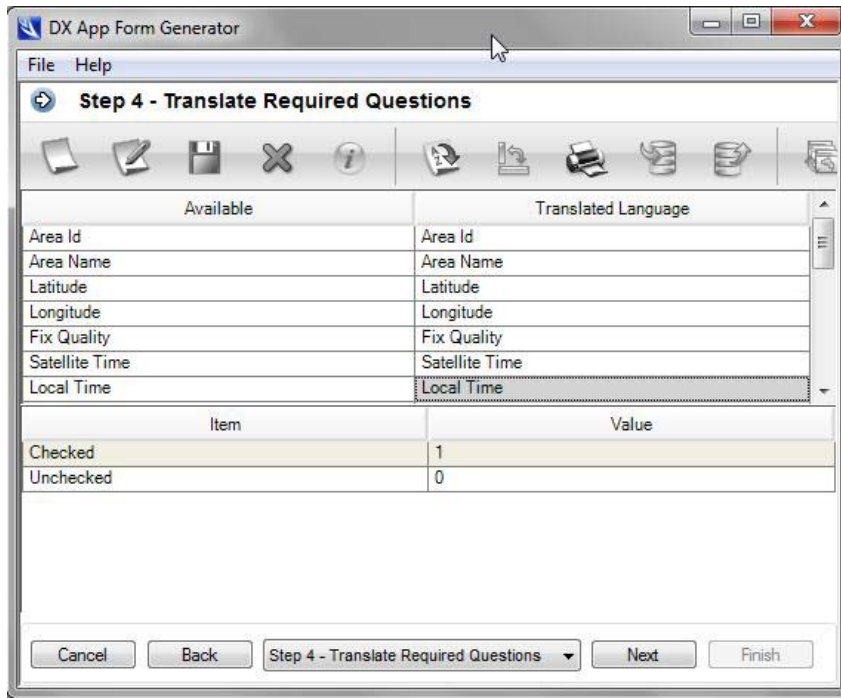


Fig. 2.4 – DX App Form Generator – Step 4 – Translate Required Questions

Type the translated strings or paste them in the **Translated Language** column next to the original phrase in the **Available** column. Specify the default values as numeric values to be saved in the **XML** file for multiple choice questions.

Click **Next** to continue to step 5.

## Step 5 – Questions

In step 5, compose, edit and delete questions of the rapid assessment form (Fig. 2.5).

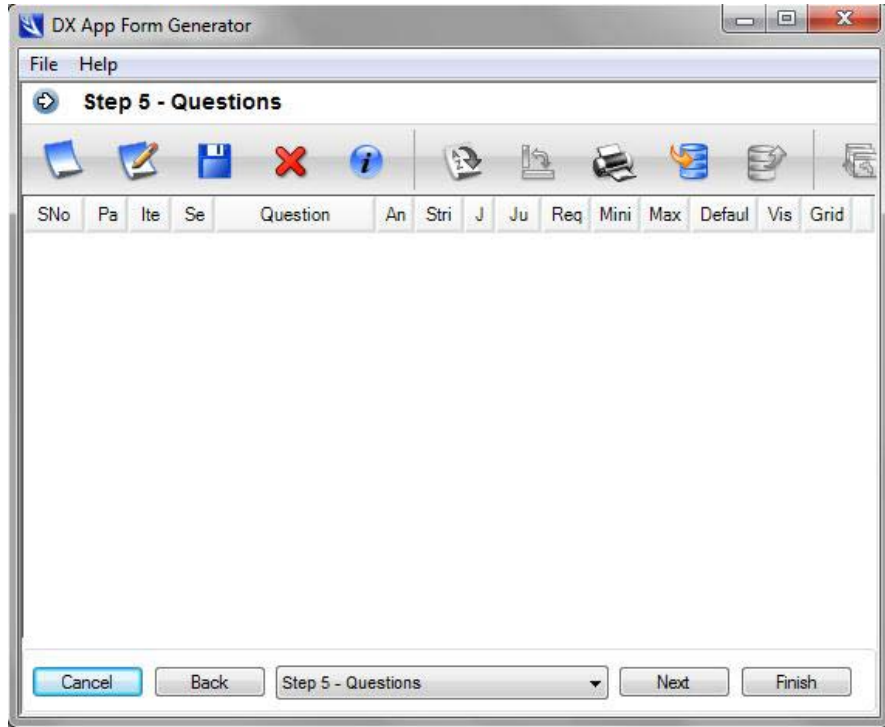



Fig.2.5 – DX XLS Data Capture – Area dialog box

Click  **New** to compose a new question.

Click  **Edit** to edit an existing question.

Click  **Save** to save the composed questions as an XML file.

Click  **Delete** to delete a selected question.

Click  **Information** to view the details of a selected question.

## Composing a new question

Click  **New** to create a question. A new **Question** dialog box appears (Fig. 2.6).

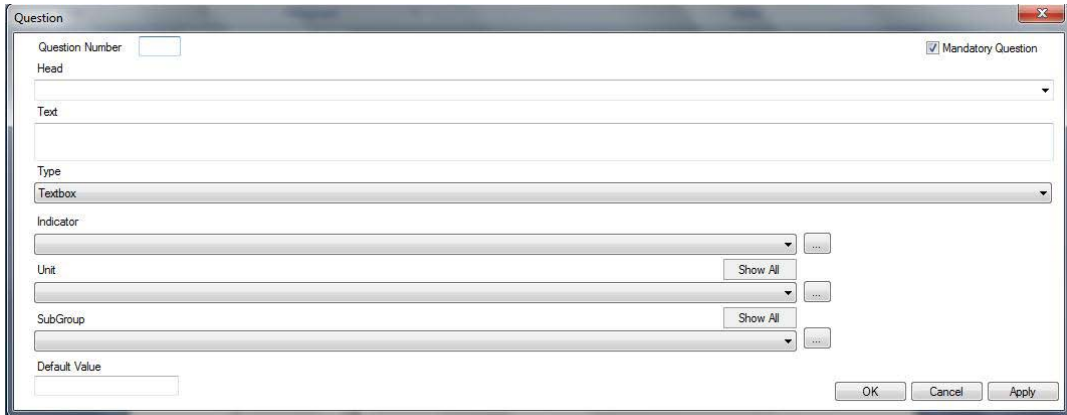



Fig. 2.6 – DX App Form Generator– Step 5 – New Question

Assign a question number to the question using the **Question Number** box. The question can also be characterized according to its subject using the **Head** box. Type the exact question as it should appear on a PDA in the **Text** field box, and select the corresponding I-U-S combination in the **Indicator**, **Unit**, and **Subgroup** field boxes.

### Note: Mandatory Question



If **Mandatory Question** is checked, the PDA application will notify the user when attempting to save the survey that a mandatory question has been unanswered.

To edit a question, first click the row header of the question and then click  **Edit** (Fig. 2.7).

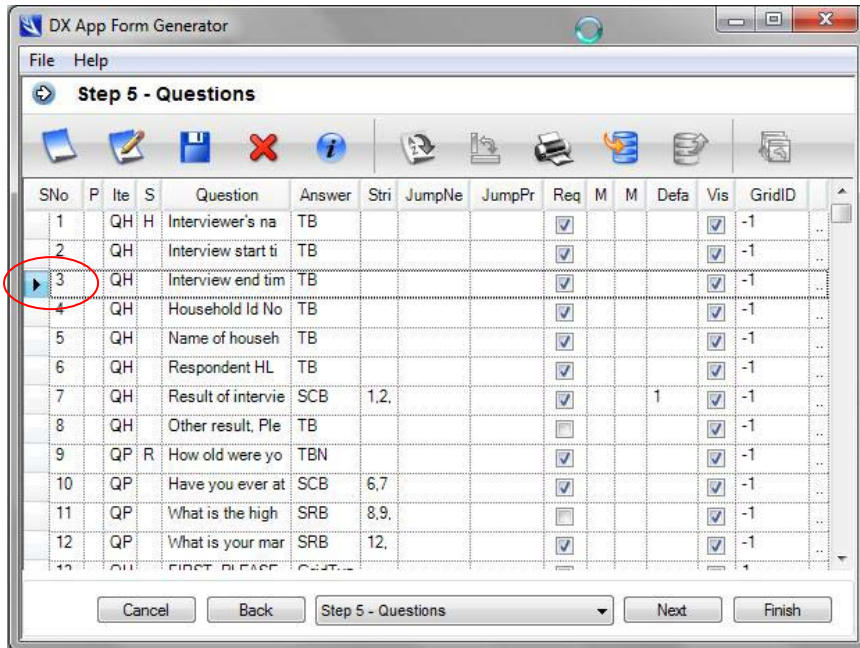



Fig. 2.7 – DX App Form Generator – Step 5 – Edit question

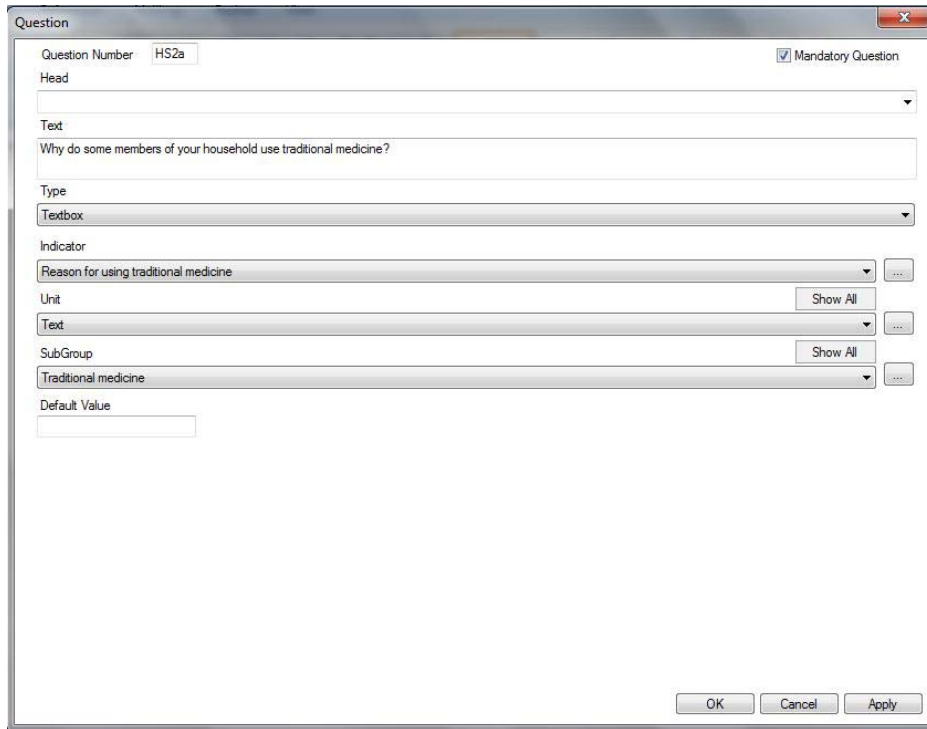
Clicking the  **Edit** button opens the **Question** dialog box as shown above (Fig 2.6), allowing you to make the desired changes to any section of the question.

## Question types

Below is a description of the different types of questions that can be composed using the **DX App Form Generator** application. Select the desired question type from the drop-down list in the **Type** box.

## Textbox

Select **Textbox** from the **Type** box when you wish to capture text input from the user. This question type can accept long text values (Fig. 2.8).



The screenshot shows a 'Question' dialog box with the following fields and values:

- Question Number: HS2a
- Mandatory Question:
- Head: (empty dropdown)
- Text: Why do some members of your household use traditional medicine?
- Type: Textbox
- Indicator: Reason for using traditional medicine
- Unit: (empty dropdown)
- Text: (empty dropdown)
- SubGroup: Traditional medicine
- Default Value: (empty text box)

Buttons at the bottom: OK, Cancel, Apply.

Fig. 2.8 – DX App Form Generator – Step 5 – Textbox question

Once all the fields have been completed, click **OK** to create the question.

## Numeric Textbox

Select **Numeric Textbox** from the **Type** box when you wish to capture numeric inputs (numbers only) from the user. Minimum and maximum values can also be set in the respective field boxes (Fig. 2.9).

The screenshot shows a 'Question' dialog box with the following fields and values:

- Question Number: HS2a
- Mandatory Question:
- Head: (empty)
- Text: Why do some members of your household use traditional medicine?
- Type: Numeric Textbox
- Indicator: Reason for using traditional medicine
- Unit: Text
- SubGroup: (empty)
- Default Value: (empty)
- Minimum: (empty)
- Maximum: (empty)

Buttons: OK, Cancel, Apply

Fig. 2.9 – DX App Form Generator – Step 5 – Numeric Textbox

Once all the fields have been completed, click **OK** to create the question.

## Radio – Text

Select **Radio – Text** from the **Type** box when you wish to define multiple options for capturing user inputs. Note that the interface for displaying these multiple options is not a drop-down list but rather a set of single-selection checkboxes (Fig. 2.10).

The screenshot shows a 'Question' configuration window. The 'Question Number' is 'HS2a' and 'Mandatory Question' is checked. The 'Text' field contains the question: 'Why do some members of your household use traditional medicine?'. The 'Type' is set to 'Radio - Text'. The 'Indicator' is 'Reason for using traditional medicine'. The 'Unit' is 'Text'. The 'SubGroup' is empty. The 'Apply Options' section contains a table with the following data:

Options	Default Value
<input type="checkbox"/> Yes	<input type="checkbox"/>
<input type="checkbox"/> No	<input type="checkbox"/>
<input checked="" type="checkbox"/> *	<input type="checkbox"/>

Fig. 2.10 – DX XLS Data Capture– Paste Link option

Note that in the mobile survey device, the option selected by the end user will be saved as text in the database.

Use the **Manage Options** button to specify the range of possible answers for this survey question, as well as for other survey questions which fall under the **Radio – Text, Radio – Numeric, ComboBox – Text, and ComboBox – Numeric** categories. While creating questions of these types, you will need to select the desired options to associate them with the specific questions.

Click the **Manage Options** button to add new text as a possible option (Fig. 2.11).

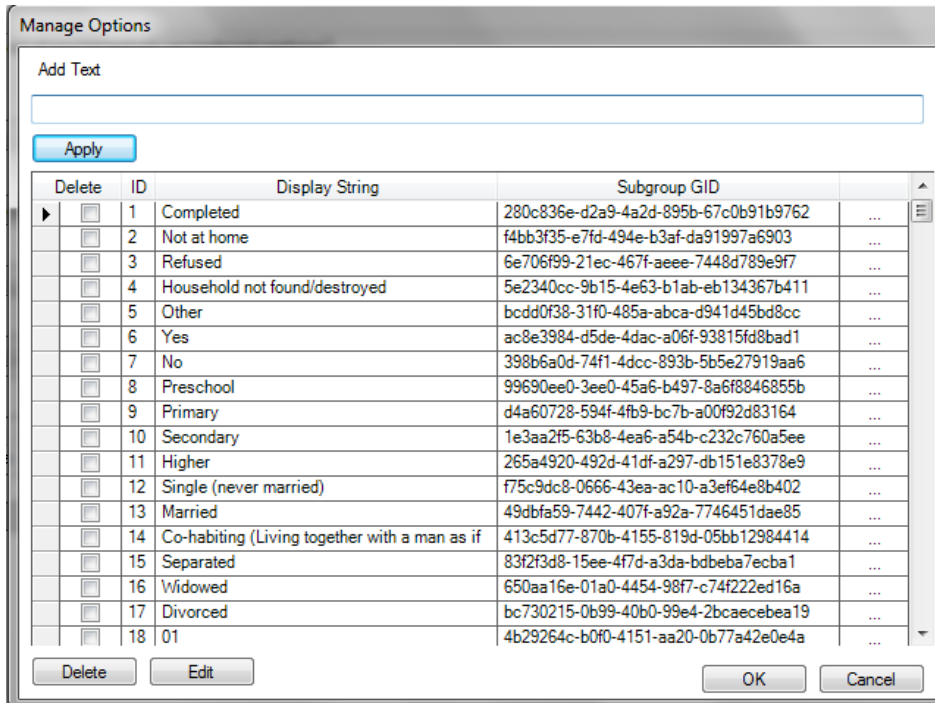


Fig 2.11 – DX App Form Generator – Step 5 – Manage Options

Type in the desired option text in the **Add Text** box, and click **Apply** to add this as a new option. You can also edit the existing options under the **Display String** column using the **Edit** button.

Click **OK** when done to save all changes.

Once all the desired options have been added, select the desired options for the specified question from the **Options** drop-down list, mapping them with the appropriate I-U-S combination (Fig 2.12).

Question

Question Number: HS2a  Mandatory Question

Head: [Empty]

Text: Why do some members of your household use traditional medicine?

Type: Radio - Text

Indicator: Reason for using traditional medicine

Unit: Text [Show All]

SubGroup: Text [Show All]

Apply Options [Manage Options]

	Options	Default Value
<input type="checkbox"/>	Yes	<input type="checkbox"/>
<input type="checkbox"/>	No	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Preschool	<input type="checkbox"/>
	Primary	
	Secondary	
	Higher	
	Single (never married)	
	Married	
	Co-habiting (Living together with a man as if married)	

Delete [OK] [Cancel] [Apply]

Fig. 2.12 – DX App Form Generator – Step 5 – Radio Text – Option Selection

Once all the fields have been completed, click **OK** to create the question.

## ComboBox – Text

Select **ComboBox – Text** from the **Type** box when you wish to specify multiple options in a drop-down list for capturing user inputs (Fig. 2.13).

Question

Question Number: HS2a  Mandatory Question

Head: HOUSEHOLD CHARACTERISTICS

Text: [Empty text box]

Type: ComboBox – Text

Indicator: Respondent's highest level of schooling

Unit: Multiple Option

SubGroup: Higher

Apply Options: Manage Options

	Options	Default Value
<input type="checkbox"/>	Preschool	<input type="checkbox"/>
<input type="checkbox"/>	Primary	<input type="checkbox"/>
<input type="checkbox"/>	Secondary	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Higher	<input type="checkbox"/>
	No	
	Preschool	
	Primary	
	Secondary	
	Higher	
	Single (never married)	
	Married	
	Co-habiting (Living together with a man as if married)	

Buttons: Delete, OK, Cancel, Apply

Fig. 2.13 – DX App Form Generator – Step 5 – ComboBox Text type

Note that this question type is only associated to one I-U-S combination.

Once all the fields have been completed, click **OK** to create the question.

## ComboBox – Numeric

Select **ComboBox – Numeric** from the **Type** box when you wish to specify multiple options in a drop-down list for capturing user inputs (Fig. 2.14).

The screenshot shows the 'Question' dialog box in the DX App Form Generator. The 'Question Number' is 'HS2a' and 'Mandatory Question' is checked. The 'Head' is 'HOUSEHOLD CHARACTERISTICS'. The 'Type' is 'ComboBox - Numeric'. The 'Indicator' is 'Respondent's highest level of schooling'. The 'Unit' is 'Multiple Option'. The 'SubGroup' is 'Higher'. The 'Apply Options' table is as follows:

Options	Subgroup	Default Value
<input type="checkbox"/> Preschool		<input checked="" type="checkbox"/>
<input type="checkbox"/> Primary		<input checked="" type="checkbox"/>
<input type="checkbox"/> Secondary		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Higher		<input checked="" type="checkbox"/>

The 'Higher' option is selected in the dropdown list, and its 'Default Value' checkbox is checked. Other options include 'Single (never married)', 'Married', 'Co-habiting (Living together with a man as if married)', and 'Separated'. Buttons for 'Delete', 'OK', 'Cancel', and 'Apply' are visible at the bottom.

Fig. 2.14 – DX App Form Generator – Step 5 – ComboBox Numeric type

The difference between this question type and the **ComboBox – Text** type is that in this case, the selected item is assigned a data value of “1” while all non-selected items are assigned a data value of “0.”

Select the checkbox in the **Default Value** column to display a default value against a particular I-U-S combination.

Once all the fields have been completed, click **OK** to create the question.

## Radio – Numeric

Select **Radio – Numeric** from the **Type** box when you wish to specify multiple options in a drop-down list for capturing user inputs. Note that this is very similar to the ComboBox - Numeric type, except that in this case, the list of answers is provided as radio buttons (Fig. 2.15).

The screenshot shows the 'Question' dialog box in the DX App Form Generator. The 'Type' is set to 'Radio - Numeric'. The 'Indicator' is 'Respondent's highest level of schooling'. The 'Unit' is 'Multiple Option'. The 'SubGroup' is 'Higher'. The 'Apply Options' table is as follows:

Options	Subgroup	Default Value
<input checked="" type="checkbox"/> Preschool		<input type="checkbox"/>
<input checked="" type="checkbox"/> Primary		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> * Secondary		<input type="checkbox"/>
<input type="checkbox"/> Yes		
<input type="checkbox"/> No		
<input type="checkbox"/> Preschool		
<input type="checkbox"/> Primary		
<input type="checkbox"/> Secondary		
<input type="checkbox"/> Higher		
<input type="checkbox"/> Single (never married)		
<input type="checkbox"/> Married		

The 'Secondary' option is selected in the dropdown menu. The 'Default Value' checkbox is checked for 'Primary'. The 'Delete' button is visible at the bottom left, and 'OK', 'Cancel', and 'Apply' buttons are at the bottom right.

Fig. 2.15 – DX App Form Generator – Step 5 – Radio Numeric type

In the **Default Value** checkbox, select the value you intend to set as the default value, and it will appear as selected during the survey.

Once all the fields have been completed, click **OK** to create the question.

## Checkbox

Select **Checkbox** from the **Type** box when you wish to allow more than one response for a question. Each selected option is assigned a data value of “1,” while all non-selected options are assigned a data value of “0” (Fig. 2.16).

The screenshot shows the 'Question' dialog box in the DX App Form Generator. The 'Type' is set to 'Checkbox'. The 'Text' field contains the question: 'What is the highest level of schooling of the head of household?'. The 'Indicator' is 'Respondent's highest level of schooling'. The 'Unit' is 'Multiple Option'. The 'SubGroup' is 'Higher'. The 'Apply Options' table is as follows:

Options	Subgroup	Default Value
<input checked="" type="checkbox"/> Primary		<input checked="" type="checkbox"/>
<input type="checkbox"/> Secondary		<input type="checkbox"/>
<input type="checkbox"/> Higher		<input type="checkbox"/>
* <input type="checkbox"/>		<input type="checkbox"/>

Fig. 2.16 – DX App Form Generator – Step 5 – Checkbox type

Once all the fields have been completed, click **OK** to create the question.


## Grid Type

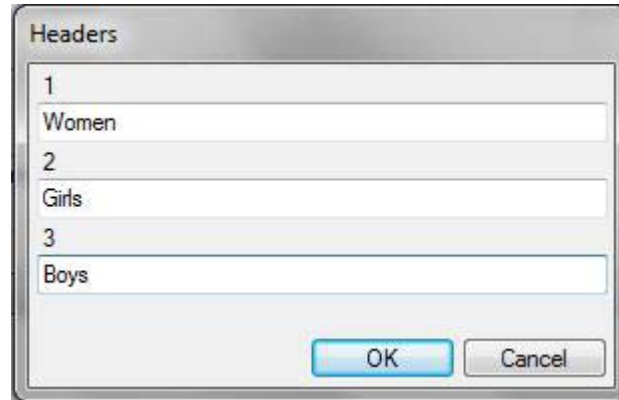
Select **Grid Type** from the **Type** box when you wish to create grid-type (cross-tab) questions. When you select **Grid Type**, the dialog box prompts you to specify the desired number of rows and columns (Fig. 2.17).

The screenshot shows a dialog box titled "Question" with a close button (X) in the top right corner. The dialog contains the following elements:

- Question Number:** A text box containing "HS2a".
- Mandatory Question:** A checkbox that is currently unchecked.
- Head:** A text box that is empty.
- Text:** A text box containing the question "Why do some members of your household use traditional medicine?".
- Type:** A dropdown menu with "Grid Type" selected.
- Columns:** A spinner box set to "3" with an "..." button to its right.
- Rows:** A spinner box set to "3" with an "..." button to its right.
- Grid Preview:** A 3x3 grid of cells with dotted lines, representing the layout of the question.
- Buttons:** "OK", "Cancel", and "Apply" buttons at the bottom right.

Fig. 2.17 – DX App Form Generator – Step 5 – Grid Type

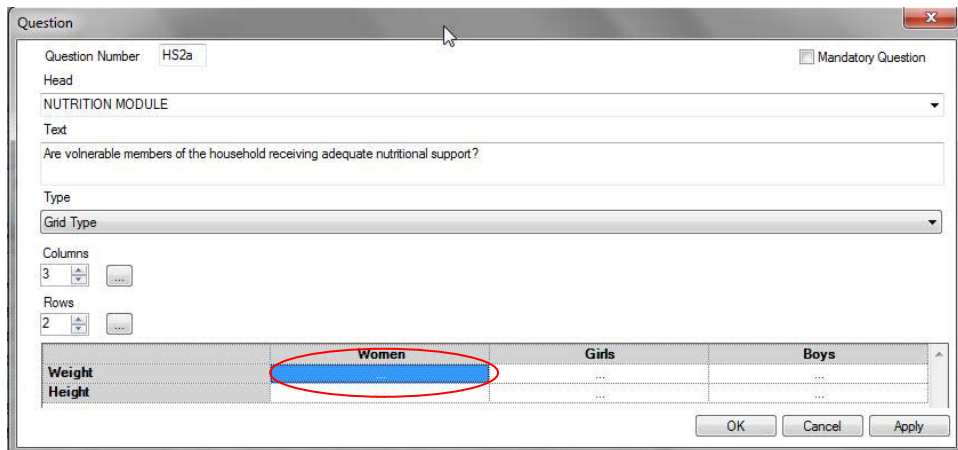
Click  **Browse** next to the **Columns** or **Rows** box to display the **Headers** dialog box, which allows you to enter the header titles for the respective rows and columns (Fig. 2.18).



The Headers dialog box is a simple window with a title bar that says "Headers". It contains three text input fields. The first field is labeled "1" and contains the text "Women". The second field is labeled "2" and contains the text "Girls". The third field is labeled "3" and contains the text "Boys". At the bottom right of the dialog box are two buttons: "OK" and "Cancel".

Fig. 2.18 – DX App Form Generator – Step 5 – Grid Type – Headers

Once the row and column headers are created, you can set cross-sectional options for the question. Click on each cell within the grid to set the question type and to define the I-U-S combination (Fig 2.19).



The Question dialog box is a complex window with a title bar that says "Question". It contains several fields and controls. At the top, there is a "Question Number" field with the value "HS2a" and a "Mandatory Question" checkbox. Below that is a "Head" dropdown menu with the value "NUTRITION MODULE". The "Text" field contains the question: "Are vulnerable members of the household receiving adequate nutritional support?". The "Type" dropdown menu is set to "Grid Type". Below the type dropdown are "Columns" and "Rows" sections, each with a numeric input field and a "Browse" button. The "Columns" field is set to "3" and the "Rows" field is set to "2". At the bottom of the dialog box is a grid with three columns labeled "Women", "Girls", and "Boys". The "Women" column has two rows labeled "Weight" and "Height". The "Weight" cell in the "Women" column is highlighted in blue and circled in red. At the bottom right of the dialog box are three buttons: "OK", "Cancel", and "Apply".

Fig. 2.19 – DX App Form Generator – Step 5 – Grid Type – Assigning question type and I-U-S

Click **OK** when done to close the window.

## Aggregate

Select **Aggregate** from the **Type** box when you wish to create aggregate-based questions (Sum, Average, Count, Percent and Composite Index).

Aggregate functions are executed across multiple imported files. Each file should have data collection done for the areas at the same level. These questions are not visible while performing the survey and are calculated only when the import process (**DX App Import XML.exe**) is run to import all the survey data into DevInfo 6.0 database format (Fig. 2.20).

The screenshot shows the 'Question' dialog box in the DX App Form Generator. The 'Question Number' is 'HS2a'. The 'Text' field contains the question: 'Why do some members of your household use traditional medicine?'. The 'Type' is set to 'Aggregate'. The 'Indicator' is 'Reason for using traditional medicine'. The 'Aggregate Type' is 'Average'. The 'Formula' field is empty. The 'Questions' list includes: Q9 - How old were you at your last birthday?, Q16 - MUAC only children - (12-35 month), Q17 - b. Early Childhood Education age (3-5) Children, Q18 - c. Primary School age Children, Q19 - d. Secondary School age children, Q20 - Total School children, Q23 - Total number of household members, Q24 - Number of Men, and Q25 - Number of Women. The 'Options' field is empty. Buttons for 'OK', 'Cancel', and 'Apply' are at the bottom right.

Fig. 2.20 – DX App Form Generator – Step 5 – Grid Type – Assigning question type and I-U-S

Select the desired type of calculation from the **Aggregate Type** box. The **Formula**, **Questions** and **Options** boxes will auto-populate at the bottom of the window.

In the case of radio or combo type questions, the **Options** field will be populated. Select the desired options for which aggregate values need to be calculated.

## Calculate

Select **Calculate** from the **Type** box when you wish to perform calculations based on the survey responses. As with **Aggregate** type questions, these questions are not visible while taking the survey and are calculated only when the import process (**DX App Import XML.exe**) is run to import all the survey data into DevInfo 6.0 database format.

### Note: Calculate based questions



**Calculate** type questions are different from **Aggregate** type questions in that they are executed within one survey file, whereas **Aggregate** type questions are executed across multiple files.

Mathematical/logic questions are calculated at the time of import. The calculated value is stored against the selected I-U-S combination (Fig. 2.21).

The screenshot shows the 'Question' dialog box in the DX App Form Generator. The 'Question Number' is 'HS2a'. The 'Text' field contains 'Why do some members of your household use traditional medicine?'. The 'Type' is set to 'Calculate'. The 'Indicator' is 'Reason for using traditional medicine'. The 'Unit' is 'Text'. The 'SubGroup' is 'Traditional medicine'. The 'Formula' field contains 'Q7'. A list of questions is shown in the middle, including 'Q7 - Result of interview', 'Q9 - How old were you at your last birthday?', 'Q10 - Have you ever attended school or prescho...', 'Q11 - What is the highest level of school you atte...', 'Q12 - What is your marital status?', 'Q16 - MUAC only children - (12-35 month)', 'Q17 - b. Early Childhood Education age (3-5) Chil...', 'Q18 - c. Primary School age Children', and 'Q19 - d. Secondary School age children'. The 'Options' list includes 'Completed', 'Not at home', 'Refused', 'Household not found/destro...', and 'Other'. The 'Validate' button is highlighted in blue. The 'OK', 'Cancel', and 'Apply' buttons are at the bottom right.

Fig. 2.21 – DX App Form Generator – Step 5 – Calculate type

**Note: Calculatable types**



**Calculate** type questions can only be performed on **ComboBox –Text**, **Radio –Text** and **Numeric – Text** type questions.

Specify the formula for the **Calculate** question in the **Formula** pane, and highlight the corresponding question in the **Question** pane. The question's options, if available, will appear in the **Options** pane.

Formulae can be written in one of two ways:

*Example 1:*

Encapsulate within an IF-THEN - ELSE statement

IF(Expression, Value\_if\_True, Value\_if\_False)

where

Expression = any logical expression

Value\_if\_True = the value of this question if the expression is true

Value\_if\_False = the value of this question if the expression is false

*Example 2:*

Encapsulated within parenthesis

[(Q3/Q2)\*100]

where, Q3 and Q2 are variables for their respective question numbers.

Click the **Validate** button to verify the formula (Fig.2.22).

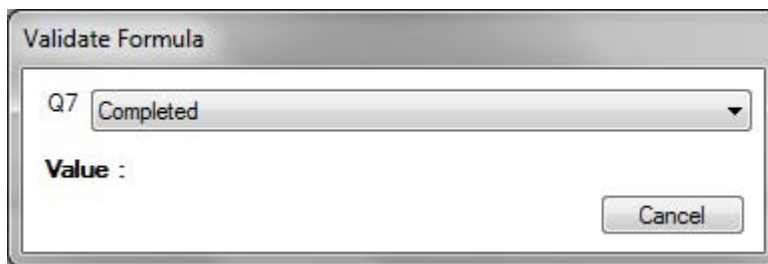



Fig. 2.22 – DX App Form Generator – Step 5 – Calculate Validation

If the set formula is incorrect, a pop-up window with the message “**Invalid formula**” appears.

### Setting dependent questions

For setting dependency of the questions based on the responses, click  **Browse** next to the **GridID** column (Fig. 2.23).

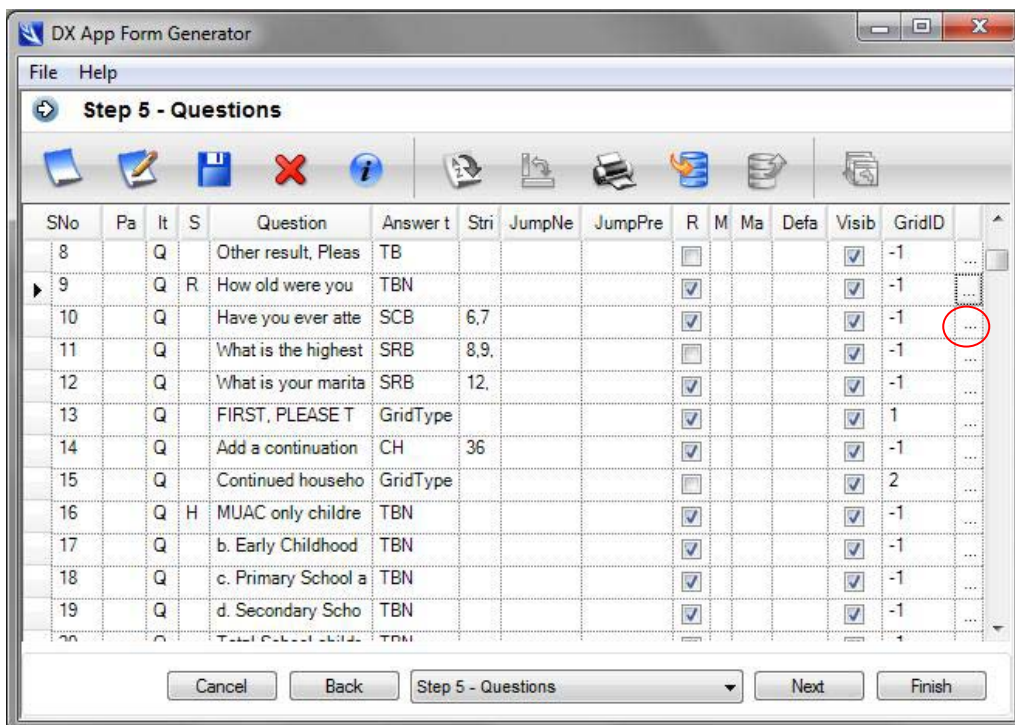


Fig. 2.23 – DX App Form Generator – Step 5 – Dependent questions

The responses to some questions can be interdependent. For example, if a certain question is answered “No,” then the questions dependent on it may go unanswered. To hide these unanswered dependent questions, you can specify the question mapping in the **Set Navigation Info** dialog box which appears when you click **Browse** next to the **Grid ID** column (Fig. 2.24).

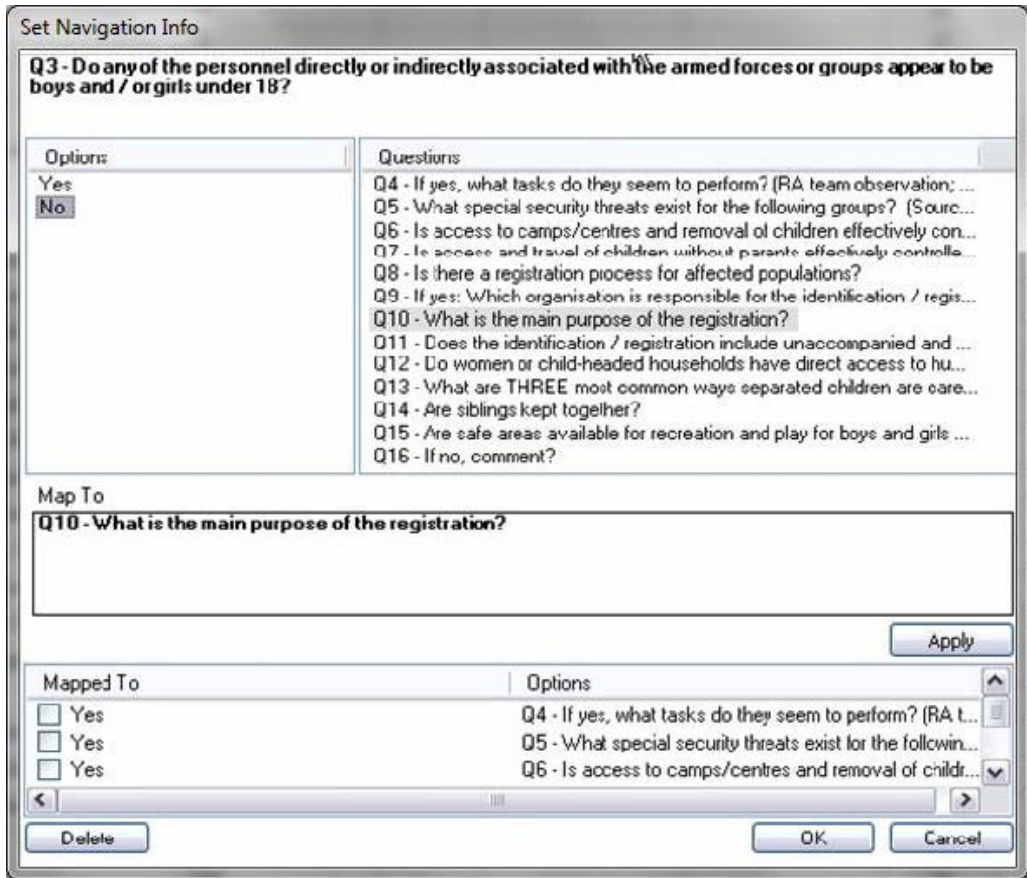


Fig. 2.24 – DX App Form Generator – Step 5 – Dependent questions

In the example shown in Fig. 2.25, Questions 4 through 9 are dependent on the answer to Question 3, and are therefore mapped with a “Yes” response to Question 3. In this case, if a user answers “No” to Question 3, the survey will direct him next to Question 10.

## Re-arranging the order of questions

To re-arrange the order of a question, select the question header and right-click to select the desired position for the question (Fig. 2.25).

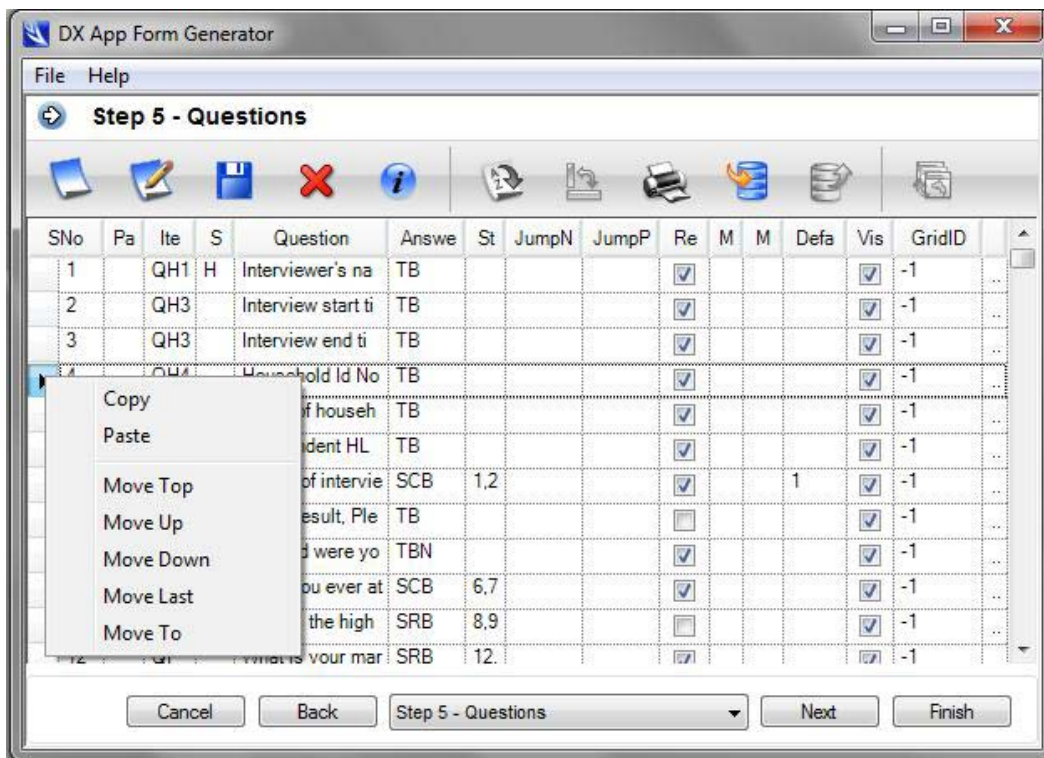


Fig. 2.25 – DX App Form Generator – Step 5 – Order re-arrangement

Once the position of the questions has been finalized, the application automatically takes care of the arrangement of the dependent questions.

Click **Next** to proceed to Step 6.

## Step 6 – Select areas

In step 6, select the survey areas. Whenever a survey area is selected, you must select all the associated upper area levels for that area (Fig 2.26).

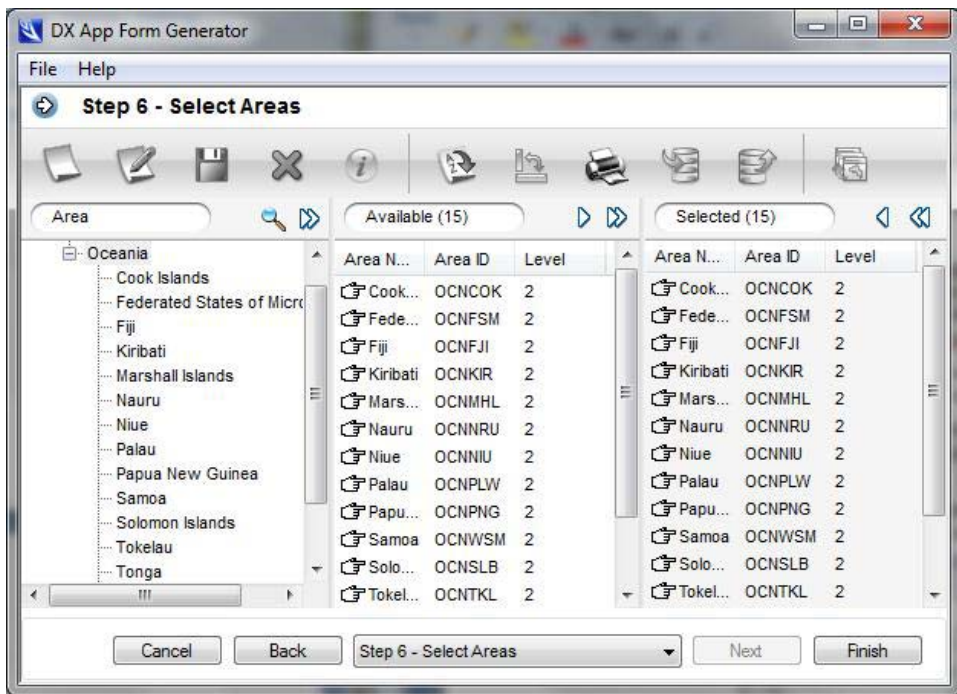


Fig. 2.26 – DX App Form Generator – Step 6 – Select Areas

Clicking **Finish** with improper area selection will result in an “Invalid Selection” message appearing.

Note that an Area\_Data.xml file will be created in the same folder where the questionnaire XML file is stored. The surveyor can obtain the list of areas from this XML file.

When done, click **Finish** to complete generating the XML-based rapid assessment form.