

Manual for conducting socioeconomic surveys through Pocket Portable Device Assistants (PDAs) and personal computers

Version 1.0 August 2009



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Comments and questions

For comments, questions, mistakes, and omissions related to this manual and to the functioning of the *Socioeconomic Survey Form* program, please email:

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For questions and more information or examples on the methodologies and tools for conducting socio-economic surveys by means of tools described through the present manual, please email:

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1. Introduction

These programs were developed at CIMMYT for conducting field socioeconomic surveys by means of expand PDAs and expand PCs. The process of collecting data in the PDA or PC consists of designing the survey on the PC, taking the questions from the questionnaire, and programming them. This generates the template containing the questions in a file with extension .ssf. This file allows the socioeconomic survey form (SSF) for the PDA, as well as the SSF for the PC, to interpret the template and design the backbone of the questionnaire on the screen, capturing the survey data by means of a set of validation rules in the program. The survey tools are divided into two programs.

1.1 Socioeconomic survey form programs

1.1.1 Socioeconomic survey form for Pocket

The Socioeconomic Survey Form (SSF) is a program designed for Pocket PCs. It runs with portable devices such as Pockets and Ultra-Mobile Personal Computers (UMPCs) with Windows Mobile as its operating system. To date, we have tested the SSF with Windows Mobile 2003 SE, and Windows Mobile 5.0, but not with later versions.

You can build entry forms based on templates for entering new information and display or edit entered data. The number of questions you can enter is limited only by the capacity of the Pocket PC. In the forms, you record the information in XML files. With the SSF you can:

- Enter new information and edit the existing data
- Safely display the recorded data on a questionnaire.
- Navigate easily through questionnaires.
- Perform data entry with validation rules.

1.1.2 Socioeconomic Survey Form for PC

The Socioeconomic survey form for PC is a program designed for PCs. The application runs on desktop computers, laptops, and netbooks, and in general with any computer that has Microsoft Windows as its operating system. To date, we have tested it with Windows 2000, XP, and Vista.

It allows users to design templates for the Pocket and also for PC. The templates are files with XML syntax that the Socioeconomic Survey Form program reads and constructs so as to generate forms for entering data through controls such as text fields, boxes, radio buttons, and lists. The data introduced can be exported to different file formats such as CSV, SPSS¹ or MS Excel. The templates have an *.ssf extension and the data captured is saved in the *.xml extension files with the same file name as the template files.

With the SSF version for PC you can easily design forms for entry capture. Simply select the type of control you want to see in the capture form, place it where you want it on the screen and assign it some properties such as the text to display, capture value by default and validation rules.

In general, SSF has the following characteristics:

- It is free (requires no payment for use).
- You create capture forms merely by dragging and dropping the field controls.
- Easy handling of the design and data entry thanks to its user-friendly interface in a Windows environment.
- Requires no prior programming or database expertise for designing the capture forms.
- Allows for the creation of relational tables, simplifying the creation of large arrays or matrices.
- *WYSIWYG* (What-You-See-Is-What-You-Get) view: The design of the form corresponds to the data entry form in your Pocket and PC.

¹ SPSS (Statistical Package for the Social Sciences): A software system for data management and analysis. SPSS may be used for many univariate and multivariate statistical analyses and has facilities for sorting and merging files and manipulating data.

- There is no limit to the number of controls set up in the capture form, or the size of the records, or the number of records in the database. The limits are set by the resources of the computer itself.
- Different types of data entry or variables (alpha, numeric, dates, boolean)

Although no previous knowledge of socio-economic surveys or similar programs is required, being familiar with the use of PDAs is useful, as well as experience using Windows Explorer on a PC, and the operation of the Pocket settings. For any reference, it is recommended you use the PDA's and PC's own manual.

The present manual is targeted to any user interested in conducting socioeconomic surveys through the Pocket and PCs. The manual covers fundamental aspects including the program [installation](#) and its [requirements](#), and a brief step-by-step [tutorial](#) for the user to start exploring the main features of the programs.

As a user, if you are only interested in conducting surveys, probably reading only the [tutorial](#) section will be enough. If you are a supervisor or administrator in charge of collecting the data from the questionnaire, you should go through the entire manual because to know all the program requirements and the installation in the Pocket and PC, for copying the files (data) from the Pocket to the PC (and vice versa), and to familiarize yourself with the template syntax to be able to modify it based on the changes made to the questionnaire.

The latest version of this manual and examples to help you use the software can be downloaded from the CIMMYT website:

<http://www.cimmyt.org/english/docs/manual/seconsur>

1.2 Basic Requirements

You will need a PC with a Microsoft Windows operating system (tested with Windows 2000 and XP). The PC should have a minimum processor speed of 1 GHz. The PC must have the Microsoft .Net Framework 2.0 Redistributable Package (or greater) and *Windows Installer 2.0* in order to be able to run the installation programs for Pocket and PC. If the computer system is Windows XP or Windows Server 2003, *Windows Installer* comes included. This program will not run on a Macintosh computer.

The Pocket PC device with one of the following operating systems installed: Pocket PC 2003/SE or Windows Mobile 5.0. A 400 MHz processor at least (624MHz altamente recomendable). To have the Socioeconomic Survey Form operating on the Pocket, Microsoft .Net Compact Framework 2.0 Redistributable (or greater) must be installed.

The SSF only takes up 1 MB of disc space.

1.3 Glossary of terms used

Check boxes - Small square boxes to the right of a choice. When checked (an "X" appears in the box) the choice is active (signals: yes). When not checked the choice is not active (signals: no).

Combo box - Text list that allows you to select an item from a list. This control displays the current selection (if available) in its input field. Clicking on the down arrow (drop down menu) will show the available text entries. Meaningful use of a Combo Box could be a list of states or countries, for example.

Capture controls - These are the controls that accept text responses/information entries through the keyboard and/or mouse strokes to select or change an option. Strictly speaking, they are all the SSF controls save for *labelCtrl*.

Display controls - This refers to the static text shown on screen that cannot be changed when in *Interview mode*. The controls that can display static text on screen in SSF are *labelCtrl*, *checkCtrl* and *tableCtrl*.

Key field (primary key) - The unique identifier for a row in a database table.

Label - Any descriptive text used for a description of another control or a form page.

Option (or radio) buttons - A group of small circles inside a box. Only one of the buttons in the box can be active at a time. The advantage of this control is a faster selection. A disadvantage is the dramatically increased use of space on the form because all the options are displayed on the form.

PC - Acronym for **P**ersonal **C**omputer. It is a term used to describe a class of personal computers based on Intel's 486 microprocessor and designed to be used by one person at a time.

PDA or Pocket PC - Short for *Personal Digital Assistant*, a handheld device that uses a stylus rather than a keyboard for input. PDAs today are available in either a stylus and/or keyboard version. PDAs are also called *Pocket PCs*.

Questionnaire - The actual survey form that contains your questions.

Relational database - A database where data are stored in more than one table, each one containing different types of data. Any data element (values) can be found in a relation by knowing the name of the table, the attribute (column) name, and the value of the primary key.

Table - A collection of data elements (values) that is organized using a model with horizontal rows and vertical columns

Template - Complete set of elements for particular types of questions from the questionnaires. The template also includes a set of logical rules.

Text box - A box surrounding text where text can be typed. Some programs allow you to set the box so it accepts a certain number of digits. For example, the box could be set to accept five digits to correspond with postal codes from a specific area.

Value - A number or a numeric code for an answer to a question. For example, if the question is "Are you married?" a value of 0 might represent "No" and a value of 1 might represent "Yes."

XML attribute - Attributes are used to specify additional information about the element. It may help to think of attributes as a means of specializing generic elements to fit your needs. An attribute for an element appears within the opening tag. For example, in the tag `<form title='General information'>`, *title* is an attribute, and *General information* is its value.

XML Tag - A piece of text that describes a unit of data, or element in XML. The tag is distinguishable as markup because it is surrounded by angle brackets (< and >) as for example, `<category>Sharecropped</category>`

XML element - An XML tag together with its contents. A unit of XML data, delimited by tags.

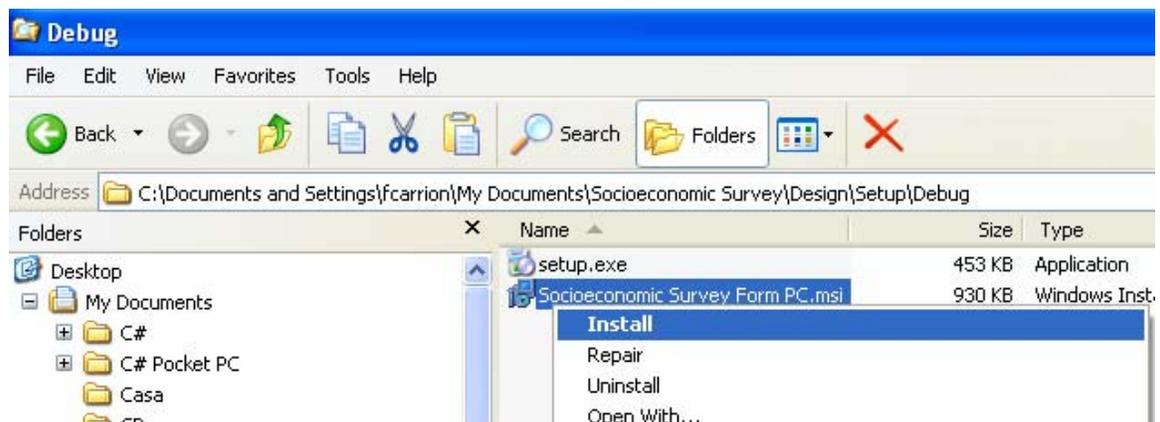
2. Installation guide

Installing the SSF is very simple. If the required programs are already installed on your computer for the correct installation of SSF, then simply run the *Socioeconomic Survey Form PC.msi* file and/or *Socioeconomic Survey Form Pocket.msi* file and follow the instructions.

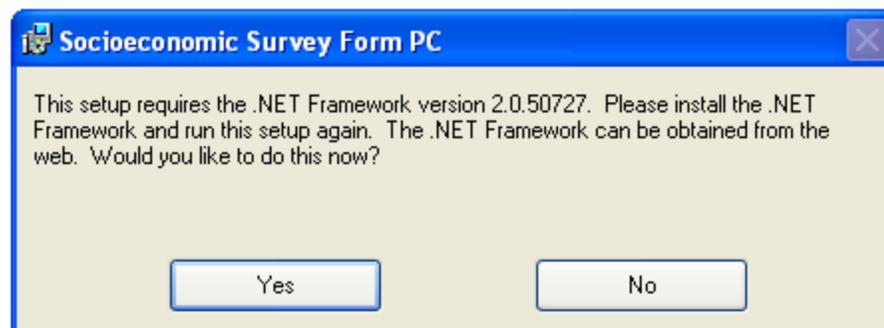
Following is shown the installation for PC and for PDA, separately.

2.1. Installation of the socioeconomic survey form for PC

The installation program comes in a file called *Socioeconomic Survey Form PC.msi*. Locate the file and select it using Windows Explorer. Double left-click or right-click to open the contextual menu, and select *Install*.

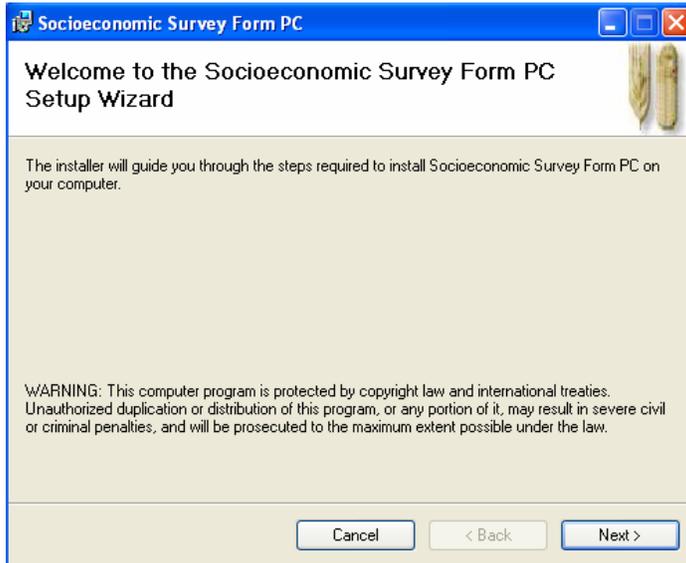


Note: As pointed out in the requirements, if your computer does not have the specified version of *Microsoft .Net Framework*, when you run the SSF installation the program will display the following informative window:

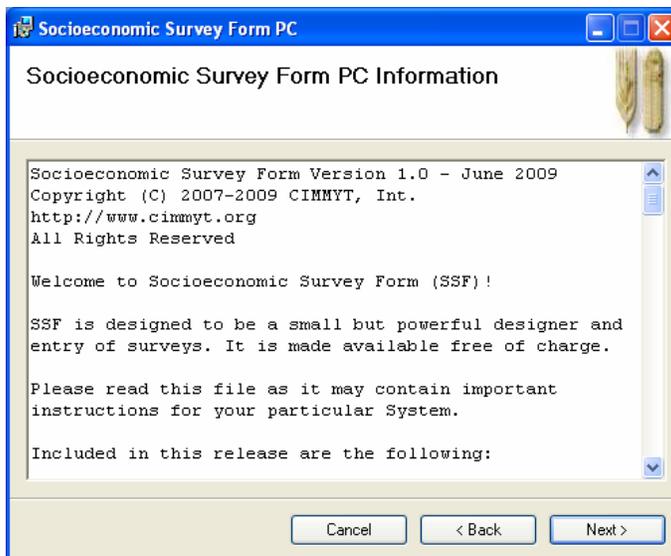


Install *.Net Framework* in whatever manner is most convenient for you and then return to the installation process.

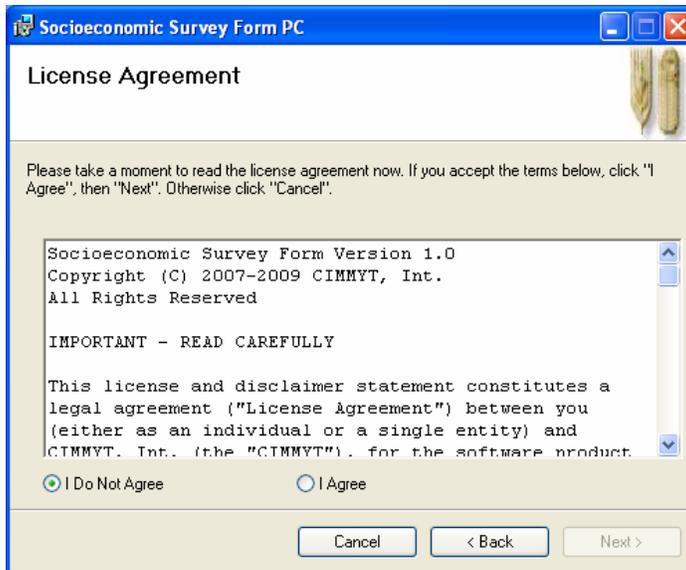
The installation sequence will now begin. As you can see, the welcome screen should appear next.



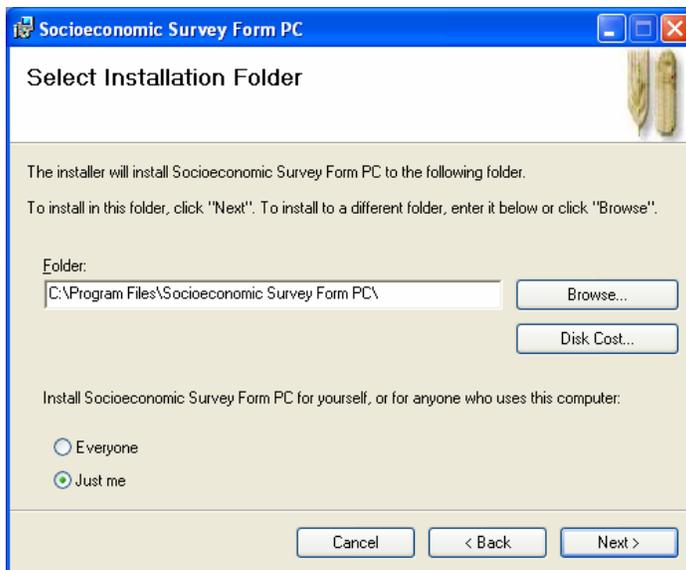
Click on *Next>* and a dialogue box will open up with program-related information.



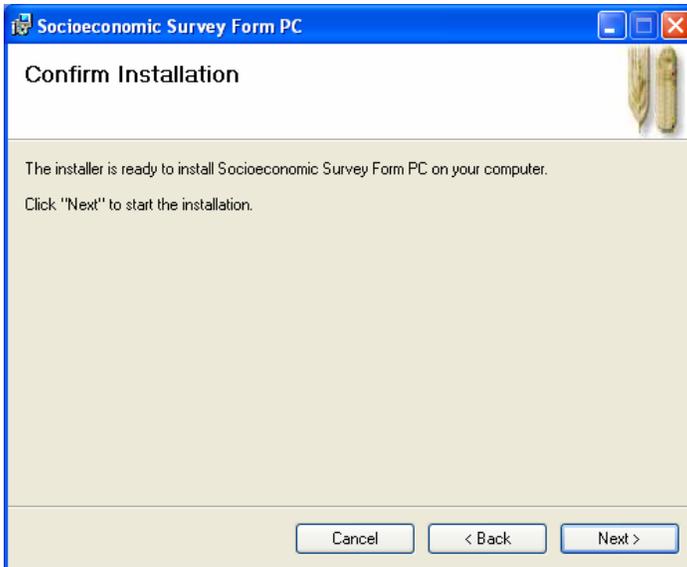
Click on *Next>* to see the type of license included in the software.



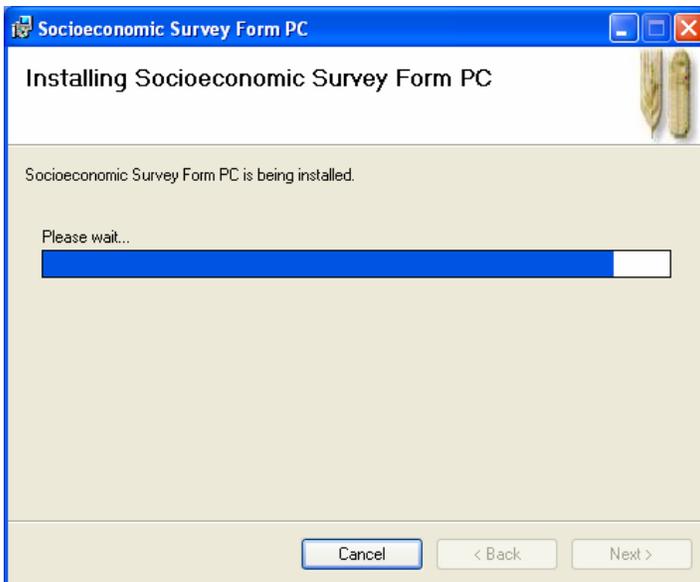
Accept the licence agreement to continue. Click on *I agree* and then *Next>*. Next you will be shown a destination file for the installation.



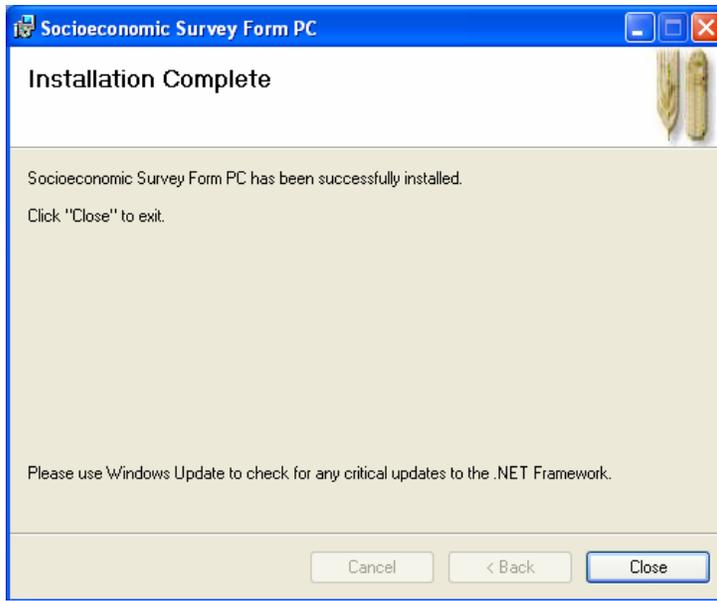
You can either accept the suggested file or select a different route for the program installation. Click on *Next>* to continue.



Final set-up screen. You will no longer be asked questions so this is your last chance to cancel the process if need be. Click on *Next*> to confirm and start the installation. You will be shown the progress of the installation.



Finally the last screen will appear, confirming that the installation is almost complete.



End of the process.
Click on *Close* to close
the window and exit
the application.

2.2 Installation of socioeconomic survey form for Pocket

The SSF version 1.0 has been tested in Windows Mobile 5.0, Windows Mobile 2003 SE operating system, and Pocket PC 2003, with a screen size of 240 x 320 pixels and in portrait mode. It has not been tested on Pocket PC with previous operating systems such as Windows Mobile 2002. As well, it has not been tested on Windows Mobile 6.0 or higher.

The procedure shown below operates on Windows Mobile 2003 Second Edition devices. However, the process should be similar for Pocket PC 2003 and for Windows Mobile 5.

To install SSF in your PDA, you need to:

- Synchronize the PDA with your PC, and
- Install SSF in the PDA from your PC

To synchronize the PDA with Windows PC use ActiveSync. This can be done by placing the Pocket on its base (desktop cradle), turning it on, and connecting the desktop cradle to your PC by attaching the USB cable to the USB port on both your

PDA and your PC. Then connect one end of the AC adapter to the cradle and the other end to an electrical outlet.. The following screen is displayed:



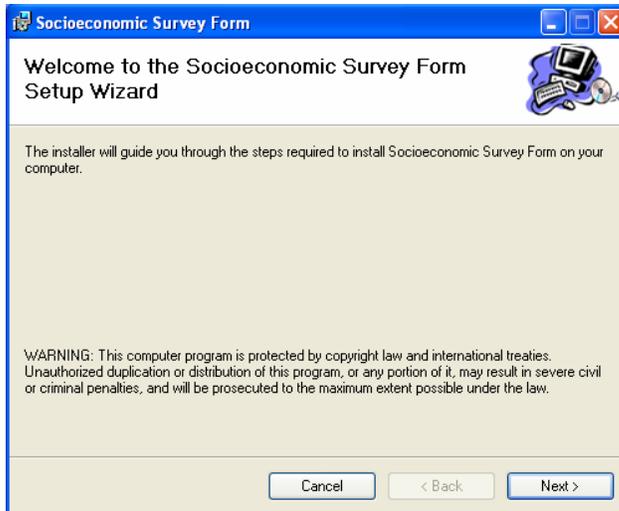
You may select any option, but the easiest option is *Guest partnership*. Click on *Next >*, since you do not need to synchronize data for installing the program.

Afterwards, the complete connection screen is displayed.



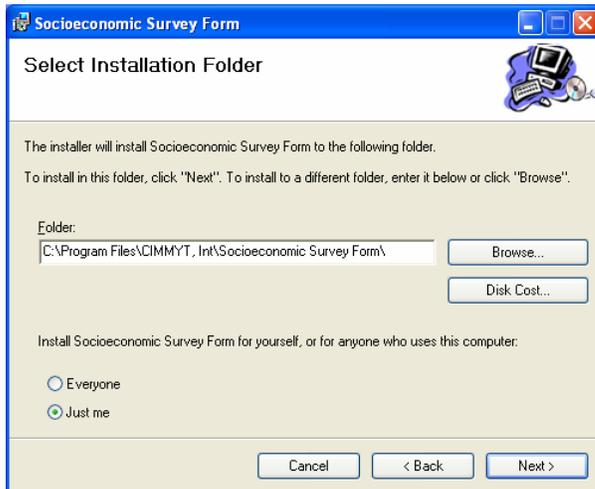
Once plugged-in, locate and select the *Socioeconomic Survey Form Pocket.msi* file; for example, with Windows Explorer. To start installation immediately, double-click on this file from its current location. The installation will start automatically, and a Setup Wizard will guide you through the process.

The welcome screen is displayed first.



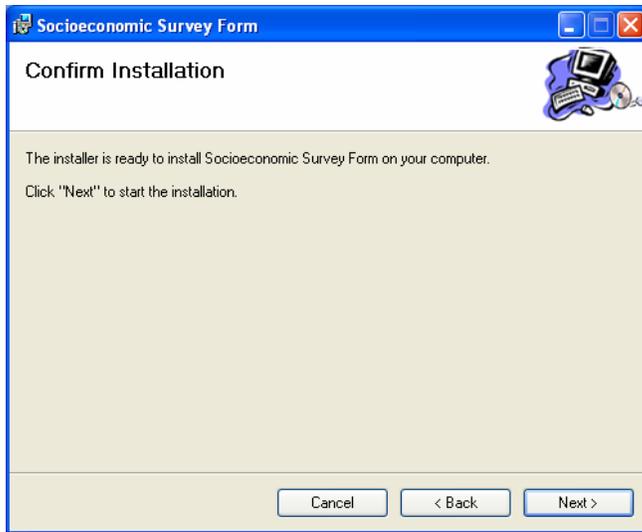
Then click on *Next >*.

The following screen pops up.



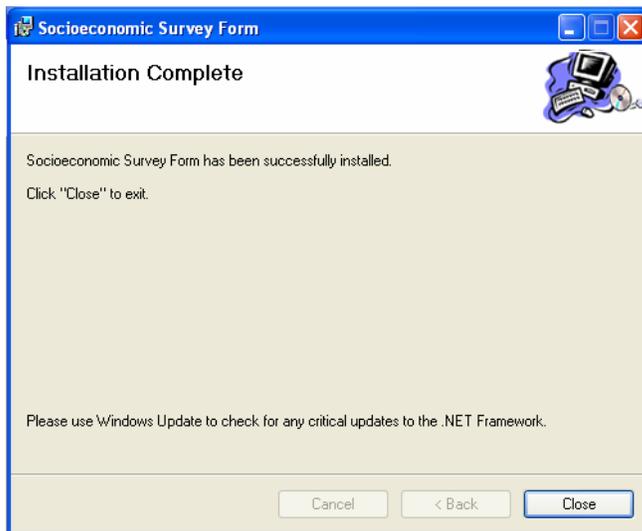
Enter the path of the folder where you want to install the program or accept the suggested path. Then click *Next >* to continue.

Subsequently, the following screen is displayed.



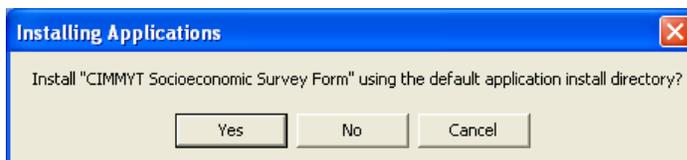
Here the screen requires you to confirm the settings selected for the installation. This is your last chance to review and modify the changes entered. Click *Next >* to start installation.

The following screen is shown.



The program will start to install the files on your hard disc. It will show if installation was successful or if there were problems.

A link to your Pocket PC will then be established. The Setup Wizard will then ask you if you want to install the program in the default directory.



If you do not have a memory storage card or if you want to install the program on the main memory of your PDA, select "Yes" and the program will be installed in your Pocket PC.



If you have CompactFlash cards or Secure Digital Memory and you want to install the program in one of these, select "No" and a menu will ask you for the destination.

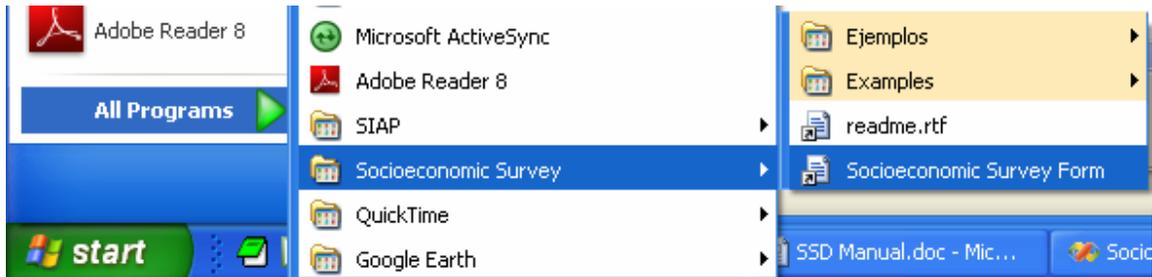


Select the destination you prefer, and then click on *OK* to finish the installation process.

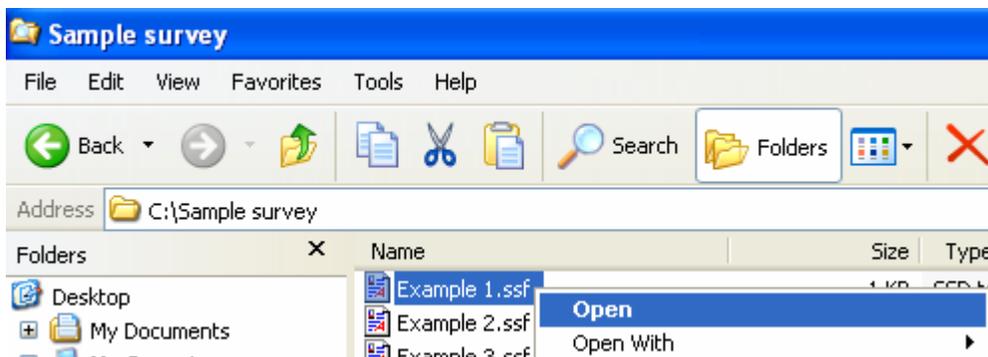
Please note that when a program is installed on the memory storage card, removing it makes the program unavailable when trying to open it. In this case the Pocket will show an error message *"Cannot find 'Socioeconomic Survey Form' (or one of its components). Make sure the path and filename are correct and all the required libraries are available."* If you want to work on the program and it is installed in the memory storage card, make sure the card is properly inserted in the PDA.

3. Socioeconomic survey form for PC

Once the program is installed you can download it using *Start > All Programs > Socioeconomic Survey > Socioeconomic Survey Form*.



But you can also run the program with *Windows Explorer* by opening a template file, double clicking on the template file or using the contextual menu, as shown below:



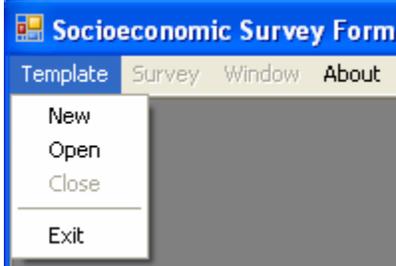
Regardless of how you open the program, the following screen will appear displaying the main menu.



The program should then display a menu at the top with four options: Template, Survey, Window, and About.

3.1 Description of the main menu

Menú Template



The Template menu displays the following options:

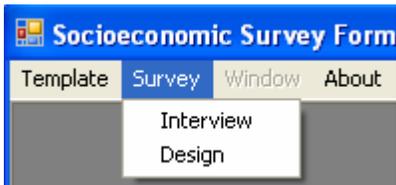
New Creates a small template that is fully functional and includes all the capture controls.

Open Opens an existing template (*.ssf) and enables the *Survey* menu for capturing data or modifying the design of the survey.

Close Closes the current template. If changes were made to the template after opening it, the application will ask you if you wish to save them.

Exit Shuts down the application (SSF) after asking you to save the changes made.

Survey Menu

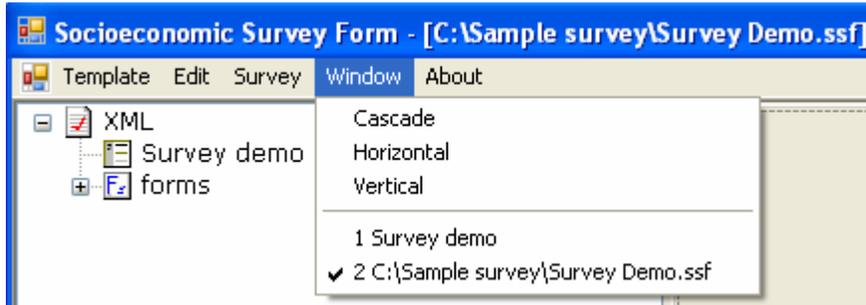


The Survey menu only has the following two options:

Interview This option is enabled once the existing template is opened or once a new one has ben created and saved to the disc. It displays the template on the screen so that new data can be input, modified or deleted from the database.

Design Allows the user to continue working on a previously designed template by clicking on the menu option *Template > Open*. The user can also open a new template to be designed by clicking on *Template > New*.

Window Menu



The Window menu has the following options:

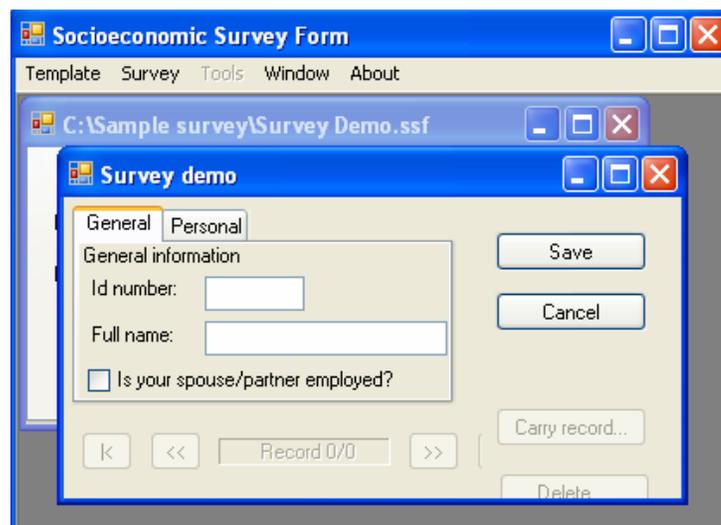
Cascade If you are working with two windows (Interview and Design), this arranges them into a cascade shape.

Horizontal This sets up the two windows. If they are open they will tile horizontally.

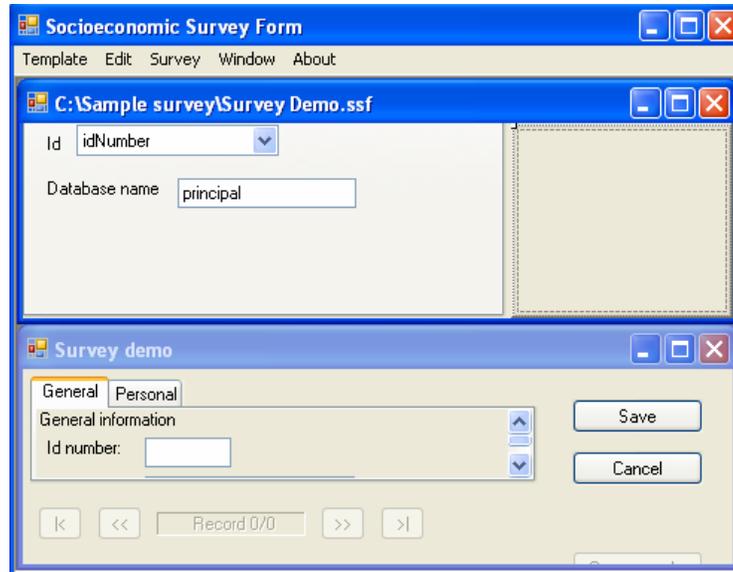
Vertical This sets up the two windows. If they are open they will tile vertically.

The following show the different set-ups:

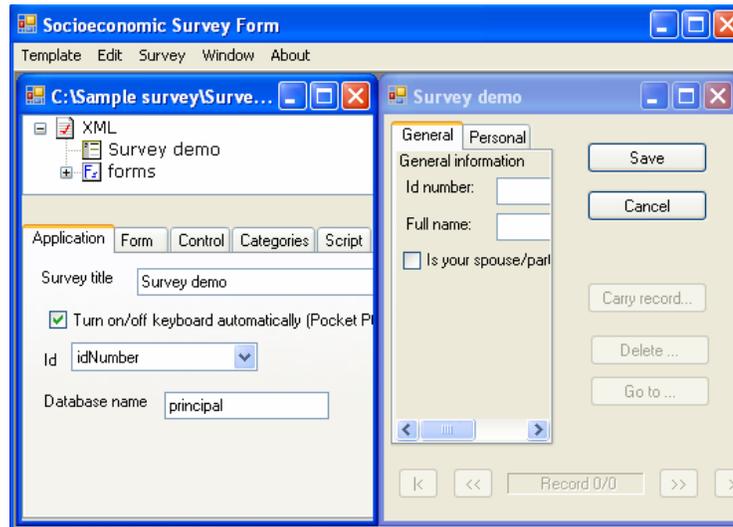
Cascade



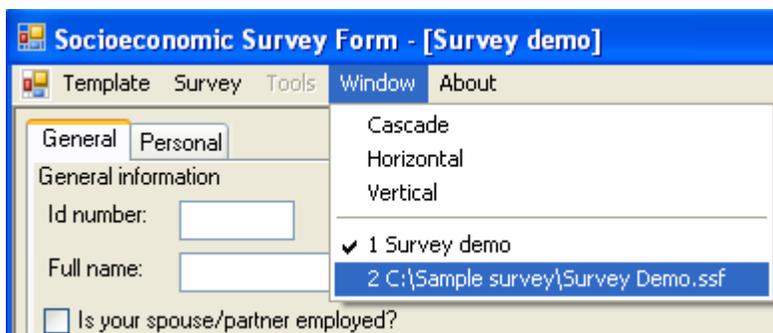
Horizontal



Vertical

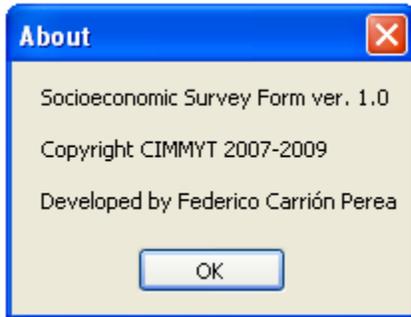


Additionally, if both the *Interview* and *Design* windows are open, you can move from one to the other by choosing the name at the end of the *Window* menu, as shown below:



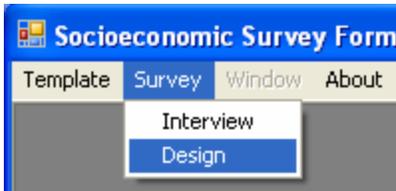
About Menu

This displays a simple window with the name and version of the program, copyright, and the name of the developer of the application.



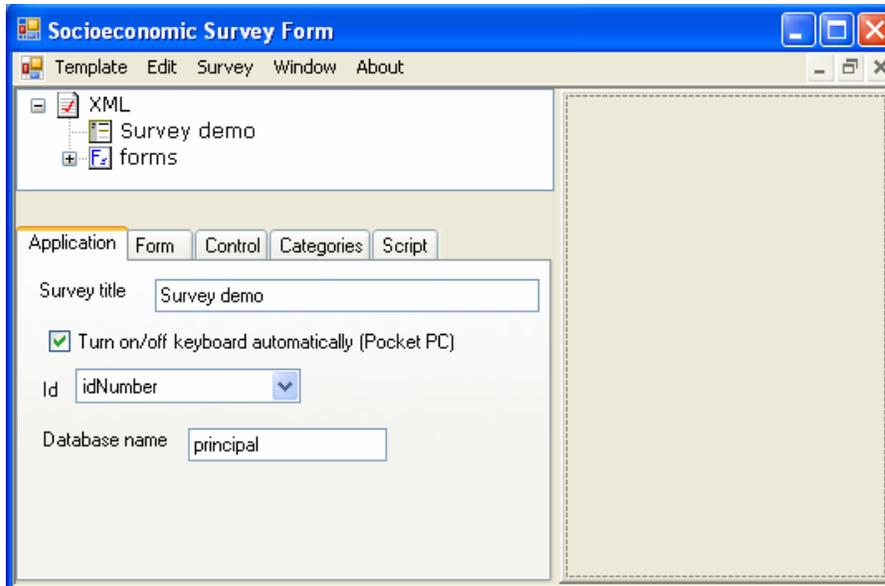
3.2 The application in Design mode

Access this option is by going through the main *Survey* menu and then selecting *Design*.



Notice that the *Design* menu option is only available if you have previously opened a template or you are starting a new one.

The first time you load a template in the *Design* window you will see the following:

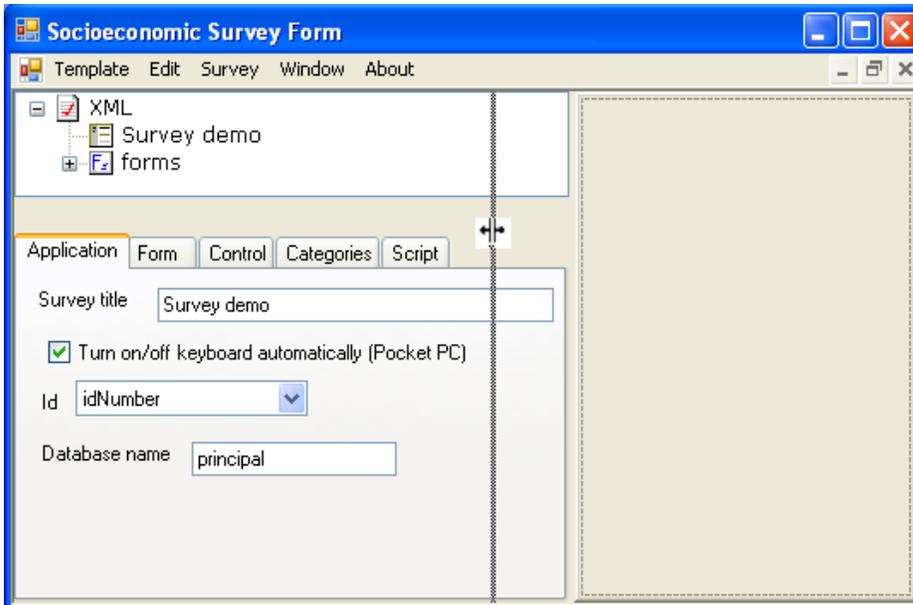


This window is divided into two panels:

Left panel In order to hierarchically represent the elements of the template a tree-shaped structure (*list of controls*) is shown in the upper part of this panel. The lower part of the panel shows the properties (*list of properties*).

Right panel This serves to display the shape and position of all the controls of a specific form, such as labels and boxes of text. We refer to this panel as *view of controls*.

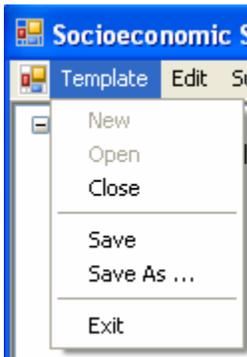
The area available for these two panels can be modified to suit the user. The SSF has a vertical bar that divides these panels which can be moved by selecting it with the mouse and then moving it left or right to modify the width of the panel in question.



3.2.1 Description of the Main menu

When you open a template and you are in Design mode, the main menu is modified and displays the following new elements:

Template Menu

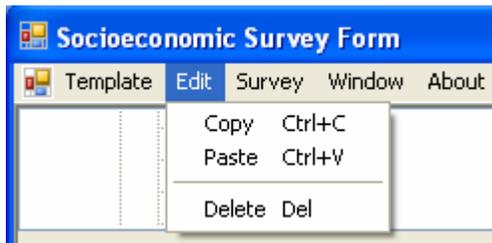


This sets up the following new options:

Save Saves the template to a disc file in XML format. If the template is new, the application asks for a file name.

Save As ... Allows you to save the template under a different name or in a different place, or both. By changing the file name and/or path, the new template becomes the current one.

Edit Menu



This menu affects the controls that appear in the right side panel (*view of controls*) in the Design window.

The only options available are:

Copy Copies the controls selected in the controls view. You can use cut and paste to transfer data from one form to another. The contents of the copy can be replaced by another *Copy* operation.

Paste Inserts the previously copied controls into middle of the current form. The inserted controls inherit all the properties of the copy, except for name and position. The application automatically assigns a unique name according to the type of control, for example, *checkCtrl1*, *comboCtrl5*, etc.

Delete Deletes all the controls currently selected. These controls are not copied in the memory, so the operation is irreversible.

3.2.2 Description of the upper left panel (list of controls)

The template is hierarchically represented in the shape of a tree. Using the mouse or the keyboard you can navigate through the forms and their respective controls.

Using the Keyboard

Use the following combinations of keys to navigate between the nodes of the tree.

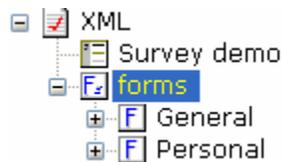
- To open and close a node, click on the right (or +) and left (or -) arrows.
- To move forward or back a level in the tree node structure, click on the right and left arrows.
- To move to the following open node, click on the down arrow.

- To move to the previous open node, click on the up arrow.
- To move to the start or the end of the tree, click on Home or End.

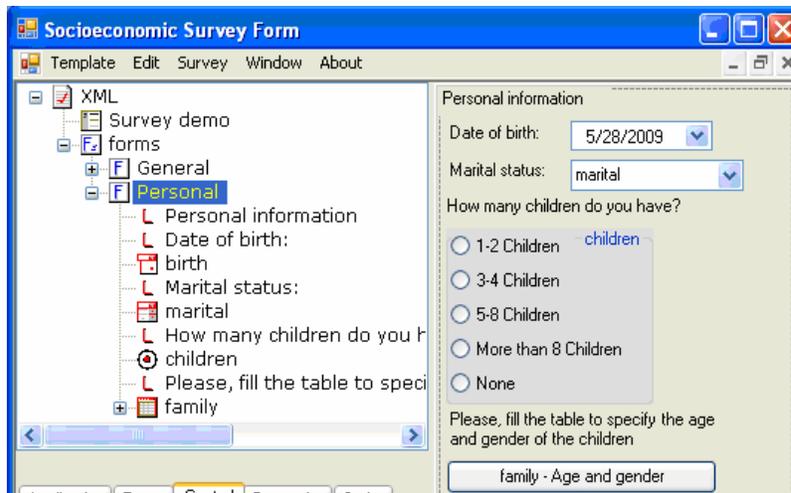
Using the mouse

- Click on the name of the node to select it.
- Click on + or - to open or close the node.
- Double click on the name of the node to open or close the node.

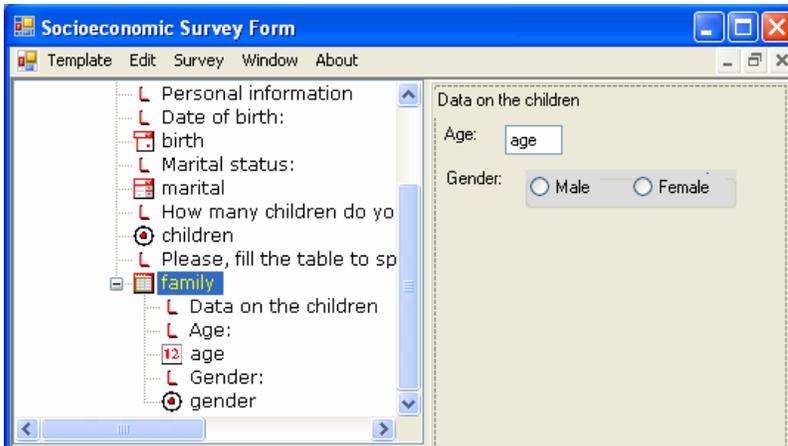
The basic structure of the list of controls is shown as follows:



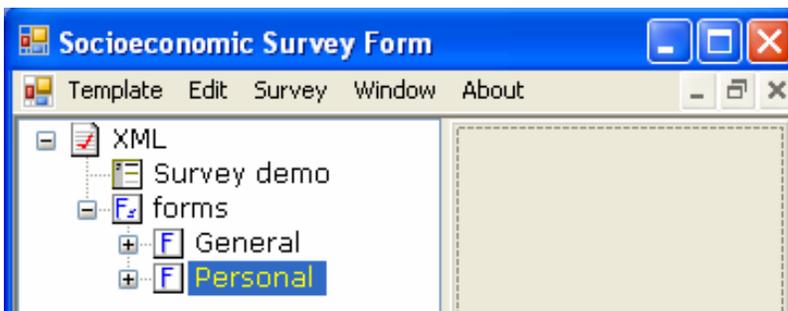
Here you will always see an **<XML>** node root, the **<title of the survey>** (*Survey demo* in this example), the node **<forms>**, and the different **<forms>** coming out of the node **forms**.



To view the content of the forms, just open the desired form and the *view of controls* panel displays the controls.



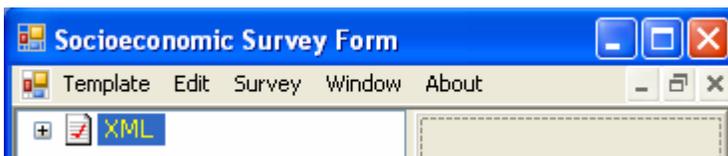
You can also view the content of the tables by opening this node in the *list of controls* panel.



All the controls in the left and right panel are hidden when the current form is closed, as shown in the figure.

As you can see, an open node icon (–) indicates that the associated nodes are visible, and a closed node icon (+) shows they are hidden.

To hide all the nodes, click on the minus sign (–) to the left of the <XML> node root.

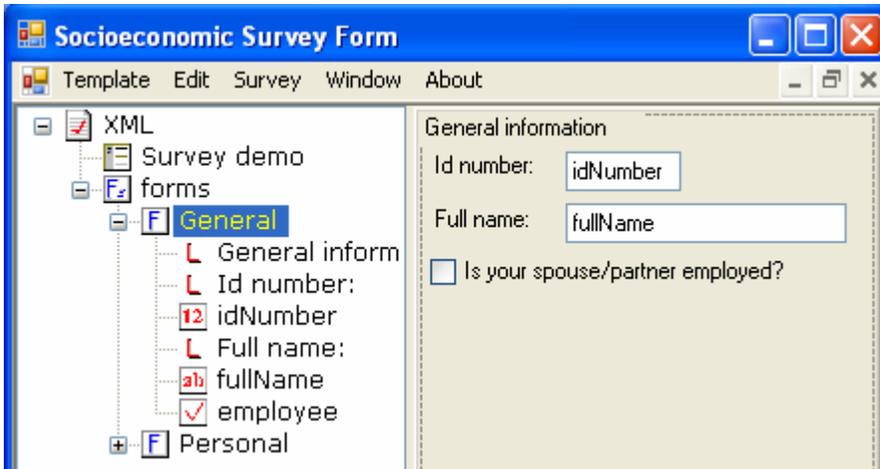


The nodes contract, visually indicating that the associated nodes are hidden.

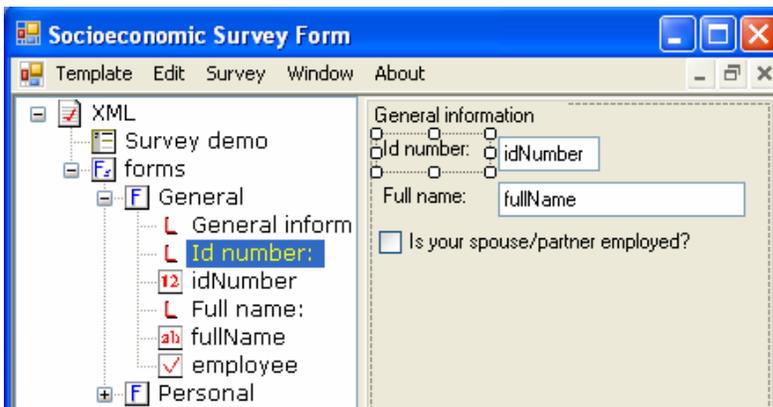
Control Tab Order

The control tab order indicates the order of the capture controls, that is, the next data entry control that you see when you hit the Tab key.

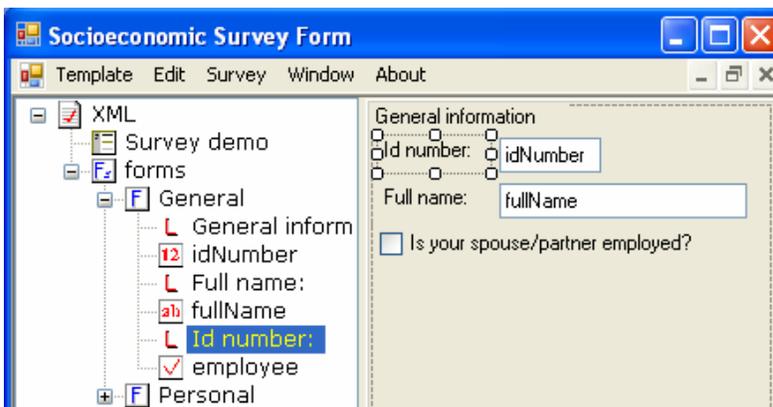
The following figure shows the order of the controls under **General**:



If you are entering data in the **idNumber** control, and you hit the Tab key, the cursor immediately jumps to the **fullName** capture control, as is specified in the left panel, *list of controls*. The order you see in the left panel is not necessarily the same as the one in the right panel, *view of controls*.



You can change the order of the nodes. On the left panel, click on the node you wish to move.



Drag the selected node to a new location (within the same form) and drop.

Notice that in the left panel, the **Id number** label now appears after the **idNumber** capture control, and that the right panel showed no change whatsoever.

You can also move the **form** type by selecting it and moving it to where you want it, as in the previous example.

This version of SSF only permits changing the order of a node one at a time. It is not possible to select a group of nodes and move them all to a new position in one move.

Description of the node icon

Following are described the different icons that show the nodes to the left.



Root

The main root of the node. It is only a representation of the XML structure.



Application

This node corresponds to the application properties, such as the title (displayed as the name of the node), automatic presentation of the keyboard (for the Pocket PC), the unique key identifier for record management, and lastly the name of the main table in the database.



Forms

The node Forms is a basic node which displays the different forms the user adds to his/her questionnaire. There should be at least one form per questionnaire.



Form

This shows the title of the current form.

The controls shown below belong to the current form and are the ones that give shape to it (capture and display). There should be at least one control per form.



labelCtrl

Control that only serves to put labels or titles on the form. It usually comes before the entry control to describe what is being captured.



alpCtrl

This allows the user to introduce alphanumeric text. It can limit the number of characters to be entered.

 numCtrl This allows the user to introduce numeric text only. It can control the range of values, and even the number of digits to capture. For example, to introduce the postal code it can be limited to five digits.

 dateCtrl This control allows the user to introduce a date easily and correctly.

 checkCtrl Control used for Yes/No (true/false) questions. A check mark means **Yes** (value of 1) and no check mark means **No** (value of 0). Use *checkCtrl* for very simple questions. If you wish, you can assign a default value (0 or 1) that is used when a new record is generated in the *Interview* mode.

 comboCtrl Allows you to choose an option from a list of alternatives that drops down. You can put a default option that is selected automatically when a new record is added.

 radioCtrl This control is used to select an element within a list of options. This control is an alternative to *comboCtrl* in the manner of selecting an option within a list of multiple options. All the options are presented on the screen so that the selection can be made more quickly; the disadvantage is that it occupies more space in the form.

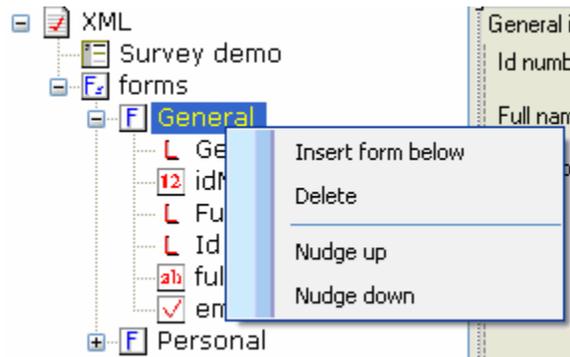
 tableCtrl tableCtrl is designed like a button so that the user can introduce a table in a capture form. Usually tables are identified in the questionnaire when there is a two-dimensional arrangement with N columns and N rows, such as, for example, capture by age, gender and schooling of all the members of a family.

Contextual form menu

The following describe the different menus that appear in the left panel, *list of controls*.

There are only two menus available in the panel and these are **form** and **control**.

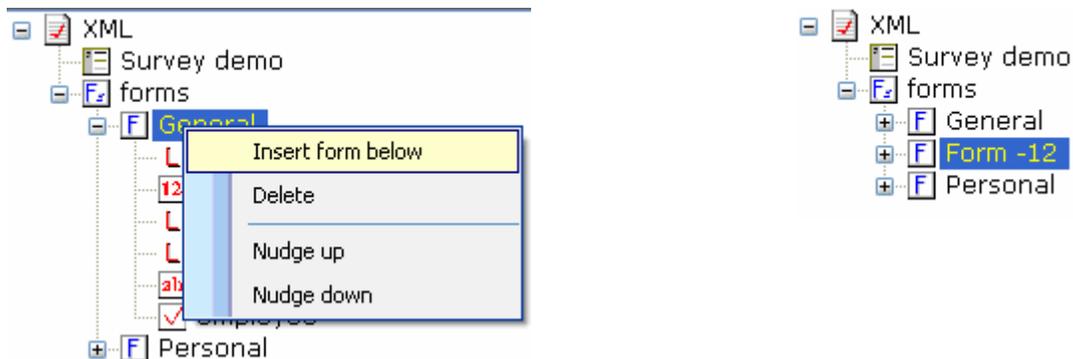
Form menu



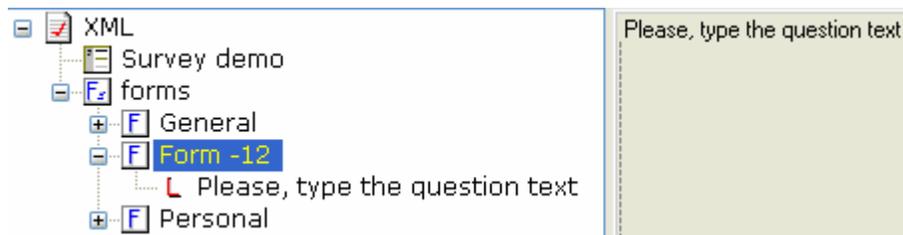
Description of the menu

a. Insert form below

Insert a new form right under the selected form.

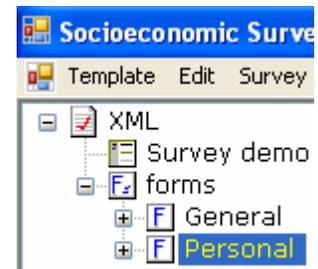
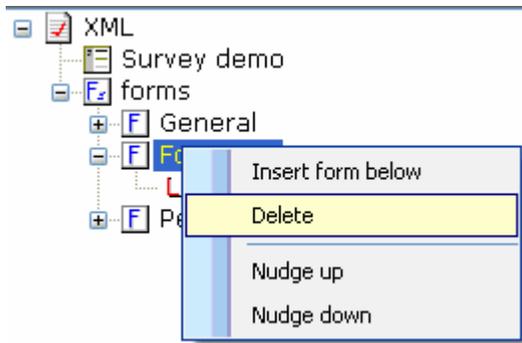


The program automatically assigns a title to the form and adds a label type control (labelCtrl). You can change these titles later on for your convenience.

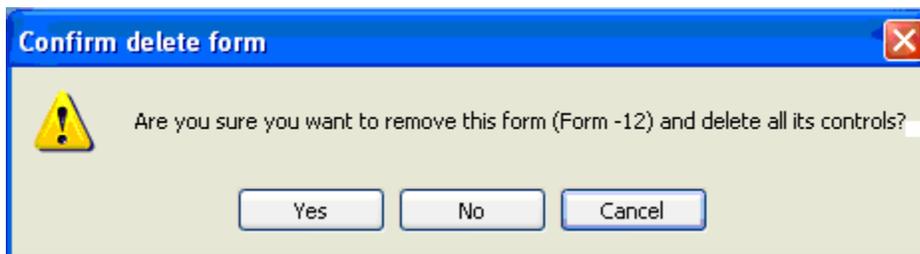


b. Delete

Permanently deletes the selected form. The deletion also includes all the controls associated with this form.

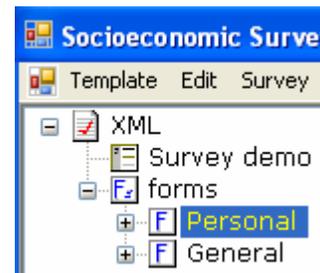
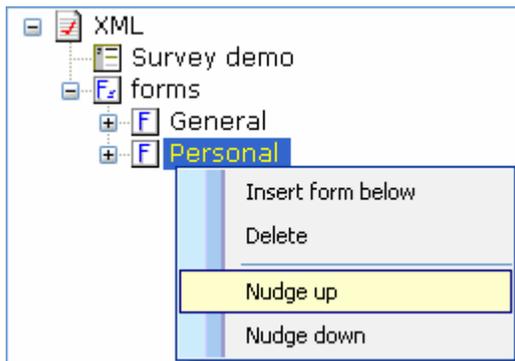


Before eliminating the form, the system will wait for you to confirm your choice.



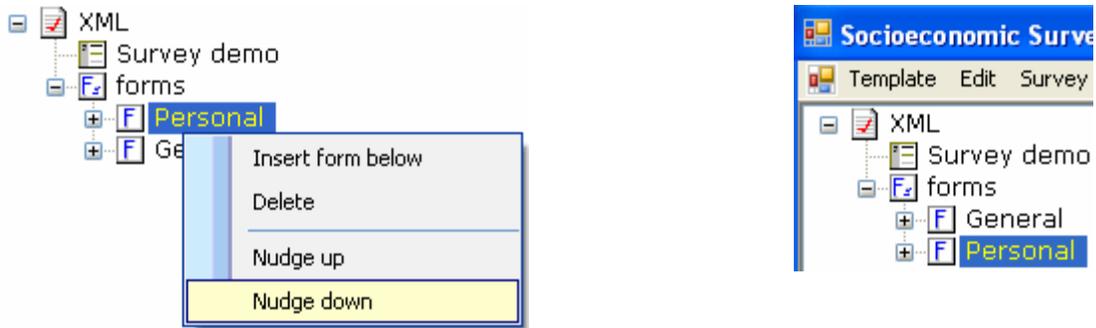
c. Nudge up

Moves the node up one level above the one before it. You can also do this by selecting the node with the mouse and dragging and dropping it where you want it.



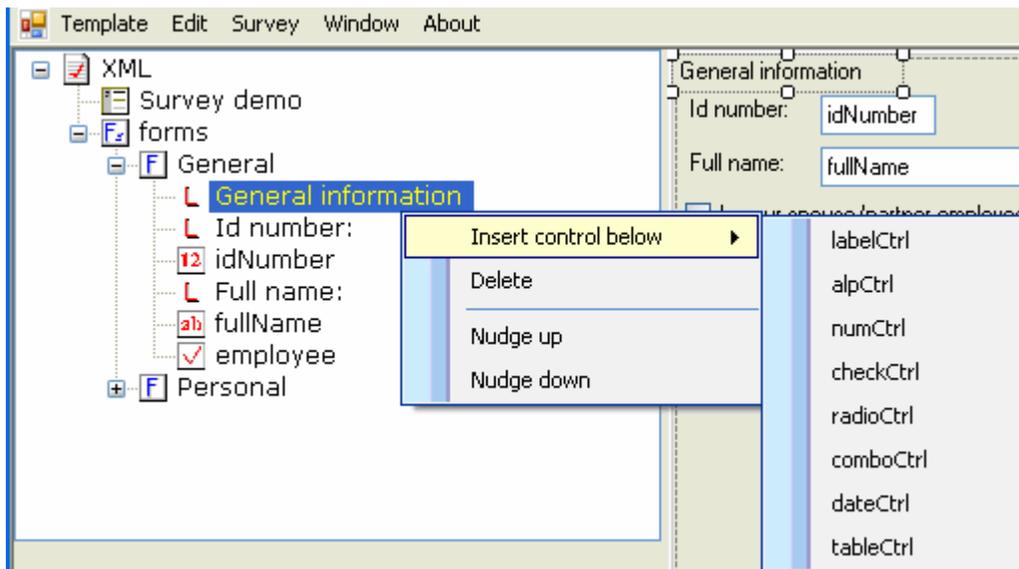
d. Nudge down

Moves the node down one level below the one that follows. You can also use the mouse to move the node down by selecting it, dragging it down and dropping it where you want it.



Contextual control menu

This contextual menu only appears when the node is of the control type. When you right-click on one of these nodes, the following appears:



This menu has the following options:

- Insert control below** Inserts a control under the selected node.
- Delete** Eliminates the selected node in the left panel *list of controls* (also the right panel), with no prior confirmation.
- Nudge Up** Moves the node up one level. If the node currently occupies the highest position, the operation does nothing.
- Nudge Down** Moves the node down one level. If the node currently sits in the lowest rung, the procedure does nothing.

Insert control below menu

As has been pointed out, this option inserts a node of the control type under the selected node. When a control is inserted, it appears as a node in the upper left panel (*list of controls*), displaying some of the properties in the lower left panel (*list of properties*), but it also occupies a place in the right panel (*view of controls*).

The inserted control will be occupying a position slightly lower than and to the right of the node preceding it, to prevent the new inserted control from covering some other existing one.



The controls can be inserted using the following:

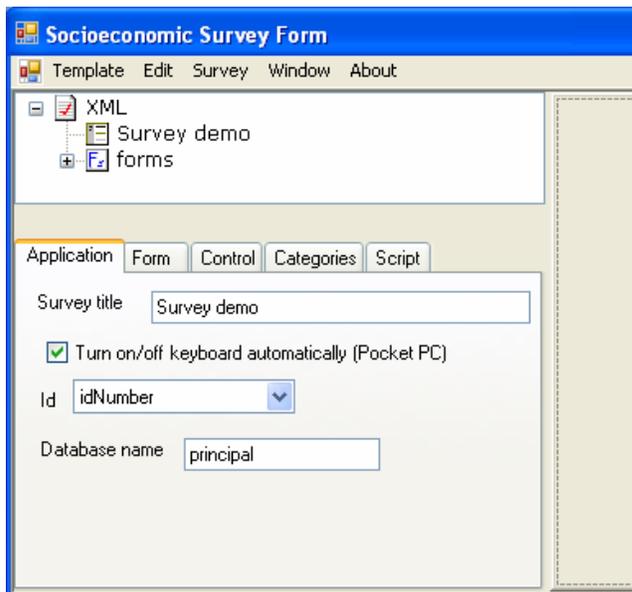
- labelCtrl** Adds a static label. Assigns the name label# by default. This name is only used internally by the application, as this type of control does not generate a field in the database.
- alpCtrl** Adds a control for capturing alphanumeric text. Generates the name alp# and by default limits it to a maximum length of 255 characters.
- numCtrl** Adds a control that limits the capture to numeric values only. Automatically creates the name num#.
- checkCtrl** Adds a verification box. Assigns it the name check#.
- radioCtrl** Adds a radio button with two elements (radio#_1 and radio#_2) as categories. By default, assigns the name control radio#.
- comboCtrl** Adds a drop-down list with two elements (Option1 and Option2) as categories. Assigns the name combo#.
- dateCtrl** Adds a control of the date type in a short form set up by its own system. The date format is set up by the system (System Settings) in the PC and in the Pocket. Creates the name date#.
- tableCtrl** A button is added as a link to the table. A text label for the table is generated by default. Notice that the table created is empty as at it does yet not include capture controls that can form part of the database. The

name of the control that is automatically assigned (and which is also the name of the table in the database) is table#.

3.2.3 Description of the lower left panel (list of properties)

The *list of properties* panel displays the properties set up to the different elements of the template. The content depends on the type of control selected; for example, if you are working with the *form* node, the panel displays all the properties associated with this node.

When you open a template and display it in the *Design* mode, the list of properties is displayed, located in the lower left panel of the program.



As you can see, the list of properties is grouped into five tabs, as follows:

Application Displays the general properties of the application such as the title of the survey and the name of the database, among others.

Form Displays the title of the selected form.

Control Displays the properties inherent in the selected control, such the type and name of the control, the position it occupies on the screen within the capture form, etc.

Categories Displays the elements of the categories that are part of the controls *comboCtrl* and *radioCtrl*.

Script Displays the scripts associated with the selected control. Scripts are events that occur in *Interview* mode, after entering a value or selecting an option in a capture control.

To view the properties of a node, simply select it in the upper left panel (or in the right panel *view of controls*), and you will then see the associated properties of this particular control in the lower left panel.

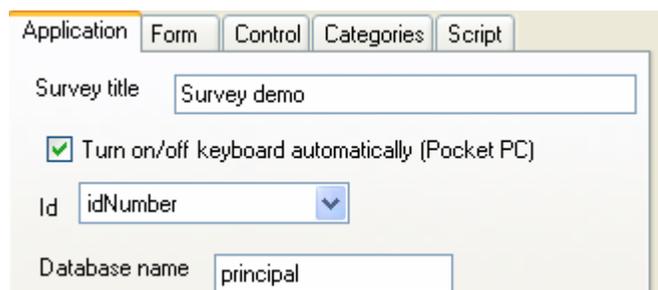
General warning

In general, the changes you make to the design of the template that have to do with changes in the database, such as the name of the main table in the database, changing the name of a data entry control, adding a new capture control, eliminating the categories of a *radioCtrl* or *comboCtrl* type control, are not compatible in *Interview* mode when the database contains records (where you have introduced data). It is not possible to automatically make the changes in the design of a template compatible when the template is already being used in production. Change the modified template to a new working directory, or delete the XML files it generates, or simply do not add records in the *Interview* mode when the template is constantly being changed.

In general, changes to the template such as add/modify/delete static text labels (*labelCtrl*), changes to the control properties such as position, default value, range, scripts, etc. **DO NOT** modify the database. These changes can be made even when the database is in production.

Application

This tab is the first you see when you first open the template.

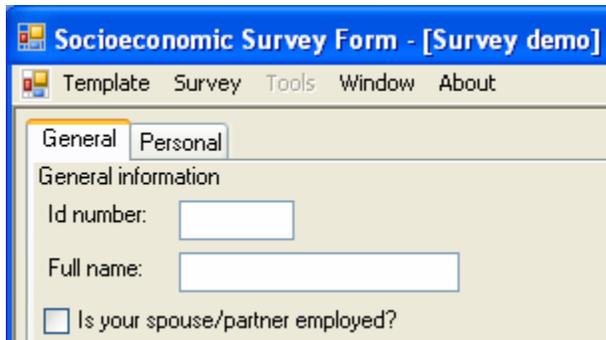


The screenshot shows a software interface with a tabbed menu at the top. The 'Application' tab is selected and highlighted in orange. Below the tabs, there are several input fields and a checkbox. The 'Survey title' field contains the text 'Survey demo'. Below it is a checkbox labeled 'Turn on/off keyboard automatically (Pocket PC)' which is checked. Underneath that is an 'Id' dropdown menu with 'idNumber' selected. At the bottom, the 'Database name' field contains the text 'principal'.

The template has the following options:

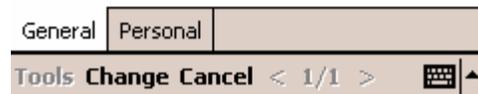
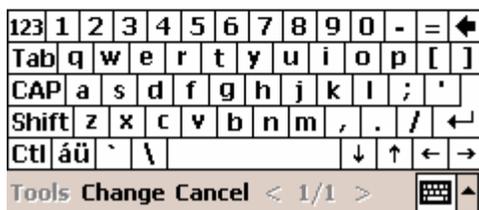
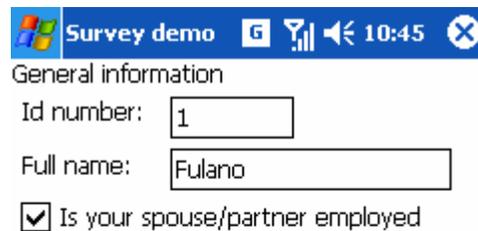
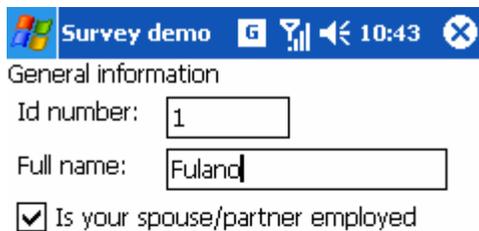
a. Survey title

This is the title that is shown in the *title bar* of the window when in Interview mode.



b. Turn keyboard on/off automatically (Pocket PC)

When the box is checked, the keyboard of the Pocket appears automatically when you position yourself on a control that requires text entry (such as *alpCtrl* and *numCtrl*). It hides automatically when the keyboard is not usually required (for example, *checkCtrl* or *comboCtrl*). This property does not apply in PC environments.



c. ID

ID is used as a key field in the database. ID keys are only candidates for controls of the *numCtrl* and *alpCtrl* type. When one of these controls is added to the template, it is automatically added to the drop-down list following the Id label for eligibility.

Id	idNumber
	-- Select one
Data	idNumber
	fullName

d. Database name

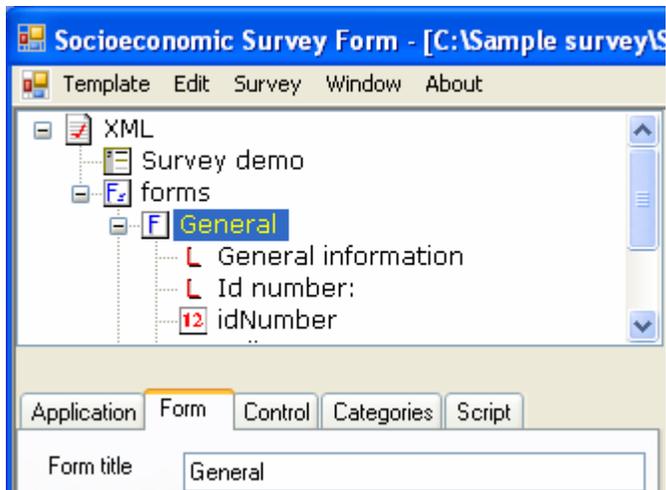
The application allows you to set the name of the main table in the database, assigning the name *principal* by default. The principal table refers to the name of the table that stores all the data of the different forms that are not part of a secondary table, that is, all the data that does not come from a control of the *tableCtrl* type.

The data is stored in XML format as shown below:

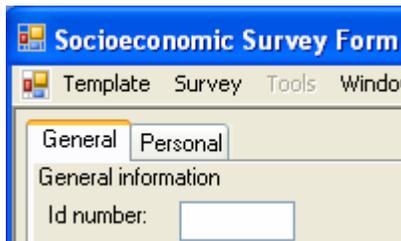
```
<?xml version="1.0" encoding="utf-8"?>
<!--...XML-Datafile generated by Socioeconomic Survey Design ...-->
<dataroot>
  <principal>
    <record>
      <idNumber>1</idNumber>
      <fullName>Mary Ross</fullName>
      <employee>1</employee>
      <birth>10/24/1980</birth>
      <marital>0</marital>
      <children>0</children>
    </record>
    <record>
      <idNumber>2</idNumber>
      <fullName>John Carpenter</fullName>
      <employee>0</employee>
      <birth>8/21/1985</birth>
      <marital>5</marital>
      <children>
      </children>
    </record>
  </principal>
</dataroot>
```

Form

This is the second tab of the *list of properties* panel. It displays the title of the form if one has been selected.



The name of the form is used to group the different sections of a questionnaire in a logical manner. In *Interview mode*, the capture screen displays in different tabs in accordance with the number of forms in the template. Under this concept, you cannot have two forms with the same name.

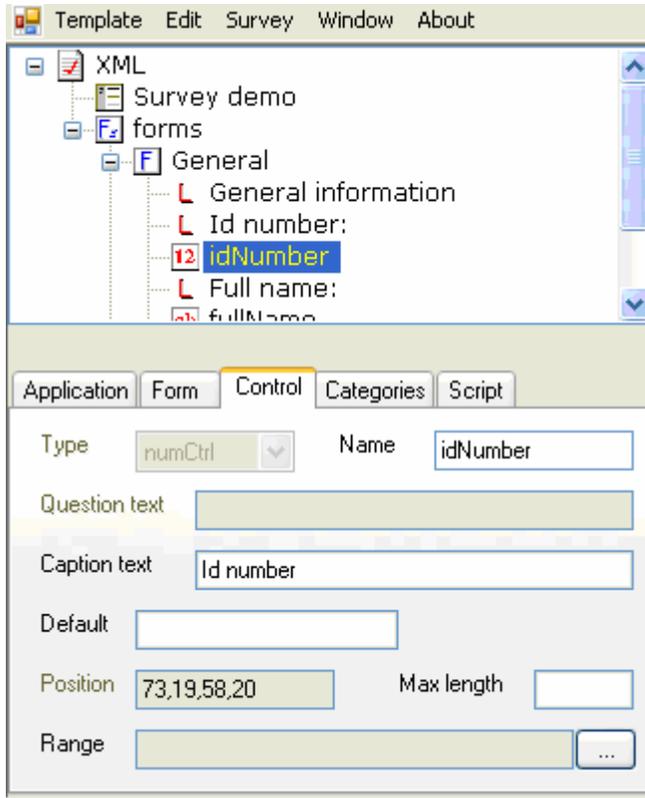


In order to manage the forms efficiently, use a short descriptive name. When creating a form, the program assigns a name by default, but it also allows you to change it to one that is more descriptive, depending on the content of the form itself.

Although the capture is divided into different capture sections (tabs), physically the data is stored in one table, specified in the *Database name* property. The name of the form is not used to create a new table in the database.

Control

The control tab shows the properties associated with a control when the control is selected in the upper left panel *list of controls*.



Some properties cannot be altered and that is why they appear in grey (disabled). The properties are disabled because they do not apply to this control. The user cannot modify the position control either as this has to be done in the control view with the mouse..

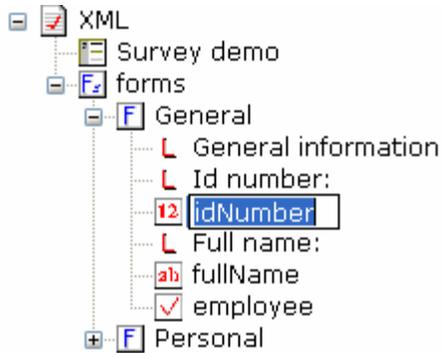
Following is a list of the properties:

a) Property of **Type** control

Displays the type of control selected. As you know, the types of controls that exist are: labelCtrl, alpCtrl, numCtrl, checkCtrl, radioCtrl, comboCtrl, dateCtrl, and tableCtrl. This list is read-only, it cannot be modified. The controls are added for the first time in the left panel *list of controls* and can be replicated in the right panel *view of controls* using the copy/paste command.

b) Property of **Name** control

Name of the control. When this control is created, it is automatically assigned a unique name, though you may change it to a more descriptive one. Consider short names for greater portability, because the data analysis will probably be done using a statistic program and this may limit the size of the name. Consult the statistical program specifications for the creation of variable names.



The name can be modified in the textbox *Name* in this tab, and also in the name of the node.

This name must be unique and must not be used by any other control. When assigning a name the system checks to see that it is not repeated, and if it is it sends out a warning message.



All controls have a name, save for *labelCtrl*, though internally it is assigned a temporary name because a reference is needed for locating it in the different panels in which it appears. Do not be concerned about the name assigned to *labelCtrl*, as it is not part of the template or the database. The next time the template is opened it may take a name that is different from the one previously assigned.

c) Property of **Question text** control

This property only applies to the controls of the *labelCtrl*, *checkCtrl*, and *tableCtrl* type. Given the nature of this type of control, a window may on the screen displaying a descriptive text label.

d) Property of **Caption text** control

These are long descriptive names that may replace the name of the control. Useful mainly when assigning short names such as, for example, *var1*, *var2*, etc. This property is used exclusively for exporting purposes, as some statistical programs incorporate this feature for data management. Consult the text length specifications depending on the program used to import the data.

This property does not apply to the *labelCtrl* and *tableCtrl* controls, as they are not part of the database.

e) Property of **Default** control

Value assigned by default when entering a new record in *Interview mode*. The default value depends on the type of control, so, for example, it might be a number for *numCtrl* and true/false for *checkCtrl*.

When the control is of the *alpCtrl* and *numCtrl* type, the value is directly introduced into the textbox *Default*, but when it is of the *checkCtrl*, *radioCtrl*, and *comboCtrl* type, the system presents you with the valid options available according to the type of control selected.

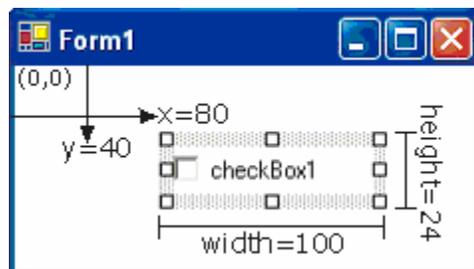
In this example, because the control selected is of type *checkCtrl*, the user can only select two options.

This property does not apply to controls of the *labelCtrl*, *dateCtrl*, and *tableCtrl* types.

f) Property of **Position** control

These are the coordinates of the position the control occupies in the capture form. A read-only property that can only be modified in the right panel *view of controls*.

For example, the position 80,40,100,24 means:



g) Property of **Max length** control

This refers to the number of characters that can be introduced in *Interview mode*. By default, when an *alpCtrl* is created it is assigned a value of 255, which is the maximum allowed.

Applies only to the controls of the *alpCtrl* and *numCtrl* type.

h) Property of **Range** control

List of numeric values allowed in data entry. The format of the *Range* property is as follows:

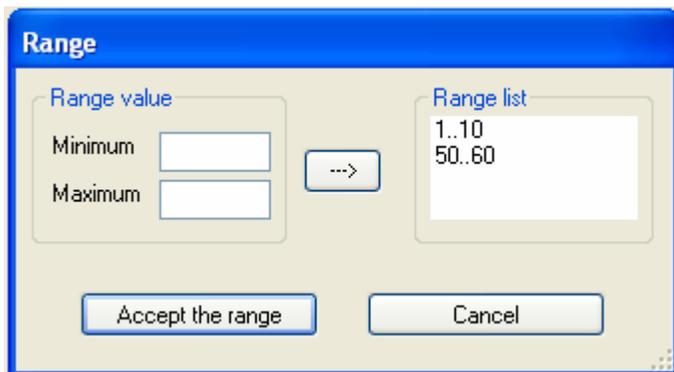
initialValue..endValue)

The values included are within a range of initial and end values. More than one range can be specified, separated by commas. For example, **1..10,50..60** means that the system only allows values to be entered that run from 1 to 10 and from 50 to 60, inclusive.

Use the ... key button located to the right of the property to add and/or delete the range of values.

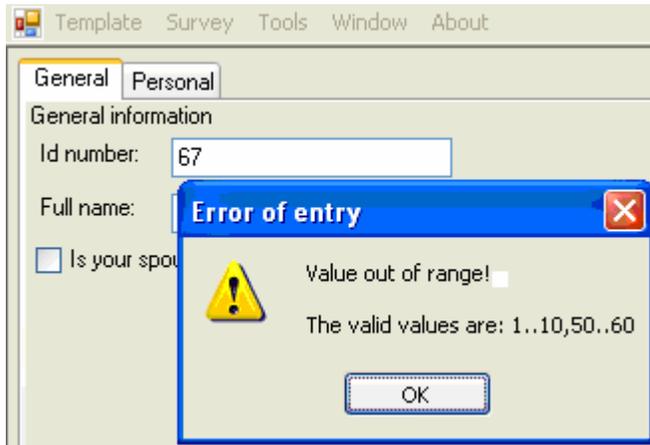


Pressing this button key will display the following dialogue box:



Fill out the **Minimum** and **Maximum** fields here with digits, and then press --> to add it to the range list, or select an item from the range list and then press <-- to

delete it. You can accept the changes introduced or cancel and go back to the *list of properties* panel.

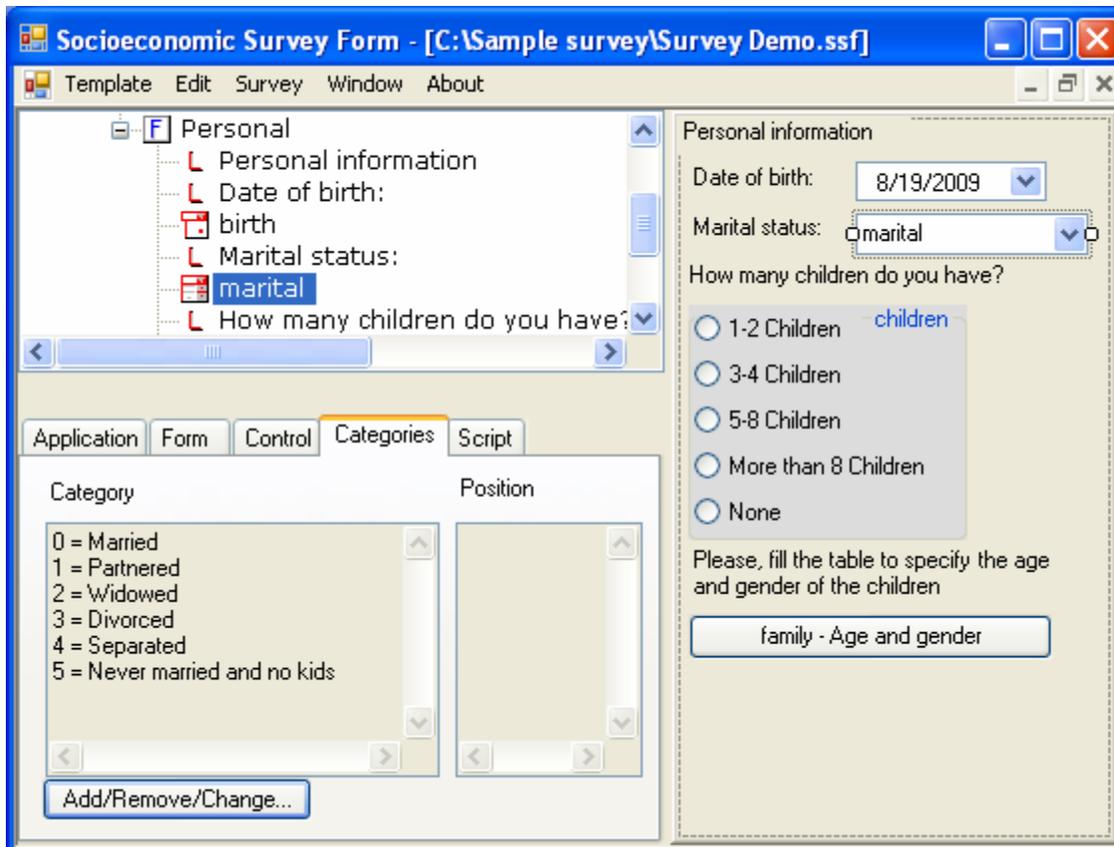


Begin by incorporating the list of previous ranges and saving it to the template file. When you are in *Interview mode*, the system will display a warning message if you try to introduce a value outside this range.

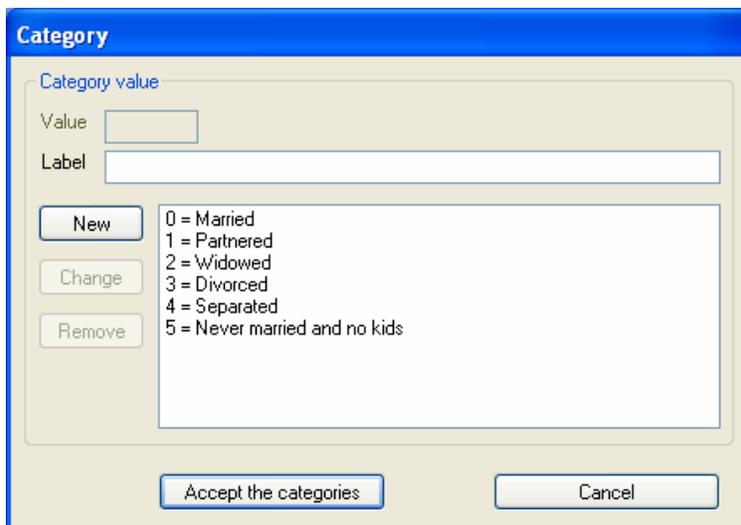
Applies only to controls of the *numCtrl* type.

Categories

The *Categories* tab refers to the different static text entries that the controls of the *comboCtrl* and *radioCtrl* type can have. When selecting this type of control in the *list of controls* panel, the *Categories* tab in the *list of properties* panel displays the text entries for the control selected.



To add, delete, or change the entries of a *comboCtrl* or *radioCtrl* control, click on the button located in the lower part of the Categories tab. The dialog box *Category* will appear.



Here you can change the list of entries as you see fit. Click on <New> to add a new entry to the list.

Category

Category value

Value

Label

0 = Married
1 = Partnered
2 = Widowed
3 = Divorced
4 = Separated
5 = Never married

Introduce the new entry into the text box called **Label** and select **<Add>** to add it.

Category

Category value

Value

Label

0 = Married
1 = Partnered
2 = Widowed
3 = Divorced
4 = Separated
5 = Never married
6 = Other

Notice that the *list of entries* has been updated, and notice that the numeric value of 6 is automatically added, a code that records in the database when you select this label in *Interview mode*.

Category

Category value

Value

Label

0 = Married
1 = Partnered
2 = Widowed
3 = Divorced
4 = Separated
5 = Never married
6 = Other

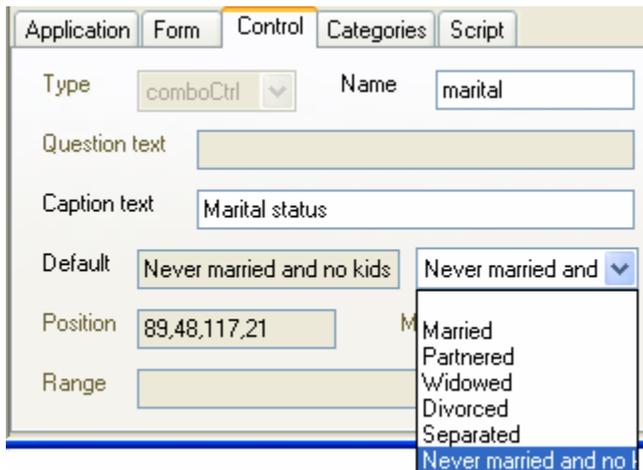
To delete an entry, simply highlight it and click on **<Remove>**.



The order of the list can be changed by selecting the entry with the mouse, and dragging and dropping it to the preferred position. In this figure, the category 5 = *Never married and no kids* was moved to the position 0.

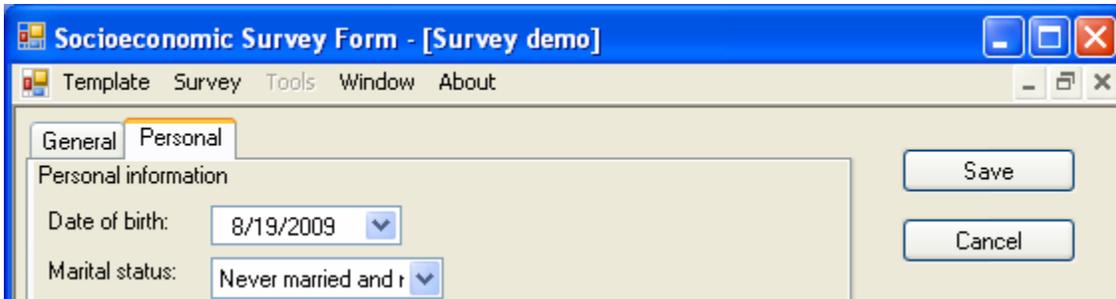
Note that all the entries change their code depending on the position they occupy in the list. Remember that this value is stored in the database, and if you change the order the value recorded in the database may no longer correspond to the previous label.

Save all changes by clicking on *<Accept the categories>* or cancel them by clicking on *<Cancel>*.



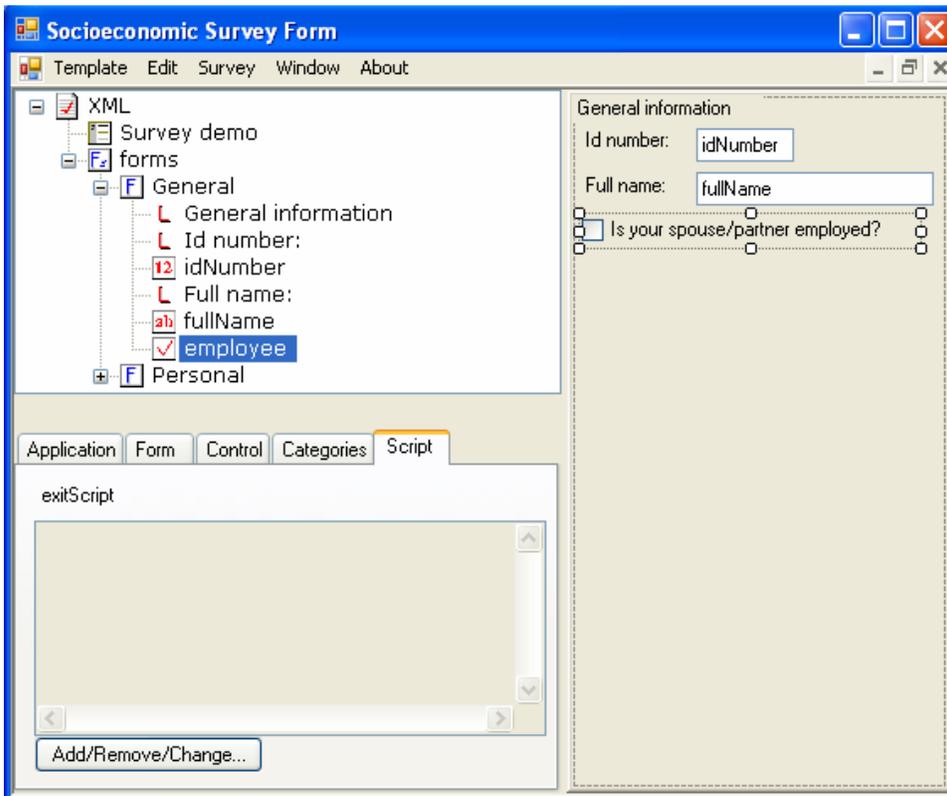
Once you have defined the categories the default entry can be selected in the *Control* tab, as is shown in the figure.

If you specify a default value, in *Interview mode* the system will automatically select it every time a new record is added.

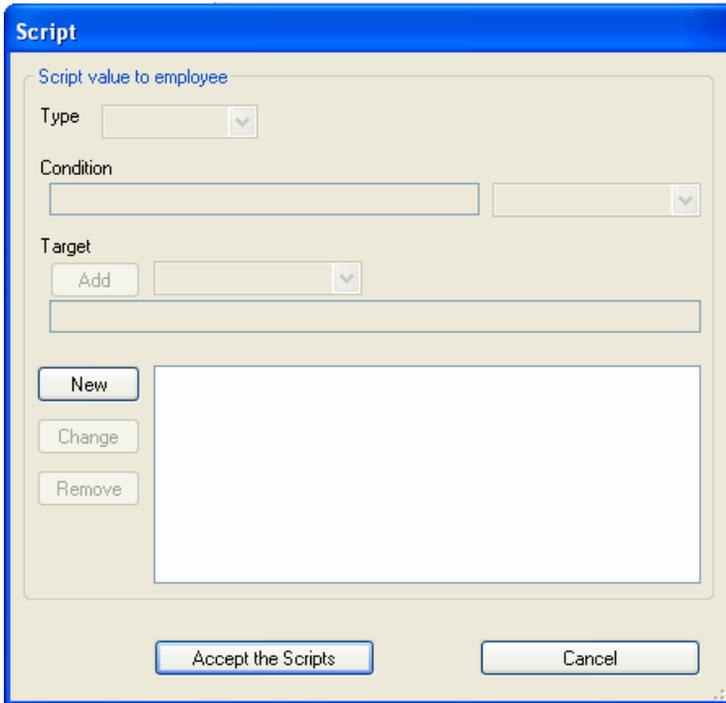


Script

Scripts are events that occur automatically when selecting or introducing a value in a capture control. For the time being, the controls that support scripts are *checkCtrl*, *radioCtrl*, and *comboCtrl*. When selecting one of these controls, the *<Add/Remove/Change...>* button from the *Script* tab is enabled.



When clicking on *<Add/Remove/Change...>*, the following window immediately appears:



Description of the window Script

Type

Allows you to select one of the three types of scripts supported: skipTo, message, and disabled.



Condition

This is the condition that needs to be met for the event to be activated. The type of condition depends on the control selected. In this example, we have selected *checkCtrl*, so the valid options to choose from for this condition would be True or False.



target

This is the manifestation of the event. The target attribute depends on the type of event selected. For example, for the *skipTo* and *disabled* types, we have to add a control from the available list; for a type of event such as *message*, we have to write in a text message by hand. When the type of event is *disabled*, more than one control can be added.

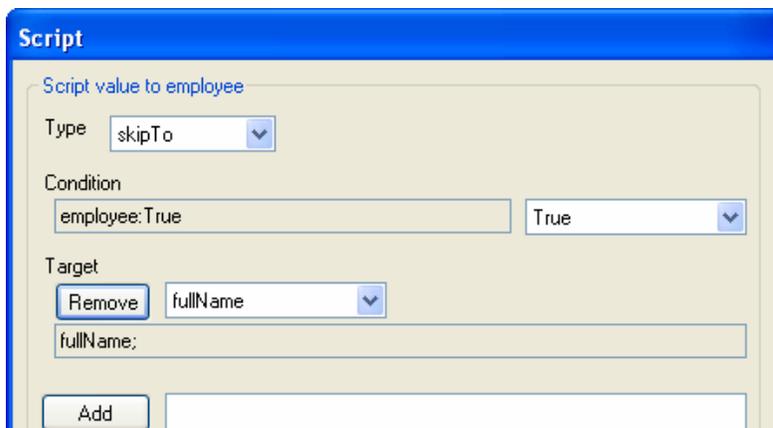


If you have added a control and wish to delete it from the list, simply select it again and click on *<Remove>* as shown below.



New

This is the first button you click when adding an event. It enables the necessary attributes to create an event of the *type*, *condition*, and *target* desired. Once all the requirements are met, click this button again (now with the label Add) to add the event desired.



Once the event is created, you can modify or delete it.

Change

First select the event to modify, make the changes necessary in the *type*, *condition*, and *target* attributes, then click on *<Change>* to reflect the changes made.

Remove

First select the event to delete, then click on *<Remove>* to remove it from the list of events.

Change the order of the list of events

The list of events comes in the order in which it was created; however, it can be modified by selecting the event and holding the right side of the mouse down while dragging and dropping it into the desired position.

Accept the Scripts

Closes the *Scripts* window by first saving the changes made to the list of events.

Cancel

Closes the *Scripts* window by cancelling any changes made to the list of events. Keeps the original list.

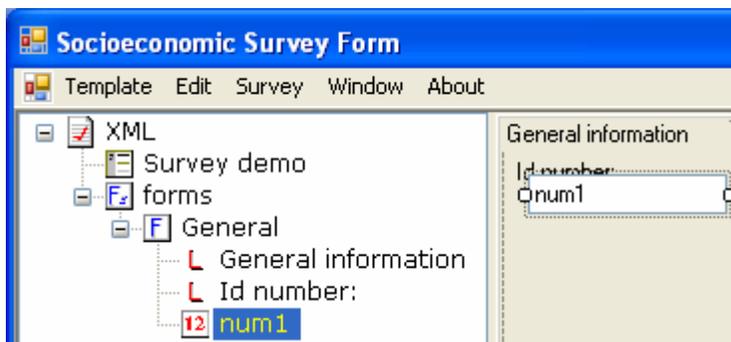
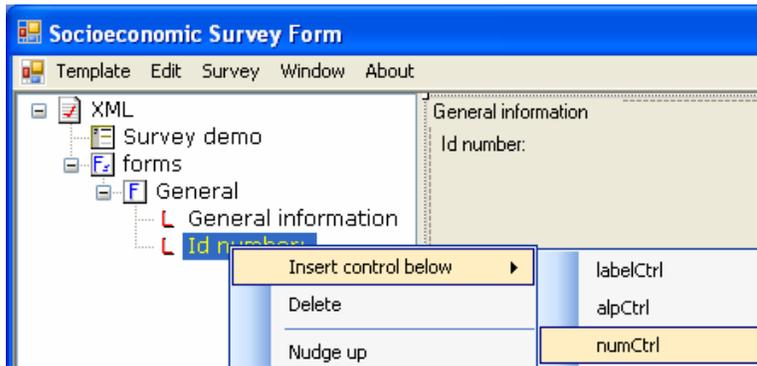
3.2.4 Description of the right panel (view of controls)

The right panel *view of controls* is a visual surface that allows communication with the user by means of controls. A control is a user interface element that displays information or accepts data entries.

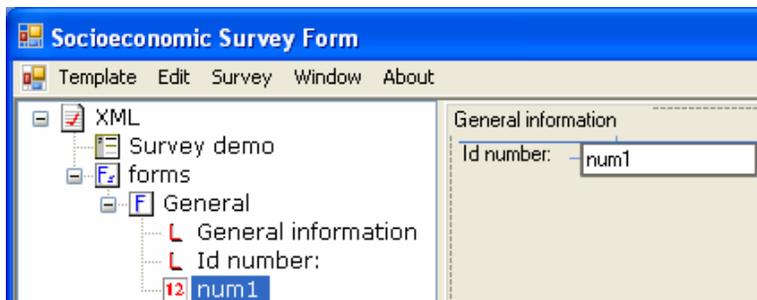
In the left panel *list of controls* you can easily create the controls on the form, and once created, select them in the right panel *view of controls* and drag and drop them where you want them. Basically, it first draws the control in the form, modifies the width, height, and position it occupies on the screen, and then modifies its properties in the *list of properties* panel.

There are two ways to add a control to the form. One is by adding the control from the *list of controls* panel using the *Insert control below* menu and the second is through the options *Copy/Paste* from the main menu.

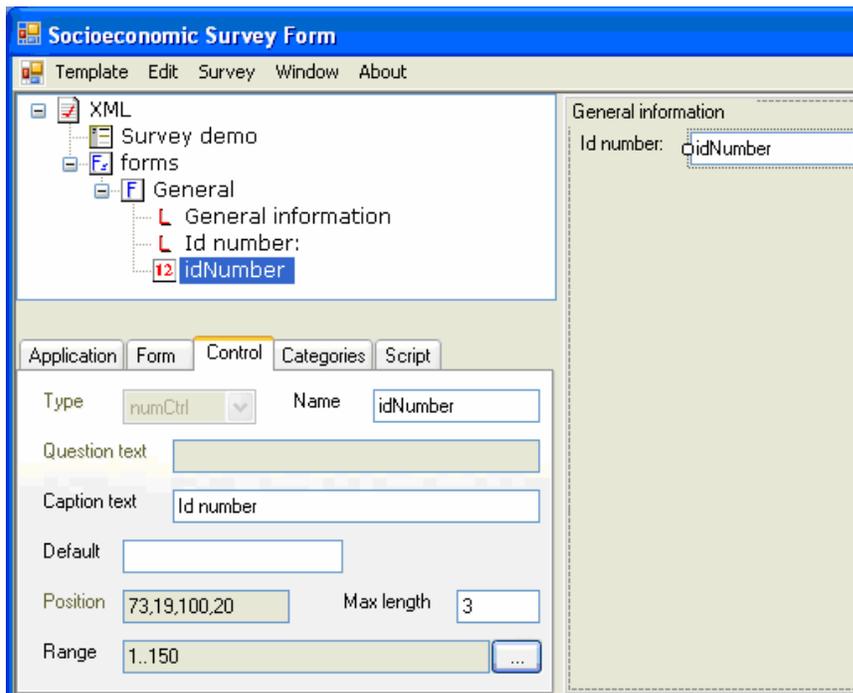
Step 1. Create the control if none has been created yet of this type.



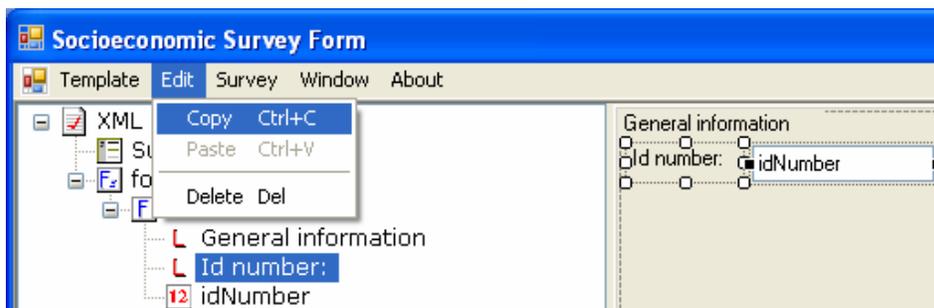
Step 2. Modify its size and position



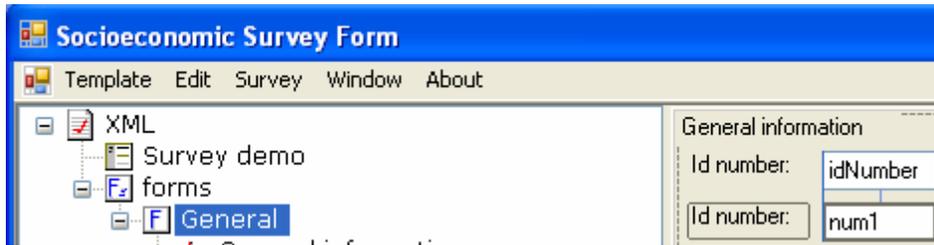
Step 3. Define its properties



Step 4. If you need to add another control of the same type, and they more or less share the same properties, you might like to *Copy/Paste* the same control. So select the controls you want and click on *Copy*.



Step 5. Once the control is copied, click on *Paste*. It will appear in the middle of the screen so you will need to select it and move it to where you want it.

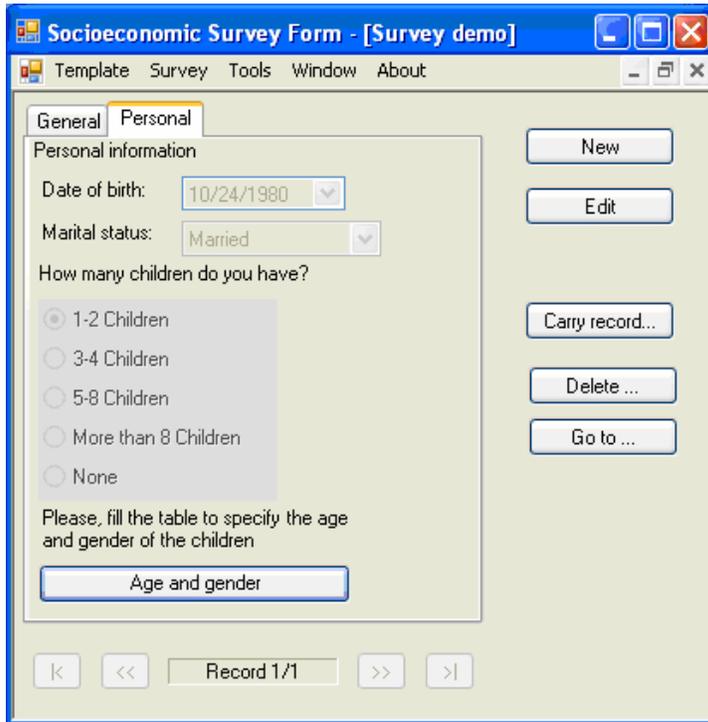


Every time a control is pasted in the form, it will appear in the middle of the form aligned to the left; if you repeat the operation try to move the previously pasted control first, that way the second copy will not appear on top of the first.

Note that you can select more than one control at a time, change the size and move it/them, delete, and even copy and paste.

3.3 The application in Interview mode

This section explains the final steps taken with the template: capturing and exporting data.



To work in the *Interview mode*, first open a template and then click on the main *Survey* menu, then on *Interview*. The capture window appears. If the database is not empty, it looks like this.

3.3.1 Description of the Interview window

The following describe the different elements that make up the *Interview window*.

a. New

Clicking on <New> generates a blank record that later can be added to the database by clicking on <Save>, or cancel by clicking on <Cancel>.



Note that the command <New> enables the <Save> and <Cancel> buttons.

b. Edit

Once records have been introduced into the database you can review and make changes to the records that have been captured. Just place yourself in the record you wish to edit and click <Edit>. The following figure shows a date type field being edited.

The screenshot shows a database form with two tabs: 'General' and 'Personal'. The 'Personal' tab is active, showing 'Personal information'. The 'Date of birth' field is set to '10/24/1980'. A calendar pop-up is open for 'October, 1980', with the 24th selected. The 'Today' date is '6/24/2009'. The form also includes fields for 'Marital status' and 'How many children', with radio button options for 1-2 Children, 3-4 Children, 5-8 Children, More than 8 Children, and None. Buttons for 'Change', 'Cancel', 'Carry record...', 'Delete ...', and 'Go to ...' are visible on the right side of the form.

Once the necessary modifications have been made click on <Change> to reflect those changes or <Cancel> to abandon the changes made.

c. Carry record...

Occasionally, some records will have very similar data. Instead of introducing all the information it is more advantageous to copy it from the record that has already been captured and then make the respective changes. To do so place yourself in the record you wish to copy and then click on <Carry record...>.

The screenshot shows a database form with two tabs: 'General' and 'Personal'. The 'Personal' tab is active, showing 'General information'. The 'Id number' field is set to '1'. A 'Carry record' dialog box is open, prompting the user to enter a new data to the key field 'idNumber'. The value '2' is entered in the input field. The dialog box also includes 'OK' and 'Cancel' buttons. Buttons for 'New', 'Edit', 'Carry record...', 'Delete ...', and 'Go to ...' are visible on the right side of the form.

If the database you are working on has a key field, you will be asked for it before generating a new record.

Notice whether the record includes tables; these should be copied, too.

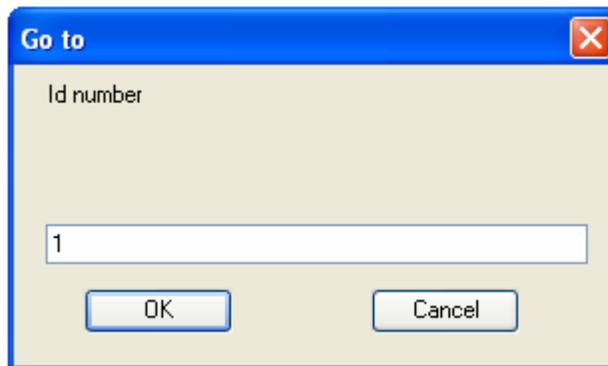
d. Delete ...

Deletes the current record with prior permission from the user.



e. Go to ...

Shows a dialogue box and waits for an entry by the user. You will be asked through the Id field if the database has this attribute, otherwise it will ask for the record number.



To look for a record, type the Id number or record number into the textbox and click on <OK>. If the system finds the Id or the record number that has been typed in, the window closes and the record appears.

f. Position

Displays the words *Record Position/Count* where **Position** is the current position with regard to all the records and **Count** shows the total number of records contained in the database.

g. Navigation bar

The navigation controls will appear in the lower part of the Interview window.



Click as follows to:

-  Go to the first record
-  Go to a previous record
-  Go to the following record
-  Go to the last record

3.3.2 Contextual menu for comboCtrl and radioCtrl

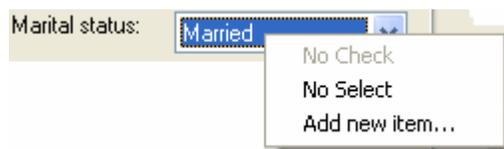
When starting the capture, it becomes clear that there are questions that have no answers; these will appear as blank in the database and some database systems will consider them null.

While capturing you can leave a blank value in the *alpCtrl* and *numCtrl* controls, and in the *radioCtrl* and *comboCtrl* controls record a blank value by simply not selecting an option. But what happens if you have selected an option and wish to remove it? The normal Windows controls do not allow for this, and so a contextual menu has been created for these types of controls that allow for this and more.

Access the contextual menu by right-clicking on the *radioCtrl* and *comboCtrl* controls.

Contextual menu comboCtrl

On a *comboCtrl*, right-clicking on an option brings up the following menu:



Notice that two options are displayed:

a. No select

This option appears if the *comboCtrl* already has an option selected. The option *No Select* allows you to leave *comboCtrl* without a selection.

b. Add new item...

This option allows you to add a new option at the end of the list.

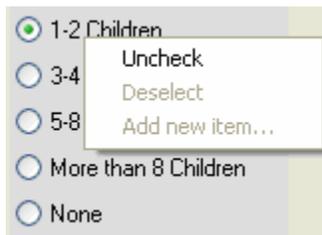


Click on *<Add>* to add the new option at the end of the list or *<Cancel>* to cancel the changes and close the window.

Remember that if you are adding a new option to the template and are capturing in more than one computer, you will also have to record this change in the other templates to ensure consistency among the data.

Contextual menu radioCtrl

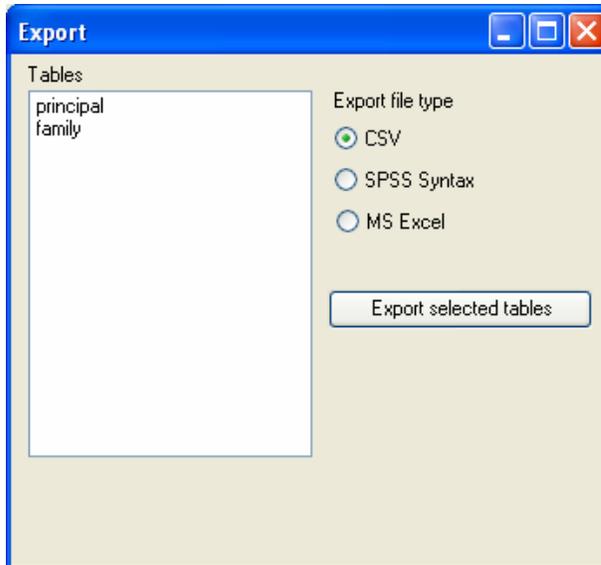
To show the contextual menu of a *radioCtrl*, simply right-click on a selected option.



The only menu option to appear is *Uncheck*, which means removing the selection check.

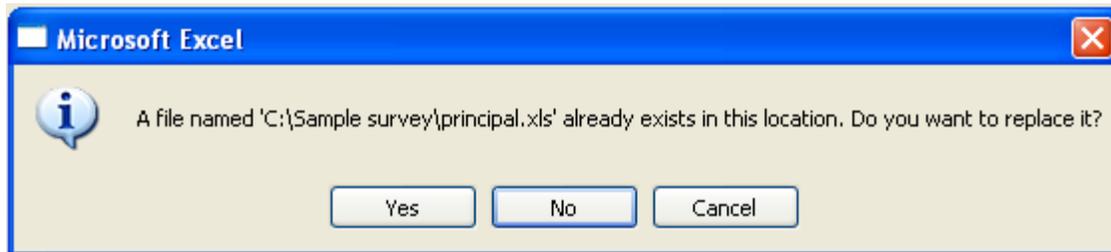
3.3.3 Export menu

The data captured is recorded in XML format, but can be converted to another format. To export, click on the *Tools > Export...* menu.



The name of the table to be exported will by default be the name of the file with a csv extension for CSV and xls for MS Excel. The exported files are stored in the same folder where the template was opened, which is also the one where the captured data is stored.

If you repeat the export operation more than once, the existing files will be replaced without prior warning, except for the MX Excel type which will await user confirmation.



Description of the Export window

a. Tables

Displays all the tables in the database. Select one or all the tables from the list you wish to export.

b. Export file type

Displays the different file formats you can export. To date there are only three, and these are:

CSV

Exports the data to a text file whose values are separated by commas. The first row is the name of the columns, and the values appear from the second row on. For example, the data shown below is from the *principal.csv* exported file:

```
'idNumber','fullName','employee','birth','marital','children'
1,'Mary Ross',1,'10/24/1980',0,0
2,'John Carpenter',0,'8/21/1985',5,4
3,'Peter Smith',1,'12/17/1987',0,0
```

This file format is the most popular and portable, and can be read by many text editors, database managers, and spreadsheets.

SPSS Syntax

Generates a SPSS command syntax file. Two files are exported using this option, one is the file separated by commas (.csv) and the other is the SPSS syntax file (.sps). For example, if you export the main table, it will generate the files *principal.csv* and *principal.sps*. The file *principal.sps* contains lines of text that look like this:

```
GET DATA /TYPE = TXT
  /FILE = 'principal.csv'
  /DELCASE = LINE
  /DELIMITERS = ", "
  /QUALIFIER = ""
  /ARRANGEMENT = DELIMITED
  /FIRSTCASE = 2
  /IMPORTCASE = ALL
  /VARIABLES = idNumber F1.0
  fullName A14
  employee F1.0
  birth A10
  marital F1.0
  children F1.0
.

VARIABLE LABELS idNumber 'Id number'
  / fullName 'Full name'
  / employee 'Is your spouse/partner employed'
  / birth 'Date of birth'
  / marital 'Marital status'
  / children 'How many children do you have'
.

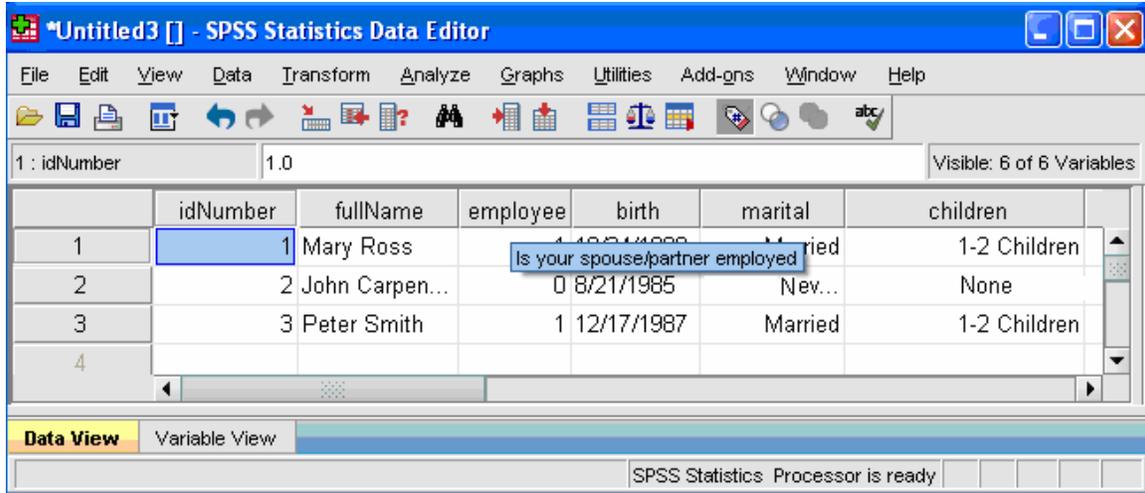
VALUE LABELS marital 0 'Married' 1 'Partnered' 2 'Widowed' 3 'Divorced'
4 'Separated' 5 'Never married and no kids'
  / children 0 '1-2 Children' 1 '3-4 Children' 2 '5-8 Children' 3 'More
than 8 Children' 4 'None'
.

MISSING VALUE marital (-1)
children (-1)
.

FREQUENCIES VARIABLES = employee marital children.

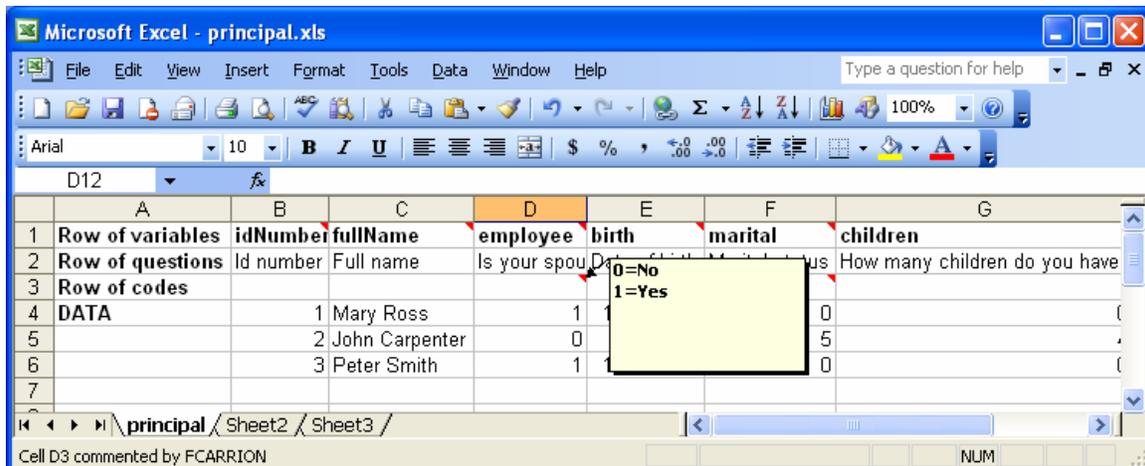
DESCRIPTIVES VARIABLES = idNumber.
```

If the SPSS program is already installed and you open the file *principal.sps*, and run all the commands contained in the file, the tab *Data view* in the *SPSS Statistics Data Editor* will look something like this:

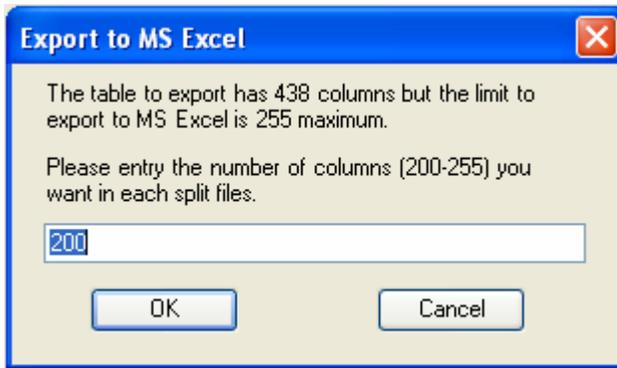


MS Excel

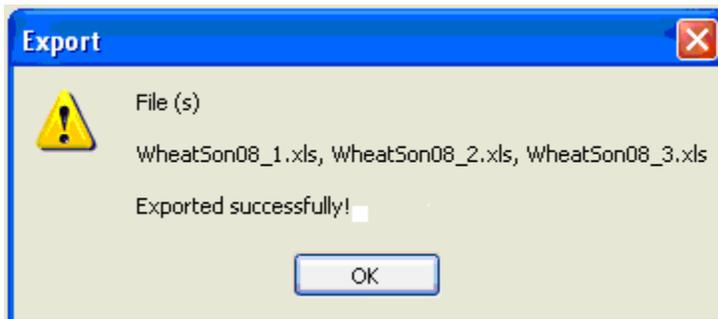
If you wish to export the data to an Excel file, select this option. The file *principal.xls* in the Excel program will look like this:



Versions prior to MS Excel 2007 allow you to work with up to 256 columns, but if the table to export contains more variables (or fields) than MS Excel can contain, SSF allows you to split the file into two or more, depending on your need.



Note: For the sake of convenience, we have only taken 255 columns leaving one column free for movements between columns.



The program will add _1, _2, _3, and so on to the end of the file name, depending on the number of divided files.

Important note:

Exporting to MS Excel only works if your computer has *Microsoft Excel* and is compatible with Office XP (2002), 2003, and 2007.

The program searches for Excel, and if not found it will show the following error message.



4. Socioeconomic Survey Form for Pocket

Welcome to the SSF for Pocket. This section is designed for you to begin to work step-by-step, describing —as an exercise— many of the program’s operational features. The file used as an example, *Survey Demo*, was copied to your PDA unit when you installed the program.

4.1 Loading the program



Once the program has been installed, an access link is copied on *Start > Programs > Socioeconomic Survey Form*. Only by clicking on it will the application open.

4.2 Entering data

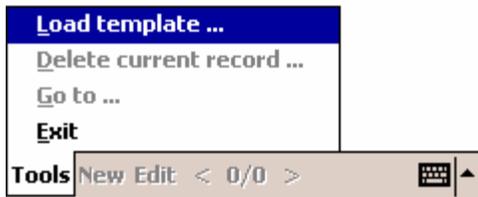


CIMMYT, Int.

Socioeconomic Survey Form

Version 1.0

Copyright CIMMYT 2007-2009



Open

Folder: All Folders

Type: Socioeconomic Survey Files

Name ▲	Folder	Date
Survey Demo		10/24 4:4...

When you run the application for the first time, a screen with general information about the SSF is displayed.

To begin entering data or to view data already entered, you need to load a template that reads SSF and displays the controls on the screen. To open the entry form, click on the option from the *Tools* menu of SSF, and then select *Load Template*.

This opens a dialog box with a list of templates created with the *Socioeconomic Survey Form for PC*. The list shows all *.ssf files in the Pocket PC. In the case shown here, there is only one file on the list: the one copied when the SSF was installed. To open a screen, click on the file name.



General information

Id number:

Full name:

Is your spouse/partner employed

The main entry screen will appear, showing the design of the form, with the tabs and entry fields.



Personal information

Date of birth:

Marital status:

How many children do you have?

- 1-2 Children
- 3-4 Children
- 5-8 Children
- More than 8 Children
- None

Please fill the table to specify the



To make it easier for the user, we divided the questionnaire into small sections. In this example, the questionnaire is divided into two sections, one called *General* and the other called *Personal*, shown in the Pocket in the shape of tabs. To move from one tab to another, simply click on it with the tip of the Pocket pen.

Now the program is ready for you to enter new information or read the existing data.

The first time a template is loaded, the database is empty. When there are no records, the screen appears as a new record which you are required to complete. In the case shown, you must fill in both the "General" and "Personal" information tabs. In addition to these entry fields enabled for the data editing, there are two buttons,

the <Save> button that works to record the entered data, and the <Cancel> button to cancel the editing of the modified record.

When you load a screen with previously entered records, it will show the edit fields disabled; you can see the data but not modify it, unless you click on <New> to create a new record, or <Edit> to change the saved data shown on the screen.

4.3 How to enter data into the pocket

Entering data into a Pocket to capture a questionnaire will depend on the type of data to be recorded.



General information

Id number:

Full name:

Is your spouse/partner employed

To enter numbers and text, you can use the input panel keyboard or the integrated external keyboard if the Pocket has one.



How many children do you have?

- 1-2 Children
- 3-4 Children
- 5-8 Children
- More than 8 Children
- None

There are Yes/No questions in a box or a radio-button option list. To choose from a list or check a verifying box, simply tap on it with your stylus.

Marital status:

Married	▼
Married	
Partnered	
Widowed	
Divorced	
Separated	

There are multiple-choice questions that allow you to choose an option from a list. To open the option list, tab on the small control triangle (upper-right side) with the stylus and choose an option from the list.

To continue the tutorial, complete the fields and click <Save>.

Survey demo

General information

Id number:

Full name:

Is your spouse/partner employed

General Personal

Tools New Edit < 1/1 >

The lower menu has options from the menu and record navigation controls. The menu <New> prepares the screen for the entry of a new record and the menu <Edit> allows you to modify the current record.

To continue the tutorial, enter two new records, repeating this process twice:

1. Click on <New>
2. Enter information in the fields, and
3. Click on <Save> to exit the edition mode, saving the data of the previously entered record.

Survey demo

General information

Id number:

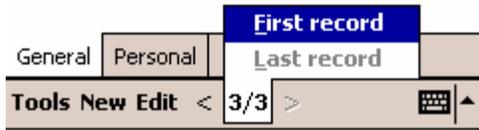
Full name:

Is your spouse/partner employed

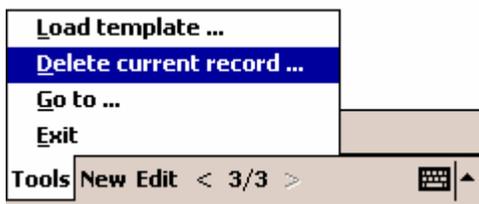
General Personal

Tools New Edit < 3/3 >

If you have followed the step-by-step tutorial, there should now be three records.



To navigate through records, click on < to move to a previous record, and on > to move one record forward. To move to the first and last records of the form, select <current record/total number of records> and click on the desired option, as shown in the figure.



The *Tools>Delete current record...* option allows you to delete the current record, upon confirmation. Click from the Pocket on the <Tools> menu and then on <Delete current record...>

And the following confirmation screen appears.



Click on <Yes> to confirm that you want to permanently delete the record, or on <No/Cancel> to cancel the operation.

5. Tutorial (Step-by-step)

This tutorial is intended to take the user by the hand in building a template for capture, basically, creating forms with their respective editing controls, generating scripts, copying the template to the Pocket PC, capturing some records, exporting data and briefly working with SPSS and Excel. This tutorial gives step-by-step instructions for the actions and procedures necessary to get the job done properly.

5.1 How to create forms for capture

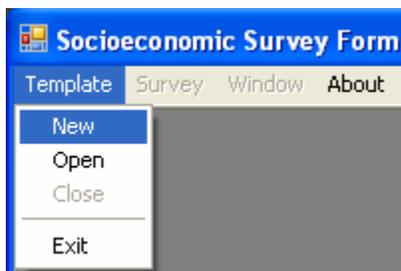
The forms are built in the PC using the Designer menu option and then the design is checked by running some tests using the Interview menu option. To get started, you shall use a hypothetical questionnaire where you will administer all the controls that exist in the program.

For the following steps, presumably the SSF program is open. If the SSF is not yet installed, please consult chapters [Installation guide](#) and [Socioeconomic survey form for PC](#), for further information.

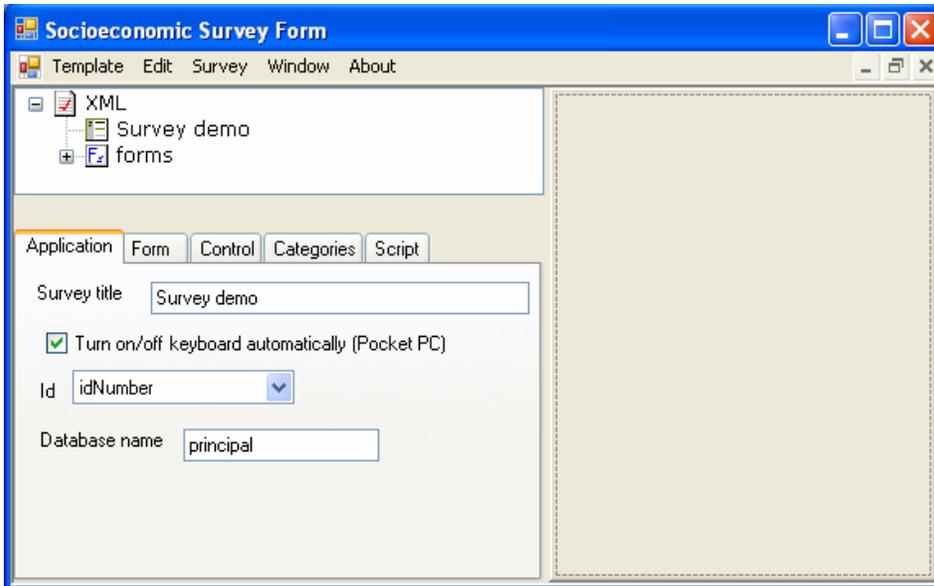
If the program has been installed but is not yet open, load it by clicking on Windows *Start* > *All Programs* > *Socioeconomic Survey* > *Socioeconomic Survey Form*.

5.1.1 How to create a new template

Once the program is loaded, click on the main *Template* > *New* menu.



The new template created will appear next. Given that the template is new, the program will automatically put it in *Design mode*, the equivalent of clicking on *Survey* > *Design* in the main menu.



To help you build your own database, the new template contains two small forms for making changes in line with your needs.

Basically, if you were to see this new template on paper, it would look like this:

SURVEY DEMO

A. General Information

Id number: _____

Full name: _____

Is your spouse/partner employed? _____ (Yes/No)

B. Personal information

Date of birth _____ (mm/dd/yy)

Marital status

Married Partnered

Widowed Divorced

Separated Never married and no kids

How many children do you have

1-2 3-4 5-8

More than 8 None

Age and gender of the children

	Age	Gender (M/F)
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____

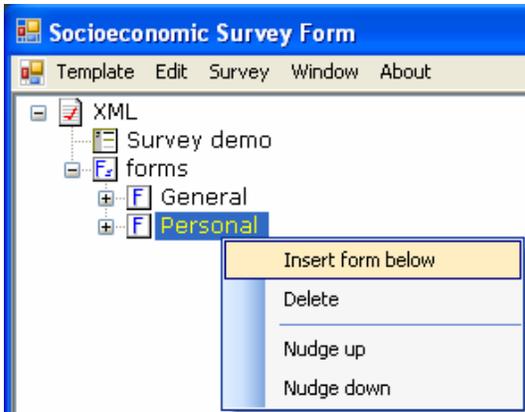
5.1.2 How to create a new form

For the purposes of the tutorial we will be adding a new section to the previously shown questionnaire, for example, section C which contains the following data:

C. Other information

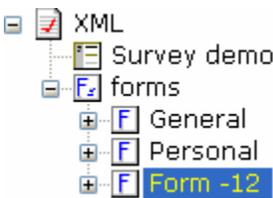
What is your favorite color? (Select only one)

Blue Black Yellow Green Other

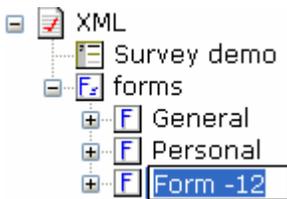


First we added the form by right-clicking on the last forms node, in this case the node *Personal*.

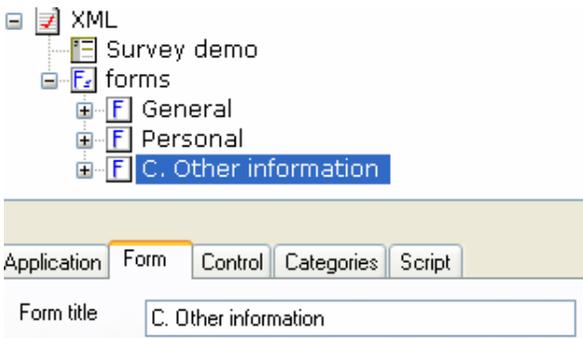
In the contextual menu, we click on the option *Insert form below* and the newly created form appears immediately.



The new form is called *Form -12* by default, but in our questionnaire it is called *C. Other information*.



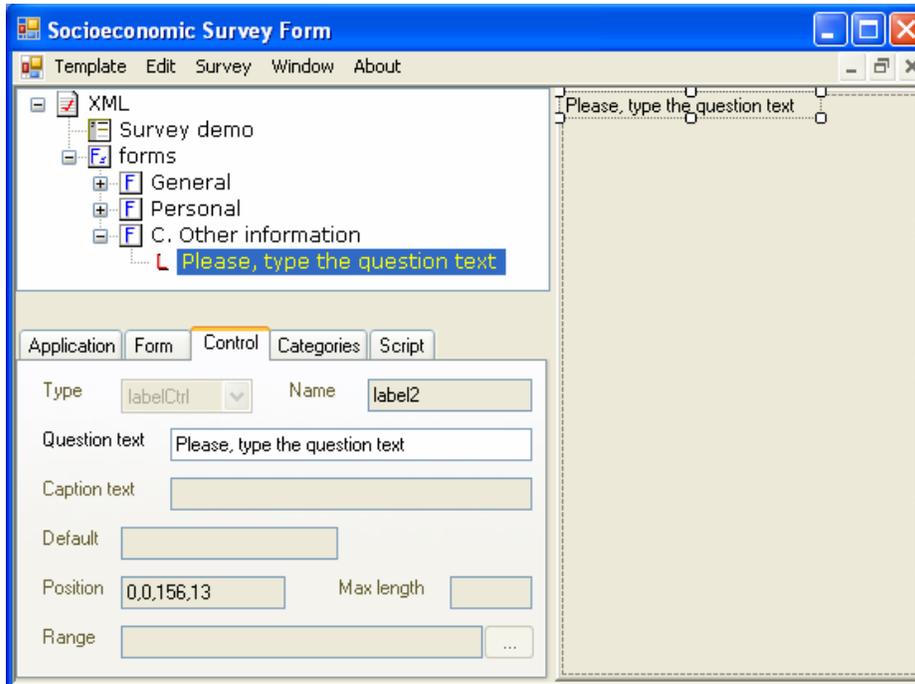
To change the name of the form you click on the same node. And when the node is in editing mode you type in the new name and then <Enter> to finish the editing.



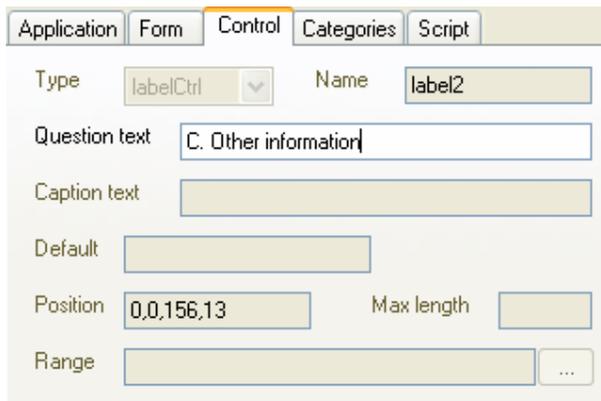
Notice that the new title of the form also appears in the *list of properties* panel, where you could of course have changed the title of the new form.

5.1.3 How to add capture controls

Our new form entitled *C. Other information* contains only one control of the *labelCtrl* type, which was automatically added when the new form was generated.



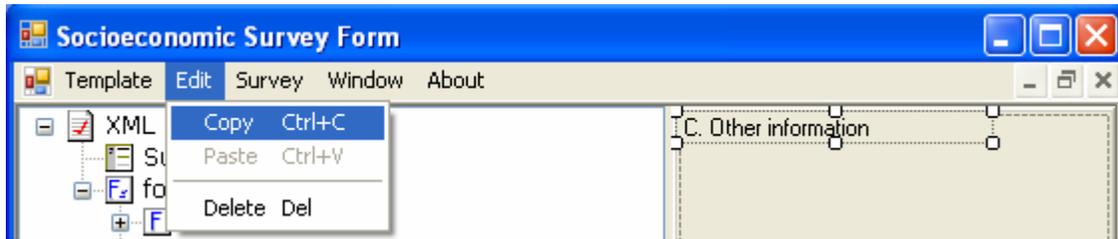
A form is an area on the screen where the controls can be put. As we have seen in our new section of the questionnaire, we need two controls, one of the *labelCtrl* type and the other one that we are going to design of the *comboCtrl* type.



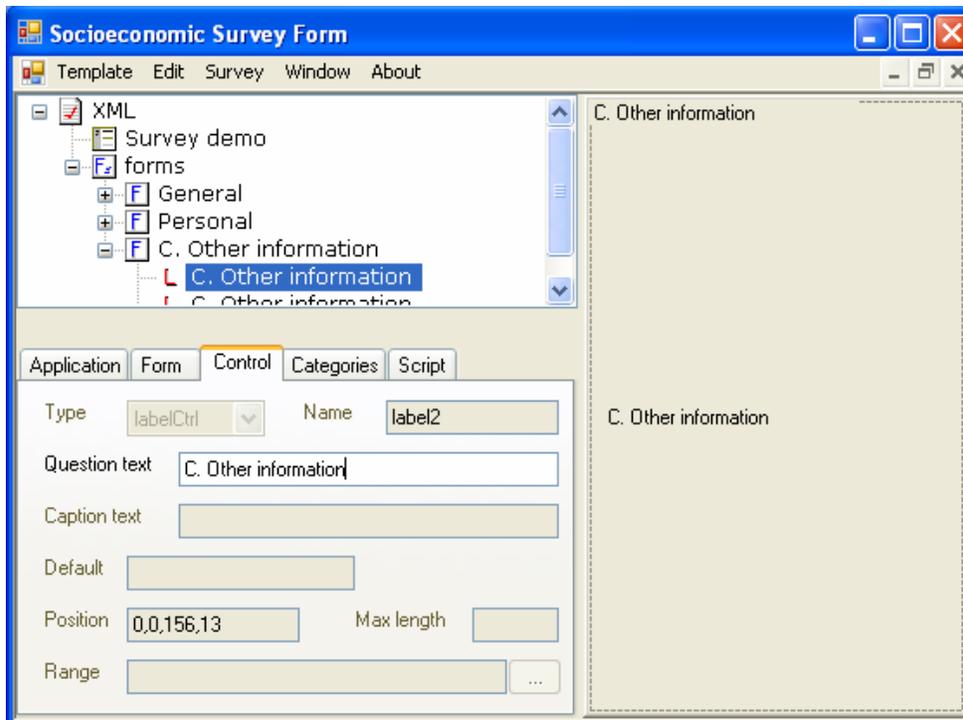
So we are going to modify the title of the only *labelCtrl* we have in our new form by editing the *Question text* property in the *Control* tab in the *list of properties* panel.

We need to create another *labelCtrl* to assign it the title "What is your favorite color?." One easy way to do this is to copy/paste from the same control; to do so be

sure you have selected this control in the *view of controls* panel and click on *Edit > Copy* in the main menu.



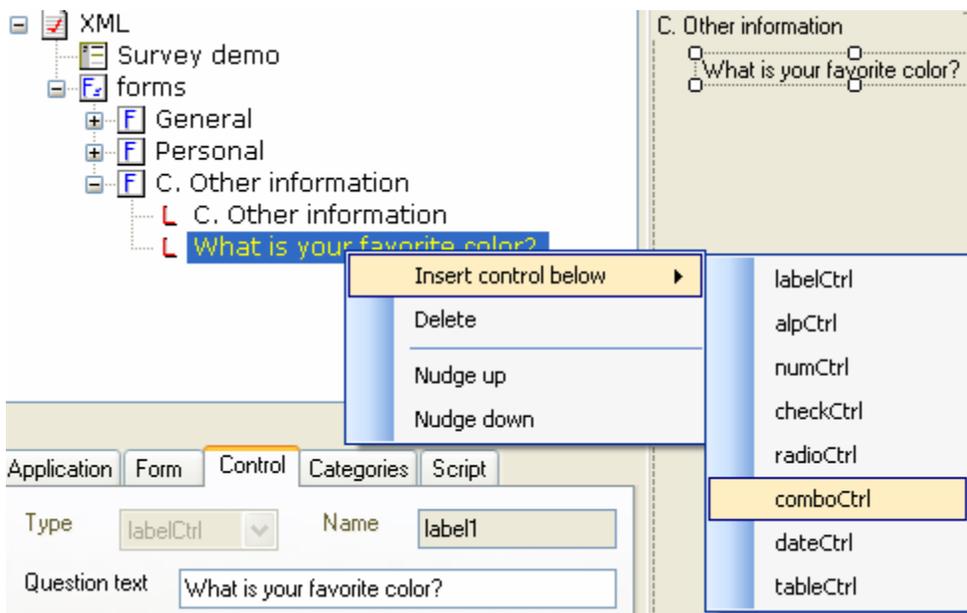
Once the selected control has been copied, click on *Edit > Paste* and the control will appear in the middle of the right panel, aligned to the left.



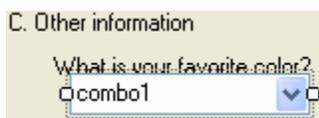
Next, change the title and move the control under the first one. To change the title of the control, simply edit it in the *Question text* property or directly on the node. To move the control, select it with the mouse in the *view of controls* panel and, keeping the left mouse button pressed, drag and drop it into the desired position.



Now, according to our new section of the questionnaire, we need to create one more control. Place the cursor on the last control (node) created in the left panel *list of controls* and right-click. Select *Insert control below > comboCtrl*.



You will note that the specified control will be generated and will appear under the previously selected control.



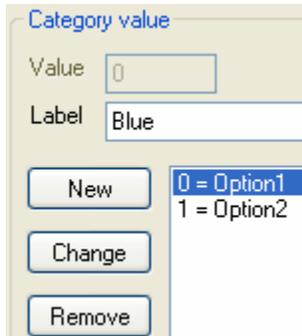
In the right panel, move the control to a better position and change the following properties in the *Control* tab of the *list of properties* panel.

Notice that we have only changed the properties *Name* and *Caption text*. The property *Position* is read-only and its coordinates reflect the position the control occupies in the right panel *view of controls*.

Now we have to add the categories to the control *comboCtrl*. To do this, while selecting this control, click on *<Add/Remove/Change...>* located in the *Categories* tab of the *list of properties* panel.

The window *Category* appears.

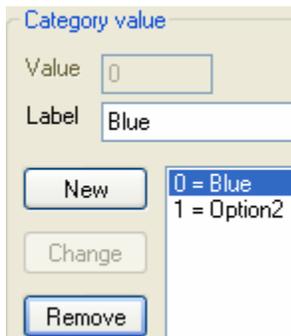
Notice that two categories were automatically added. We need a total of five categories (Blue, Black, Yellow, Green, Other), so we simply edit the two existing categories and add three new ones.



The screenshot shows a dialog box titled "Category value". It has a "Value" input field with "0" and a "Label" input field with "Blue". Below these are three buttons: "New", "Change", and "Remove". To the right of the buttons is a list with two items: "0 = Option1" and "1 = Option2". The "New" button and the first item in the list are highlighted with a blue selection box.

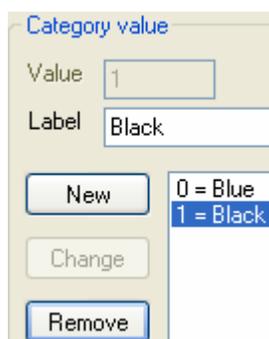
To change the name of the first category, click on *0=Option1* from the list and change the text *Option1* to the word *Blue* in the textbox **Label**.

Next click on *<Change>* to make the change.



The screenshot shows the same dialog box. The "Value" field still has "0" and the "Label" field has "Blue". The list now shows "0 = Blue" and "1 = Option2". The "Change" button is highlighted with a blue selection box.

Do the same for the second category on the list. Change the label *Option2* to *Black*.



The screenshot shows the dialog box with "Value" set to "1" and "Label" set to "Black". The list now shows "0 = Blue" and "1 = Black". The "Change" button is highlighted with a blue selection box.

Now add the three following new categories by clicking on *<New>*, typing the new category in the textbox **Label** and clicking on *<Add>* to add it to the list. Repeat the procedure for each new category.

So far we have entered all the options. Looking at the list, we can see the value *0* corresponds better to the option *Other*. To make this change, simply select option *4 = Other* and using the mouse, drag and drop it into the highest position, as shown below.

Once all the *comboCtrl* options have been entered, click on *<Accept the categories>* to accept the entry and return to the *list of properties* window.

If you wish, you can give *comboCtrl* an initialization value so that it appears selected every time you capture a new record. In the *Control* tab click on the drop-down list located to the right of the property *Default* and select the initialization value.

Let's also take into account that the *idNumber* control is linked to the folio or number of the questionnaire, and let's say you were assigned 20 questionnaires to capture, 1

to 10 and 50 to 60. You can create some validations controls such as restricting the total number of digits to capture and only permitting values in the assigned range. In the left panel *list of controls*, open the *General* form and select the *idNumber* node.

The screenshot shows the 'Control' tab of a configuration window. The 'Name' field contains 'idNumber'. The 'Max length' field is set to '2'. The 'Range' field is empty, and there is a button with three dots to its right.

In the *Control* tab of the *list of properties*, type in the value 2 in the property *Max length*.

To introduce the range of valid values, click on <...> located to the right of the property *Range*.

The following window will appear.

The screenshot shows the 'Range' dialog box. The 'Range value' section has 'Minimum' and 'Maximum' fields. The 'Range list' section is empty. The 'Accept the range' button is highlighted.

In the window *Range*, simply introduce the value 1 in Minimum and 10 in Maximum, and click on --> to add the range to the list.

The screenshot shows the 'Range' dialog box. The 'Range value' section has 'Minimum' set to 50 and 'Maximum' set to 60. The 'Range list' section contains '1..10' and '50..60'. The 'Accept the range' button is highlighted.

Repeat the same procedure for values 50 and 60.

Click on <Accept the range> to save the changes and return to the main window.

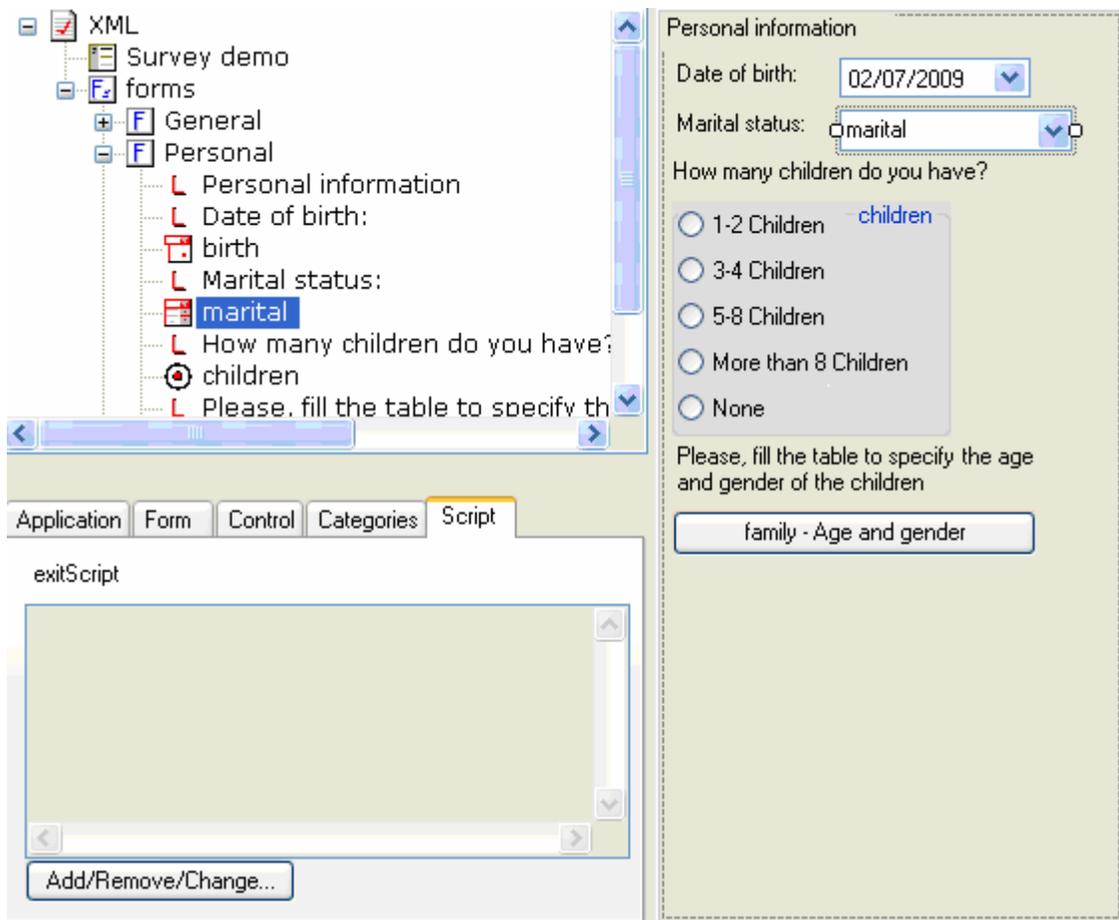
The screenshot shows a configuration window with several tabs: Application, Form, Control, Categories, and Script. The 'Control' tab is active. The window contains the following fields and values:

Type	numCtrl	Name	idNumber
Question text			
Caption text	Id number		
Default			
Position	73,19,58,20	Max length	2
Range	1..10,50..60		

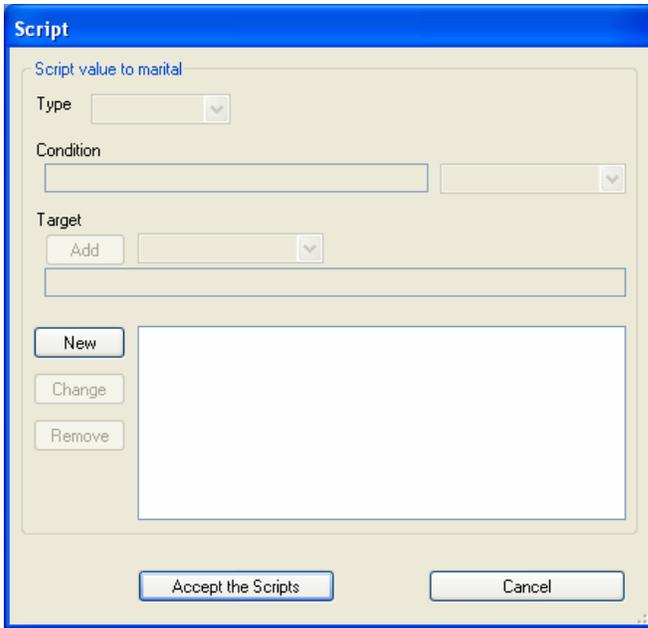
Notice that the list was assigned to the property *Range*.

5.1.4 How to generate scripts

The SSF program allows you to administer certain types of scripts, for example, for data capturing, if the marital status of the person surveyed is "Never married and no kids" you disable the question "How many children do you have?". To do this, make sure to select the *marital* control and open the *Script* tab in the *list of properties* window.



To add a new script, click on *<Add/Remove/Change...>*. The following window is displayed.

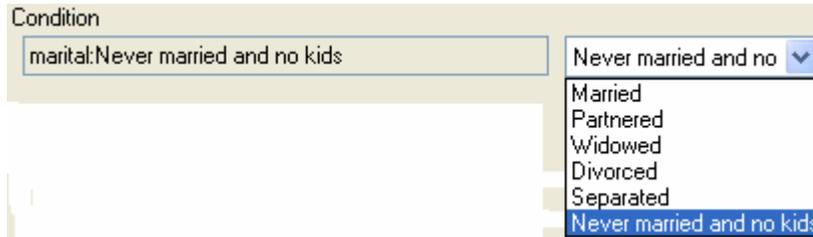


Firstly, to build the script click on <New>. Notice this enables the capture controls Type, Condition, and Target.

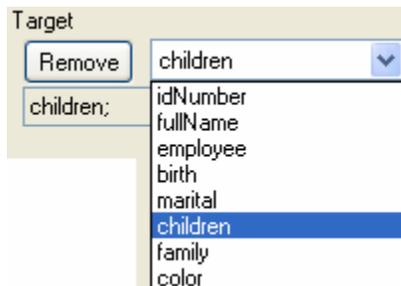
Select *Disabled* from the *Type* list.



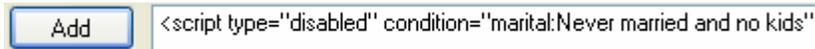
Next, from the *Condition* list select the option "Single, never married". Note that the list that drops down corresponds to the options according to the control that was selected.



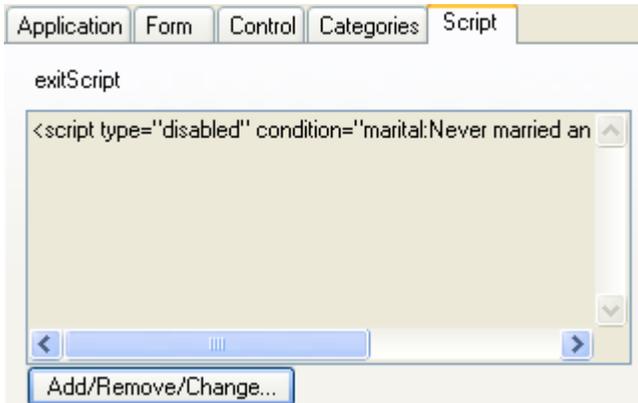
In the *Target* list, select the option *children*.



Now the new script is built, click on <Add> to add it to the list.



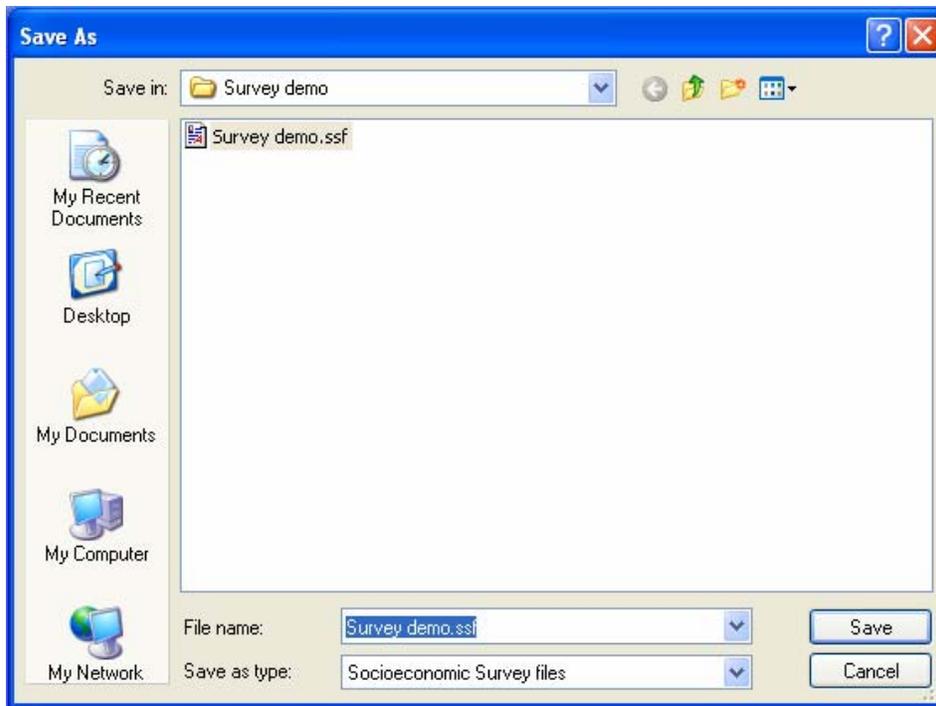
And since we are only interested in one script, click on <Accept the Scripts> to return to the main window.



Note that the script has been added to the exitScript list.

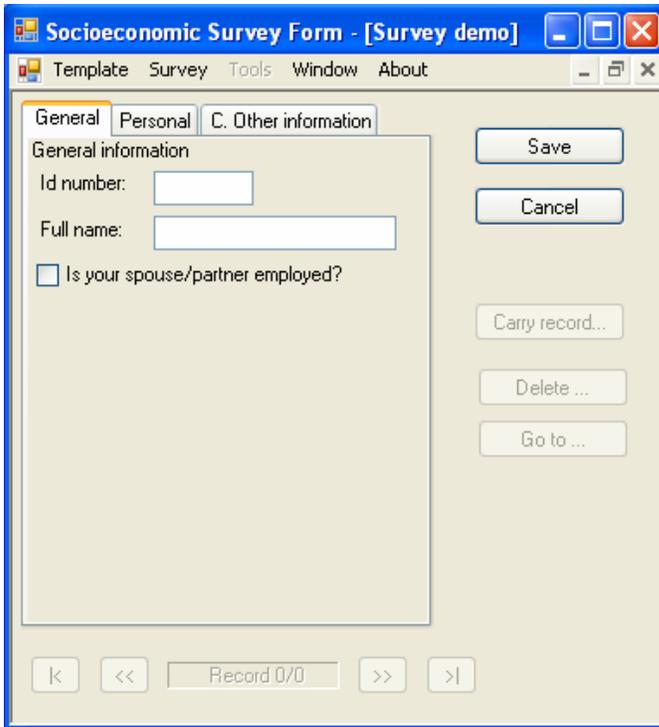
5.1.5 How to save the template

Once the template is built with all its forms, controls, and properties, save the work in a disc file by clicking on *Template > Save* in the main menu, and select or create the folder where you wish to save the template. Next, type in the new file name and click on <Save> to save it.



5.2 How to capture records in the PC

Once the template has been built, proceed to record some data in the PC. Having opened the template *Survey demo.ssf* that you have just saved to a disc, click on *Survey > Interview*. The following screen will appear:



Note that the Interview window is automatically positioned in the first tab where a new record can be entered, this is because the database is empty, showing 0 records.

Next, introduce the following data in the fields indicated in the following tabs:

In the tab *General*

General information

Id number:

Full name:

Is your spouse/partner employed?

In the tab *Personal*

Personal information

Date of birth:

Marital status:

How many children do you have?

1-2 Children

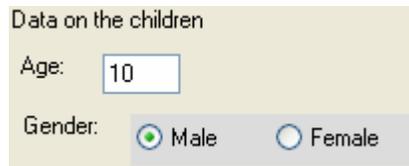
3-4 Children

5-8 Children

More than 8 Children

None

In this record, Mary Ross has two children, so we will put in two new records in the *family* table (age and gender). To do this, click on the <Age and Gender> button and a new form will be shown where we can input the new data.

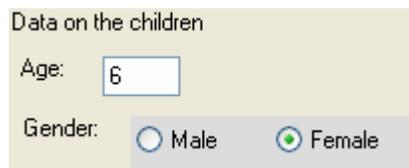


Data on the children

Age:

Gender: Male Female

Click on <Save> and then click on <New> and the following record is introduced:



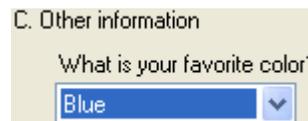
Data on the children

Age:

Gender: Male Female

Click on <Save> and click on [X] to close this window table and return to the main window.

In the tab *C. Other information*



C. Other information

What is your favorite color?

And click on <Save> to save the first record.

5.3 How to copy the template and data to the Pocket PC

This section shows that the template generated and the data captured in the PC are compatible to work in the PDA. Next we will explain two different ways to exchange data between the PC and the PDA.

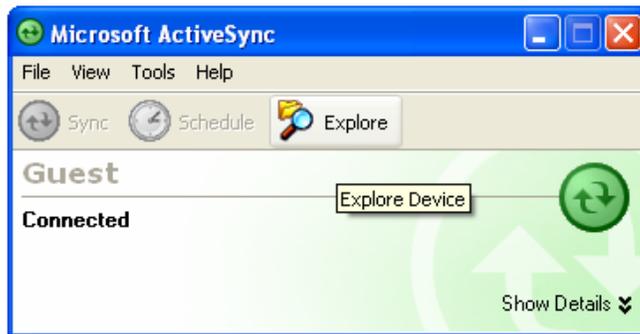
5.3.1 How to copy data using activeSync

To be able to copy files from the PC to the Pocket, the computer must have *Microsoft ActiveSync 4.2* or a higher version installed.

Connect the Pocket to its cradle and the cradle cable to the USB connector on your computer. Switch on the Pocket and, if the *Microsoft ActiveSync* is installed, synchronize the files.



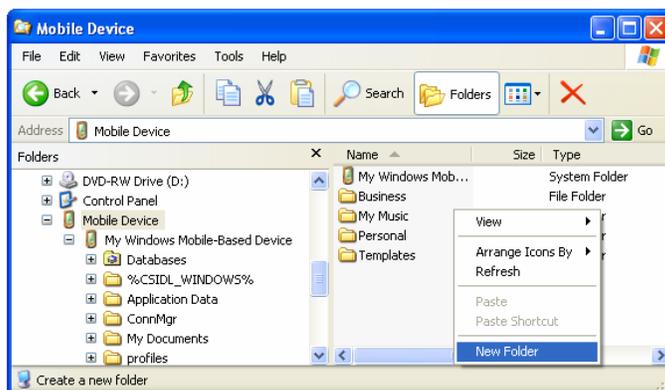
A new window should then appear asking you to Set Up a *Partnership*; select *Guest partnership* and press *Next*>



In *Microsoft ActiveSync* click on *Explore*.

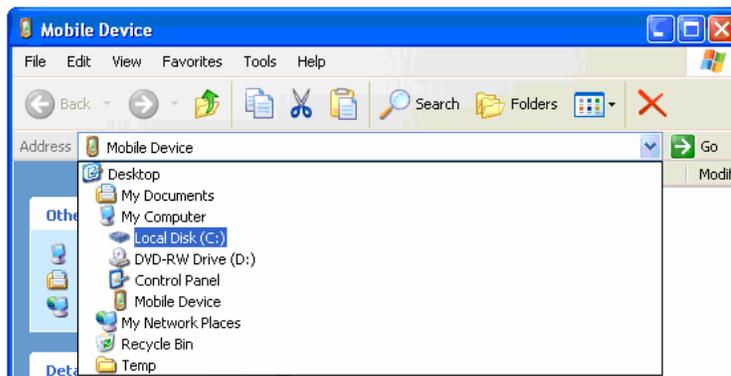
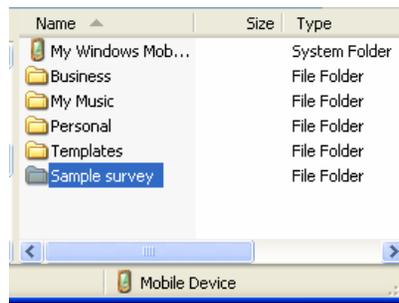
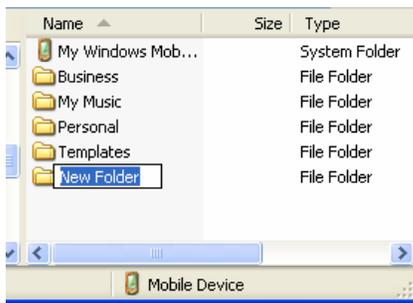
The *Mobile Device* window will now appear.

Create a new folder in the Pocket, into which you will copy the template file.

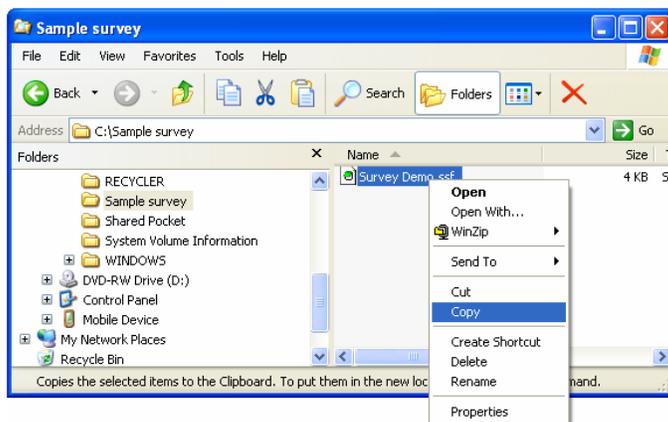


In the *Folders* list in the left panel of the window, click on the *Mobile Device* icon and, in the right panel, right-click in an empty area and select *New Folder* from the Menu.

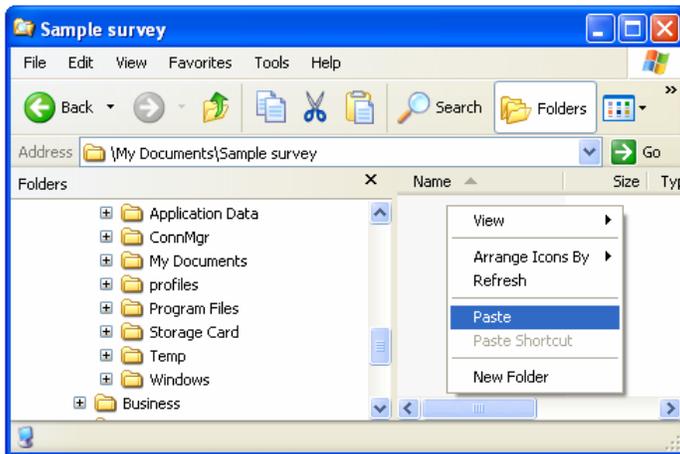
By default, this gets the name 'New Folder.' Rename it *Sample survey* in the blue box.



The new folder where you will copy the file should now be ready. Look for the file *Survey Demo.ssf* in *C:\Sample survey* on the computer's hard disk.

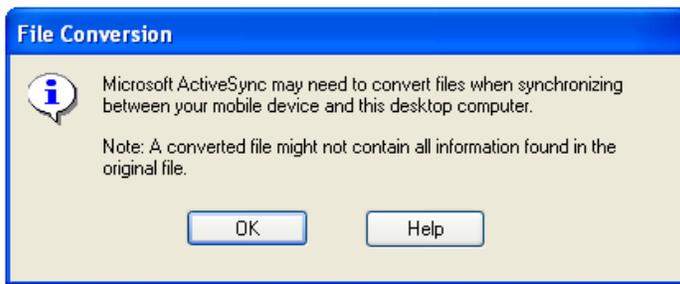


Copy it using Explorer.

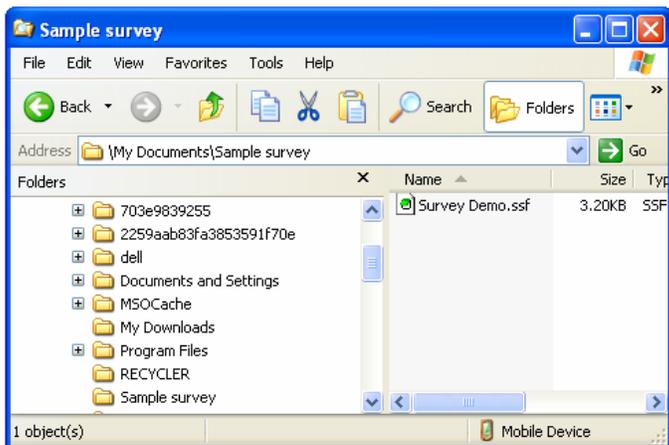


Paste it into the Pocket:

Using the *Explorer* browser, go to the Pocket folder *My Documents\Sample survey* and right-click on *Paste*.



When the *File Conversion* window appears, click on *OK*.

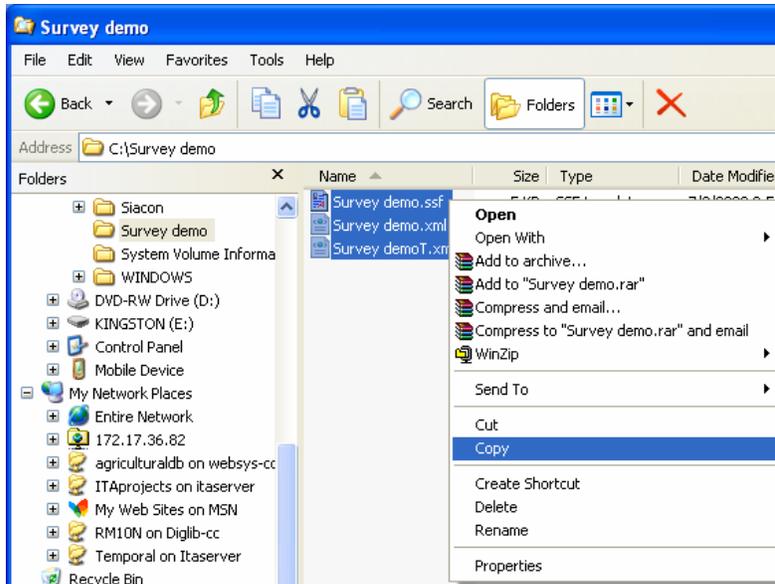


As shown in the window, the file has been pasted.

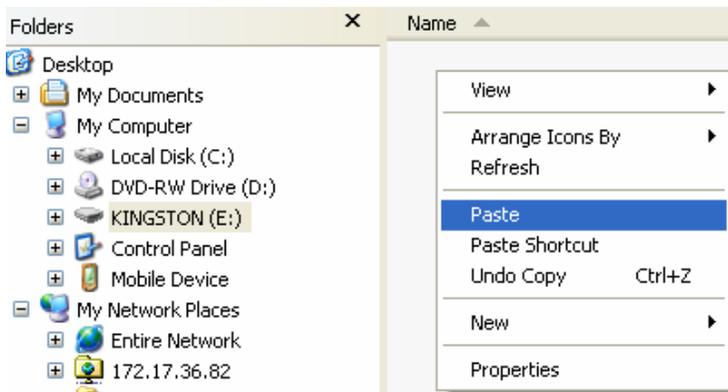
5.3.2 How to copy data using an external device

If the PDA has an external storage device, and this device can be read by the PC, then you can use this device. Normally PDAs have integrated CompactFlash (CF)

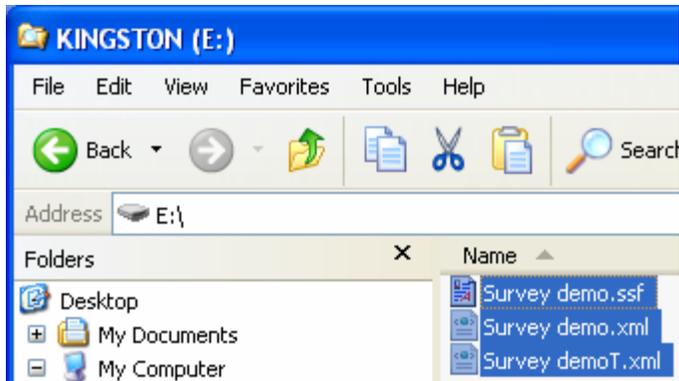
and/or Secure Digital (SD) slots that offer an alternate means of storage. In the case of the Pocket, it is strongly suggested that you use these cards to save the dynamic information instead of saving it to the internal PDA memory.



To copy data from the PC to a CF or SD card, first connect the external device and using Windows Explorer, locate the template and the data in the PC, select and copy them.



Next, place the cursor on the external card, select where you want to save your files and save them there.



Once the files have been copied, remove the external card from the PC and connect it to the PDA to be able to read them using the Pocket version of SSF.

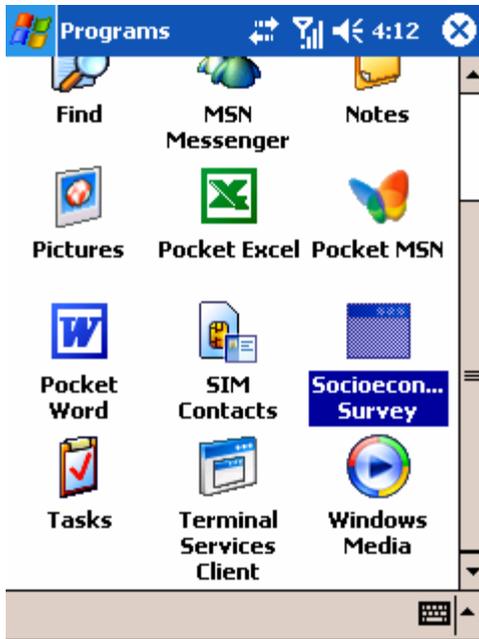
5.4 How to capture records in the Pocket

Next, you will record data using the template that you simply pasted into the Pocket.



To collect data from a template, first load the program that will read it. This is done through the *Socioeconomic Survey Form*, which has to be correctly installed in the Pocket. If not done yet, do so by means of the [installation guide](#).

Once the SSF file is installed in the PDA, load the program. In the Pocket click on *Start* and then on *Programs*.



From *Programs*, find and open the icon that corresponds to *Socioeconomic Survey Form*.



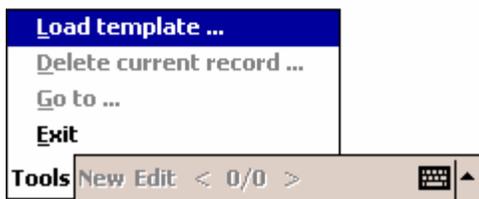
Load the SSF program, click on *Tools* and on the option *Load template* to read the template file.

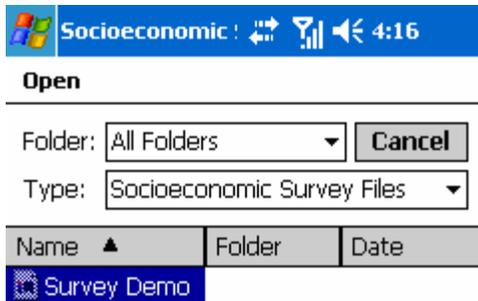
CIMMYT, Int.

Socioeconomic Survey Form

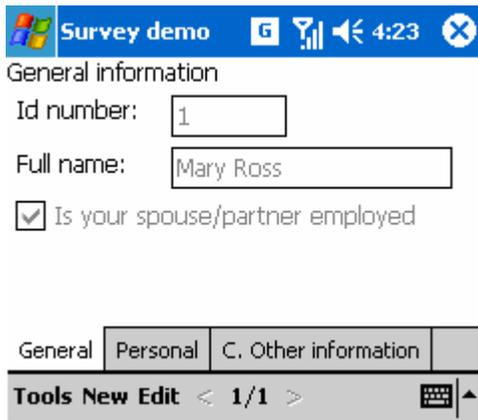
Version 1.0

Copyright CIMMYT 2007-2009

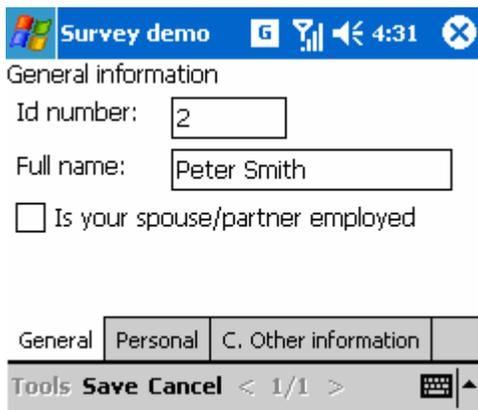




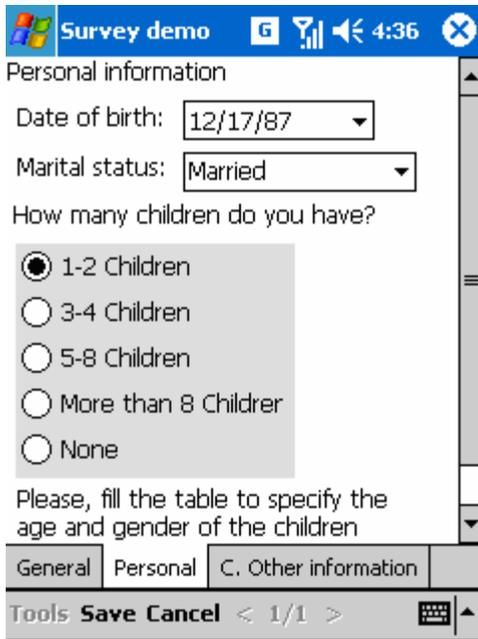
In the *Open* window you can view all files of the *Socioeconomic Survey* type; in this case there is only one, click on it and open *Survey Demo*.



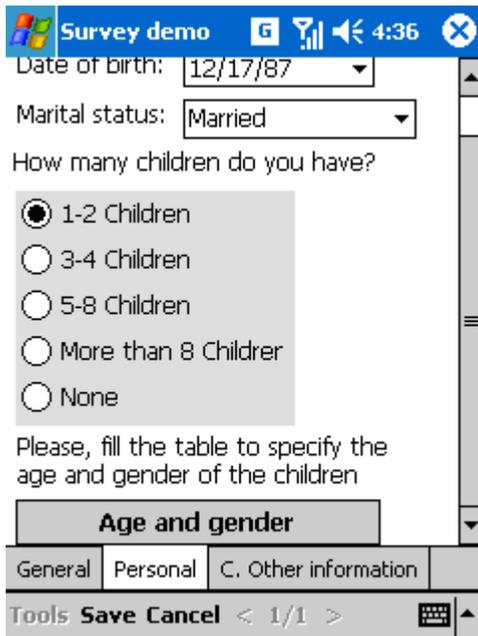
The screen appears divided in three tabs, as designed in the previous template. In the first tab (General) there are three filled fields and in the lower part of the screen you can find the 1/1 label that means that we are located in the first item of a total of one.



To enter another record in the Pocket, click on <New> and enter data into the fields as shown in the figure. Then click on the *Personal* tab to enter data for questions there.



In the *Personal information* section you will see blank question fields that you should complete with new data, as shown in the figure. Scroll down to additional questions using the vertical scroll bar on the right.



At the end of this section of questions there is an *Age and gender* button. This brings you to a table with new questions, where you can record data on the respondent's family.

Click on the *Age and gender* button.



Data on the children

Age:

Gender: Male Female



Now you are in the 'Family' table where you can enter age and gender data relating to the children of the respondent. If the person has X number of children, you should record X number of records.

Enter the desired data and click on the *Save* button located in the lower part of the screen.



Data on the children

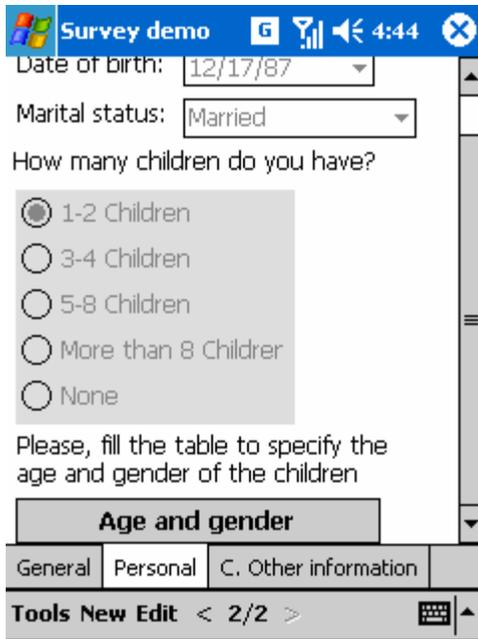
Age:

Gender: Male Female



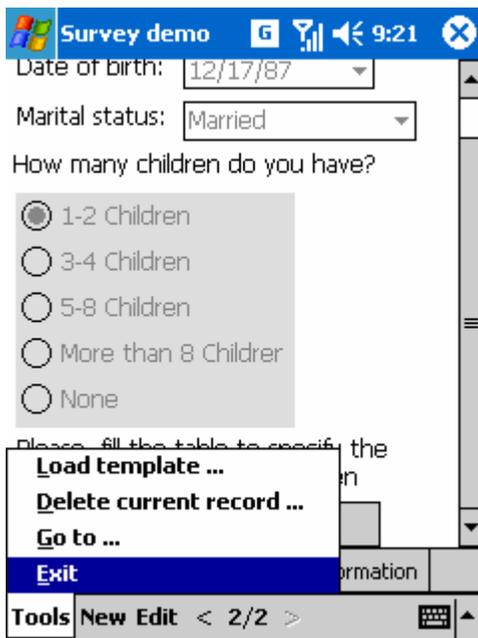
After saving the data, the menu appearing in the lower part will change the display options.

To close this table and return to the main recording area, click the close button (X) in the upper right of the screen.



Return to the main data collection area. To save the data click on the *Save* menu. Note in the lower menu that a legend reading <2/2> appears; this means you see a record which is 2 of a total of 2 records.

So far you have entered one record in the Pocket.



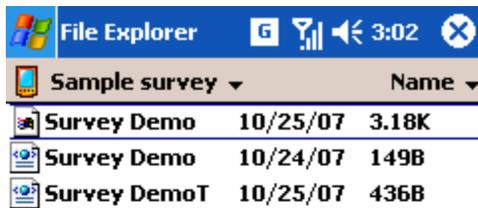
As you have two records into the survey, this section is finished; you do not need to enter more data and can close the program. Go to *Tools>Exit* to exit the program (and free up the memory).

5.5 How to export data

Once the data capturing has been concluded, the next logical step is to export the data. For this you will need to put the data in a different program that allows you to analyze all the data in the questionnaires that have been captured.

In the previous section we updated the database using the Pocket to record a new survey. We need to copy the latest version to the PC to have access to the most updated data.

Copy the data from the Pocket to the PC as you did before when copying data from the PC to the PDA. The data captured is saved in the same folder as the template; for the Pocket this is *My Documents\Sample survey* and for the PC it is *C:\Survey demo*.

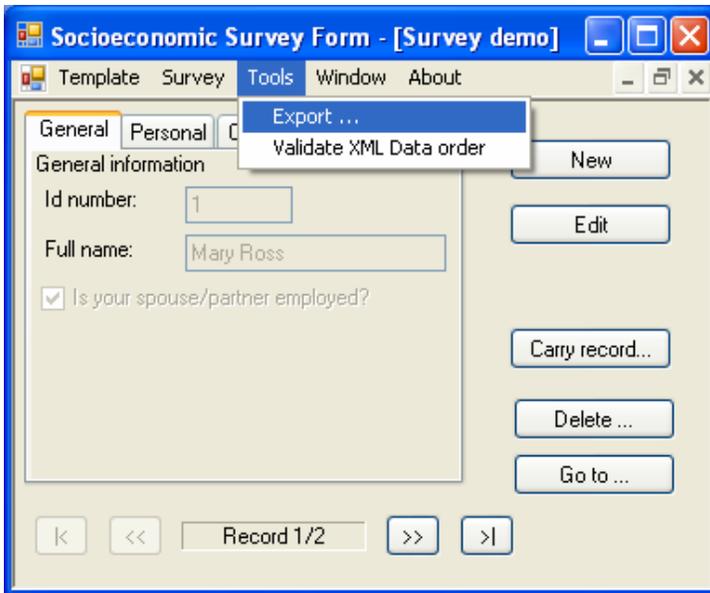


File Explorer			
Sample survey			
	Name		
Survey Demo	10/25/07	3.18K	
Survey Demo	10/24/07	149B	
Survey DemoT	10/25/07	436B	

There are three files in the folder, one is the template that you used to capture data, and the other two are the XML files that contain the captured data. The data files are always going to have the name of the template, that is, *Survey Demo.xml* and *Survey DemoT.xml*. The first stores the data of the principal table and the second stores all the other tables that are generated (in this case only one table that is called *family*).



Once the data files have been copied to the computer, you are ready to export the data to a more specific format like CSV, Excel or SPSS. This can be done using the SSF program, PC version.

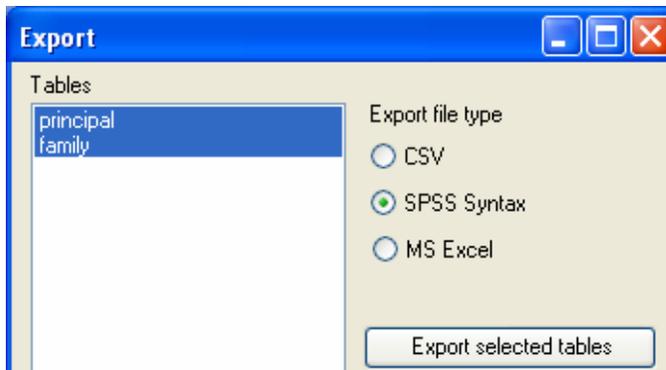


On the computer, run the SSF program; once the program is loaded open the template *C:\Surveydemo\Survey demo.ssf*, and select the option *Survey > Interview* from the main menu. Now select *Tools > Export...*

The following window opens immediately.

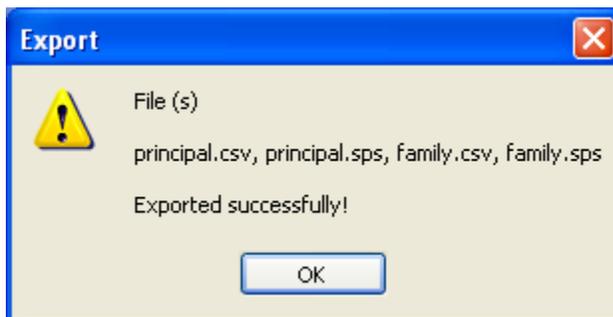


The Export window shows all the tables available and the file formats permitted.

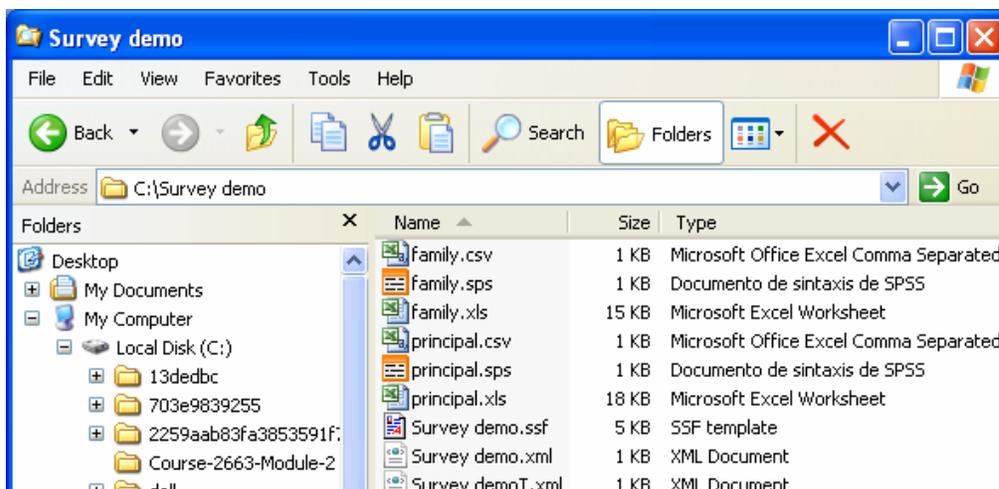


From the **Tables** list select all the tables and in **Export file type** select the option **SPSS Syntax**.

Click on *<Export selected tables>* and you will then get a message confirming the operation has been successful.

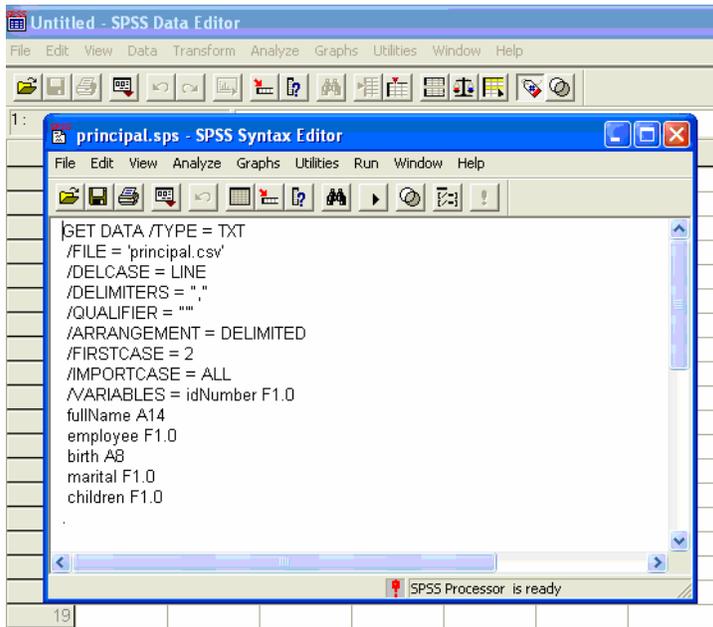


Repeat the process, but this time for the MS Excel file type. Close the Export window by clicking on [X] and return to the main window. So far you have exported all the data to SPSS and Excel. You can view the list of files generated by opening the folder using Windows Explorer.

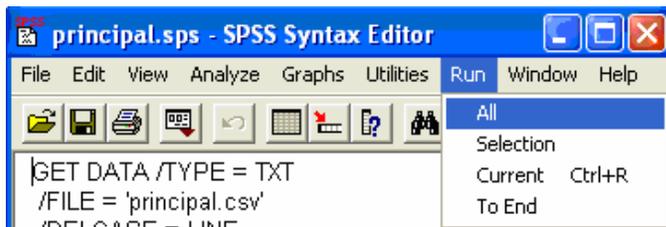


If the statistical software SPSS is already installed, all .sps files will be automatically recognized. When you export the data to SPSS, you generate new files with names that correspond to the names of the data tables. If you export data to SPSS, two files are generated for each data table, one with .csv extension and one with .sps. These are needed for the SPSS program to import the data.

Open the file *principal.sps* by double click on it. Next figure shows the syntax file loaded into the SPSS program.



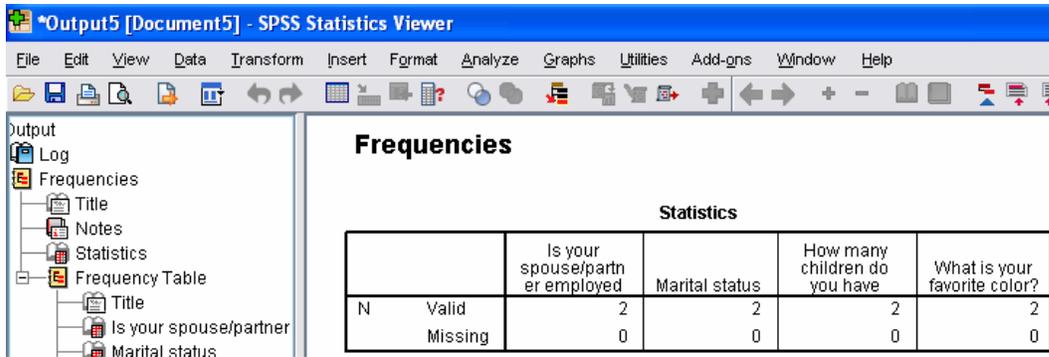
This is the window that shows the SPSS Syntax Editor. Different instructions of SPSS are present such as Get Data, Variable Labels, Value Labels, Missing Value, Frequencies Variables, and Descriptive Variables.



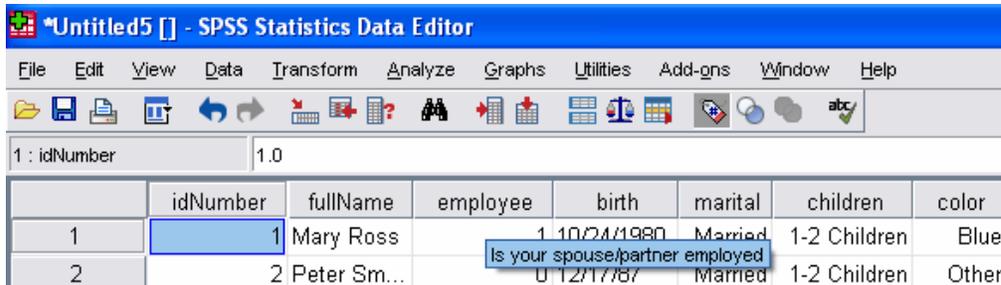
To run the syntax, click on the menu *Run > All*.

Note: this syntax is compatible with the SPSS version 10 or higher. If this needs to be run with a lower version, use this version's syntax and make the required modifications.

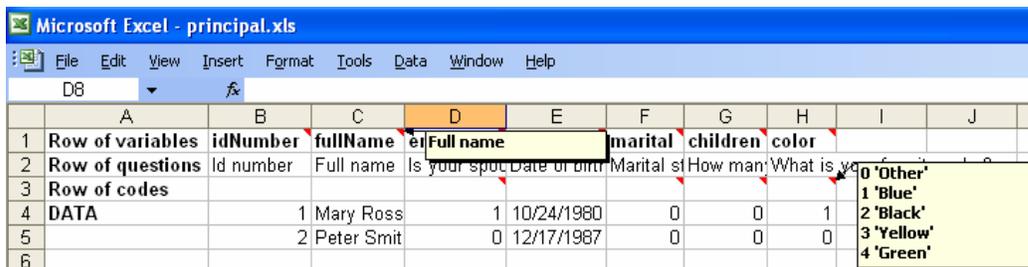
The syntax generated by the SSF contains commands for getting data from the *principal.csv* file and also generates statistical procedures of frequencies and means.



You can also see that the *Data Editor* window contains the labels of the variables and of the categories.



So far we have briefly reviewed some of the SPSS functions. Next, we shall load the exported data for MS Excel. Again, you can load the *principal.xls* file by double clicking using Windows Explorer. The following figure shows the file loaded in Microsoft Excel.



Notice that the first row is reserved for the name of the variable, and also includes the label of the variable in commentary mode. Row two shows the longer label of the variable. The third row includes the label of the codes for the defined variables (comboCtrl, radioCtrl and checkCtrl) visible as commentary. From the fourth row on you can see the captured values.

In this sample template we have been working with a table called *family*, and we have said that it is linked to the principal table through the *idNumber* field, as you can see in the following figure.

Microsoft Excel - principal.xls								
A9 fx								
	A	B	C	D	E	F	G	H
1	Row of variables	idNumber	fullName	employee	birth	marital	children	color
2	Row of questions	Id number	Full name	Is your spouse	Date of birth	Marital status	How many children	What is the color
3	Row of codes							
4	DATA	1	Mary Ross	1	10/24/1980	0	0	1
5		2	Peter Smit	0	12/17/1987	0	0	0

Microsoft Excel - family.xls							
A10 fx							
	A	B	C	D	E	F	G
1	Row of variables	idNumber	autoNumber	age	gender		
2	Row of questions			Age of	Gender of the children		
3	Row of codes						
4	DATA	1	1	10	0		
5		1	2	6	1		
6		2	1	2	0		

Notice that the first two rows of *family* data correspond to the first row of data from *principal* where both tables are associated with the value 1 for *idNumber*.

6. A template's syntax

The syntax of the template is presented to show how the questionnaire form is structured and to familiarize the user with its sections. Usually, the template is viewed using the *Socioeconomic Survey Form for PC* program, but if you don't have it, you can open the template with any text editor and explore and modify its parts. The template is an XML-code file that interprets the *Socioeconomic Survey Form* programs, and the corresponding file extension is .ssf.

General definition:

```
<XML>
  <application>
    <forms>
      <form>
        <control>
          <categories>
            <category>
              <exitScript>
                <script>
<XML> 0 Root
```

<application> 1 Application

- This tag is mandatory and unrepeatable
- Attributes: autoKeyboard, id, databaseName

Description: The value of the XML mark <application> is used as the title to be shown on top of the Pocket screen and in the title bar on your PC, once the template has been loaded.

The "autoKeyboard" attribute refers to the Pocket's keyboard. If the value is "True," the keyboard is automatically shown when you are in an edit field (text field). The value "False" does not show the keyboard automatically, but it is necessary to activate it manually by clicking on its icon.

- This attribute is mandatory

The "id" attribute refers to the key field of the application data (database). For example, the value id="idenProd" means that the *idenProd* field of the database acts as the key field. Records can be found easily by using any database manager, and the key field prevents any duplication; i.e., there cannot be two records in the database with the same value in the *idenProd* field. The value of the "id" attribute must exist in the <control> section referred to in the *name* attribute, and it may only be type="alpCtrl" or type="numCtrl."

- This attribute is optional

The "databaseName" attribute is specified with the name *XML node* that will contain the main records to conduct the survey. If the attribute is left out, the "principal" value will be taken by default.

- This attribute is optional

<forms> 2 Forms

- This tag is mandatory and unrepeatable

Description: Forms Section

<form> 2.1 Form

- This tag is mandatory and repeatable
- Attributes: title

The "title" attribute shows the title of the tab.

- This attribute is mandatory

<control>2.1.1.1 Control

- This tag is mandatory and repeatable
- Attributes: type, name, caption, questionText, posControl, maxLength, range, default

The "type" attribute specifies the following types of controls:

labelCtrl Displays a label.

alpCtrl Displays an edition field that, in the capture, allows all kinds of characters.

- numCtrl* Displays an edition field; it allows only numbers from 0 to 9, and the decimal point.
- checkCtrl* Displays a false/true-type verification box. The unchecked box is false (0), and the one checked is true (1).
- radioCtrl* Displays a "Select an option"-type list.
- comboCtrl* Displays a "Select an option"-type dropdown list.
- tableCtrl* Displays a button, and by clicking on it sends it to be entered in a table with the name that corresponds to the "name" attribute.

- This attribute is mandatory

The "name" attribute specifies the name of the variable where the recorded value is stored. Note that the type="labelCtrl" does not require a variable name because it is not part of the database; it is only used to show titles on the screen.

- This attribute is mandatory except for type="labelCtrl."

The attribute "questionText" is the text of a control that is printed on the screen. This attribute is the *raison d'être* of a labelCtrl. It may be blank text in a checkCtrl if this suits our design needs. It represents the title of the table in a tableCtrl.

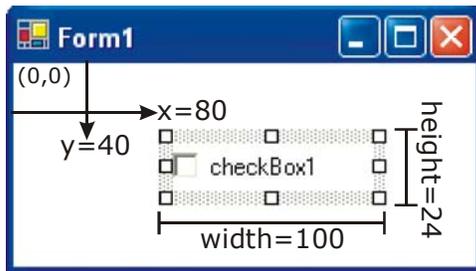
- This attribute is mandatory. It applies only to type labelCtrl, checkCtrl, and tableCtrl.

The "caption" attribute is used to place the VARIABLE LABELS on the SPSS syntax when you decide to export the data in the Socioeconomic Survey design program.

- This attribute is optional. It doesn't apply to labelCtrl and tableCtrl.

The "posControl" attribute specifies the numeric coordinates of the screen where the *capture control* is shown. Its position (x, and) and size (width and height) of the control must be specified. Its format is x, and, width, height. The following figure is an example.

posControl='80,40,100,24'



- This attribute is mandatory.

The "maxLength" attribute specifies the maximum number of characters that may be entered in the type="alpCtrl" and type="numCtrl" controls.

- This attribute is optional. It applies only to type="alpCtrl" and type="numCtrl".

The "range" attribute indicates the number values allowed for the type='numCtrl'. For example, range='1..9,15..30' means that the user may only enter values from 1 to 9, and from 15 to 30. Valid ranges may also be:

range='1..9,15..', allows you to enter values from 1 to 9, and from 15 and up.

range='.9', allows you to enter values less than or equal to 9.

- This attribute is optional. It applies only to type='numCtrl'.

The "default" attribute is useful to start the values of the controls, such as:

alpCtrl Starts the control with a text chain.

numCtrl Starts the control to a number value.

checkCtrl If default="True" starts the verified control.

radioCtrl If the value of the default attribute matches one on the element list <category>, this button will be enabled.

comboCtrl If the value of the attribute belongs to one of the list <category>, the comboCtrl displays that element.

- This attribute is optional

Please find below some step-by-step examples

Example 1: Use of tabs and labels.

```
<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='False'>Example 1</application>
  <forms>
    <form title='General'>
      <control type='labelCtrl' posControl='10,10,140,15' questionText='General Information' </control>
    </form>
    <form title='Personal'>
      <control type='labelCtrl' posControl='10,10,140,15' questionText='Personal Information' </control>
    </form>
  </forms>
</XML>
```



Example 1 shows a form with two tabs with the automatic keyboard disabled. The title of the form is "Example 1" and the tab's titles are "General" for tab 1 and "Personal" for tab 2.



Example 2. Use of *alpCtrl* control.

```
<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='False'>Example 2</application>
  <forms>
```

```

<form title='General'>
  <control type='labelCtrl' posControl='10,10,140,15' questionText='General Information' />
  <control type='labelCtrl' posControl='10,30,40,15' questionText='Place' />
  <control type='alpCtrl' name='place' posControl='50,30,120,15' maxLength='10' />
</form>
</forms>
</XML>

```



Example 2 shows a form where you can enter any text, and you are restricted to entering 10 characters or under.

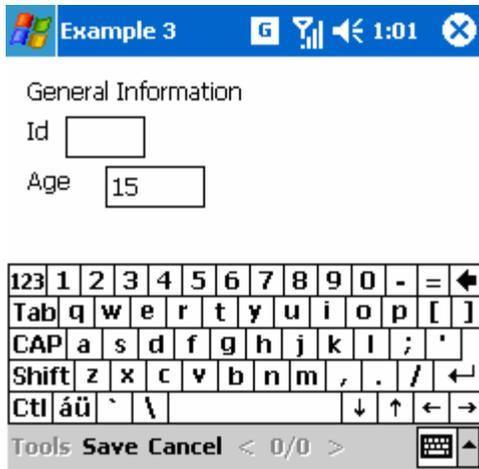


Example 3: Use of the *numCtrl* control.

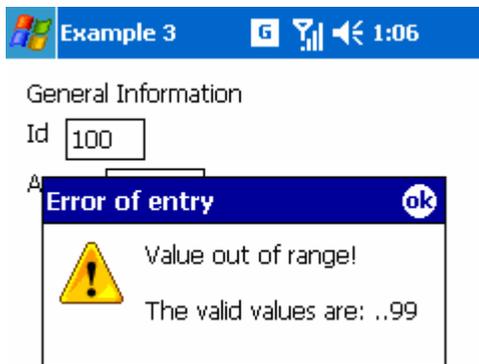
```

<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='True' id='ID'>Example 3</application>
  <forms>
    <form title='General'>
      <control type='labelCtrl' posControl='10,10,140,15' questionText='General Information' />
      <control type='labelCtrl' posControl='10,30,20,15' questionText='Id' />
      <control type='numCtrl' name='ID' posControl='30,30,40,15' range='..99' />
      <control type='labelCtrl' posControl='10,55,30,15' questionText='Age' />
      <control type='numCtrl' name='age' posControl='50,55,50,15' default='15' />
    </form>
  </forms>
</XML>

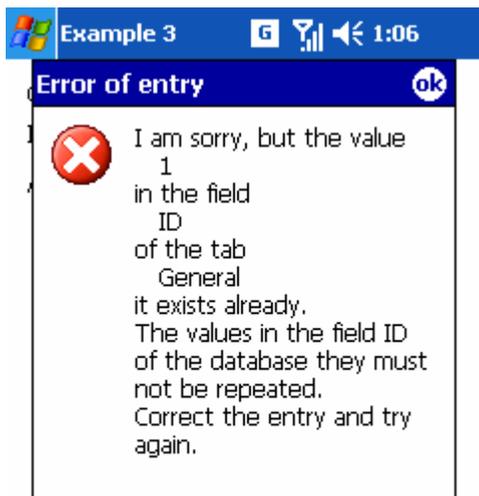
```



Example 3 shows a form with two numeric edition fields. Because of the `autoKeyboard='True'` attribute, by placing the cursor on any of the edit fields, the keyboard appears automatically on the screen. Note that in each new record, the `name='age'` field starts at 15 because it has been set to do so in the *default* attribute.



The numeric field is set to accept values at a range no higher than 99.



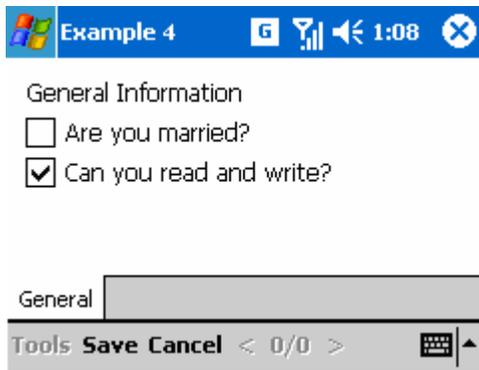
Also, since the attribute `id='ID'` is in place, the system established the ID field as the key field. If you try to add a value to the database which is already there, the system will not save the data. This way, values are not duplicated in the ID field.

If you want the values to be duplicated, all you have to do is to delete the `id` attribute of the tag `<application>`.



Example 4. Use of the *checkCtrl* control.

```
<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='False'>Example 4</application>
  <forms>
    <form title='General'>
      <control type='labelCtrl' posControl='10,10,140,15' questionText='General Information' />
      <control type='checkCtrl' name='married' posControl='10,30,115,15'
        questionText='Are you married?' />
      <control type='checkCtrl' name='readWrite' posControl='10,50,150,15' default='True'
        questionText='Can you read and write?' />
    </form>
  </forms>
</XML>
```



This shows two verification-box-type questions. To answer "yes" to this kind of question, check the box. Note that every time you generate a new record, the question *Can you read and write?* is always checked.

<categories> 2.1.1.1.1 Categories

This tag is mandatory. It applies to type="radioCtrl" and type="comboCtrl" only, and is unrepeatable.

Description: Category Section

<category> 2.1.1.1.1.1 Category

- This tag is mandatory and repeatable

- Attributes: position

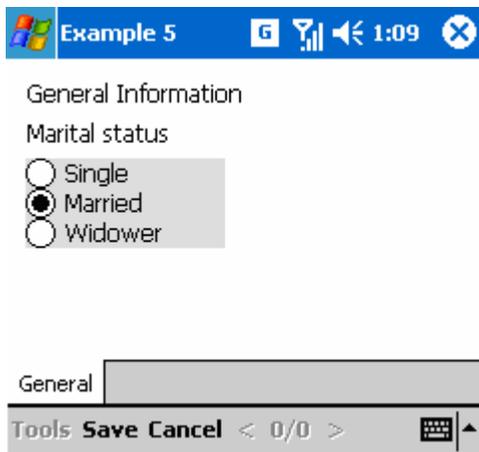
Description: It shows the different options for this kind of question.

The "position" attribute helps you to locate on the screen the option list within the *posControl* framework, stated in the type='radioCtrl' controls. Their position is related to the framework, and the format is "x, y, width, height".

- This attribute is mandatory. It applies to type="radioCtrl" only.

Example 5. Use of *radioCtrl* control.

```
<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='False'>Example 5</application>
  <forms>
    <form title='General'>
      <control type='labelCtrl' posControl='10,10,140,15' questionText='General Information' />
      <control type='labelCtrl' posControl='10,30,75,15' questionText='Marital status' />
      <control type='radioCtrl' name='maritalS' posControl='10,50,100,45' default='Married'>
        <categories>
          <category position='0,0,100,15'>Single</category>
          <category position='0,15,100,15'>Married</category>
          <category position='0,30,100,15'>Widower</category>
        </categories>
      </control>
    </form>
  </forms>
</XML>
```



This shows a radio-type option list. From this list, it is possible to choose only one option. Note that we have selected by default the option *Married*, every time a new record is generated. The *default* attribute of the element *<control>* is optional, if you do not use it, none of the radio-button-type option list will appear checked for each new record.

Example 6. Use of *comboCtrl* control.

```
<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='False'>Example 6</application>
  <forms>
    <form title='General'>
      <control type='labelCtrl' posControl='10,10,140,15' questionText='General Information' />
      <control type='labelCtrl' posControl='10,30,135,15' questionText='Type of land ownership' />
      <control type='comboCtrl' name='tenure' posControl='145,30,95,15' default='Sharecropped'>
        <categories>
          <category>Own land</category>
          <category>Land rented</category>
          <category>Sharecropped</category>
        </categories>
      </control>
    </form>
  </forms>
</XML>
```



This shows a form with a combo-box list entry. You may only select one item. The selected option is the *Sharecropped one*, by default.

<exitScript> 2.1.1.1.2 Scripts

This tag is optional and unrepeatable.

Description: Section of scripts that help you to validate the response to a command. Once you have entered the last value, it will move to another command.

The XML element *<exitScript>* does not apply to *labelCtrl*, *alpCtrl*, *dateCtrl*, and *tableCtrl*.

<script> 2.1.1.1.2.1 Script

- This tag is mandatory and repeatable
- Attributes: type, condition, targetName

Description: Statement of the validation and skip script.

The "type" attribute states the type of validation. Its possible values are:

skipTo If the condition is true, skip to the command specified in the *targetName*. This is useful when you want to skip everything to get to an entry command that is located far away or under a different tab.

message If the condition is true, the screen will show a message specified in the *targetName*, and the entry goes back to the command.

disabled If the condition is true, it disables the command(s) set on "targetName." Its syntax is "control1;control2;...;controlN."

- This attribute is mandatory

The "condition" attribute helps you to establish the validation target condition. The condition depends on the type of control you are validating, but every time it is evaluated as true, the *targetName* is processed. The general syntax for "condition" is "nameControl1:status;nameControl2:status,,,nameControlN:status".

Depending on the command, *status* may be True/False for checkCtrl, text for radioCtrl and comboCtrl, and (>/</=) value for numCtrl. Remember that with XML use **<** to represent the symbol < and **>** for the symbol >. Other special characters are **"**, **&** and **'** that represent the symbols ", & and ' respectively.

- This attribute is mandatory

The "targetName" attribute is executed depending on the *type* attribute, and every time the *condition* is met.

- This attribute is mandatory

To understand how the script is encrypted, the following examples are given for each command.

Example 7. Use of type="disabled" scripts.

```
<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='False'>Example 7</application>
  <forms>
    <form title='General'>
      <control type='labelCtrl' posControl='5,10,140,15' questionText='General Information' />
      <control type='checkCtrl' name='haveSilo' posControl='5,30,230,15'
        questionText='Do you have silos to store your corn?'
        <exitScript>
          <script type='disabled' condition='haveSilo:True' targetName='noSilo' />
        </exitScript>
      </control>
      <control type='labelCtrl' posControl='20,50,180,15' questionText='How many silos do you have?' />
      <control type='numCtrl' name='qSilo' posControl='200,50,40,15'>
        <exitScript>
          <script type='disabled' condition='qSilo:&lt;3' targetName='cap3' />
        </exitScript>
      </control>
      <control type='labelCtrl' posControl='20,70,190,15' questionText='Of which capacity?' />
      <control type='comboCtrl' name='cap1' posControl='20,90,45,15'>
        <categories>
          <category>100</category>
          <category>200</category>
          <category>500</category>
        </categories>
      </control>
      <control type='comboCtrl' name='cap2' posControl='80,90,45,15'>
        <categories>
          <category>100</category>
          <category>200</category>
          <category>500</category>
        </categories>
      </control>
      <control type='comboCtrl' name='cap3' posControl='140,90,45,15'>
        <categories>
          <category>100</category>
          <category>200</category>
          <category>500</category>
        </categories>
      </control>
      <control type='labelCtrl' posControl='5,120,190,15'
```

```

        questionText='If you do not have a silo, why not?' />
    <control type='alpCtrl' name='noSilo' posControl='5,140,200,20' maxLength='80'/>
</form>
</forms>
</XML>

```

The previous code shows the *type='disabled'* use in the scripts. If the question "Do you have silos to store your corn?" is true (haveSilo:True), then the question "If you do not have a silo, why not?" (noSilo) is overridden. Likewise, if the answer to question "How many silos do you have?" is less than three (qSilo:<3), then it disables the third list box (cap3) that refers to the silo's capacity.

Example 8. Use of type="skipTo" scripts.

```

<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='False'>Example 8</application>
  <forms>
    <form title='General'>
      <control type='labelCtrl' posControl='10,10,140,15' questionText='General Information' />
      <control type='labelCtrl' posControl='10,30,40,15' questionText='Gender' />
      <control type='comboCtrl' name='gender' posControl='10,50,70,15'>
        <categories>
          <category>Male</category>
          <category>Female</category>
        </categories>
        <exitScript>
          <script type='skipTo' condition='gender:Male' targetName='nameM'/>
          <script type='skipTo' condition='gender:Female' targetName='nameF'/>
        </exitScript>
      </control>
    </form>
  </forms>
</XML>

```

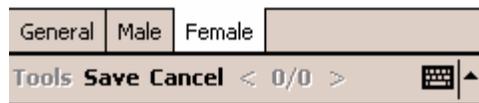
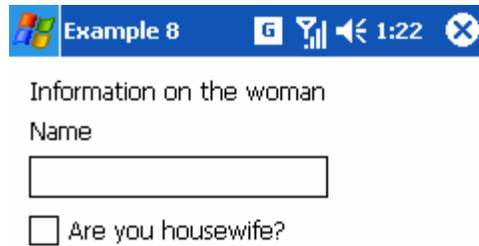
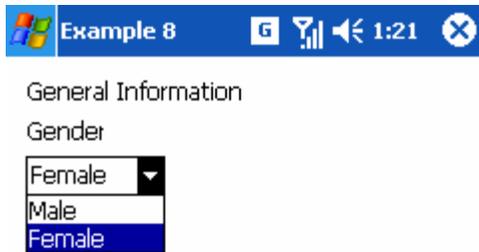
```

        </exitScript>
    </control>
</form>
<form title='Male'>
    <control type='labelCtrl' posControl='10,10,140,15' questionText='Information on the man' />
    <control type='labelCtrl' posControl='10,30,150,15' questionText='Name' />
    <control type='alpCtrl' name='nameM' posControl='10,50,150,20' maxLength='80' />

    <control type='checkCtrl' name='farmer' posControl='10,80,215,15' questionText='Are you farmer?' />
</form>
<form title='Female'>
    <control type='labelCtrl' posControl='10,10,160,15' questionText='Information on the woman' />
    <control type='labelCtrl' posControl='10,30,150,15' questionText='Name' />
    <control type='alpCtrl' name='nameF' posControl='10,50,150,20' maxLength='80' />
    <control type='checkCtrl' name='housewife' posControl='10,80,215,15'
        questionText='Are you housewife?' />
</form>
</forms>
</XML>

```

This example shows the *type='skipTo'* use in the scripts. If you select *Man* in the "Gender" question of the *General* tab, the control skips to the "Name" question of *Male* tab (condition='gender:Man' targetName='nameM'). Likewise, if you select *Female* in the "Gender" question, you will skip to the "Name" question of the *Female* tab (condition='gender:Female' targetName='nameF').



Example 9. Use of type="message" scripts.

```
<?xml version="1.0" encoding="utf-8"?>
<XML>
<application autoKeyboard='False'>Example 9</application>
  <forms>
    <form title='General'>
      <control type='labelCtrl' posControl='5,10,140,15' questionText='General Information' />
      <control type='checkCtrl' name='haveSilo' posControl='5,30,230,15'
        questionText='Do you have silos to store your corn?'
        <exitScript>
          <script type='disabled' condition='haveSilo:True' targetName='noSilo' />
        </exitScript>
      </control>
      <control type='labelCtrl' posControl='20,50,180,15' questionText='How many silos do you have?' />
      <control type='numCtrl' name='qSilo' posControl='200,50,35,15'>
        <exitScript>
          <script type='message' condition='haveSilo:False;qSilo:>0'
            targetName='This answer conflicts with previously entered data ("Do you have silos to store
your corn?").' />
        </exitScript>
      </control>
      <control type='labelCtrl' posControl='20,70,190,15' questionText='Of which capacity?' />
      <control type='comboCtrl' name='cap1' posControl='20,90,45,15'>
        <categories>
```

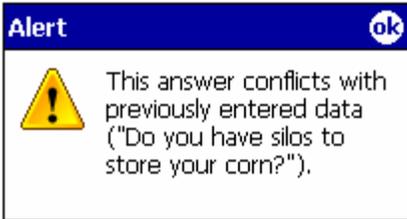
```

        <category>100</category>
        <category>200</category>
        <category>500</category>
    </categories>
</control>
<control type='comboCtrl' name='cap2' posControl='80,90,45,15'>
    <categories>
        <category>100</category>
        <category>200</category>
        <category>500</category>
    </categories>
</control>
<control type='comboCtrl' name='cap3' posControl='140,90,45,15'>
    <categories>
        <category>100</category>
        <category>200</category>
        <category>500</category>
    </categories>
    <exitScript>
        <script type='message' condition='qSilo:&lt;3'
            targetName='It is not correct to select the capacity of a third silo if you have answered that you
have less than three.'/>
    </exitScript>
</control>
<control type='labelCtrl' posControl='5,120,200,15' questionText='If you do not have a silo, why not?' />
<control type='alpCtrl' name='noSilo' posControl='5,140,200,20' maxLength='80' />
</form>
</forms>
</XML>

```

General Information

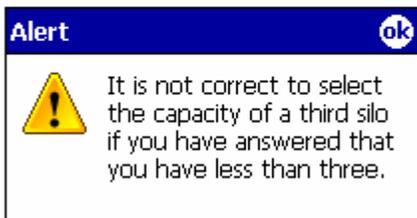
Do you have silos to store your corn?
How many silos do you have?
Of which capacity?



This example shows the use of the `type="message"` script. As shown in Example 9, if the question "Do you have silos to store corn?" is false and you try to enter an amount higher than zero, the question "How many silos do you have?" will display a warning message.

General Information

Do you have silos to store your corn?
How many silos do you have?
Of which capacity?



We have added to the template a second warning validation; i.e., you cannot enter the capacity of a third silo, if for the question "How many silos do you have?" you gave an amount lower than three.

7. Field use of PDAs and handling of the questionnaire

This section contains a set of comments based on the field experience of surveyors that conducted the research project "Evaluación de impacto in comunidades of the Valles Centrales de Oaxaca" ("Impact Assessment Research in Communities of the State of Oaxaca, Mexico"). This practical and direct use of PDAs in the field with farmers allowed us to identify the advantages and disadvantages of their usage, as well as the usefulness of the present manual. Since interviewers were initially unfamiliar with this technology, interviewers had to be trained in the use of the PDA, and simplifications had to be made to the survey administered through the PDA, and problems occurring during start-up had to be solved. Hence the Oaxaca study also served to test the technology. The first surveys were recorded both on paper and in PDA, both to make sure no data were lost and to compare the effectiveness of the two methods. After an adjustment period, most surveyors adopted the PDAs. They were asked to mention the advantages of working with the Pocket, as well as its disadvantages and possible solutions or alternatives. The results are listed.

7.1 Advantages

The tools described in this manual are excellent for quantitative socioeconomic surveys, their main advantages being that they:

- ✓ Save time by allowing data to be recorded rapidly at the time of the interview, and avoiding having to enter data later.
- ✓ Allow more ready availability of data for analysis by allowing cross-checking in the field.
- ✓ Permit verification of data at the time of the interview and correction of bias remaining from the field data collection.
- ✓ Frequently allow data to be emailed from the field to the place where it will be stored and analyzed, in an electronic and verified form.

The tools are primarily to capture socio-economic (household level) data, though other data can be recorded (agronomic, breeding-trial, pest-infestation data, etc.).

7.2 Disadvantages - solutions/alternatives

Disadvantage

- The application of the surveys is "cold:" when entering the data, the surveyor does not look the interviewee in the eyes, and therefore the interviewee loses interest.

Solution/Alternative

- ✓ Minimize the questions that require full attention from the surveyor on the Pocket, such as use of "alpCtrl" commands to enter the name of the interviewee, address, etc.
- ✓ Familiarize yourself with the survey to be able to ask the questions without reading them from the Pocket.

Disadvantage

- It can be difficult to see the data on the screen for questions that have a table that is too big for the screen. As you scroll down or to the right, you will be unable to see the column headers and row names.

Solution/Alternative

- ✓ Insert a line and/or column when you can no longer see the column header or row name. Copy and paste the column header or row name in the space you made. This way you can see the column header information, for example, even as you scroll down the description of the data you are collecting will be visible.
- ✓ Memorize your column headers or row names. This way, as you scroll down, for example, and can no longer see your column header, you will still understand the data entries.
- ✓ Change the table into a relational database. In other words, keep the information on the table to a minimum. Create separate records for each entry.

Disadvantage

- It is difficult to read the screen in sunlight (outdoors).

Solution/Alternative

- ✓ Avoid the direct sunlight by placing yourself under the shade of a roof or a tree.

Disadvantage

- The Pocket battery does not last more than three surveys.

Solution/Alternative

- ✓ Have at least one backup battery, and verify that it is charged before every survey.

Disadvantage

- It is difficult to enter qualitative data.

Solution/Alternative

- ✓ It is recommended you have a notepad with you to write down answers to qualitative questions. These can later be transferred to the Pocket.

Disadvantage

- If the survey is not properly designed, there is the risk of not entering the right information in the field.

Solution/Alternative

- ✓ You must first test the survey in the field and subsequently on paper; the survey is designed to incorporate the changes into the Pocket. The survey is applied again in the field and the design of the questionnaire will better capture the data you need to collect.

Disadvantage

- When conducting a survey the respondent gives information that needs to be converted or estimated. I cannot record this type of information because the Pocket does not allow me.

Solution/Alternative

- ✓ If the respondent provides you with information that cannot be recorded directly into the Pocket because a conversion or estimation is needed, write them down on a notepad, for later conversion and recording in the PDA.