2. Form Designer

Introduction

In Epi Info™ 7, the Form Designer and the Enter modules work together to design the data entry process and collect data. Form Designer is the tool used to design the survey, questionnaire, or form, tailor the data entry process, and specify the tab sequence. It is where you customize any data validation you want to occur when the form receives data in the Enter tool.

Data collection in Epi Info™ 7 is organized by projects. Each project can have one or many forms which can have one or many pages. On each page, one or many data entry fields are added which collect individual data elements.
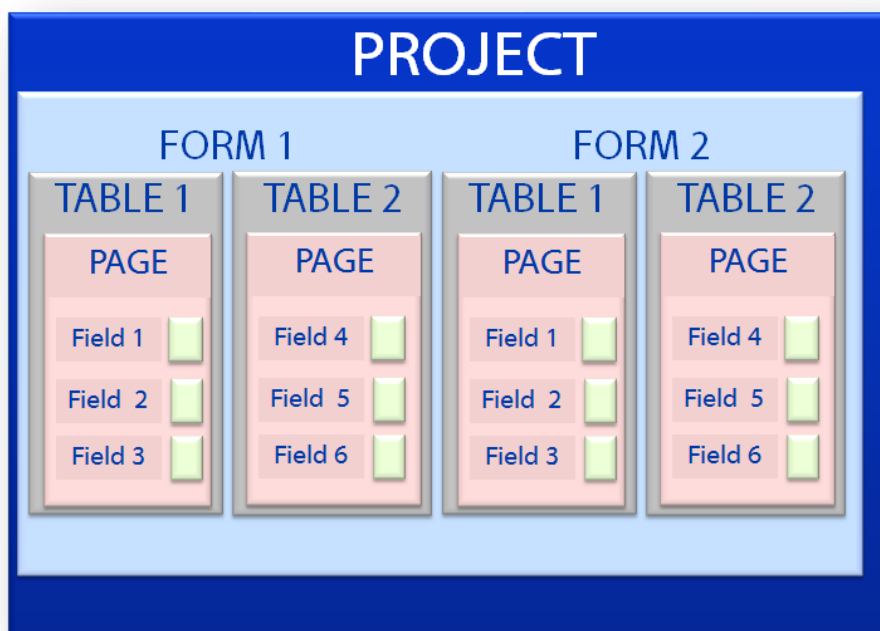

Figure Error! No text of specified style in document..1: Project Organization

Fields added to a page can be any of a variety of field types corresponding to the type of data needed and the kinds of analyses that can be anticipated. Field types range from simple labels, text, numeric, and date fields to more advanced fields like drop-down lists, data grids, and command buttons. A list of the available field types is shown in Figure 2.21.

Epi Info™ 7 normally uses the Microsoft Access database format. If no changes are made to the default settings when new projects are created, data are stored in the project's MS

Access data file having an ".mdb" extension.   If you have access to a Microsoft SQL Server database, Epi Info™ 7 can natively use this format for data storage, instead of the MS Access format. Epi Info™ 7 handles all of the database management aspects such as the table creation, managing keys, relationships, and other information storage details. Since the process of designing the form also defines the database, the Form Designer can be regarded as a type of database design environment.

Navigate the Form Designer Workspace

To open Form Designer, click **Create Forms** from the Epi Info™ 7 - Menu, or select **Tools > Create Forms** from the toolbar.
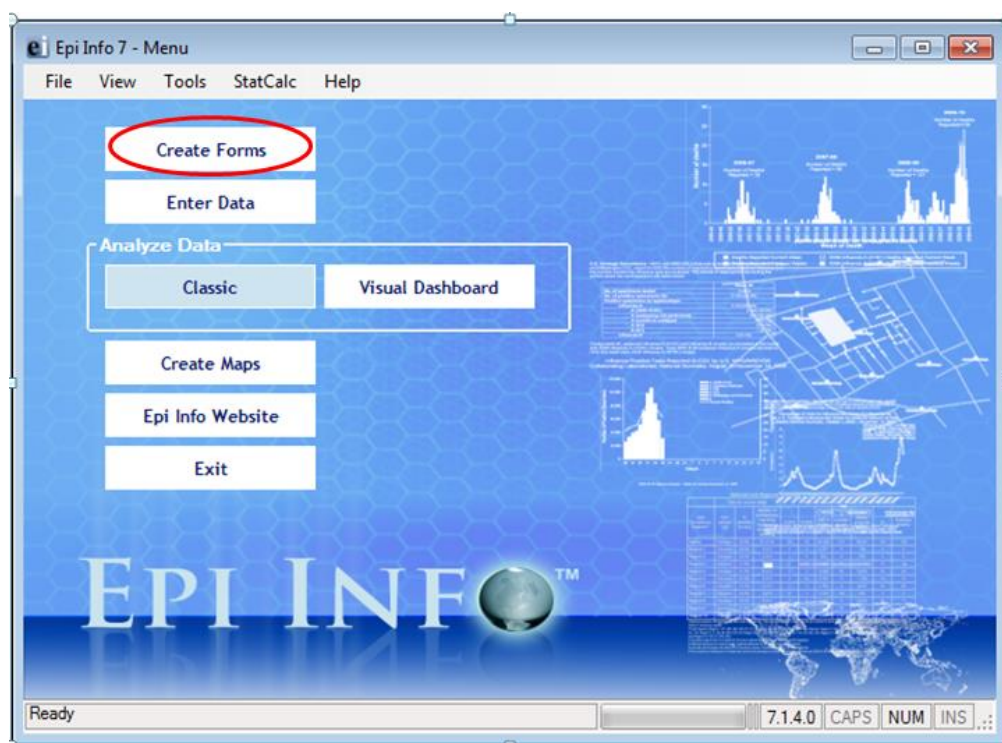

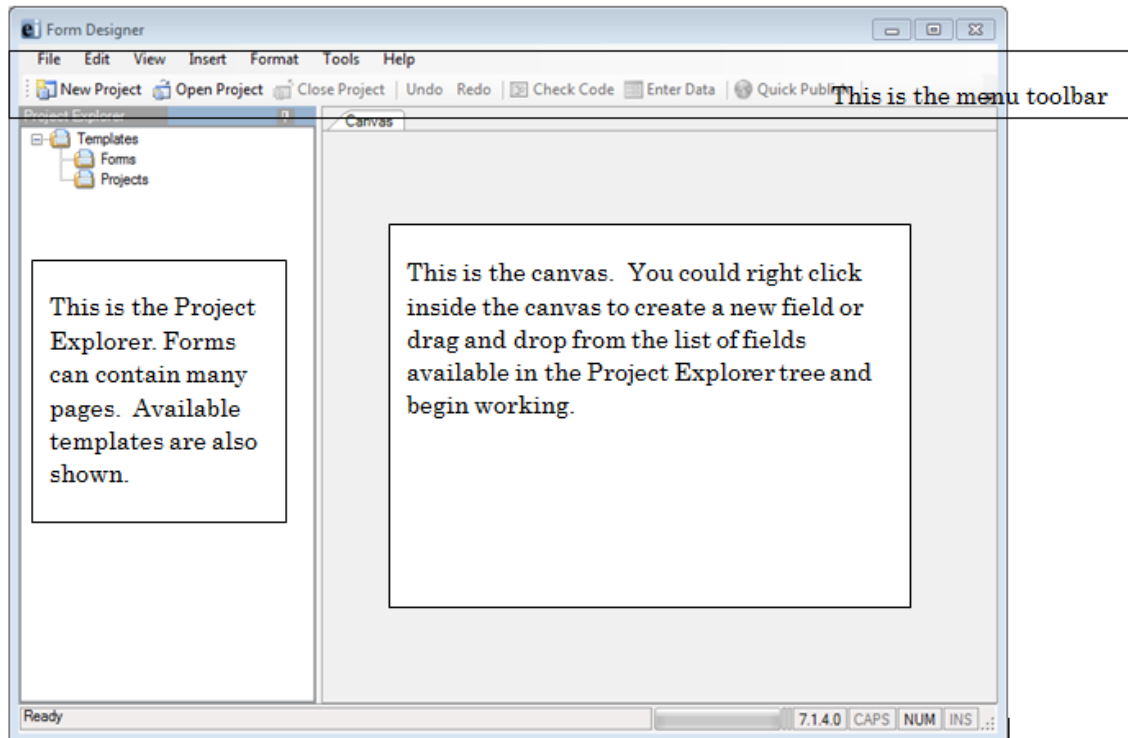**Figure** Error! No text of specified style in document.**.2:** Create Forms Menu Option

Figure Error! No text of specified style in document..3 Form Designer (No Active Project)

1. The **Menu toolbar** provides an easy way to access your projects and gives you tools to edit your forms, manage your project and customize your Canvas.

2. The **Project Explorer** is located on the left of the screen and allows you to add pages, fields, and templates to a form. Each category can be collapsed or expanded by clicking their respective – or + buttons next to the category name.

3. The blank page to the right of the Project Explorer is the **Canvas** where the form is designed. Each field is defined and edited using its Field Definition dialog box. You can customize the work space by selecting fonts, colors, and grid options.

Open a Recent Project

Epi Info™ 7 is packaged with many sample projects, templates, and examples to use for helping to showcase its many features and functions. The **Sample** project is one that contains several forms already prepared with instructional data collected. Many of these forms and their associated data are used in schools of public health for teaching Epi Info™ and the science of epidemiology and statistics important to public health research and epidemiologic investigations.

To open a recent project, from the Form Designer menu, select **File > Recent Projects**.

A list of recently opened projects is shown in the menu. Even though this may be the first time opening Form Designer, the Sample project is shown in the list to get you started.
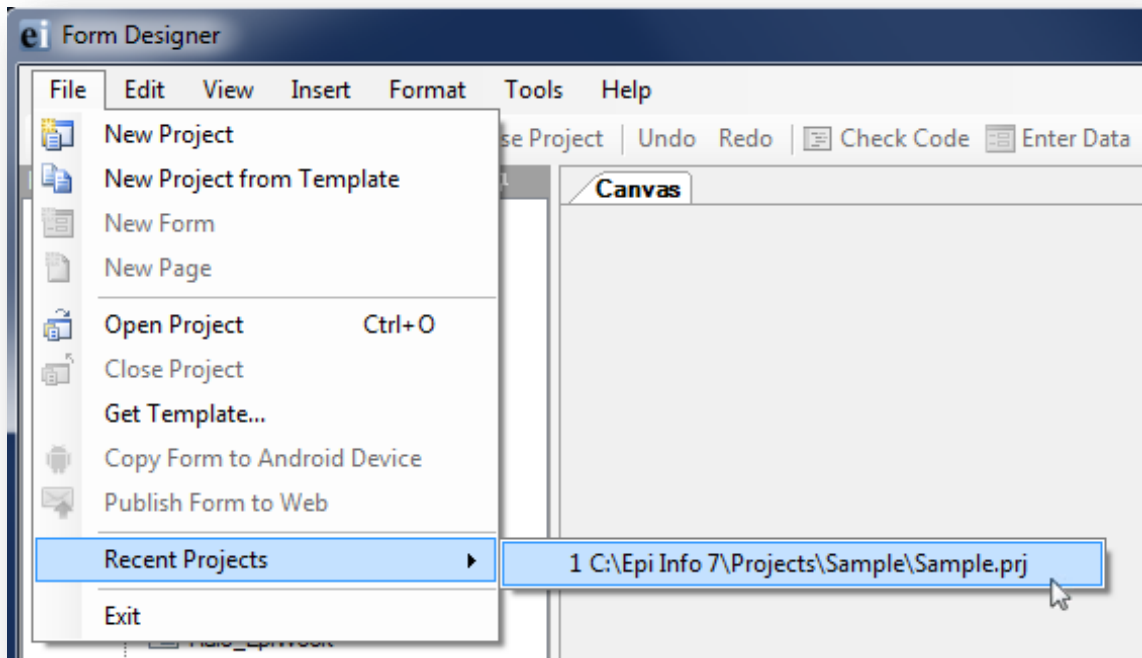

Figure Error! No text of specified style in document..4: Opening a Recent Project

After selecting the Sample project, Form Designer opens to the first page of the first form – ADD Full.
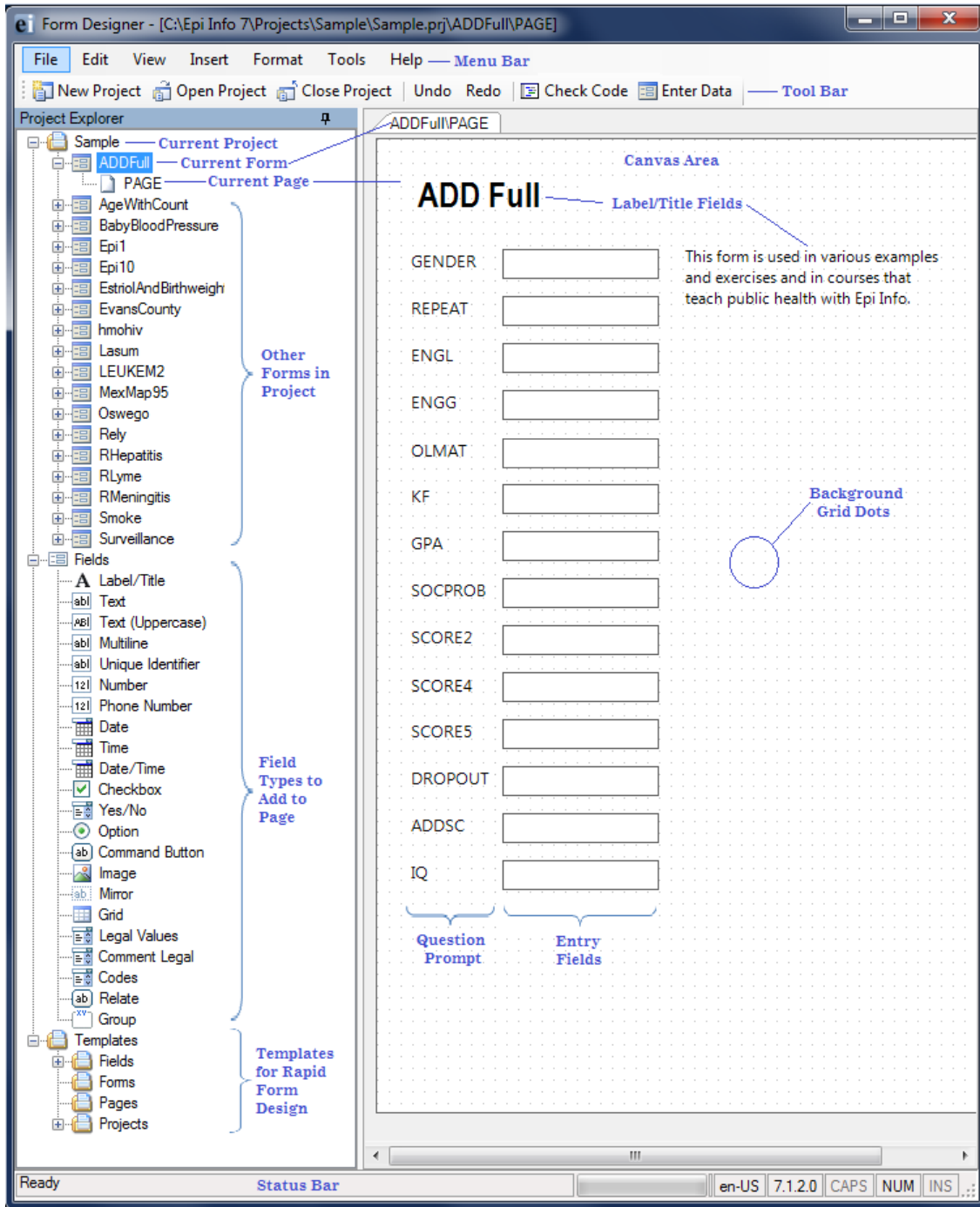

Figure Error! No text of specified style in document..5: Form Designer First Page of Project

Create a New Blank Project and Form

Every Epi Info™ 7 project could contain two files; the database file and a project file (.prj) that is contained in a project folder. The project file holds the information about the location and format of the database, and whatever connection information might be required, such as a user name and password. If you choose to use the Microsoft Access format for your database, your project may also have the database file (.mdb) inside the project folder. The database file can also be saved to another location as needed. Projects that use a SQL Server database will only have the .prj file since the database is located on the server.

To create a new project and form, follow the steps below:

1. From the Epi Info main menu, select **Create Forms** or select **Tools > Create Forms** from the toolbar. The Form Designer window opens.

2. Click the **New Project** button in the toolbar or select **File > New Project**. The New Project window opens.

Figure Error! No text of specified style in document..6: New Project dialog box

3. Enter a **Project Name**. Project names cannot contain spaces, or most non-alphanumeric characters, although underscores are permitted.

4. Set the desired project location by typing it into the Location field, or clicking the browse button. The default location for projects is the **\Epi Info 7\Projects** folder.

5. Provide a description of the project. (Optional)

6. Select the database format from the **Data Repository** drop-down list. The default option is Microsoft Access 2000-2003. However, SQL Server is also available. To use the SQL Server option, you need to have access to a SQL Server database.

7. If you selected Microsoft SQL Server for the **Data Repository**, then click the browse button to the right to enter the connection information for the SQL Server database. Contact your SQL Server database administrator for the required information requested in this dialog box.
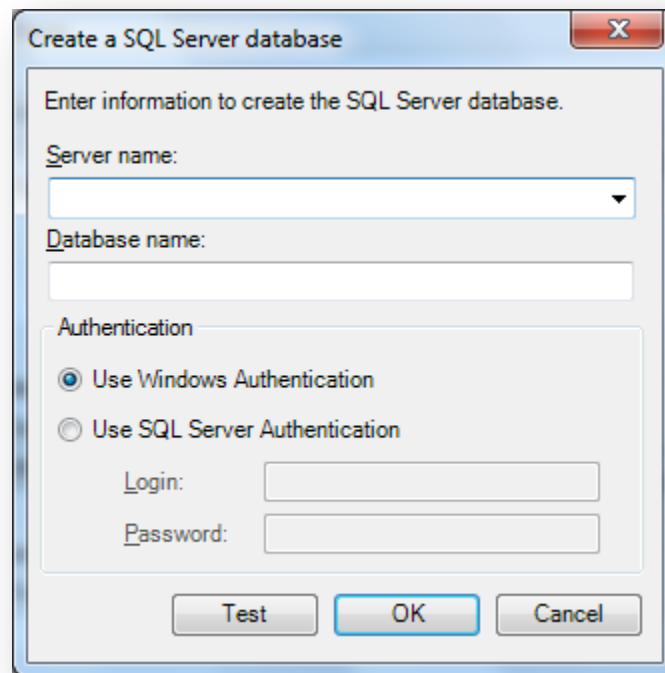
Figure Error! No text of specified style in document..**7:** SQL Server Database dialog box

8. Click **OK**.

9. Tab to, or select the **Form Name** field.

10. Enter a **Form Name**.

- Use only letters, numbers, and underscores.

- Do not start a form name with a number.

- Do not use any spaces.

11. Click **OK**. A new blank canvas appears with the new form name and page on the tab at the top left of the canvas.

Before You Begin

Decide on a Naming Convention for Field Names

Before beginning to design your form it is helpful to have a standard way to name the data fields. While Epi Info™ will attempt to suggest a field name based on the question or prompt, in many cases these suggestions are too lengthy or cumbersome. Having a standard naming convention to assign to fields as they are added to the form will make later analyses much easier. The following suggestions may help:

- Keep field names short.

- Capitalize words within field names to help improve their readability. For example, "PatientLastName" is easier to read than "patientlastname".

- Use a prefix to keep associated fields together in alphabetized lists.

Customize the Form Designer

One of the most helpful things you can do *before* beginning to develop your questionnaire or survey form is to decide on the layout and overall look of the form.

Aspects to consider include the following:

- What Font do you want the Questions and Entry Fields to have? You may want to set the **Default Prompt and Input Fonts.** You specify the fonts in **Format>Set Default Prompt Font** and **Set Default Input Font.**

- How far apart should fields be spaced? You may want to adjust the settings for the grid. The grid square size and other grid settings are set in **Format > Grid Settings.**

- Will the form need to be printed? If so, what size paper will likely be used? You may want to use a corresponding page size when designing the form. You specify the page size in **Format > Page Setup.**

- What page orientation should be used, Portrait or Landscape? The answer to this may depend on what devices and platform will be used for data entry. If the form will be published to a website or uploaded to a mobile device, consider a smaller page size and an appropriate page orientation. The page orientation is set in **Format > Page Setup.**

- Would you prefer the Question or Prompt to appear above the Input Field or to the left of the Input Field? You set the question and input field positioning in **Format > Page Setup** and select **Vertical** or **Horizontal**.

- What screen resolution will likely be used for data entry? If the anticipated screen resolution is less than your usually setting, you may consider reducing your resolution while designing the form so the layout of your fields will be consistent when viewed in the Enter tool.

While you can change these format settings at any time during the form design, if these questions are considered earlier, there may be less rework required to make the form presentable than if these settings are changed after fields are added to the pages.

Set a Default Prompt or Input Field Font

Set the character font to be used as fields are added to the form using the Format menu.

Default Prompt Font

1. Format > Set Default Prompt Font. The Font dialog box appears.

2. Select a **font, font style,** and **sizes**.

3. Click **OK**.

Default Input Font

1. Format > Set Default Input Font.

2. Select a **font, font style,** and **sizes**.

3. Click **OK**.

Change Grid Settings

Use the **Format** settings to customize the Form Designer canvas.

1. From the Form Designer toolbar, select **Format**. The drop-down menu opens allowing you to customize your canvas.

2. Select **Format** > **Grid Settings** to open the grid settings dialog box.

Figure Error! No text of specified style in document..8: Grid Settings

- Check the **Snap to Grid** box to force fields in the form to snap to the grid nearest the field edge.

- Check the **Show Grid** box to see the grid as the canvas background.

- Use the **up and down arrows** in the Grid Square Size field to alter the displayed width between grid lines.

- Select the **Snap prompt to grid** or **Snap entry field to grid** check boxes depending on the snapping effect you want to use.

3. Click **OK**. The Form Designer page appears with new settings.

Set the Page Size, Orientation, and Default Prompt Alignment

The Page Size, Orientation, and Default Prompt Alignment are set using the Page Setup dialog.
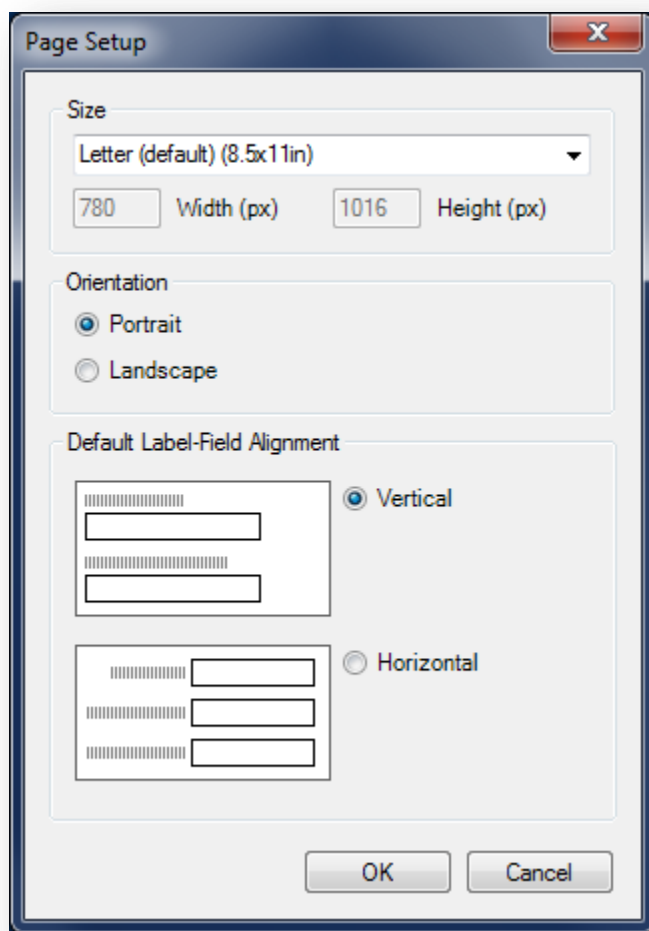
Figure Error! No text of specified style in document.**.9:** Page Setup

1. On the Form Designer menu, select **Format > Page Setup**.

2. Set the page size to be any of the pre-configured sizes listed in the Size drop-down list or use a Custom Size and specify the Width and Height in pixels.
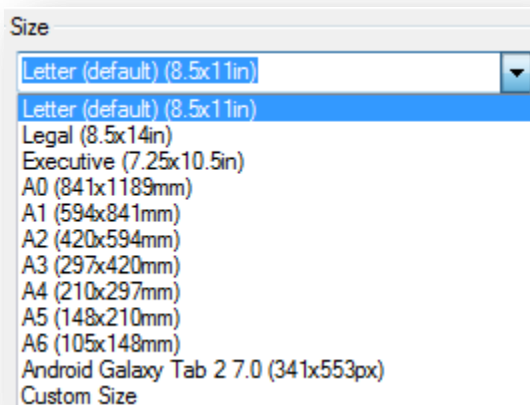
3. Set the preferred page orientation – Portrait or Landscape.

   • Portrait orientation is good for data entry forms that need to be printed and when the data entry is done from printed forms that have a portrait orientation. Portrait orientation may also be preferred for forms uploaded to small mobile devices such as smart phones or tablets.

   • Landscape orientation is better for forms intended to be published to a website for entry using an Internet browser on a desktop or laptop computer.

   Set the default alignment to be vertical so the field is below the prompt and left aligned, or horizontal where the field is to the right of the prompt on the same row.
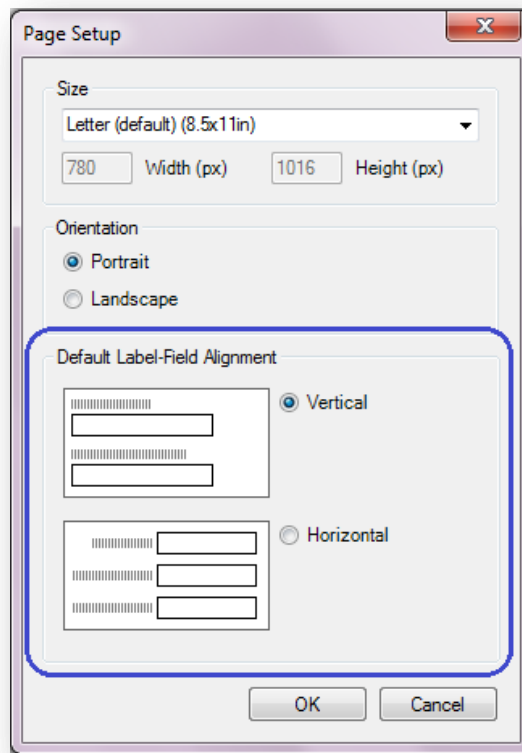
Figure Error! No text of specified style in document.**.11:** Page Setup dialog showing Default Label-Field Alignment

Insert a Background Image or Color

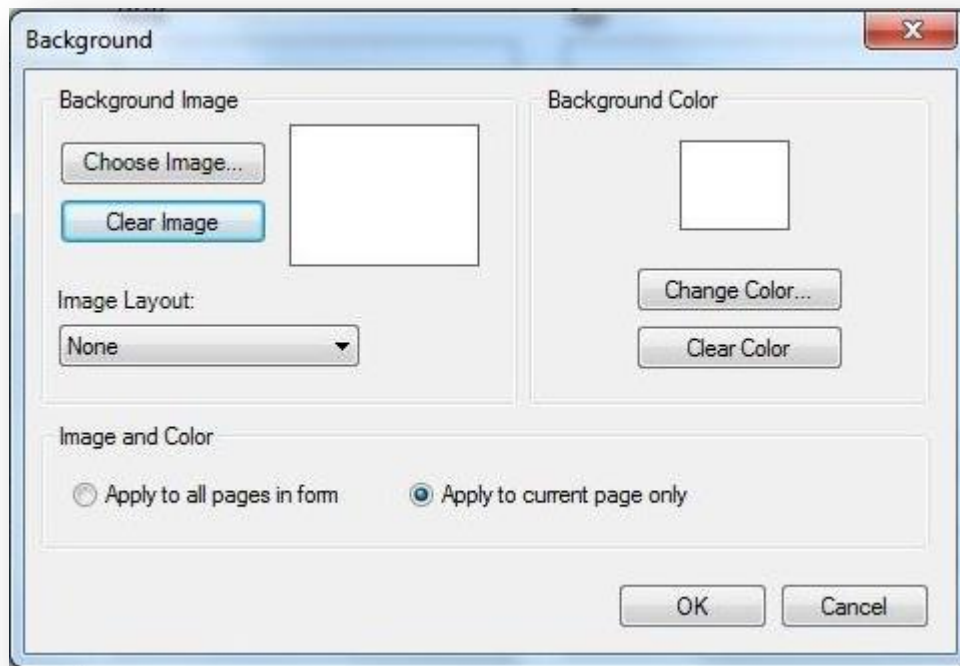1. From the Form Designer toolbar, select **Format > Background**. The Background dialog box opens.

Figure Error! No text of specified style in document.**.12:** Background Format

2. To set a background image, use the Background Image section of the dialog, click **Choose Image**. The Background Image box opens.

3. Locate the image file. Click **Open**. The selected image appears in the Background Image dialog box. Image formats include bitmap (.bmp), picture (.ico), and JPEG (.jpg).

4. Use the **Image Layout** drop-down list to customize the image on the screen (**None, Tile, Center, and Stretch**).

5. From the Image and Color section, use the option buttons to **Apply to all pages** or **Apply to the current page only**.

6. Click **OK**. The image appears in the form.

7. To remove the image, select **Clear Image** from the Background Image box.

8. To set a background color, click **Change Color**. The Color dialog box opens.

9. Select a **background color** from the palette or select **Define Custom Colors** to enter a more specific color request.

10. Click **OK**. The selected color previews in the background box.

11. From the Image and Color section, use the option buttons to **Apply to all pages** or **Apply to the current page only**.

12. Click **OK**. The color appears in the form as a background.

13. To remove the color, select **Clear Color** from the Background Color box.

Create a New Project from a Project Template

Another way to create a new project is to use a pre-defined project template. This option creates the project with all of the forms, pages, fields, and Check Code that are specified in the project template. Epi Info™ 7 comes with a number of sample project templates to demonstrate its many features. These templates are located in the Project Explorer under **Templates > Projects**.

To use an existing project template, follow the steps below:

1. Select **File > New Project from Template**. The New Project from Template window opens listing the available project templates.

2. Select the desired project template.

3. Confirm the name and location of the new project, and the data format as shown in the window and make changes as needed.

4. Click **OK.**   The Form Designer will begin constructing the forms and fields and after a few moments, the first page of the project opens in the canvas.

Create a New Form in an Existing Project

1. Select **File > New Form** or right click on the project folder in the Project Explorer and select **Add Form**. The form dialog box opens.

2. Type a **Form Name**.

3. Click **OK**. The new form appears in the Project Explorer, and the first page appears in the canvas area.

Open an Existing Project

There are two ways to open an existing project.

If the project you want to open is one of the four most recent projects opened, select **File > Recent Projects** and select the project from the list.

Otherwise, follow these steps:

Click the **Open Project** button from the toolbar or select **File > Open Project**. The Open dialog appears

1. Select a **project file (.prj)** from the Epi Info™ Projects folder.

Note: Epi Info™ will only display files in the Epi Info Project File format (*.prj).

2. Click **Open**. The project appears on the canvas.

Close Project

1. Click the **Close Project** button from the toolbar or select **File > Close Project**.

2. The project closes.

Note: Epi Info™ automatically saves all changes to the project.
There is no save function in Form Designer.

Add or Insert a Page

Add a Page

The Add Page function will add a blank page at the end of the form. To add a page, right click on the form in the Project Explorer and select **Add Page** from context menu or select **Insert > Page > Add Page** from the toolbar.
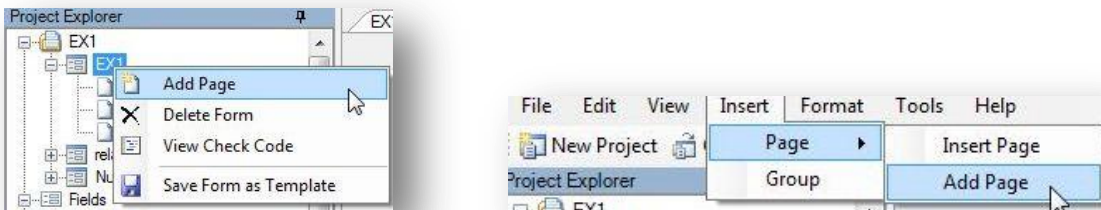
Figure Error! No text of specified style in document.**.13:** Add a Page

Enter a page name in the **Set Page Name** dialog box and click **OK**. The blank page appears on the canvas and in the Project Explorer at the end of the form.
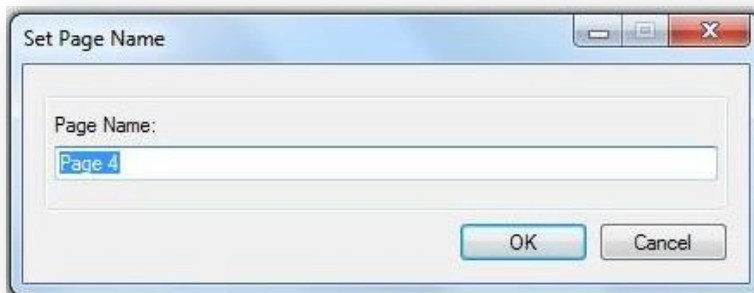
Figure Error! No text of specified style in document.**.14:** Set Page Name

Insert Page

The Insert Page function will add a blank page immediately before the current page displayed on the canvas. To insert a page, right click on the desired page in the Project Explorer and select Insert Page from the context menu or select **Insert** > **Page** > **Insert Page** from the toolbar
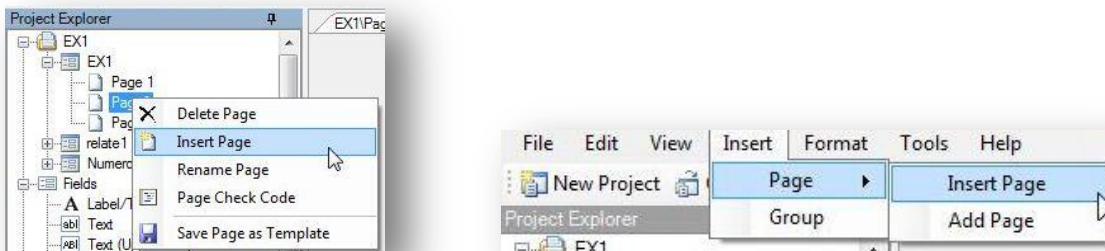
Figure Error! No text of specified style in document..**15:** Insert Page

The new page appears on the canvas and in the Project Explorer immediately before the current page.

Name a Page

1. Right click on a page in the Project Explorer. Select **Rename Page** from the context menu.
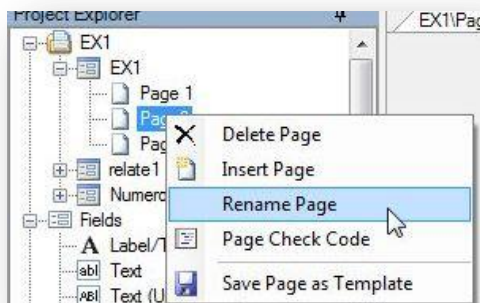
Figure Error! No text of specified style in document..**16:** Rename Page

2. The **Page Name** dialog box opens. Enter a name in the Page Name field.

Figure Error! No text of specified style in document.**.17:** Set Page Name

3. Click **OK**. The page name appears in the list of pages.

Delete a Page

From the Project Explorer, right click on the page you want to delete and select **Delete Page** or select **Edit > Delete Page** from the toolbar.
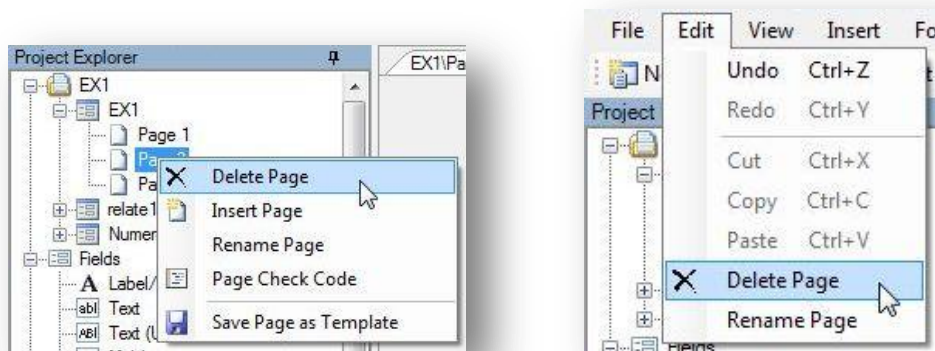
Figure Error! No text of specified style in document.**.18:** Delete Page

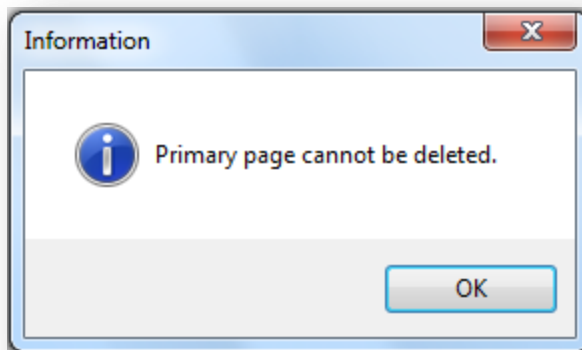*Note: If there is only one page to the form, then you cannot delete the only page.*

Otherwise, a dialog box opens prompting you to confirm deletion. Click **Yes**. The page is deleted.
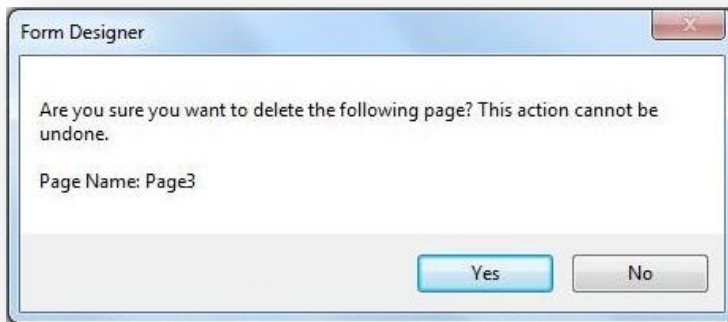
Undo / Redo

Most actions performed on the canvas, such as moving fields, copying and pasting fields, and changing field alignment, are recorded in the memory of the tool. This allows you to undo any of those actions.

Click **Undo** from the toolbar or **Ctrl + Z** to undo the most recent action in the list. Form Designer begins recording actions when it is opened. Therefore, you can undo all actions from the most recent to the first action performed since opening Form Designer.

Click **Redo** from the toolbar or **Ctrl + Y** to redo the most recent action undone. As with Undo, the Form Designer remembers the actions retracted by clicking Undo. Therefore you can Click Redo repeatedly to reinstate the actions retracted by Undo, up to the first time Undo was clicked.

Form Designer only remembers actions in the Redo list that were undone by clicking Undo. As soon as you make any other changes directly to the canvas, other than clicking Undo, then the Redo list is discarded. ***Redo can only reinstate actions that were undone***—it cannot be used to repeat actions made directly to the canvas.

Check Code

Epi Info™ allows the creator of the questionnaire or survey to guide the data entry process to produce range checking, automatic skip patterns and coding of variables. This is accomplished using Check Code. Many other more complex functions are possible such as mathematical or logical operations, checking the value of a field against the value of one or more other fields, and displaying helpful dialogs or custom error messages. Click the **Check Code** button to open the Check Code Editor. For information about the Check Code Editor, refer to the Check Code section of the user guide.

Enter Data

The Enter tool is used to enter data into the data entry forms in Epi Info™ 7. Click the **Enter Data** button to open the current form in the Enter tool. Only independent, stand-alone forms or Parent level forms can be opened in Enter. If the form is a Related Form—as in a child form related to another parent form—then you cannot open the Related Form by clicking the Enter Data button. You must open the top-most parent form first, and then use the parent form's relate button to access the child form. This is required in order to keep the record hierarchy according to the related table relationship.

If a form does not yet contain a data table, Epi Info™ will prompt you to create a data table in this step. For information regarding the Enter tool, refer to the Enter Data section of the user guide.

Fields

A Field is sometimes called a data entry field or input field. The field is usually where the answers to the questions are entered, although Epi Info™ 7 has a few field types that don't receive any data such as Label Fields and Command Buttons.

Fields usually contain a question or prompt or some text describing the data that will be collected. In Epi Info™ 7, different fields are provided to collect different types of information. A list of available fields is shown in the Project Explorer under the Fields category or when you right click on the Canvas and select **New Field**.
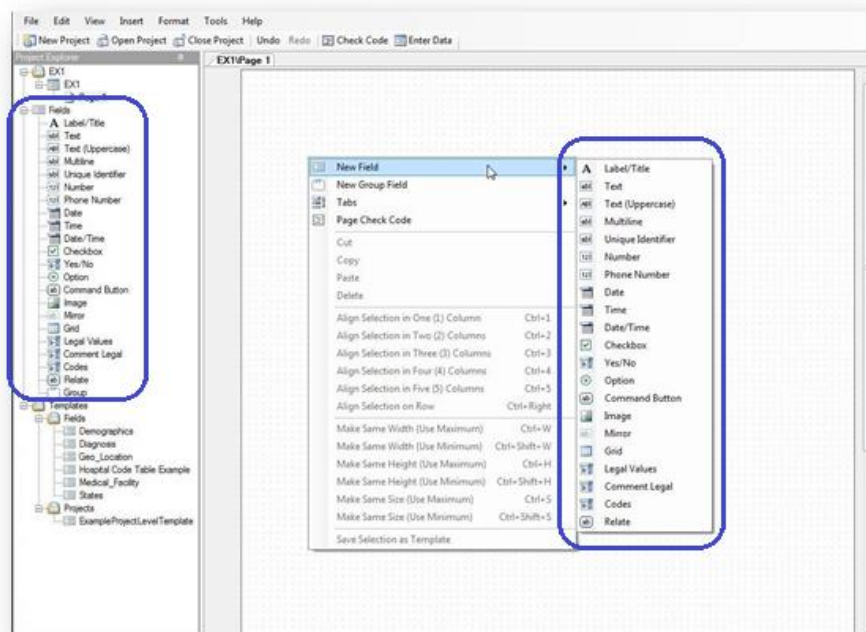
Figure Error! No text of specified style in document.**.21:** New Field context menu

Field Attributes

Fields have properties or attributes that help control how or if they receive data. Each field type has a set of available field attributes; however, some options may not be shown or may be disabled (grayed out) depending on the field type selected.

- **Required** field attribute makes a field mandatory in data entry. If a page contains fields marked with the Required attribute, the Enter tool will not allow record navigation or the saving of a partially completed record until a value is supplied in all Required fields.

> **Use With Caution!** The Required attribute can potentially cause gridlock if, for any reason, the required information is not available at the time of data entry. It is best to use this attribute sparingly to avoid this situation.

Additionally, Check Code can be used to set or unset a field's required status. For more information on this feature, refer to the topics in the Check Code Command Reference on the SET-REQUIRED and SET-NOT-REQUIRED commands.

- **Read Only** – prevents data entry into the field. This attribute is used for fields that hold calculated or prepopulated values that should not be edited. The cursor cannot be placed in the field and therefore no data entry can occur. Also, since the cursor cannot enter a field with this attribute, Check Code written for this field will not have a chance to run.

  The Read Only attribute is useful for calculated fields that will not be changed directly. Read Only cannot be used in combination with the Required attribute because those attributes are mutually exclusive.

- **Retain Image Size** – used only for image fields, this attribute maintains the size of the original image and does not alter the size to fit the image box in the form.

- **Range** – enables a valid range with lower and upper limit fields. Only Number and Date field types can have range values. If a value is entered that is less than the lower limit or greater than the upper limit, you will get a warning message. Missing values are accepted unless the field's Required attribute is checked.

- **Repeat Last** – causes the field to be automatically populated with the last value displayed for that field. This may speed up data entry for fields that often have a value the same as the last record entered. For example, if entering many records from a given clinic, then a "Clinic Name" field could have the Repeat Last attribute checked so it will be automatically filled in from the clinic name used in the last record.

- **Pattern** – the format that a response must be entered in the field.

- **Prompt Font --** the font for the text entered in the Question or Prompt text box.

- **Field Font --** the font for the data entered into the field.
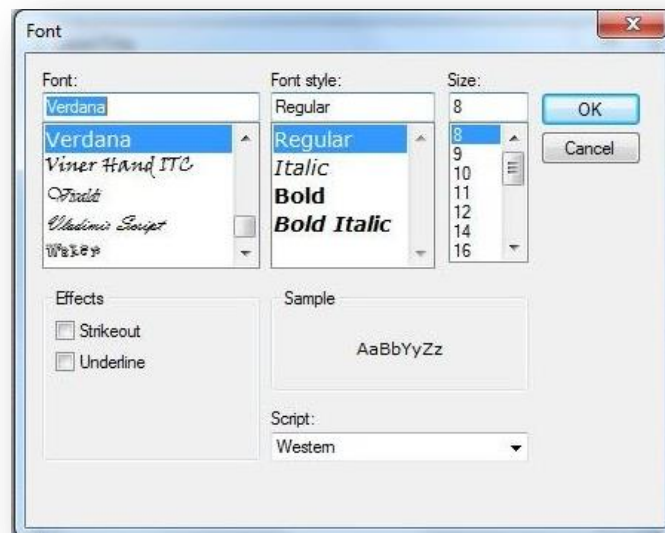
Figure Error! No text of specified style in document.**.22:** Font dialog box

Field Type	Required	Read Only	Retain Image Size	Range	Repeat Last	Pattern	Web Survey Compatible	Companion for Mobile Compatible
Label/Title							X	X
Text	X	X			X		X	X
Test (Uppercase)	X	X			X			X
Multiline	X	X			X		X	X
Unique Identifier								
Number	X	X		X	X	X	X	X
Phone Number	X	X			X	X		
Date	X	X		X	X		X	X
Time	X	X			X		X	X
Date-Time	X	X			X			
Checkbox		X			X		X	X
Yes-No	X	X			X		X	X
Option							X	X
Command Button								X
Image			X					X
Mirror								
Grids								
Legal Values	X	X			X		X	X
Comment Legal	X	X			X		X	X
Codes	X	X			X			
Relate								
Group							X	X

Figure Error! No text of specified style in document..23: Field Attributes

Add a New Field

Click and drag the type of field you want to add from the Project Explorer to the approximate location on the canvas.

Alternatively, right click on the canvas in the approximate location you want to add a field and select the field type from the **New Field** context menu.

A **Field Definition** dialog box appears. The contents of the Field Definition dialog depend on the type of field being added.

Label/Title

The **Label/Title** field allows you to have a title on the form or to give instructions or other information. Since this field type does not allow any data entry, it does not have Check Code, and is not searchable. The following figure is an example of a Label/Title field in Enter (circled in blue) based on the FoodHistory form of the sample EColi project.

Figure Error! No text of specified style in document..24: Label/Title Field
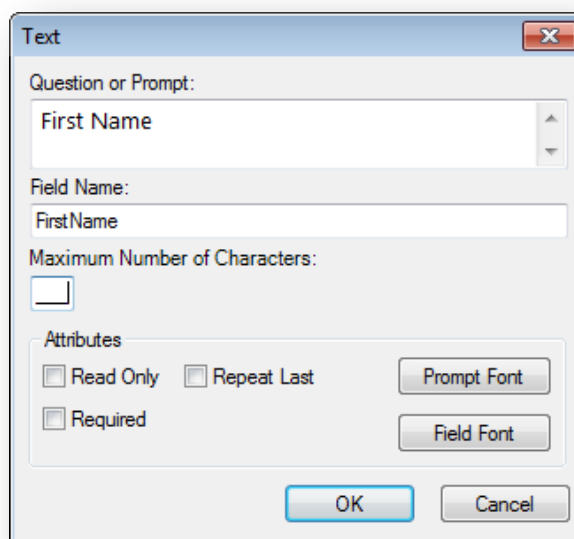
To complete the Label/Title Field Definition dialog:

1. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas.

2. Click in the **Field Name** text box. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

   Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

3. Click the **Font** button to adjust the Question or Prompt font settings. *Titles typically are configured with larger font or bolder text*.
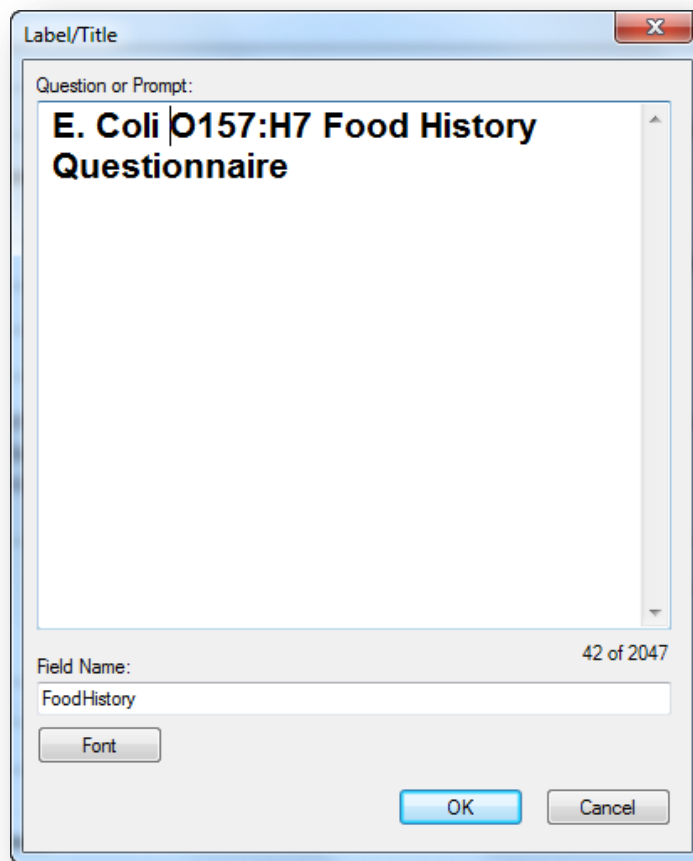
Figure Error! No text of specified style in document..25: Label/Title Field Definition dialog box

4. Click **OK**. The Label/Title appears on the canvas.

Text Field

The **Text** field is one of the most generic and common data entry fields used to capture text type data—letters, numbers, and symbols. Text fields hold up to 255 characters in a single line. You can restrict the number of characters entered by specifying a maximum field size. Text fields are often used for short questions such as name, address, occupation. The following figure provides an example of how a Text field appears in Enter (circled in blue) based on the FoodHistory form of the EColi project.

Figure Error! No text of specified style in document..**26:** Text field
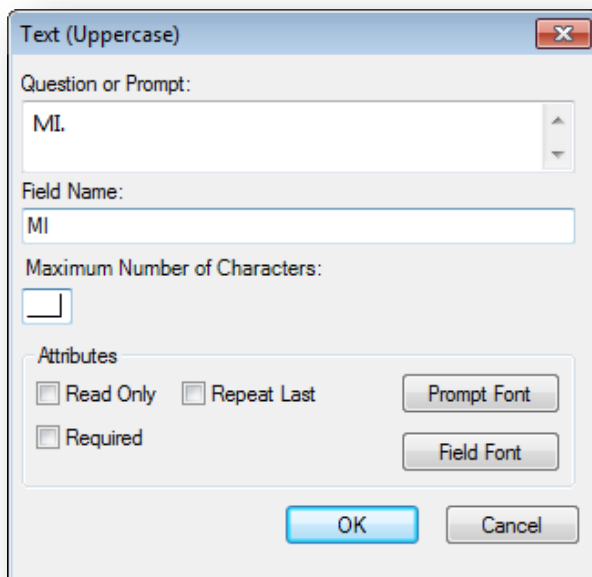
To complete the Text Field Definition dialog box:

1. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

2. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

3. Optionally, you can limit how long the value can be typed into this field by specifying the maximum number of characters using a number (e.g. 10 for ten characters). If the maximum number of characters box is left blank, text fields can accept up to 255 characters.
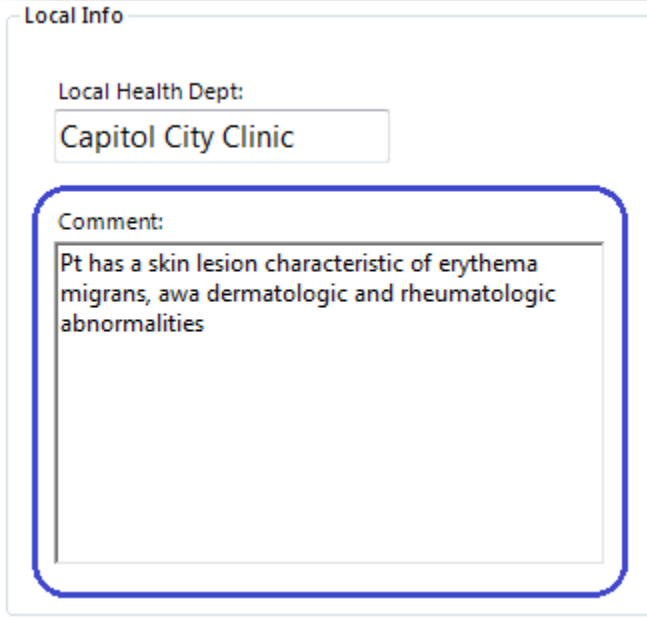
    Note: Entering a maximum number of characters is optional.

Figure Error! No text of specified style in document..27: Text Field Definition dialog box

4. Click **OK**. The Text field appears on the canvas.

Text Uppercase

The **Text Uppercase** field is used to help standardize the data entered. All letters typed in this field are automatically in ALL CAPS. This field draws emphasis to the information collected on the form. This field type is not supported on web surveys. The following figure provides an example of how a Text Uppercase field appears in Enter (circled in blue) based on the Surveillance form of the Sample project.

Figure Error! No text of specified style in document..28: Text (Uppercase) field

To complete the Text Uppercase Field Definition dialog box:

1. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

2. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

3. Optionally, you can limit how long the value can be typed into this field by specifying the maximum number of characters using a number (e.g. 10 for ten characters). If the maximum number of characters box is left blank, text fields can accept up to 255 characters.

Figure Error! No text of specified style in document..**29:** Text (Uppercase) Field Definition dialog box

4. Click **OK**. The Text Uppercase field appears on the canvas.

Multiline

The **Multiline** field is similar to the Text field but allows for several lines of text. This field type allows you to enter a large amount of text based on the question or prompt. The benefit of using this type of field is that a Multiline field can hold up to 1 gigabyte of data or approximately two million characters. However, you can't specify the maximum number of characters that can be entered into a Multiline field the way you can with a Text field. Also, some analyses are more difficult with Multiline data. For example, you can't sort data based on values in a Multiline field, so if sorting is important for your work, may be better to use another type of field. Multiline fields are most useful when capturing lengthy narratives and wordy, free-form, and descriptive data. The following figure provides an example of how a Multiline field appears in Enter (circled in blue) based on the Surveillance form of the Sample project.
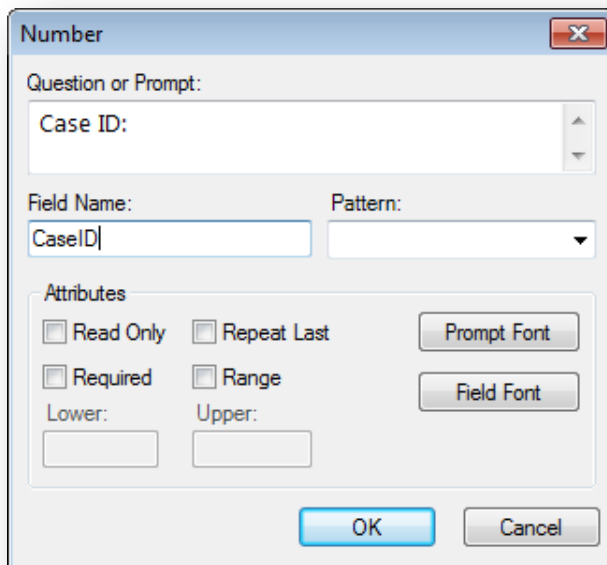

Figure Error! No text of specified style in document..**30:** Multiline field

To add a Multiline field:

1. Open the **Multiline Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

Figure Error! No text of specified style in document..**31:** Multiline Field Definition dialog box

4. Click **OK**. The Multiline field appears on the canvas.

Number

The **Number** field only accepts numeric values. Letters and most symbols cannot be entered into this type of field, however the negative sign (-) and the decimal point (.) are allowed. Number fields can have a valid upper and lower range. For numbers that must have a specific number of decimals, you can specify a required pattern. For example, if your data requires two decimal places, your number field could have the pattern "##.##" which would allow a number between -9.99 to 99.99.

Note: The negative sign takes one of the pattern spaces.

Therefore, the number "-7" entered into a field with this pattern would appear as "-7.00", whereas the number "5" would appear as "05.00". The leading zeros are not included in calculations, analyses, or output. The following figure provides an example of how a Number field appears in Enter (circled in blue) based on the FoodHistory form of the EColi project.

Figure Error! No text of specified style in document.**.32:** Number field

To add a Number field:

1. Open the **Number Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the **tab** key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

4. Optionally, select a pattern from the **Pattern** drop-down list (optional). You can also create a new pattern by typing in the desired pattern using the # symbol and the decimal point as needed. The default setting is None.

5. To limit the range of responses, check the **Range** checkbox (optional). Type a lower and upper limit in the **Lower** and **Upper** fields.
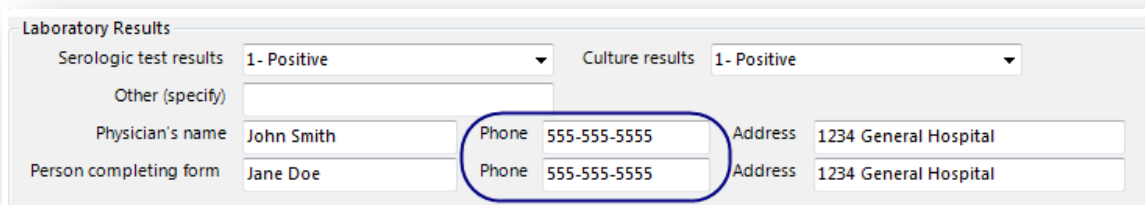
Figure Error! No text of specified style in document..33: Number Field Definition dialog box

6. Click **OK**. The Number field appears on the canvas.

Phone Number

The **Phone Number** field is similar to a number field, but with a pre-defined list of common phone number patterns. As with the Number field, letters and most symbols are not allowed. This field type is not supported on Web Survey. The following figure provides an example of how a Phone Number field appears in Enter (circled in blue) based on the Case Report form of the Lyme project.

Figure Error! No text of specified style in document..34: Phone Number field

To add a Phone Number field:

1. Open **the Phone Number Field** Definition dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

4. Optionally, select a pattern from the **Pattern** drop-down list. The default setting is None.

Figure Error! No text of specified style in document..**35:** Phone Number Field Definition dialog box

5. Click **OK**. The Phone Number field appears on the canvas.

Date

The **Date** field is used to enter a date. The date pattern for data entry is determined by the computer's regional settings where the pattern can be modified. The date pattern cannot be changed within Epi Info™ 7. The following figure provides an example of how Date fields appear in Enter (circled in blue) based on the FoodHistory form of the EColi project.

Figure Error! No text of specified style in document..**36:** Date field

To add a Date field:

1. Open the **Date Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

   Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.
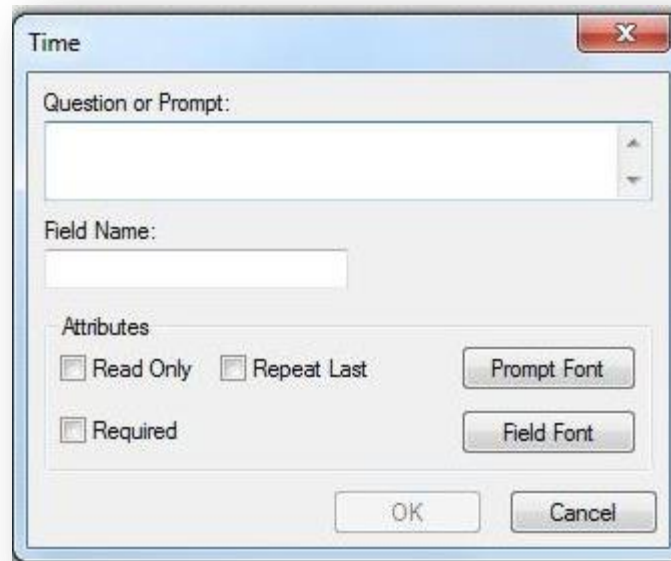
4. To limit the range of responses, check the **Range** checkbox (optional). Enter a lower and upper date range into the Lower and Upper fields or select a date using the date calendar by clicking on the calendar icon.
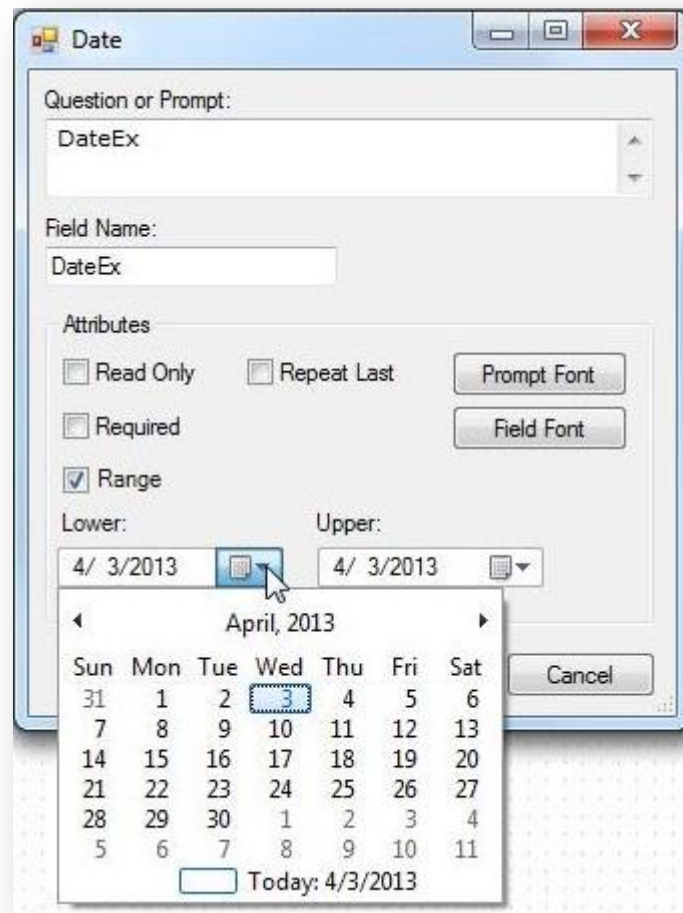
Figure Error! No text of specified style in document.**.37:** Date Field Definition dialog box

5. Click **OK**. The Date field appears on the canvas.

Time

The **Time** field is used to collect time data in the form of hours, minutes, seconds, and AM or PM. The time pattern for data entry is determined by the computer's regional settings where the pattern can be modified. The time pattern cannot be changed within Epi Info™ 7.

To add a Time field:

1. Open the **Time Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

Figure Error! No text of specified style in document..38: Time Field Definition dialog box

4. Click **OK**. The Time field appears on the canvas.

Date-Time

The **Date-Time** field is used to collect data representing the exact date and time of a given moment. It is like a date field combined with a time field. The Date-Time pattern for data entry is determined by the computer's regional settings where the pattern can be changed, if needed. The date-time pattern cannot be changed within Epi Info™ 7. This field type is not supported on Web Survey. The following figure provides an example of how a Date-Time field appears in Enter (circled in blue) based on the Oswego form of the Sample project.

Figure Error! No text of specified style in document..**39:** Date-Time field

To add a Date-Time field:

1. Open the **Date-Time Field** Definition dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

   Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

Figure Error! No text of specified style in document..**40:** Date-Time Field Definition dialog box

4. Click **OK**. The Date-Time field appears on the canvas.

Checkbox

The **Checkbox** field allows you to collect data by checking or unchecking a box. Multiple checkboxes can be used to quickly enter responses that are consistent in the study (e.g. symptoms or foods eaten). Checkbox fields collect binary data such as 0 or 1, True or False, Yes or No. The response is stored in the database as a 1 or 0 where 1 equals Yes and 0 equals No. When writing Check Code, use (+) and (–) to indicate yes and no, respectively. Unlike the Yes-No field type, Checkbox fields do not contain missing values, so all checkbox fields are considered to be "No" until they are checked during data entry or assigned a "Yes" value in Check Code. Since checkbox fields can only be either Yes or No, these fields cannot be required fields. The following figure provides an example of how Checkbox fields appear in Enter (circled in blue) based on the FoodHistory form of the EColi project.

Figure Error! No text of specified style in document.**.41:** Checkbox field

To add a Checkbox field:

1. Open the **Checkbox Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.
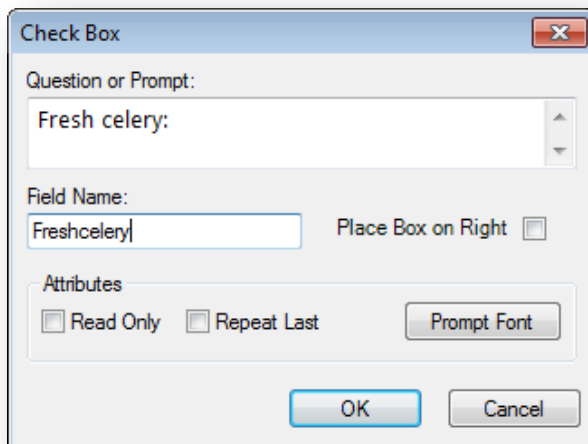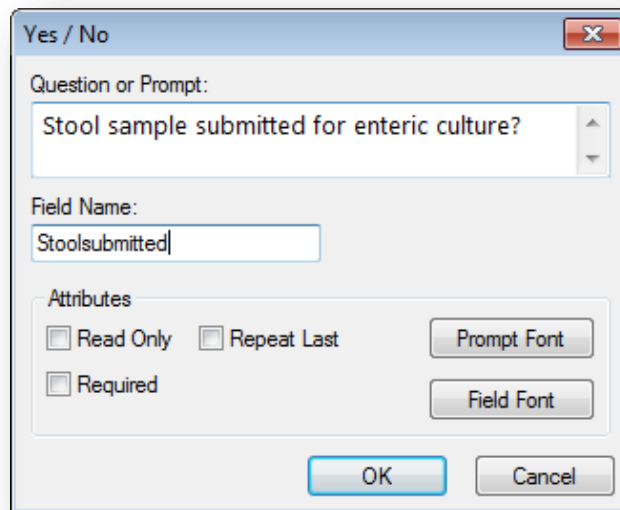
Figure Error! No text of specified style in document.**.42:** Check Box Field Definition dialog box

4. Click **OK**. The Checkbox field appears on the canvas.

Yes-No

The **Yes-No** field is used to collect data with only a Yes or No answer. The field appears as a drop-down list on the canvas. The answer is stored in a database as a 1 or 0 where 1 = Yes and 0 = No. When writing Check Code, use (+) and (–) to indicate yes and no, respectively. Until this field is answered one way or the other, the field's value is considered to be missing. In Check Code, the missing condition is indicated by the (.) operator. The following figure provides an example of how a Yes-No field appears in Enter (circled in blue) based on the FoodHistory form of the EColi project.

Figure Error! No text of specified style in document**..43:** Yes-No field

In the Enter module and in the output of analyses, the values for Yes-No fields can be displayed in a variety of ways, or customized for a specific purpose such as in translation to another language. Regardless of how the data are displayed, the values in the database and in exported output are still only 1 or 0.

Yes-No fields can display their data as:		
Yes	No	Missing
True	False	Unknown
(+)	(-)	(.)
<custom setting>	<custom setting>	<custom setting>

To add a Yes-No field:

1. Open the **Yes-No Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

   Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

Figure Error! No text of specified style in document.**.44:** Yes-No Field Definition dialog box

4. Click **OK**. The Yes-No field appears on the canvas.

Option

The **Option** field creates a group box containing mutually exclusive option buttons, also known as radio buttons. These are used for fields requiring one and only one answer. When a choice is made, any other selection within the group is cleared. In the database, the values are stored as a zero-based array. The first option is 0, the second is 1, the third is 2, and so on. The image below shows an example of two option fields. Since the options are mutually exclusive, in the first example you can't select both options "Have your cake" and "Eat your cake". You may select only one or the other. The field name for this example option field is "HaveOrEatCake". Since the first option is selected, the field "HaveOrEatCake" has the value of zero (0). In the next example, the field name is "TrafficLightColor". Since the selected color is the third option, the value of "TrafficLightColor" is two (2).
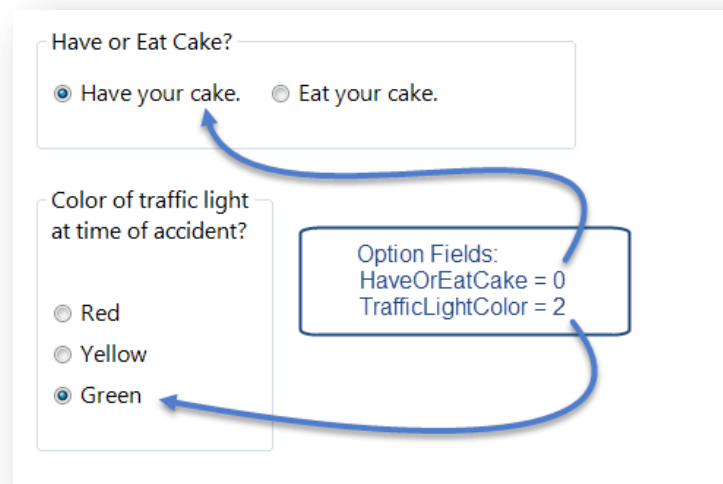
Figure Error! No text of specified style in document.**.45:** Option Field

To add an Option field:

1. Open the **Option Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

   Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.
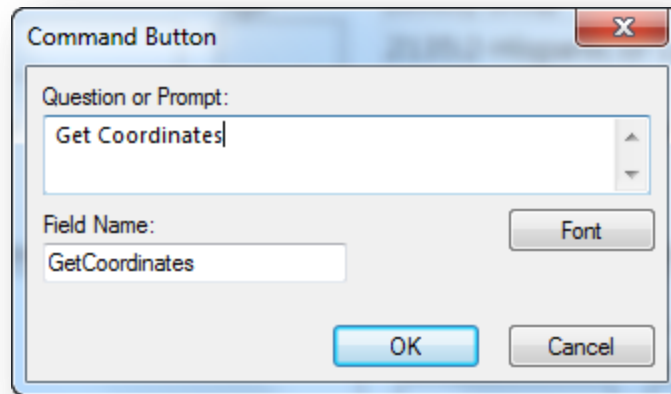
4. Select **Vertical** or **Horizontal** from the **List options vertically or horizontally** field to choose how the options are displayed in the Option field.

5. In the **Start listing options on the left or right** field, select Left or Right to choose where the options are listed.

6. In the **Attributes** field, select **Right** or **Left** to determine how the radio buttons are aligned with the option text.

7. Select the **Number of Choices** in the **Attributes** field. You can have a maximum of 16 options. The number of options selected corresponds to the number of rows listed under **Option Definition**.

8. Enter the option name in each row of the **Option Definition** section.

Figure Error! No text of specified style in document..46: Option Field Definition dialog box

9. Click **OK**. The Option field appears on the canvas.

Command Button

The **Command Button** creates a clickable button on the form and is used to run a specific block of Check Code. Below are a few examples of the possible applications of a Command Button and the Check Code behind the button:

- Compare the values of fields and perform automatic calculations

- Raise a message for information or to alert the data entry person to invalid data

- Capture longitude and latitude coordinates from an address field

- Run a prewritten program in Classic Analysis

- Open the Visual Dashboard with a saved canvas

- Open other programs outside of Epi Info™ 7 such as Microsoft Excel or Outlook.

The Command Button field is not supported on Web Survey. The following figure provides an example of how a Command Button appears in Enter (circled in blue) based on the FoodHistory form of the EColi project.

Figure Error! No text of specified style in document..47: Command Button

To add a Command Button field:

1. Open the **Command Button Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

Figure Error! No text of specified style in document..48: Command Button Field Definition dialog box

4. Click **OK**. The Command Button field appears on the canvas.

Image

The **Image** field allows an image to be inserted in the record. Examples of items that could be included as an image might be the patient's photo, an image of a wound, rash or insect bite, a bacteria culture dish, or the barcode of a sample vial. This is especially useful when the data collection device has a built in camera such as a tablet computer and smart phone.

If the image is not collected from a built in camera, clicking in this field will display the Open dialog to browse for an image file. The accepted image file types are: Portable Network Graphics (.PNG), Graphics Interchange Format (.GIF), Joint Photographic Expert Group (.JPG or .JPEG), and Windows Bitmap Format (.BMP). This field type is not supported on Web Survey.

Figure Error! No text of specified style in document..49: Image field

To add an Image field:

1. Open the **Image Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

4. By default, Epi Info™ expands/contracts the image to fit in the size of the Image field. Check the **Retain Image Size** checkbox to disable this function and have the image inserted in the field without modification.
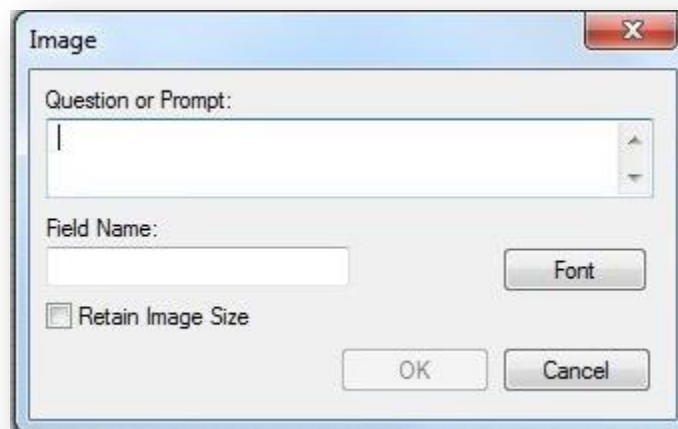
Figure Error! No text of specified style in document..**50:** Image Field Definition dialog box

5. Click **OK**. The Image field appears on the canvas.

Mirror

The **Mirror** field shows data in a field on another page. It does not actually store data of its own. It only shows data from another field. This is useful when the same information needs to be displayed on multiple pages in a form. Since this field type does not allow any data entry, it does not have a column in the database, Check Code cannot be run on this field, and Mirror fields are not searchable. This field type is not supported on Web Survey.

Mirror fields also have the following attributes:

- Mirror fields are Read Only.

- When the source field receives data through data entry or when it is assigned a value in Check Code, the value of that field will be reflected in the Mirror field.

- Mirror fields can be copied and pasted to subsequent pages while in the Form Designer. However, since they are Read Only, their contents cannot be copied when running the form in the Enter tool.

- Command buttons cannot be selected as source fields to mirror.

The following figure is an example showing three mirror fields on Page 2 of a form that reflect the data entered into Page 1 of the form. The mirror fields on Page 2 are circled in blue.
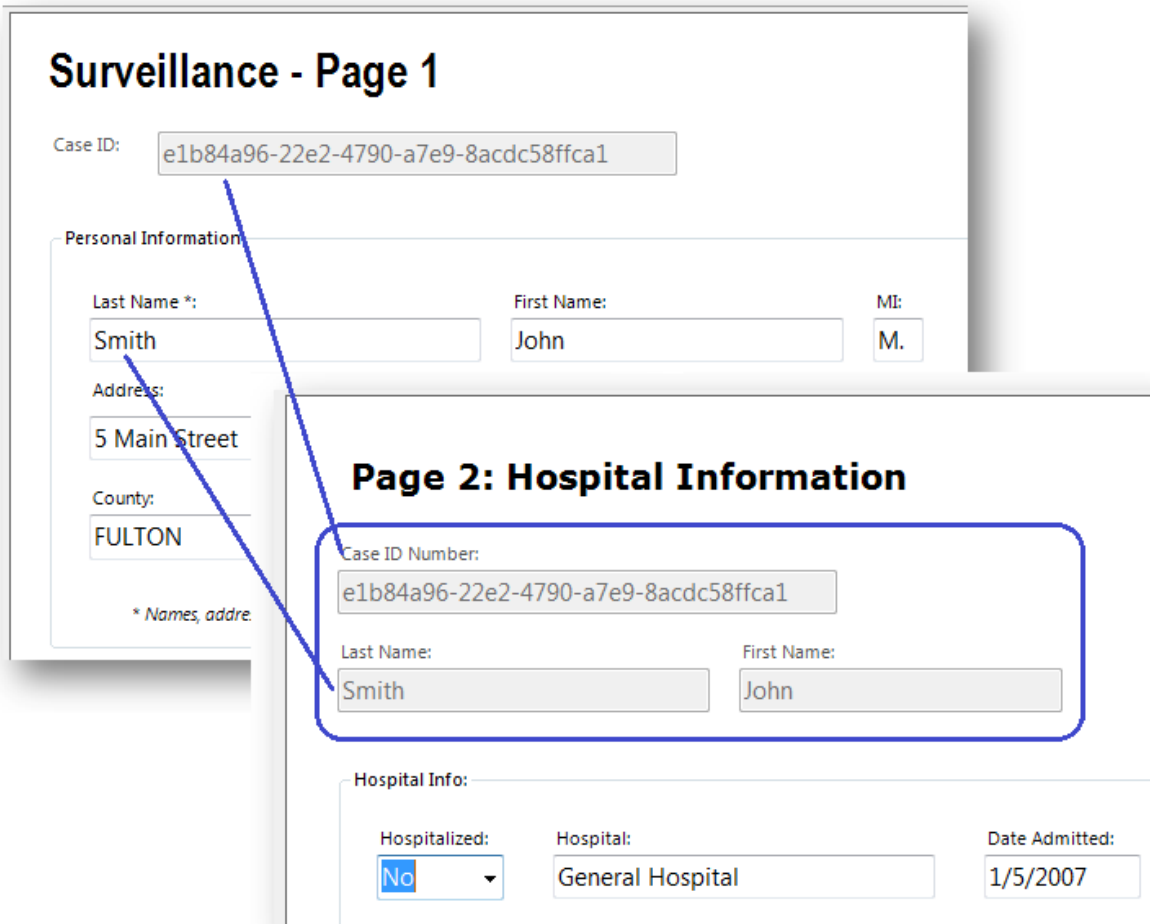
Figure Error! No text of specified style in document.**.51:** Mirror fields reflecting data entered on Page 1

To add a Mirror field:

1. Open the **Mirror Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for hiding or unhiding mirror fields in Check Code and other commands.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

4. Click the **Assigned Variable** drop-down list in the Attributes Group to show a list of variables that can be mirrored.

5. Select the **variable** to be mirrored.
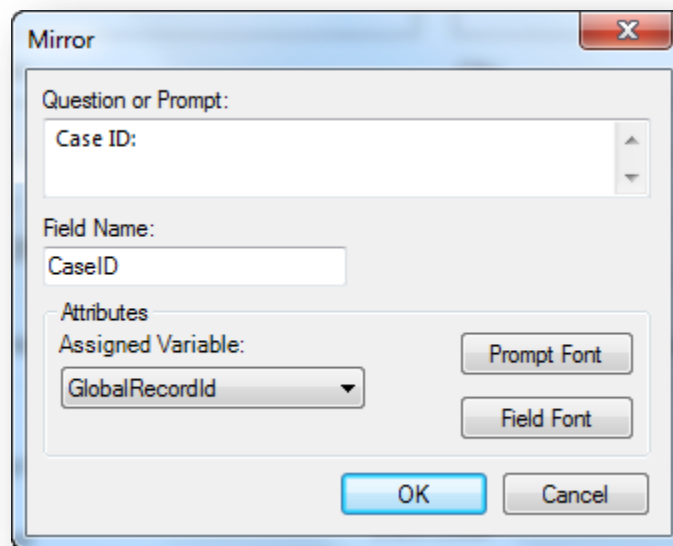
Figure Error! No text of specified style in document.**.52:** Mirror Field Definition dialog box

6. Click **OK**. The Mirror field appears on the canvas.

Grid

The Grid field allows users to enter data in the form of a spreadsheet on the page. This allows for simple and effective data entry for multiple data points.

When you create a Grid field, you specify each column for the grid, the type of data for the column, its size and properties.

Figure Error! No text of specified style in document.**.53a:** Grid Field

Before deciding to use a Grid field on your form, please also know the following limitations with Grid fields:

1. Not all field types are supported as grid columns. Text, Number, Date, Time, Date-Time, Phone Number, Checkbox, Yes-No, Legal Value, and Comment Legal field types are supported.

2. Grid fields do not support Check Code. This means that the many things that Check Code can offer, such as automatic calculations, skip patterns, enabling/disabling of fields, or other data entry validation, are not available to Grid fields.

3. Grid column tab order cannot be changed. Pressing the tab key moves the cursor to the next field from left to right. Pressing the Enter key moves the cursor within the same column, but down to the next row.

4. Grid fields are not supported on Web Survey.

To add a Grid field:

1. Open the **Grids Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.
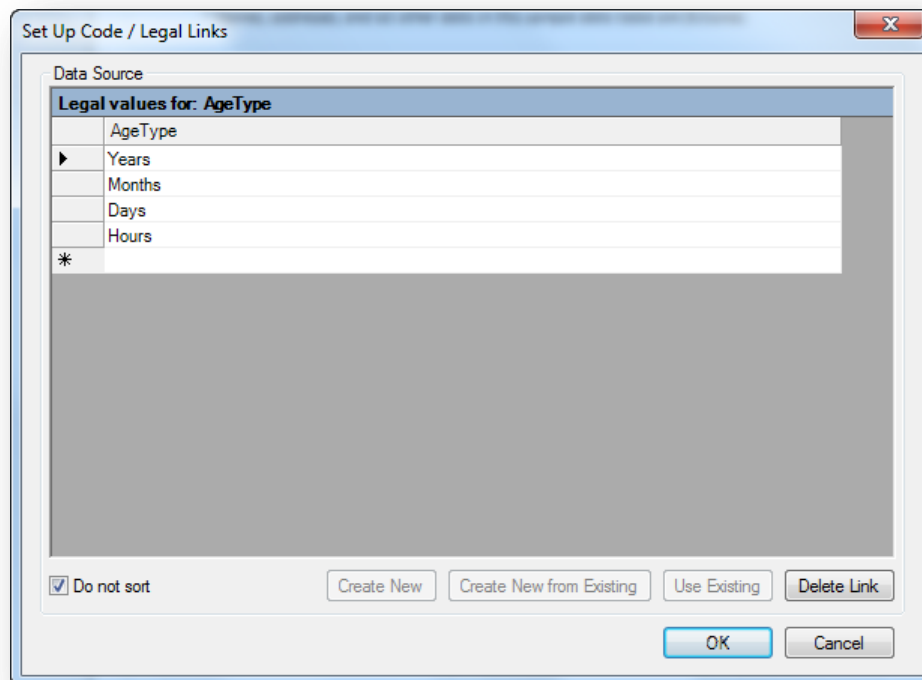

Figure Error! No text of specified style in document..**54:** Grids Field Definition dialog box

After setting the Question or Prompt for the Grid field and setting it's Field Name, the Add button is enabled.

4. Click the **Add** button.

Figure Error! No text of specified style in document.**.55:** Grid Columns

5. Type the column heading into the **Enter Column Name for Grid** textbox. This text will display as the column heading on the form.

6. Press **Tab** or click in the **Column Name** textbox. Epi Info automatically suggests a column name based on the Enter Column name for Grid field, however, it is very important that column names be short, intuitive, and usable. The column name cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

   Note: It is best to simplify the column name at this time. Column names cannot be changed after data collection starts.

7. Select the column size from the **Size** drop-down list. This determines the amount of characters that can be placed in that column's cells. This setting only applies to Text type columns.

8. Select the column format from the **Column Type** drop-down list. Available formats are:
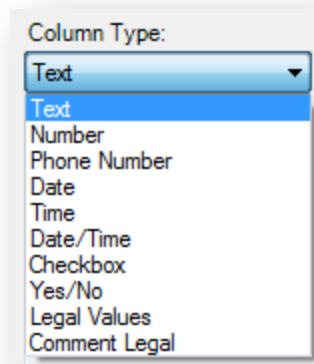
Figure Error! No text of specified style in document..**56:** Grid Column Types

9. After selecting a Legal Values or Comment Legal column type, click the browse button next to the Data Source field and complete the steps outlined in the Legal Values and Comment Legal field sections below.

10. Click **Save Column** to add the column to the grid.

11. Repeat steps 5-10 until all desired columns have been added.

12. Click **OK**. The Grid field appears on the canvas.

Legal Values

A Legal Values field creates a drop-down list of choices on the field. The responses listed in the drop-down are the only choices available to the respondent and cannot be altered. The following figure provides an example of how Legal Value fields appear in Enter (circled in blue) based on the Surveillance form of the Sample project.
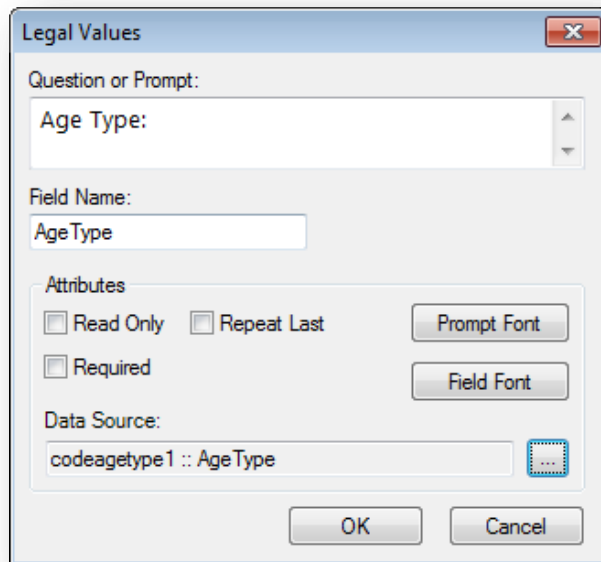
Figure Error! No text of specified style in document..**57:** Legal Values field

To add a Legal Values field:

1. Open the **Legal Values Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

Figure Error! No text of specified style in document..58: Legal Values Field Definition dialog box

4. Click the **Browse** button to the right of the Data Source textbox.

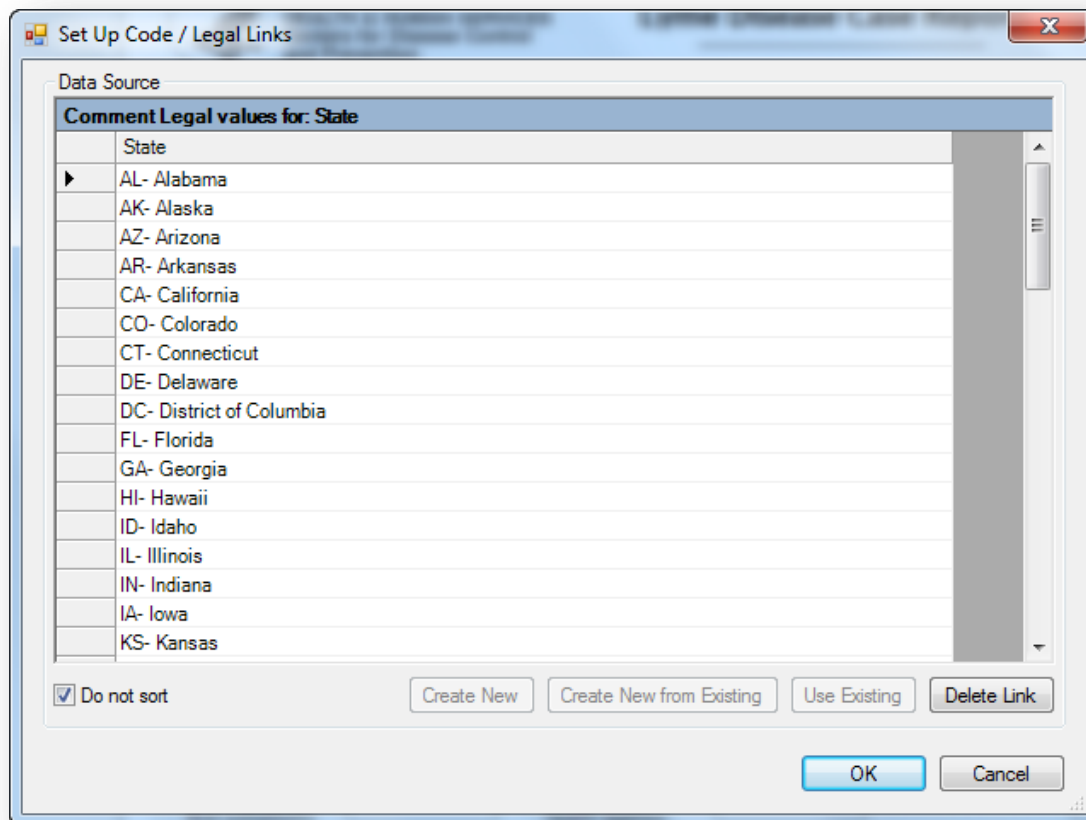5. Click **Create New** to enter the available answers for the question.

Figure Error! No text of specified style in document..59: Set Up Code / Legal Links

6. Enter the first value (e.g. Years). Press **Enter** or **Tab** to advance to the next value.

7. Enter additional values until all necessary items are added to the drop-down list.

8. Values will appear in alphabetical order unless you select **Do Not Sort.** This feature displays values in the order in which they were entered.

9. Click **OK**.

10. Existing tables can also be used to create legal values.

    1. Click **Create New from existing** (takes a copy of selected table, changes to the original table will not affect the new table) or **Use Existing** (establishes a connection between the selected table and the new table, any changes made to the original table will modify the new table)

    2. Select a table from the drop-down list.

    3. Click **OK**.

11. From the Field Definition box, click **OK**. The new field appears in the form as a drop-down list of values.

Comment Legal

Comment Legal fields are similar to Legal Values. They are text fields with character(s) typed in front of the text (with a hyphen). During data entry, the character and the text (e.g., M-Male) are displayed. However, only the character value is stored in the table (e.g., M). In the Classic Analysis and Visual Dashboard tools, statistics can be calculated if all values are numeric. The following figure provides an example of how a Comment Legal field appears in Enter (circled in blue) based on the CaseReport form of the Lyme project.
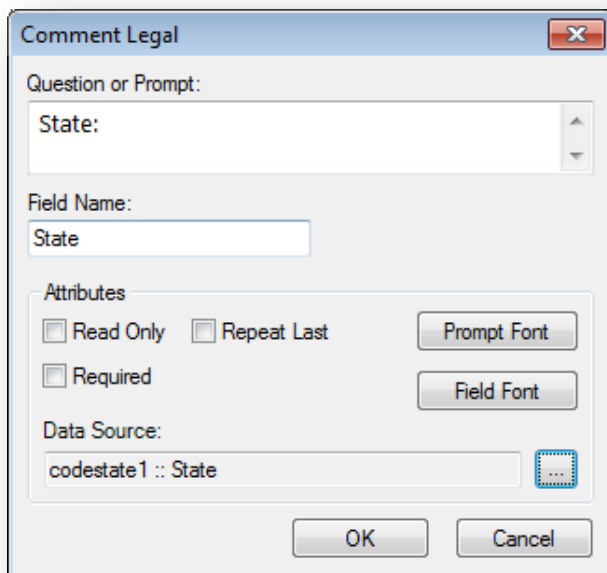
Figure Error! No text of specified style in document.**.60:** Comment Legal field

To add a Comment Legal field:

1. Open the **Comment Legal Values Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

Figure Error! No text of specified style in document..**61:** Comment Legal Field Definition dialog box

4. Click the **browse** button to the right of the Data Source textbox.

5. Click **Create New** to enter the available answers for the question.

Figure Error! No text of specified style in document..**62:** Set Up Code / Legal Links

6. Enter the first value using the form code-hyphen-comment as in "M-Male" where "M" is the code and "Male" is the comment. Press **Enter** or **Tab** to advance to the next value.

7. Enter additional values using the same code-hyphen-comment format until all necessary items are added to the drop-down list.

8. Values will appear in alphabetical order unless you select **Do Not Sort** which will display values in the order in which they are entered.

9. Click **OK**.

10. Existing tables can also be used to create comment legal fields.

   1. Click **Create New from existing** (takes a copy of selected table, changes to the original table will not affect the new table) or **Use Existing** (establishes a connection between the field and the existing table. Any changes made to the original table will be seen in all fields that use this table as the source.

   2. Select a table from the drop-down list.

   3. Click **OK**.

11. From the Field Definition box, click **OK**. The new field appears in the form as a drop-down list of values.

Codes

A Codes field designates the available options on a form based on the user's response to a question. Based on the value selected from a drop-down list, other field(s) are populated with predetermined values. At least two fields must exist; one which holds the selection code, and another to receive the value of the code. The first field holds the selection code in a drop-down list while subsequent fields are Read Only and are populated based on the values in the code table. The Codes field allows for more efficient data entry by the user. This field type is not supported on Web Survey. The following figure provides an example of how a Codes field appears in Enter (circled in blue) based on the Surveillance form of the Sample project.

Figure Error! No text of specified style in document..**63:** Codes field

Create a New Code Table

1. Open the **Codes Field Definition** dialog box.

2. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

   Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

4. Select the **field(s)** to be linked from the **Select field(s) to be linked** section. To select multiple fields, hold down the **CTRL** key and click each **field**.
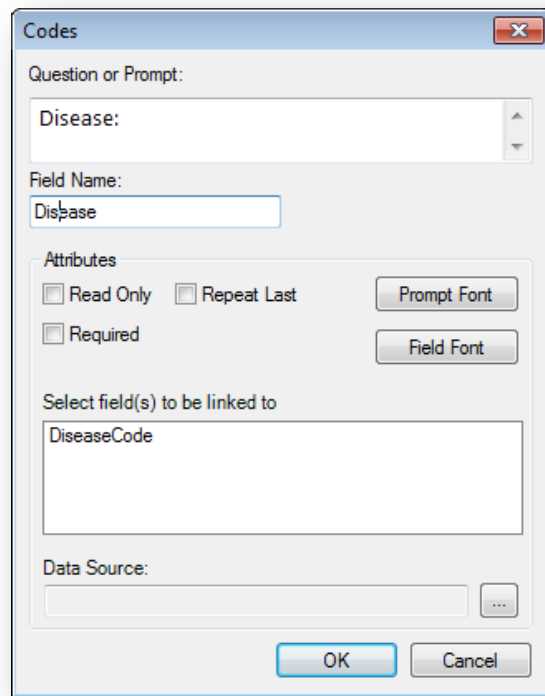
Figure Error! No text of specified style in document..64: Codes Field Definition dialog box

5. Click on the **Data Source Browse** button.
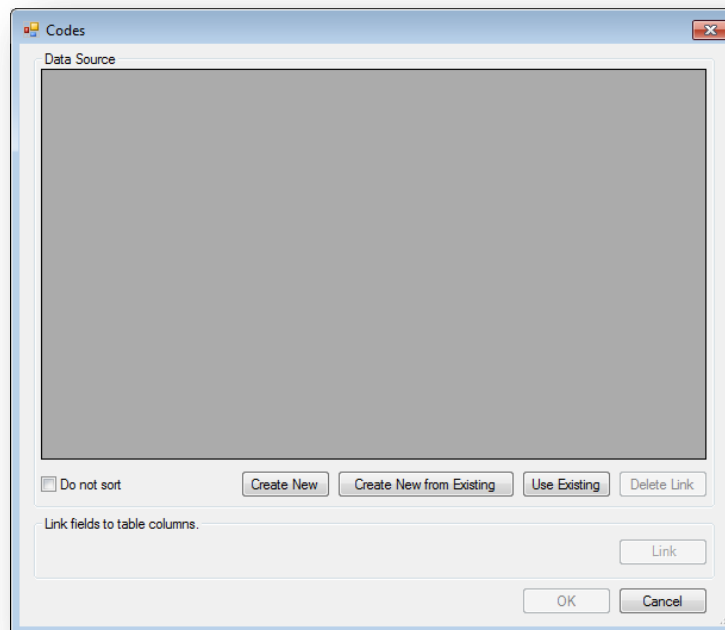
Figure Error! No text of specified style in document..64 b:Create New Code table

6. Click **Create New**. A spreadsheet opens for you to enter the values for the Codes field and Linked fields.
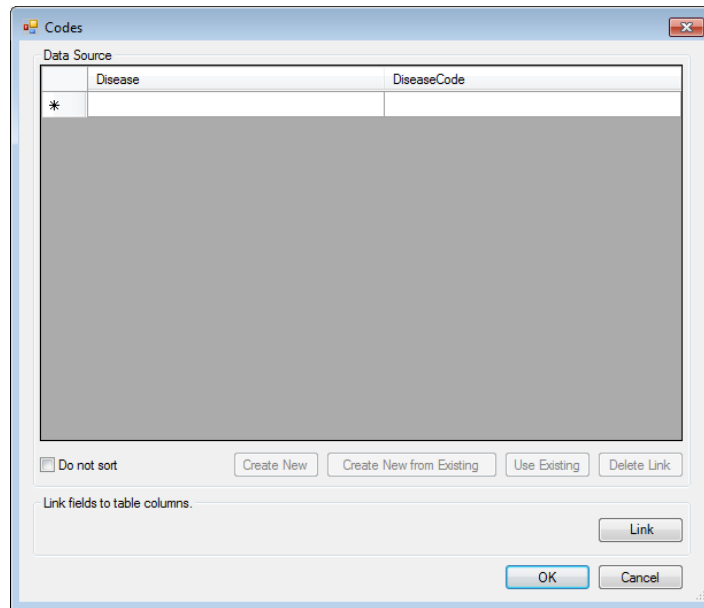

Figure Error! No text of specified style in document.**.65:** Codes Data Source Blank

7. The left-most column displays the selection field(s) chosen in the Fields Definition dialog box.
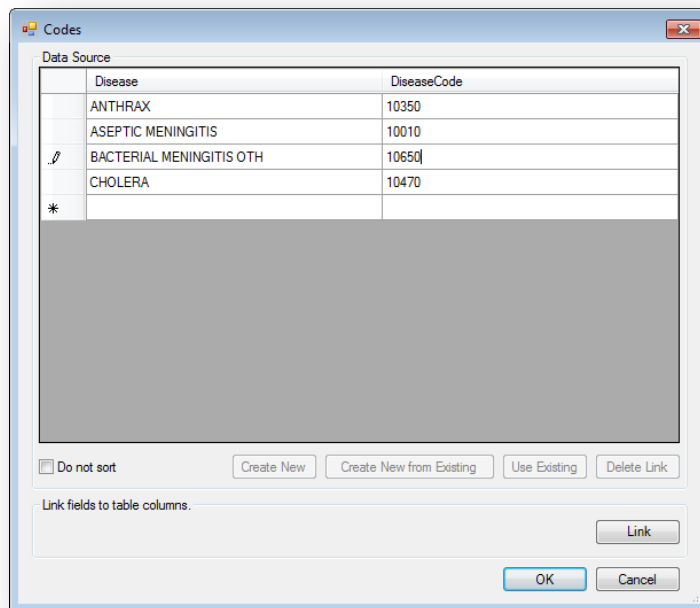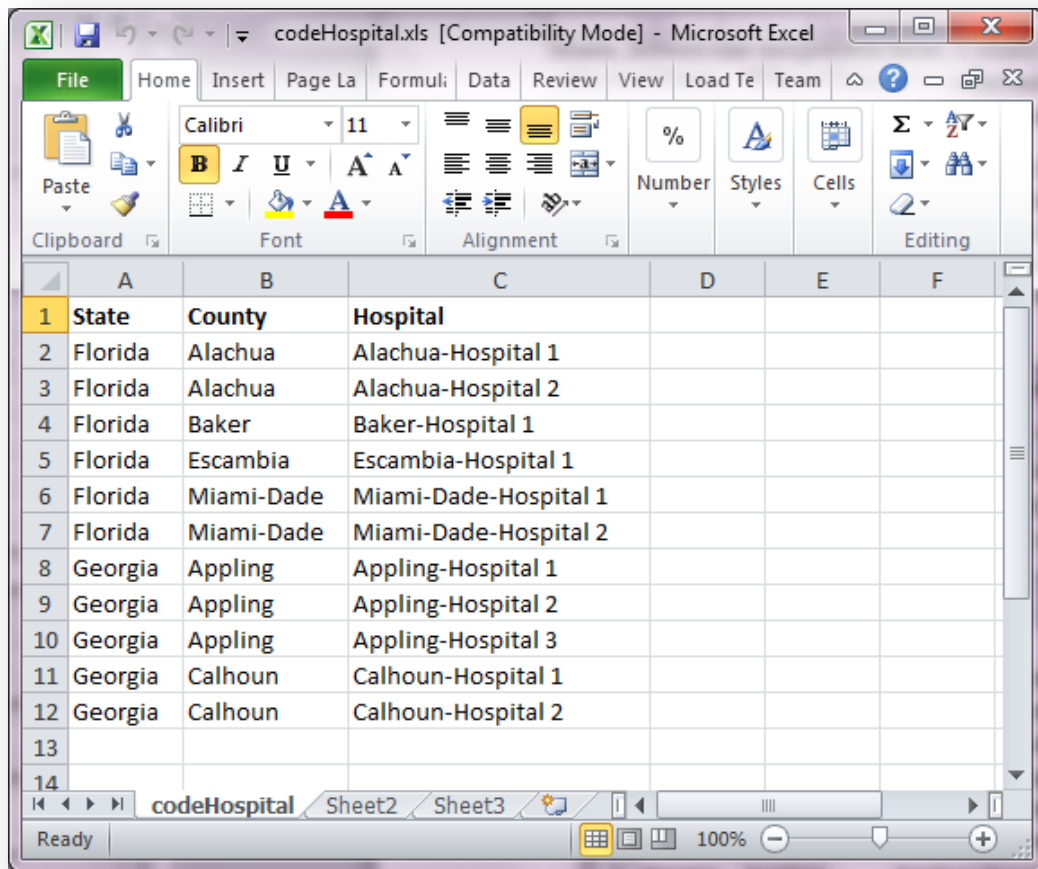
Figure Error! No text of specified style in document.**.66:** Codes Data Source Complete

8. Each column to the right lists the field(s) to receive the codes based on the value of the selection field.

9. Enter the **codes** for each field.

10. Press the **Tab** key to move to the next field, or to the next row if at the end of a row.

11. Click **OK** to accept the codes for each field.

12. Existing tables can also be used to create code tables.

    1. Click **Create New from Existing** (takes a copy of the selected table, changes to the original table will not affect the new table) or **Use Existing** (establishes a connection between the selected table and the new table, any changes made to the original table will modify the new table)

    2. Select a table from the drop-down list.

    3. Click **OK**.

13. Click **OK** to close the Field Definition dialog box and place the fields in the form.

14. To test the code table, open the **Enter** tool and verify that both fields populate based on the drop-down list selection.

Create Cascading Drop-Down Fields

Cascading Drop-Down fields are essentially two or more Code, Legal Value, or Comment Legal fields linked together in such a way as to filter each subsequent field based on the value selected in prior fields. In the example described below, the drop-down field for State, filters the drop-down field, County, to show only those counties that exist in the selected State. When County is selected, the drop-down field for Hospital is shown with only the hospitals located in the selected county.

In order to create Cascading Drop-Down fields, you need to have a table completed with all values for the linked fields that can be imported into Epi Info™ 7. The Excel spreadsheet shown below, named 'codeHospital', is an example of such a table. When importing this table into your Epi Info™ 7 project, the table name must contain the prefix "code", as in this example, "**code**Hospital".

Figure Error! No text of specified style in document..**67:** Cascading Drop-down Fields

To add Cascading Drop-down fields, complete the following steps:

1. Add the first **Codes** field to the page, but don't link the field to other fields, yet. You will do this in later steps. For this example, we named the field StateName.
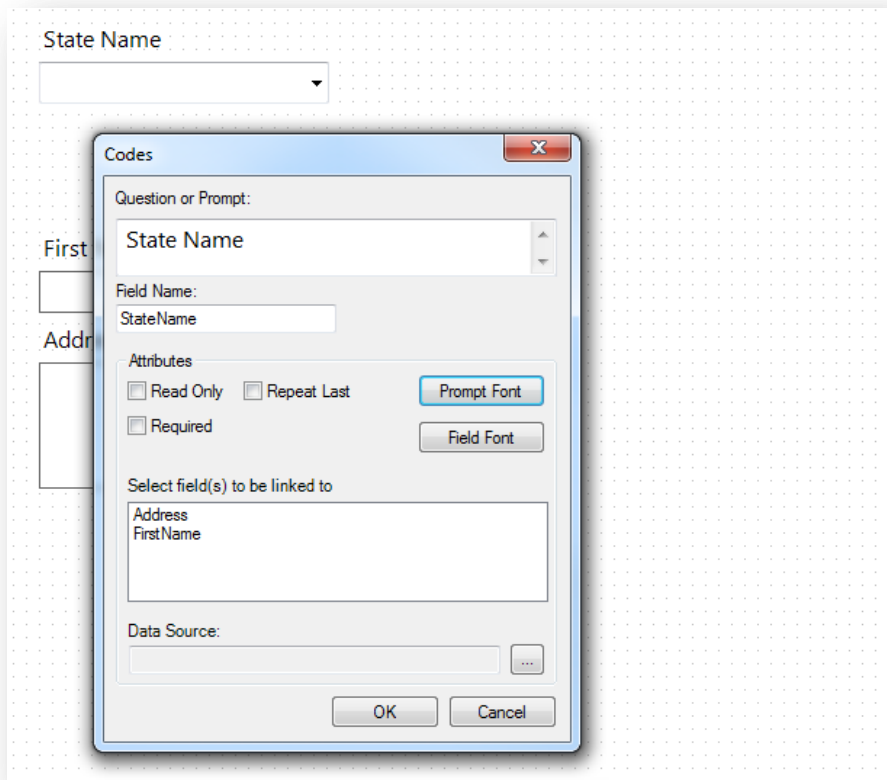
Figure Error! No text of specified style in document.**.68:** Adding Codes to Cascading Drop-down Fields

2. Add another **Codes** field to the page. Again, don't link the field to other fields, yet. In this example, we named the second field County. Repeat this step for all but the last field in your cascading sequence. In this example, we have only three fields to link, so the next field will be our last.

3. Add the last **field** in our cascading sequence. The last field should be a type other than a Codes field, such as Legal Value or Comment Legal. Since no other fields will be linked to this last field, you don't want to use a Codes field.   In our example, we have two Codes fields named 'StateName' and 'County', and one Legal Value field named 'Hospital'.
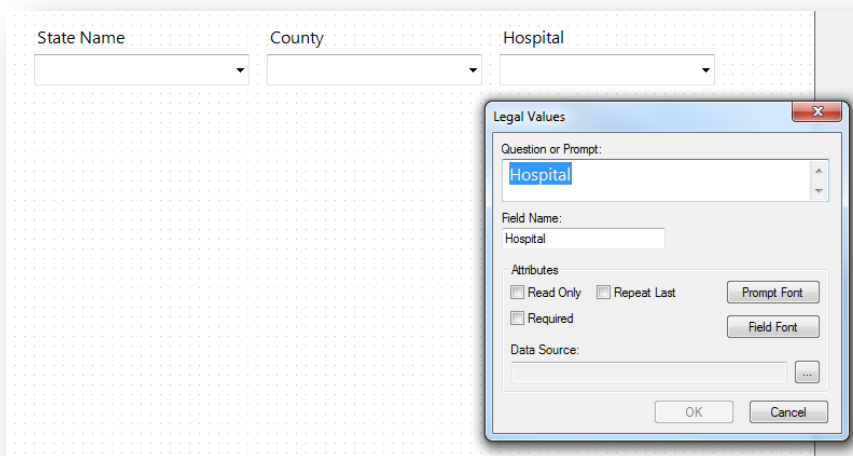
Figure Error! No text of specified style in document.**.69:** Adding Legal Values to Cascading Drop-down Fields

4. If using a Legal Value or Comment Legal field for the last field, click the browse button to the right of Data Source. The Set Up Code / Legal Links dialog opens.

5. Click **Use Existing**. The Open Form – Select a Table dialog box opens.

6. Select the code table that was imported and click **OK**. In this example, we selected the codeHospital table.
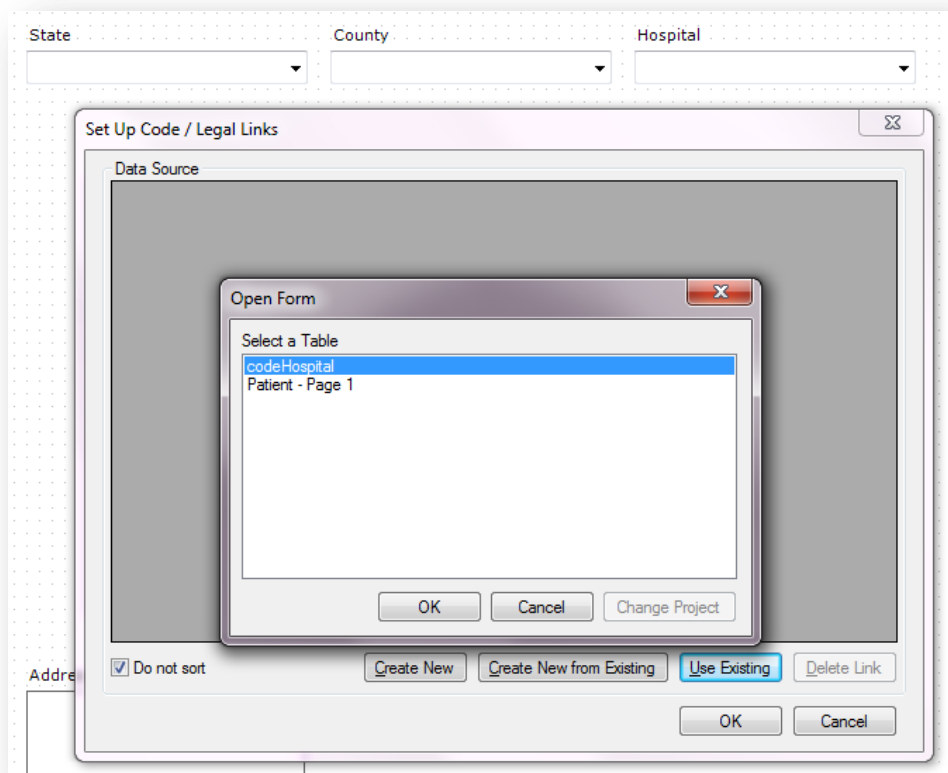
Figure Error! No text of specified style in document..**70:** Open Form Dialog Box

7. Click **OK**. The Select a field dialog opens showing the columns in the codeHospital table that can be linked.

8. Select the appropriate **field**. Because we are linking the Hospital field, we selected Hospital in this example.
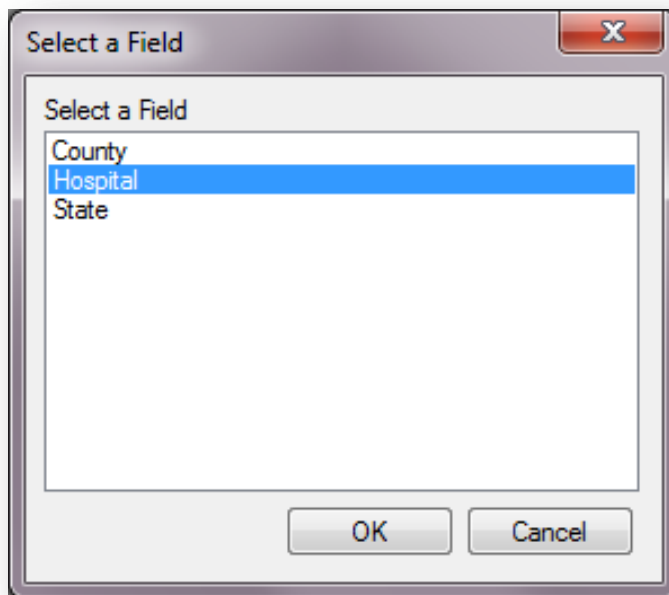
Figure Error! No text of specified style in document.**.71:** Selecting a Field

9. Click **OK** on the **Select a Field** dialog. The Set Up Code / Legal Links data source table shows the values from the Hospital column in table.
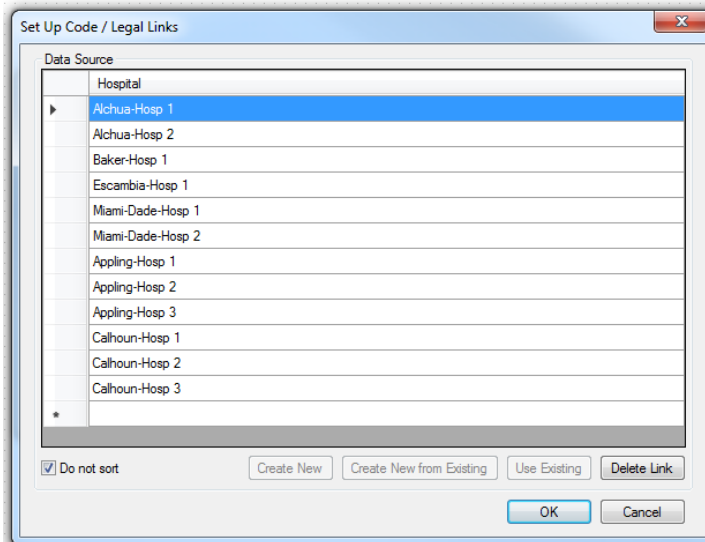
Figure **Error! No text of specified style in document.**.72a: Data Source shows values for Hospital

10. Click **OK** on the **Set Up Code / Legal Links** dialog box.

11. Click **OK** on the field definition dialog. The next steps are to link the fields to the remaining Codes fields.

12. **Open** the properties for the first **Codes** field added above. (Right click the field and select **Properties**.) Our first field was 'StateName' and we want to link this field to the County field so when the State Name is selected, only the corresponding counties are shown in the County field.

13. In the **Select Fields to be Linked** box, select the field you want to be filtered. Since, in our example, we want the County field to be filtered based on the selection made for State, we should select **County** here.

14. Click the **Browse** button to the right of **Data Source**. The Codes dialog opens.

15. Click **Use Existing**. The **Select a Table** dialog box opens.

16. Select the same code table used to link the last field. In our example, **codeHospital** is the code table we are using.

17. Click **Link**. The **Match Fields** dialog box opens. This is where we match the fields in our cascading sequence to the columns in the code table.

18. Select the **column to be linked** to the first **Codes** field. Since our first field is StateName, we selected the column from our imported table named '**State**'.

19. In the **Link Associated Fields** group, select the **Form Field to be linked**. For our example we want County to be linked to State, so we selected **County**.

20. In the **Table Fields** drop-down, select the corresponding column in the code table.

21. Click **Link**. The association to the linked field appears in the Linked Fields box.
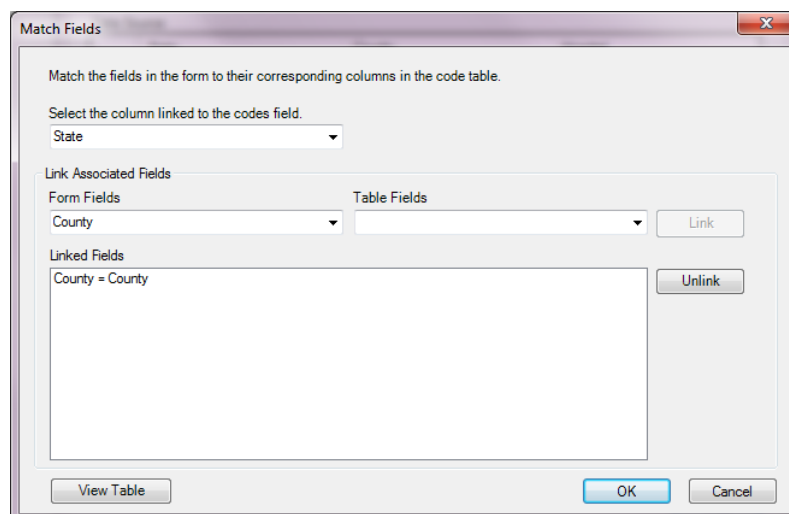
Figure Error! No text of specified style in document.**.73:** Match Fields Dialog Box

22. Click **OK** to close the Match Fields dialog.

23. Repeat the steps 12 through 21 for each remaining Codes field in the cascading sequence. For each, specify the next field in the cascading sequence and link it to the corresponding field in the code table. In our example, County is the only remaining Codes field to be linked and this field will be linked to Hospital.
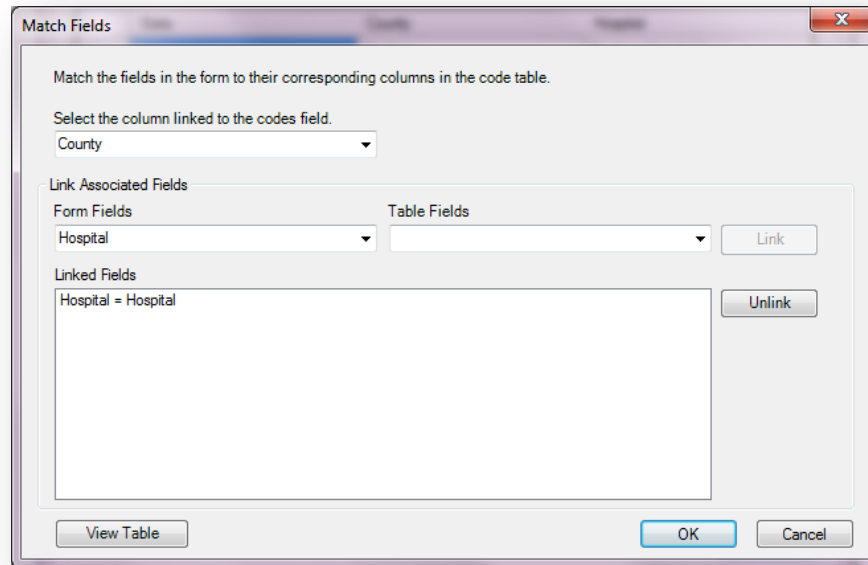

Figure Error! No text of specified style in document..74: Linked Fields

This completes the process to create a series of cascading drop-down fields. When the form is opened in Enter, the selection made in the first field in the cascading sequence will filter the values shown in the next field in the sequence. In our example, when Florida is selected for State Name, the list shown for County only includes the values Alchua, Baker, Escambia, and Miami-Dade.

The StateName codes field filters the County codes field because of they way they are linked and because Alchua, Baker, Escambia, and Miami-Dade are the only counties on the same rows as Florida in the codeHospital table.

	A	B	C
1	**State**	**County**	**Hospital**
2	Florida	Alchua	Alchua-Hosp 1
3	Florida	Alchua	Alchua-Hosp 2
4	Florida	Baker	Baker-Hosp 1
5	Florida	Escambia	Escambia-Hosp 1
6	Florida	Miami-Dade	Miami-Dade-Hosp 1
7	Florida	Miami-Dade	Miami-Dade-Hosp 2
8	Georgia	Appling	Appling-Hosp 1

Figure Error! No text of specified style in document.**.755:** The codeHosptal table imported from Excel.

Likewise, when the county Alchua is selected, only the values Alchua-Hosp1 and Alchua-Hosp2 are shown in the Hospital legal values field.

Relate

Related forms are relationships between the main or parent form with sub or child forms. They are used to establish a one-to-one or one-to-many relationship between parent form records and child form records. For example, a survey may have a form devoted to patient information. This may be related to a form to record the many hospital visits that each patient may have. Related forms are linked to a parent form automatically by unique keys generated by Epi Info™ 7. In Enter, the related form is opened by clicking a Related Form Button. When a Related Form Button is selected, it will open the first page of the related form. Using Check Code, the Relate Button can be made conditionally accessible (e.g., to show a special form for a particular disease). This field type is not supported on Web Survey or on the Companion for Android application. The following figure is an example of how a Relate field appears in Enter (circled in blue) based on the Surveillance form of the Sample project.
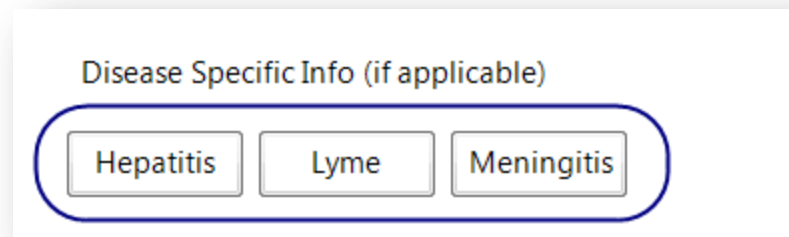
Figure Error! No text of specified style in document**..76:** Relate field

To add a Relate field:

1. **Open** the **Relate Field Definition** dialog box.

2. Enter the **Question** or Prompt. The text entered in this field will display on the canvas and prompt the user to enter a response.

3. Click in the **Field Name** text box or press the **tab key**. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

    Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

Figure Error! No text of specified style in document..**77:** Relate Form Button Field Definition dialog box

4. From the Related Form drop-down list, select **Create new form** to create a new form or select an existing form.

- The dialog box will show the **Accessible always** button selected. This option cannot be modified. The **Accessible only when following conditions are true** selection is not available in this version of Epi Info™ 7.

- **Accessible always** will create a related button in the form that is active at all times during data entry.

- **Accessible only when following conditions are true** will be available in a future Epi Info™ release. However, a conditional statement can be created using Check Code (see Check Code). Check Code can be associated with the button to create a condition statement.

5. Select **'Return to the parent form after one record has been entered'** to allow only one record to be entered in the related form for each record in the parent form. In Enter, after a record is saved in the related form, you are returned to the parent form. If multiple entries are desired, then leave this option unselected.

6. Click **OK**. The Related Form button appears on the canvas.

Group

A Group field is a way to group together one or more fields on a page for visual and practical purposes. Visually, a group helps to tie similar fields together into a common category. Grouped fields also provide organization and structure to the form. A background color can be added to a group to enhance its appearance. You can nest groups and arrange them so they overlap specific fields for situations where you need a Venn style "diagram" on your form.

Group fields also have several practical purposes. In Classic Analysis and the Visual Dashboard, you can run statistics on individual fields, but if the fields are contained within a group, then you can use the group field and the statistics will be done on each field within the group.

Similarly, several Check Code commands can be run on all fields within a group by using just the group name, rather than using each field name individually. This makes commands such as Enable, Disable, Clear, Highlight, Set-Required, Set-Not-Required, among others, much easier for you to write.

Fields contained within the Group box are automatically members of the Group field. To remove a field from a group, simply drag the field outside of the boundaries of the group box. Likewise, dragging the group box itself will move all the fields within the group. When the group box is released, any additional fields within the boundaries of the group box are automatically members of the group field for analyses and Check Code execution.

The following figure provides an example of how Group field (circled in blue) appear in Enter.

Figure Error! No text of specified style in document.**.78:** Group field

To create a Group field:

1. Click and drag a **rectangle** around the fields to be grouped. Each field in the selection appears highlighted with a rectangle.

2. From the Form Designer toolbar, select **Insert > Group** or right click on a blank part of the canvas and select **New Group Field** from context menu. The **Group Properties** dialog box appears.
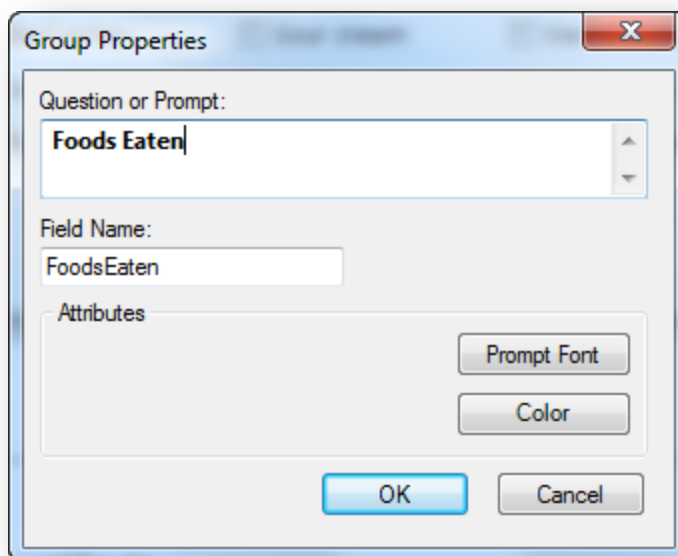
Figure Error! No text of specified style in document..**80:** Group Field Properties

3. Enter the **Question** or **Prompt**. The text entered in this field will display on the canvas and prompt the user to enter a response.

4. Click in the **Field Name** text box or press the tab key. Epi Info automatically suggests a field name based on the Question or Prompt, however, it is very important that field names be short, intuitive, and usable. The field name is used for data validation in Check Code and when doing analyses.   Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

   Note: It is best to simplify the field name at this time. Field names cannot be changed after data collection starts.

5. Click **OK** to create the group. The fields appear in the group box.

   • Move the group by clicking and holding the **group name** with the mouse.

   • Resize the group box by moving the cursor over the group and adjust the box dimensions by clicking and dragging the corner boxes to the desired dimensions. If the new size includes additional fields, they become members of the group.

   • Fields in the group are rearranged in the same process as on the Form Designer canvas. Click on the field and drag the field to the desired location.

Edit an Existing Field

Right click on the field and select **Properties** from the context menu. The Field Definition dialog box appears. Make the necessary changes and click **OK**.

Edit a Field Name

Field Names are critically important to Epi Info™ 7 projects because they are the basis for everything from database management, to data validation, and analysis. Because field names are such an integral part of Epi Info™ 7 projects**, field names cannot be changed after the data table has been created** to begin collecting data—even when testing the form with test data.

Therefore, it is very important to establish a concise and usable naming convention for your field names when beginning to design your data entry form. Although Epi Info automatically suggests a field name based on the Question or Prompt, it does so by concatenating the first several words together, stripping spaces and invalid symbols. This can be convenient when the question is only a few short words, but if the prompts to your questions frequently begin with similar phrases such as "Please enter the …?" or "What is the …?", then the suggested field names will also have the same ambiguous start creating a very challenging and tedious experience searching for a specific field when writing Check Code or using Analysis and the Visual Dashboard.

For these reasons, is very important that field names be short, intuitive, and usable. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

The field name cannot be changed after the data table is created. When testing a form in Enter, the data table is initially created. If the data table has no data or only test data that can be discarded, you can delete the data table in order to change the field name. Refer to the topic **'Delete an Existing Data Table Without Deleting the Form'** for more information.

Invalid Field Names

Since field names cannot start with a number, if your question or prompt begins with a number, Epi Info's suggested field name will begin with a leading letter "N" before the number.

Field names cannot have spaces or non-alphanumeric characters other than the underscore.

Since fields are referenced by their field name in the database, the field name must be unique—it cannot already exist as the name of another field in your form.

Finally, Epi Info needs to reserve some words for internal use and to avoid conflicts related to database interaction. For a complete list of reserved words, please see the appendix

If your desired field name is invalid for any of the reasons mentioned above, it will appear in red font and the OK button will be disabled. To avoid this, modify the field name slightly, perhaps add a suffix or prefix to make it an acceptable name. Then click **OK**.

Delete a Field

1. Right click on the **field**. The context menu opens.

2. Click **Delete**. The field is removed from the form.

Warning: The field and any data previously collected are deleted from the form and database. Deletions occur immediately. There is no prompt to verify the deletion before it occurs, and the only way to recover the field is by using the "undo" feature, however, "undo" will not recover deleted data.

Copy, Cut, and Paste Fields

1. Click and drag a **rectangle** around the fields to be copied or cut.

2. From the Form Designer toolbar, select **Edit > Copy** or **Cut** from the drop-down list.

3. Click in the **new section** of the form or select a **new page** in the project.

4. Select **Edit > Paste**. The copied fields appear in the form.
   When pasting fields, Epi Info automatically suggests a field name based on the name of the original field. To ensure the field name is unique, Epi Info appends a number. For example, if the field name of a field being copied is "Age", then the pasted field is automatically named "Age1". Copying and pasting this field again will result in a third field named "Age11". The similarity of these names may lead to confusion and sometimes errors when used in Check Code and in analyses. Therefore it is important to change the field name as described in the next step.

5. For each field pasted, do the following:

   1. Right click the new field's question or prompt and select Properties from the context menu.

   2. Click in the Field Name text. Change the field name making it more clear and intuitive for the instance of the new field.

   3. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character "_" is permitted).

Note: Field names cannot be changed after a data table has been created (data collection has started).

Note: You can also right click on the field and use the context menu to copy or cut the field. Also, you can right click the canvas and use the context menu to paste a field from the clipboard.

Align Fields

There are several ways to align fields in Form Designer. Aligning fields in a consistent format allows you to make the form appear more professional. The process of aligning fields begins with selecting the desired fields to be aligned.

1. Click and drag a **rectangle** around the fields to be aligned.

    *   To align the fields vertically, select **Format > Alignment > As Stack.**

    *   To align the fields horizontally, select **Format > Alignment > As Table.**

    *   For additional options, right click on the canvas to display the possible alignment configurations.

Figure Error! No text of specified style in document..81: Field Alignment Options

2. The options appear as follows:

    *   **Align Selection in Column(s)** – aligns all fields vertically in the number of columns indicated (similar to **Format > Alignment > As Stack**).

    *   **Align Selection on Row** – aligns all fields horizontally (similar to **Format > Alignment > As Table**).

Set Field Size

There are several field sizing options available in Form Designer. Making field sizes consistent will allow you to make the form appear more professional. The process of standardizing the field size begins with selecting the desired fields.

1. Click and drag a **rectangle** around the fields to be re-sized.

2. Right click on the canvas to display the possible sizing configurations.

3. The options appear as follows:

- **Make Same Width (Use Maximum)** – Adjusts selected fields' width to match the widest field of the selection

- **Make Same Width (Use Minimum)** – Adjusts selected fields' width to match the narrowest field of the selection

- **Make Same Height (Use Maximum)** – Adjusts selected fields' height to match the tallest field of the selection

- **Make Same Height (Use Minimum)** – Adjusts selected fields' height to match the shortest field of the selection

- **Make Same Size (Use Maximum)** – Adjusts selected fields' height and width to match the largest field of the selection

- **Make Same Size (Use Minimum)** – Adjusts selected fields' height and width to match the smallest field of the selection

Manually Set Field Size

1. Hover your mouse over the field to display the field's frame and sizing handles.

2. Hover the mouse over one of the sizing handles to see the mouse change to an arrow cursor.

3. Click and drag a sizing handle to stretch the field to the needed size.
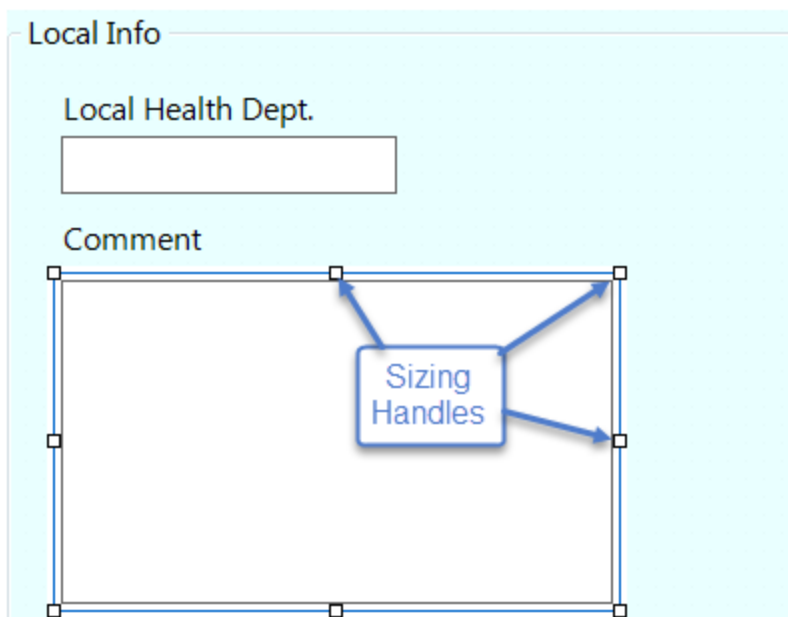
Figure Error! No text of specified style in document..83: Manually Adjust Field Size

Manually Set Field Position

In certain cases, the field alignment or positioning will need to be adjusted manually. In Epi Info, the field and prompt can move together or separately. This is especially helpful if using a right-to-left language where the question or prompt should be to the right of the entry field.

Figure Error! No text of specified style in document..84: Manually Adjust Field Position

The following example is based on a form containing a Label/Title field and a Text field.
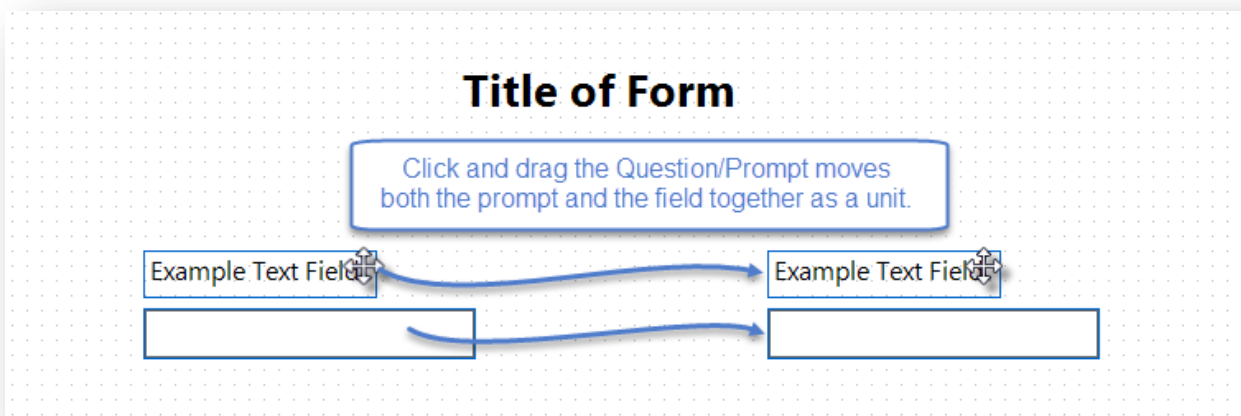
Figure Error! No text of specified style in document..85: Prompt and Entry Field Selection

1. To move a field and question together, click and drag the field's prompt.

2. To move the field and prompt separately, click and drag the entry field, not the prompt, as shown below.
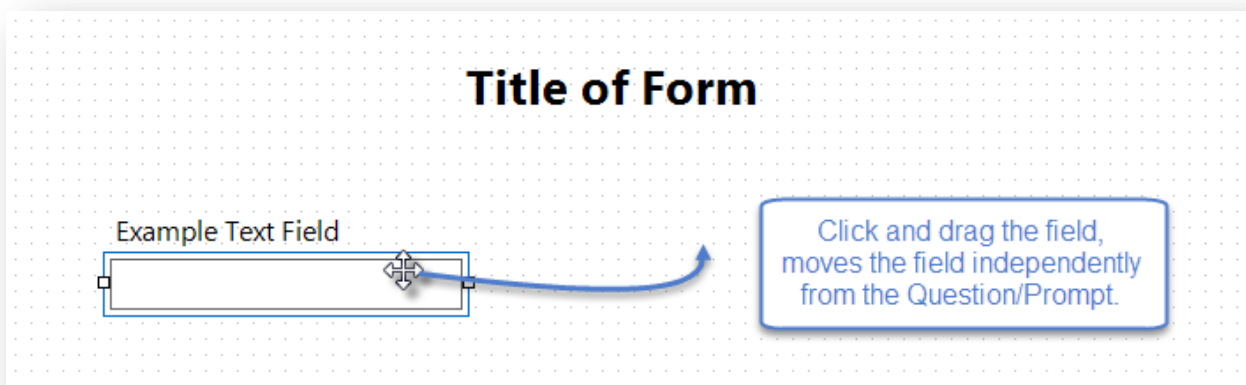
Figure Error! No text of specified style in document..86: Select Entry Field

3. **Release** the entry field at the desired location.
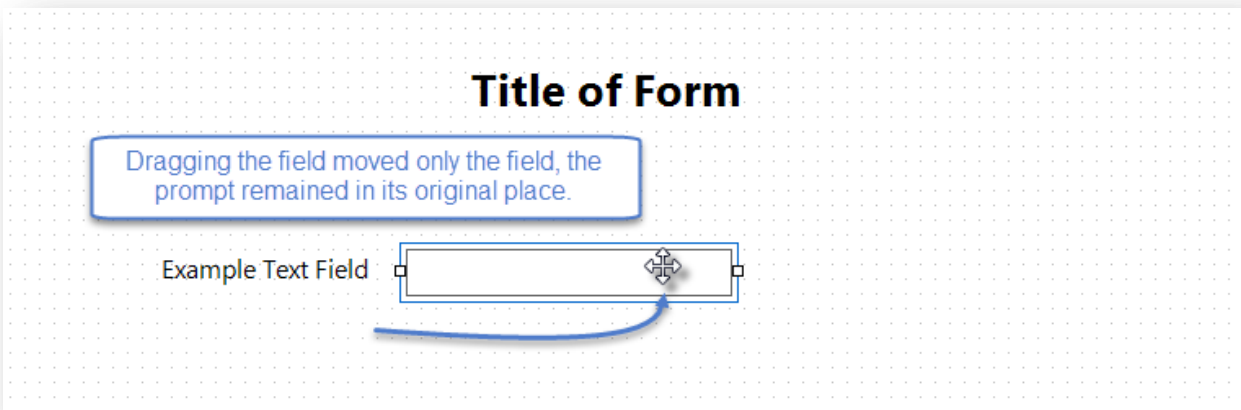
Figure Error! No text of specified style in document.**.87:** Adjust Entry Field Location
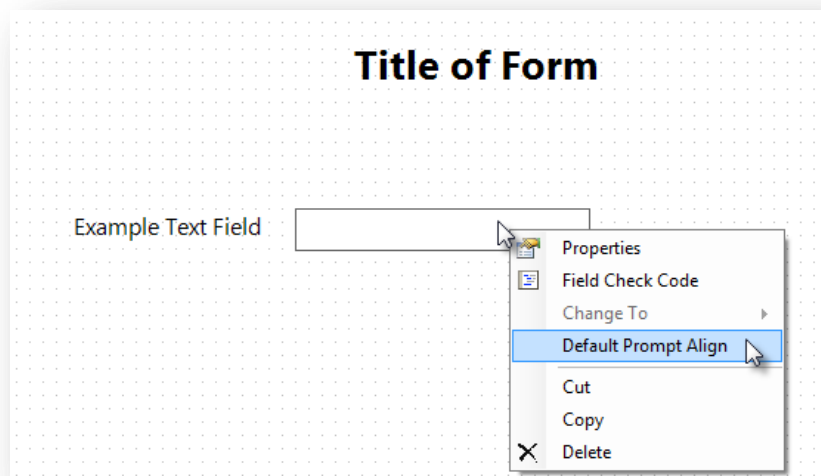
Figure Error! No text of specified style in document.**.88:** Default Prompt Alignment

4. To restore the original field and prompt alignment according to the default configuration, right click on the **field** or prompt and select **Default Prompt Align**.

5. To set the default prompt alignment, select **Format > Page Setup** from the Form Designer menu bar. Set the default alignment to be vertical so the field is below the prompt and left aligned, or horizontal where the field is to the right of the prompt on the same row.
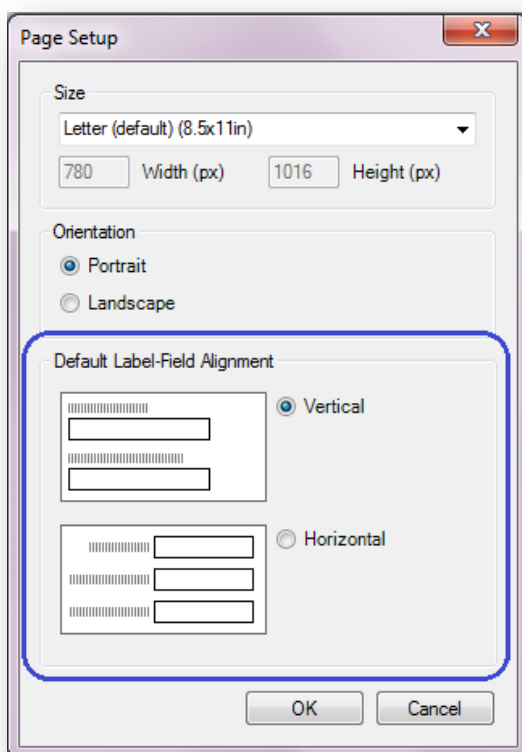
Figure Error! No text of specified style in document.**.89:** Page Setup dialog showing Default Label-Field Alignment

Tab Order

In the Enter module, during data entry, pressing tab or enter will move the cursor to the next field. Tab Order is the order or sequence that the cursor moves from field to field. Initially, the tab order is determined by the order in which the fields are added to the form. In many cases, as fields are moved around the page, added from a template, or pasted from somewhere else, the tab sequence may become disorganized. There are other situations in which you may prefer the tab order to move in a custom way, such as down a column of questions, or maybe from right to left across the page.

The proper tab order will make entering data more user friendly and efficient. Additionally, the tab order will determine how fields are displayed on a mobile device.

To show the tab order, right click on the canvas and select **Tabs > Show Tab Order**. The tab order number for each field is shown in a rectangle near the entry field. Red rectangles

indicate the field is a Read Only field or one that cannot receive the cursor, such as Label/Title fields. Group fields also do not receive the cursor, but a tab number is reserved for the group, even though the tab order number for a Group box is not shown.
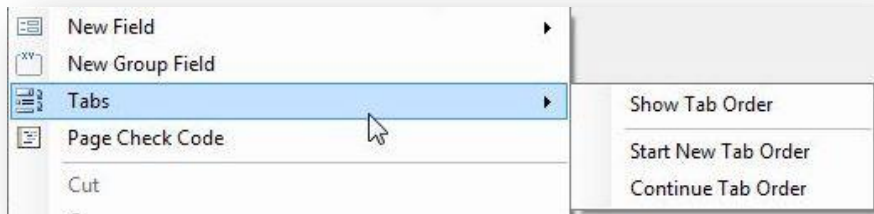
Figure Error! No text of specified style in document.**.90:** Show Tab Order

Start New Tab Order

Right click the canvas and select **Tabs > Start New Tab Order** from the context menu**.** Selecting this function will automatically set the tab order according to each field's position from left to right, then top to bottom.

Customize the Tab Order

You can customize the tab order to meet the needs of your questionnaire. This process begins by showing the tab order on the canvas. The example below demonstrates how to adjust the tab order in the Food History form of the EColi project located in the Projects folder.

Right click the canvas and select **Tabs > Show Tab Order** from the context menu to show the current order of field entry.
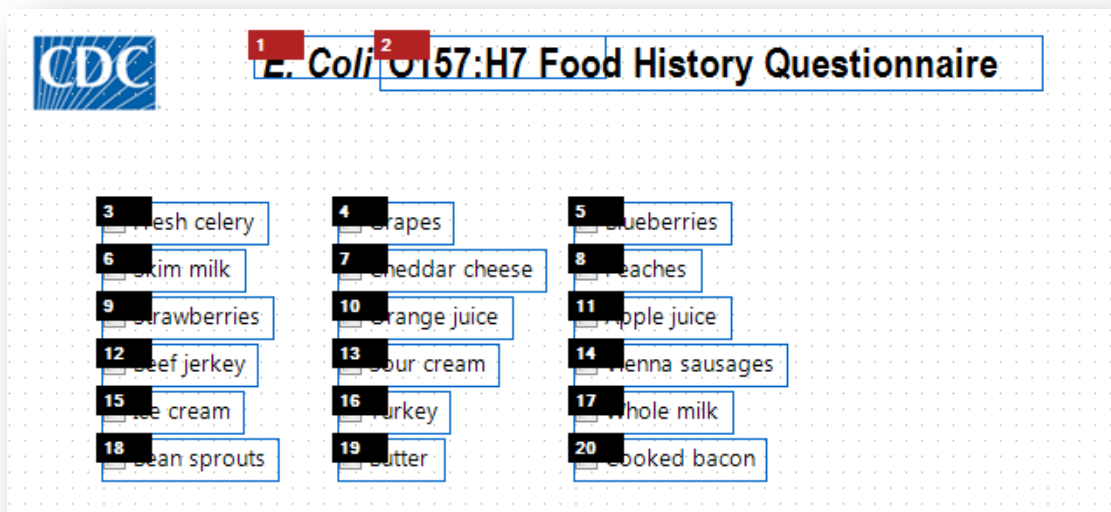
Figure Error! No text of specified style in document..91: Show Tab Order

In the example shown in the figure above, the sequence will move the cursor from left to right, row by row.

Suppose you wanted to have the order run down the first column, from 'Fresh celery' to 'Bean sprouts', then over to the 'Grapes' in the second column. There are a couple of methods to do this.

Customize Tab Order using the Mouse

1. With the Tab Order showing, hover the mouse pointer over the field you want to be the first field in the sequence. In this example, we want to start the sequence with 'Fresh celery' at tab order 3. A prompt appears showing the options available to reset the tab order.
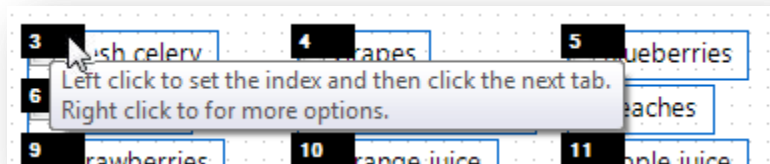
Figure Error! No text of specified style in document..92: Tab Order Prompt

2. Click on the **tab order number** to set the index.   In this example, we click the number **3** in order to set the index at 3.

3. Click on the tab order number for the next field you want to follow the index field. In our example, the field below 'Fresh celery' is 'Skim milk', currently tab order 6. When we click on the number 6, the number changes to follow our index field and becomes 4 (one more than 3—our index).
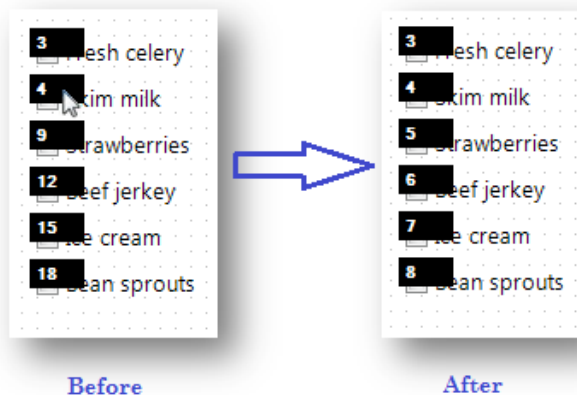
Figure Error! No text of specified style in document..93: Tab Order Adjusted Manually – Before and After

4. Click each successive field's **tab order** box in the desired flow and the numbers are updated sequentially. In our example, we clicked on the tab order boxes 9, 12, 15, and 18 to set the order to be 5 through 8 consecutively.
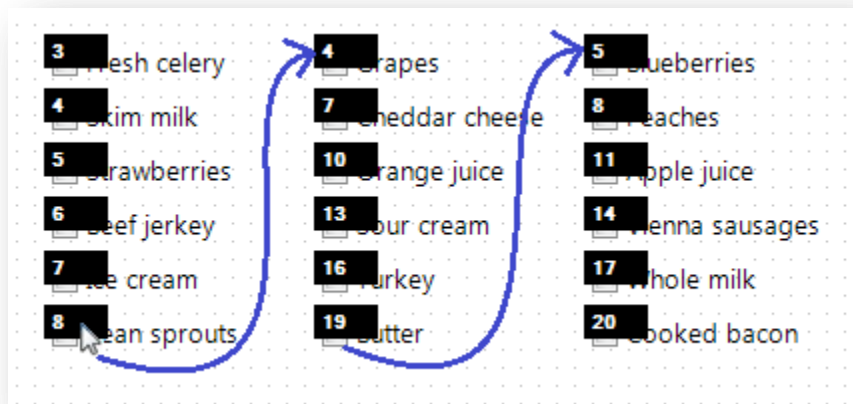
Figure Error! No text of specified style in document..**94:** Additional Tab Order Options

5. After clicking the tab number at the bottom of the first column, move the mouse up to the **first field** of the second column to continue the sequence. Continue clicking each successive **tab order number** until you are finished. Click anywhere on the canvas to hide the tab order numbers.

Figure Error! No text of specified style in document..**95:** Additional Tab Order Options

Customize Tab Order using 'Continue Tab Order'

The Continue Tab Order feature sequentially renumbers the tab order for a selected set of fields based on the current index value. As an example, the figure below shows the original tab order in the Food History form of the EColi project located in the Projects folder.

Figure Error! No text of specified style in document.**.96:** Customize Tab Order

In order to have the order run down the first column, from 'Fresh celery' to 'Bean sprouts', then over to 'Grapes' in the second column using the Continue Tab Order option, follow these steps:

1. Click and drag a rectangle around the first column of fields. This will select just those fields.
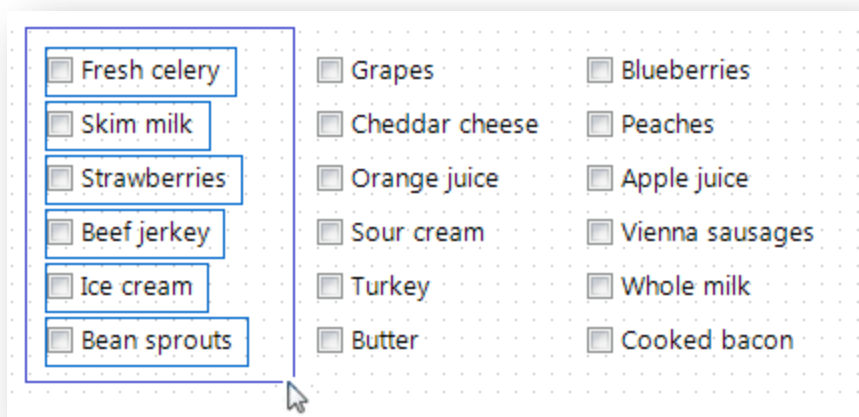
Figure Error! No text of specified style in document.**.97:** Click and Drag Column of Fields for Tab Order

2. Right click the canvas and select **Tabs > Start New Tab Order**. This will reorder only the selected fields beginning with the first tab order number.

Figure Error! No text of specified style in document.**.98:** Start New Tab Order

3. **Click** and **drag** a **rectangle** around the second column of fields to select them.
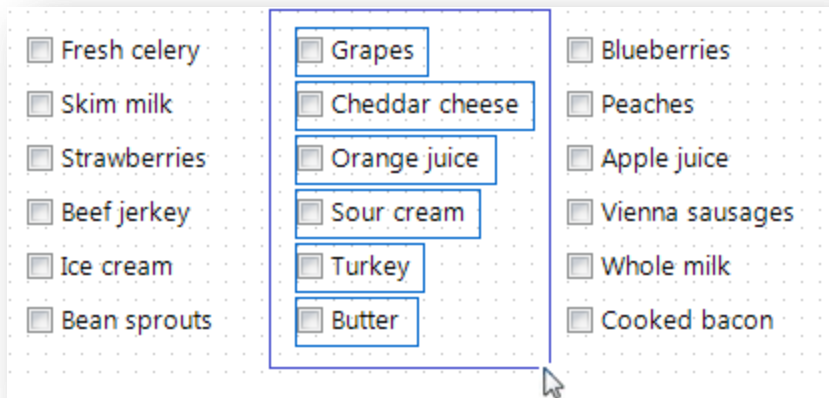
Figure Error! No text of specified style in document..99: Grouping Tab Order

4. Right click on the canvas and select **Tabs > Continue Tab Order**. This will reorder the second column of fields continuing from the last Tab Order Number used in the previous action.
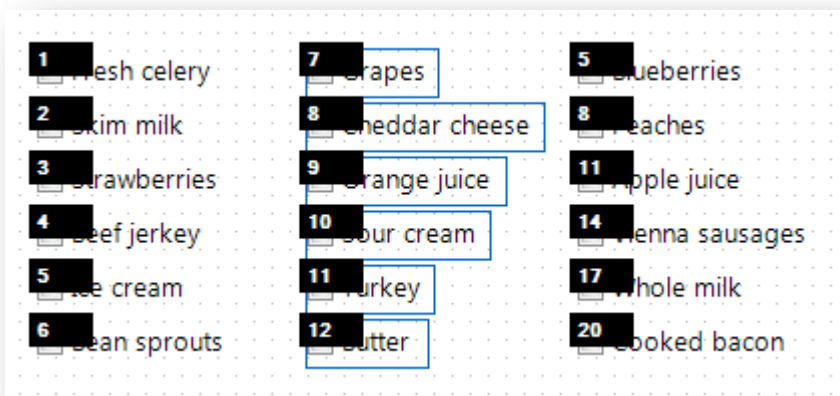
Figure Error! No text of specified style in document..100: Continue Tab Order

5. Repeat steps 3 and 4 until all fields' Tab Order are renumbered as needed.

Disable Tab

The Disable Tab feature makes the field essentially a Read-Only field that does not receive the cursor. In the example shown in the figures that follow, the Age field is calculated in Check Code based on the value entered for Birth Date. Therefore, the designer of this form wants the cursor to skip over the Age field by disabling its tab.

1. Right click the canvas and select **Tabs > Show Tab Order** from the context menu.

2. Right click on the desired field's tab order box and select Disable Tab.
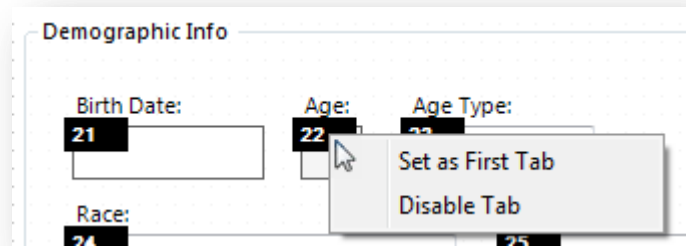
Figure Error! No text of specified style in document.**.101:** Disable Tab

After disabling the Tab for a field, the tab order box becomes red to indicate that it is no longer a field that will receive the cursor. Pressing the tab key will bypass any disabled tabs.
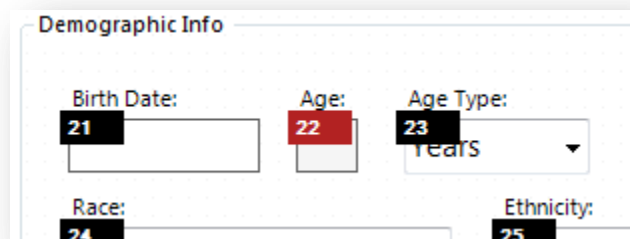
Figure Error! No text of specified style in document.**.102:** Bypassing Disabled Tabs

Note: Check Code only runs when the cursor enters a field. If a field's tab order is disabled, Check Code will not run for that field.

Templates

Templates are a time-saving feature that allows you to save all or part of your project to be reused in other projects and shared with other Epi Info™ 7 users *without* sharing data collected with the project. For example, you might want to save certain fields for use on forms you will create later, as opposed to having to create those same fields over and over (e.g. case demographic information). Saving fields for later use could also be a good way to have a library of fields already built and ready to go in case of a public health emergency. Templates are saved to the Epi Info™ Templates folder using the Extensible Markup Language (XML) format. There are four types of templates: Field, Page, Form, and Project.

Epi Info™ 7 is packaged with a number of project and field level templates that demonstrate many of the various field types and features of Epi Info™ 7 including some Check Code examples. These are listed in the Project Explorer under the Templates category.

One of the best ways to see how Epi Info can be used is to create a project using these templates and examine how they were done. A new project can be created from one of the sample Project Templates in the Form Designer when you open it for the first time.
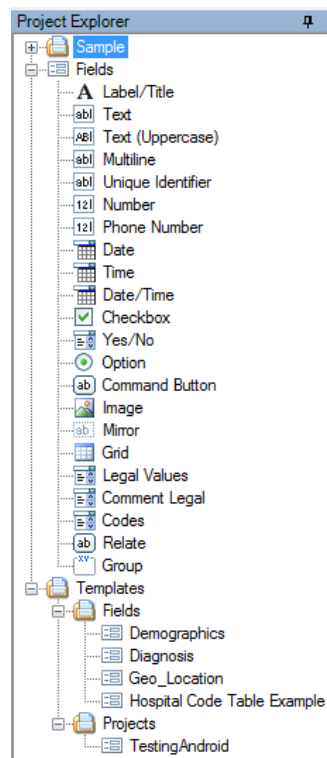
Figure Error! No text of specified style in document.**.103:** Project Explorer Template

Project Templates

Since Epi Info™ 7 Projects contain one or more forms, and each form has one or more pages with fields, Project Templates contain an example of all of the above including any Check Code that may have been saved with the template. Project templates are an effective and convenient way to share projects between colleagues without including collected data.

Create a New Project From Template

A list of demonstration templates are located in the Project Explorer under **Templates > Projects.** Use one of them to create a new project.

1. **Double-click** the template of choice or select **File > New Project from Template.** The New Project from Template dialog opens.
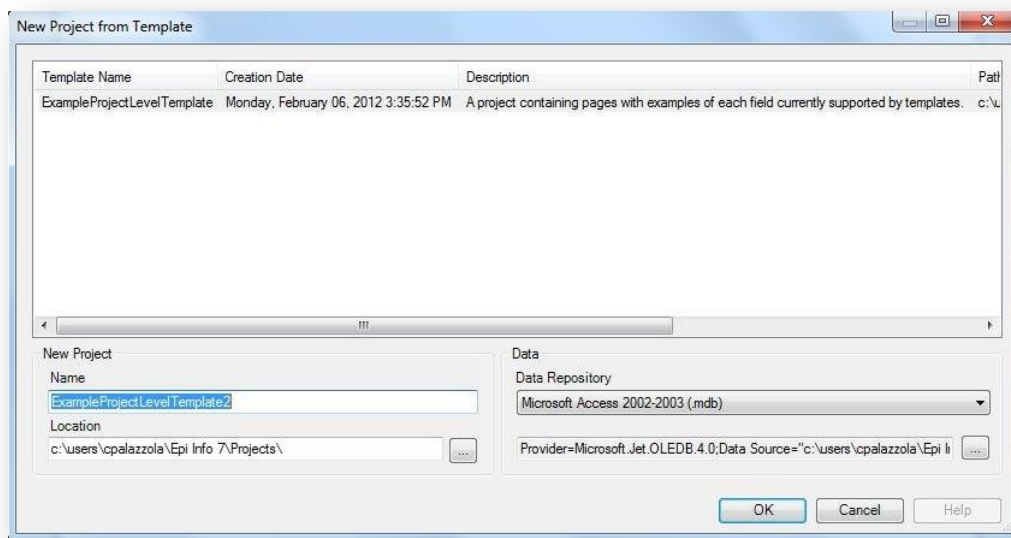
Figure Error! No text of specified style in document.**.103:** New Project from Template

2. Select a template from the list. The Name and Data Repository used when the template was created is automatically populated in their respective fields.

3. **Edit** the **Project Name**, if necessary (optional).

4. The default location for the project is the Projects folder within the Epi Info™ 7 folder. Specify another location, if necessary (optional).

5. Select the database format from the **Data Repository** drop-down list. The default option is Microsoft Access 2000-2003, however SQL Server is also available. To use the SQL Server option, you need to have access to a SQL Server database.

6. If you selected Microsoft SQL Server for the Data Repository, then click the browse button (…) to the right of the Data Repository field to enter the connection information for the SQL Server database. Contact your SQL Server database administrator for the required information requested in this dialog.

7. Click **OK**. The Form Designer creates the project and after a few moments, the new project appears with the first form's initial page shown on the canvas.

For additional information on creating new projects, refer to the topic Create a New Blank Project and Form.

Create a New Template from a Project

There are two options to create a project template that includes all the forms, pages, fields, and Check Code in the current project – **Save Project as Template**, which allows you to specify a template name and description, and **Quick Save Project as Template** which automatically names the template based on the project name and the current date and time. Both options save the template in the same way, but Quick Save does not allow for a custom name and description.

1. In the Project Explorer, right click on the **project name**. The project name is the top most item in the Project Explorer.

2. From the drop-down list, select **Save Project as Template** or **Quick Save Project as Template**.   If Quick Save Project as Template is selected, the template is immediately saved to the Templates > Projects folder with the name of the project and a timestamp.
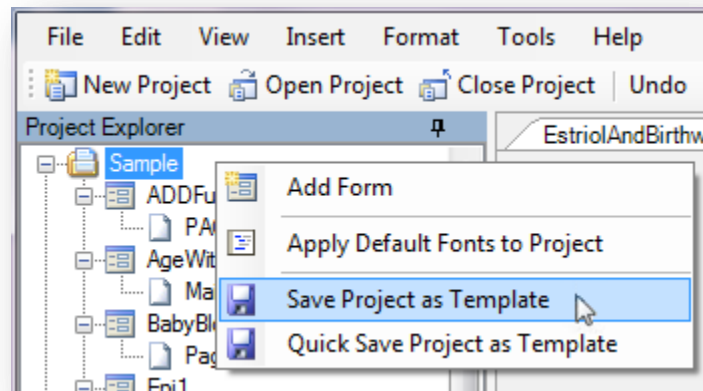
Figure Error! No text of specified style in document.**.1055:** Save Project as Template

3. If the **'Save Project as Template'** option is selected, a dialog appears to allow you to add a Template Name and an optional Description.
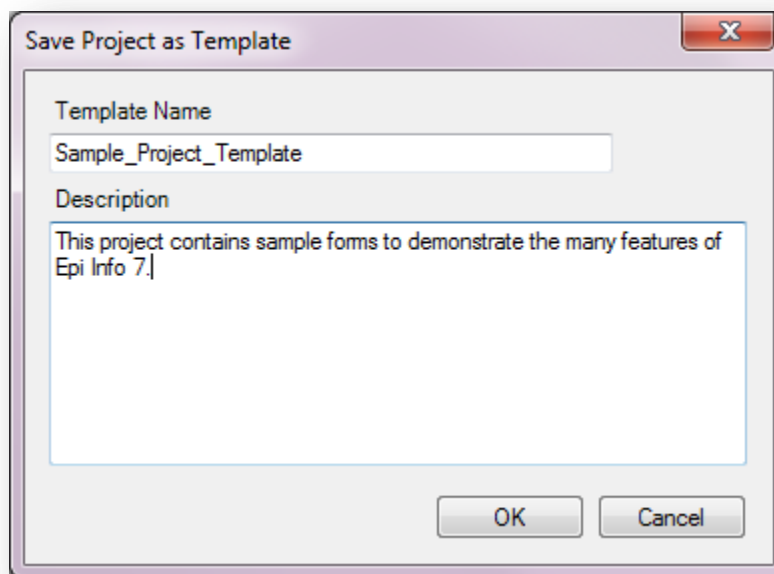
Figure Error! No text of specified style in document.**.1066:** Save Project as Template Description

4. Click **OK**. The template is saved to the **Templates > Projects** folder.

5. To retrieve the template to send to someone, locate the template in the Project Explorer.

6. Right click the template name and select **Open Containing Folder**. This opens the folder in Windows Explorer. From Windows Explorer, you can copy and paste the XML template file into an email or save it to a shared network location for others to use.
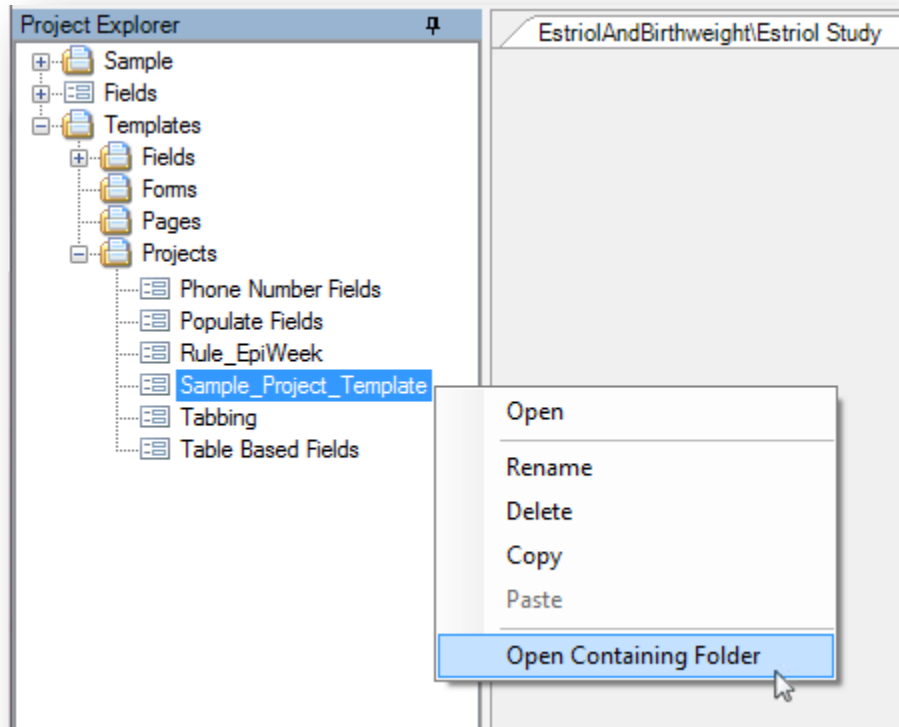
Figure Error! No text of specified style in document.**.1077:** Open Containing Folder

Get Template

If you receive a template from a colleague, an easy way to copy the template to the correct location within Epi Info™ 7 is to use the Get Template feature.

1. From the Form Designer menu, select **File > Get Template**… The Open dialog appears.

2. Locate the **template file**.

3. Click **Open**. The template is saved to the corresponding **Epi Info 7 > Templates** folder according to the type of template. If the template is a Project template, then the New Project from Template dialog opens.
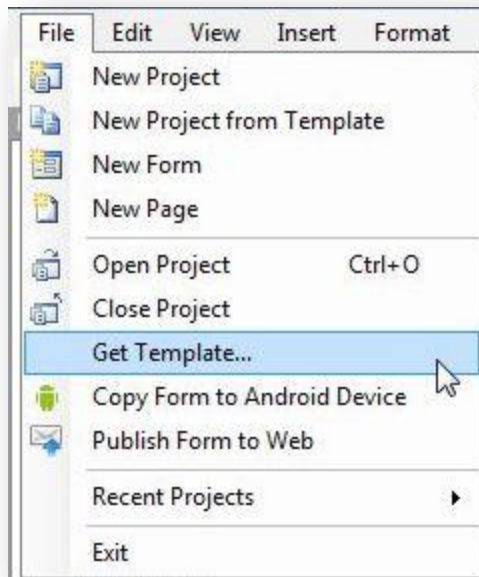
Figure Error! No text of specified style in document..1088: Get Templates

Form and Page Templates

Form and Page templates are created and used in similar ways. The difference is in the item selected when right clicking to get the context menu. Also, form templates can be used to create a single form project, whereas a page template can only be added to a form in an exising project.

Create a Form Template

If you want the template to include all the pages and associated Check Code for a given form then right click the form name in the Project Explorer and select Save Form as Template. In the example shown below, the form 'Surveillance' along with its three pages, 'Person', 'Hospital Info', and 'Case Report', will be included in the template along with all associated Check Code.
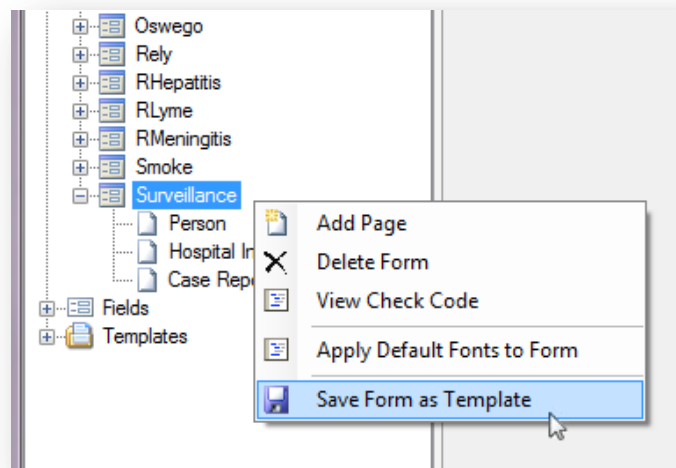
Figure Error! No text of specified style in document.**1099:** Save Form as Template

Create a Page Template

If you want the template to include the contents of a specific page, and the Check Code for the fields on that page, then right click the page name in the Project Explorer and select Save Page as Template. In this example, only the selected page 'Hospital Info' and its Check Code will be in the template.
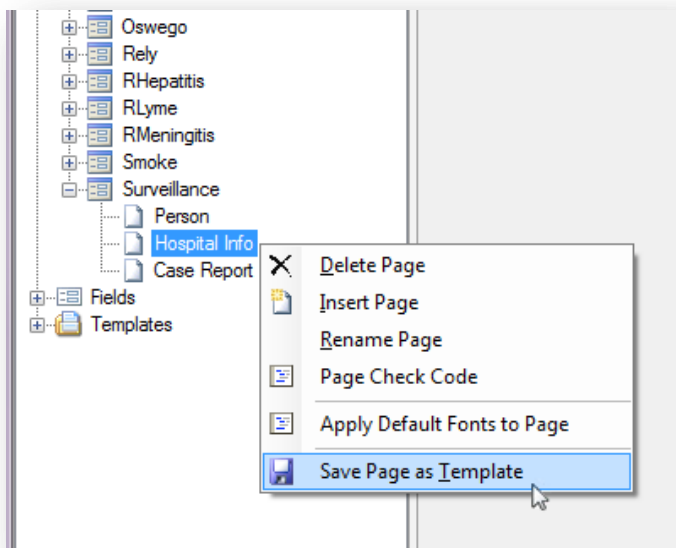
The **Add Template** dialog appears for you to enter a **Template Name**.
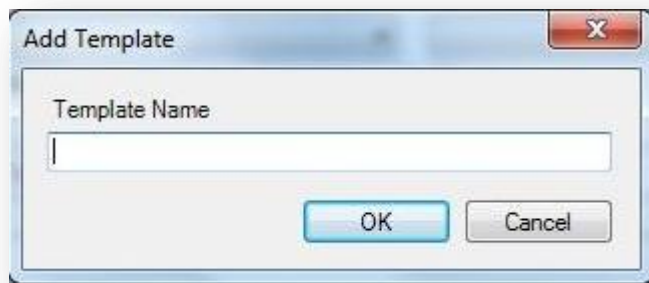
Figure Error! No text of specified style in document..111: Add Template dialog box

Click **OK**. The page template is created and saved to the respective folder under **Templates** in the **Project Explorer.**

How to Use Form and Page Templates

Form and Page Templates are very similar in the way they are used. In order to use either template, there must be an existing Project already open in the Form Designer. The difference is that a Form Template contains the instructions to create a set of pages, each with one or more fields and Check Code, if any. A Page Template has only the page layout

information and instructions to create the fields on a single page along with Check Code, if any.

Since all field names and page names must be unique within a given form, a new form created from a Form Template requires very little additional work to make the form usable after it is created from a Form Template.

A Page Template, on the other hand, can be used repeatedly on a given form. Because of this, during the process of creating the new page from a Page Template, if any field names already exist for the form, Epi Info™ 7 automatically appends a number to new field name from the template. Epi Info™ 7 does this to avoid having any duplicate field names. Unfortunately, this has the side effect of potentially breaking the Check Code that may exist for that page template. The field names within the Check Code are not synchronized. Therefore, the Check Code must be manually updated with the new field names.

To use a Form or Page Template, follow these steps:

1. With a project open in Form Designer, locate the template in the Project Explorer – **Templates > Forms** for form templates, or **Templates > Pages** for a page template.

2. If you cannot find the template you need, but you know it is saved somewhere, use the **File > Get Template**… feature to browse for the template.

3. Click and Drag the template to the canvas. Epi Info™ 7 will create the new form or page and place it in the Project Explorer.

4. If a page template was used, to change the page order, clicking and drag the page in the Project Explorer to the appropriate position.

Field Templates
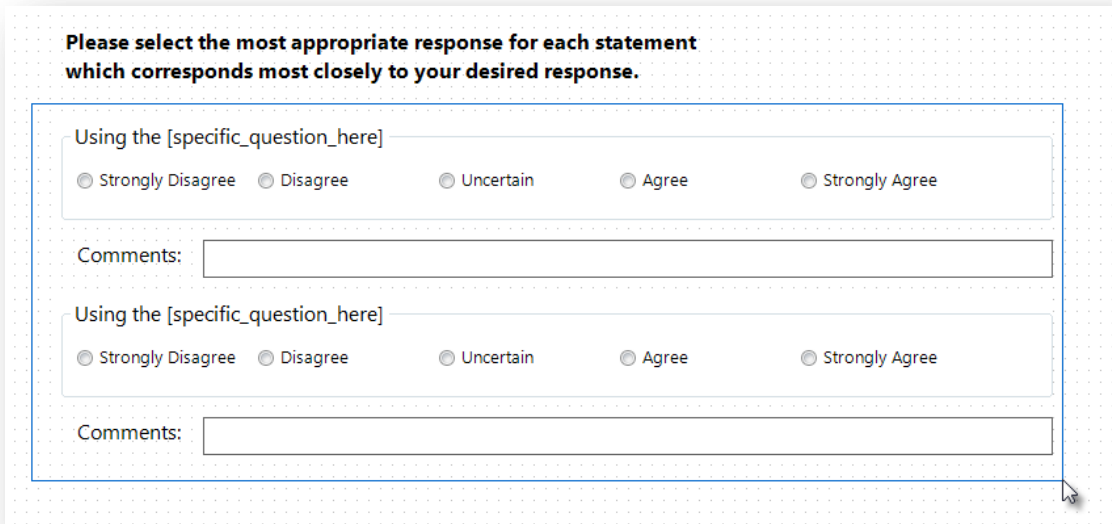
Field templates allow for easy and concise duplication and sharing of fields and enable consistent collection of routine information. When a survey needs to have several questions asked in the same way, as in a **Likert scale**, it is easiest to set up one or two or a few of these questions, save them as a field template, then add additional sets of questions to the form from the template. This method only requires updating the prompt and field name properties of the new fields.

Each field template includes the field definition and attributes for one or more fields, along with any Check Code written for the selected fields. A list of demonstration field templates are available in the Project Explorer under **Templates > Fields.**

How to Create a Field Template

A convenient way to reuse a field or set of fields along with their Check Code or to share fields with a colleague, is to create a Field Template. To do this, follow these steps:

1. Select the fields to add to the template by drawing a rectangle around them. To do that, click and drag the mouse from the top left of the desired fields diagonally down to the lower right until all needed fields are contained in the blue box.

Figure Error! No text of specified style in document..112: Drag a rectangle to Select Fields

2. **Release** the mouse button and the selected fields will remain highlighted.

Figure Error! No text of specified style in document..113: Selected Fields appear with blue border

3. Right click on a blank area of the canvas. Select **Save Selection as Template** from the context menu.
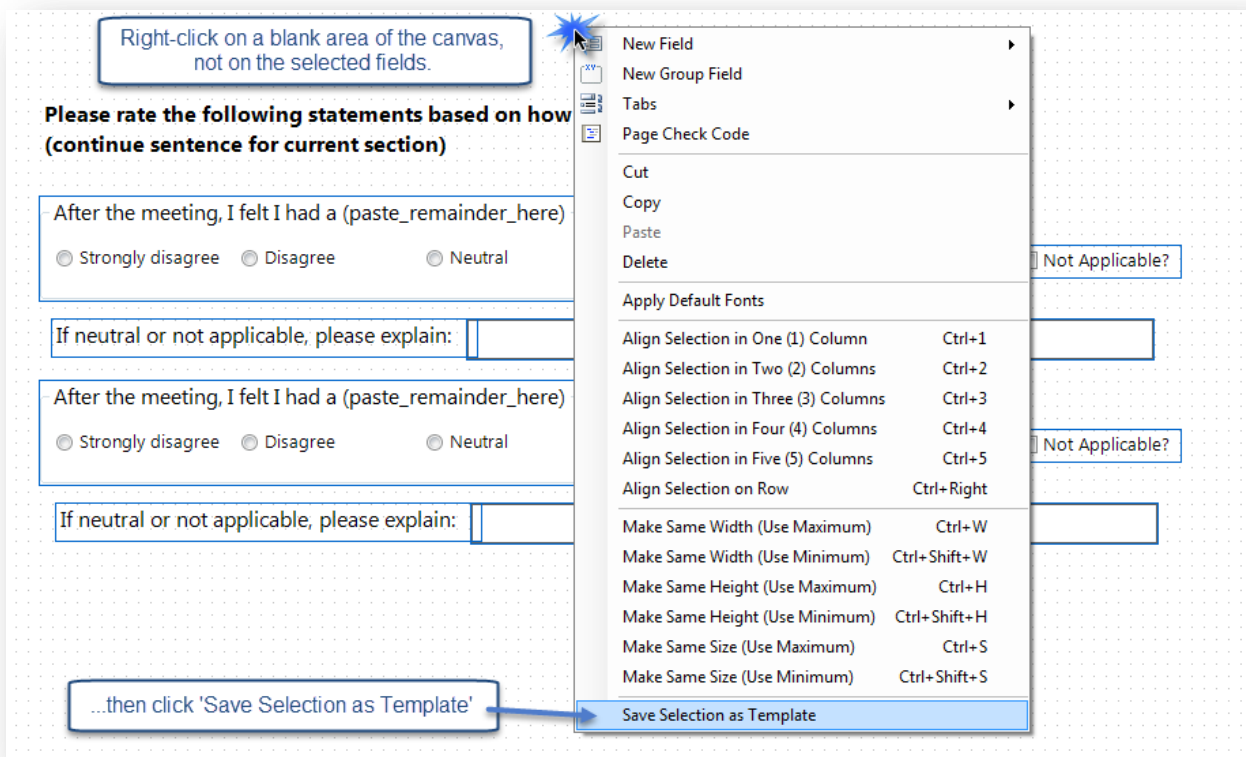
Figure Error! No text of specified style in document..114: Create New Field Template

Note: Right clicking on a field or field group will not display the proper menu options to create a field template. Right click on a blank portion of the canvas only.

4. Enter a **Template Name** in the **Add Template** dialog box.
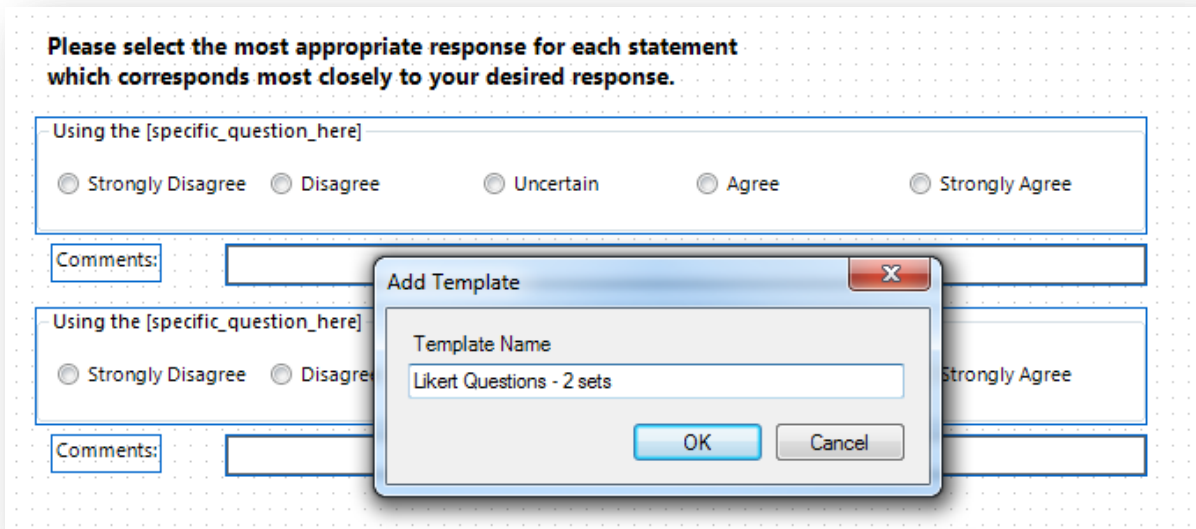
Figure Error! No text of specified style in document.**.115:** Field Template Name

5. Click **OK**. The field template appears under **Templates > Fields** in the Project Explorer.

Using Field Templates

To use a Field Template to create a new set of fields, follow these steps:

1. Locate the **Field Template** in the Project Explorer.
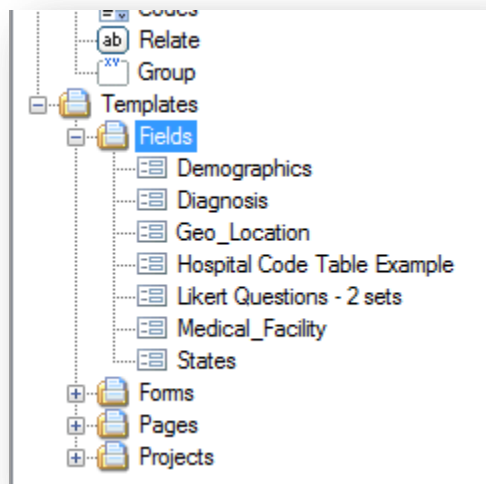
Figure Error! No text of specified style in document.**.116:** Field Template drop-down list

2. If you cannot find the template you need, but you know it is saved somewhere, use the **File > Get Template**… feature to browse for the template.

3. **Click** and **drag** the desired template from the **Project Explorer** onto the page in the appropriate location. As you drag the template over the canvas, you will see a blue rectangle showing the approximate footprint that the fields will occupy when created.

4. **Drop** the template where new field(s) should be placed. When the template is released, Epi Info™ 7 will create the new fields and copy the associated Check Code into the Check Code Editor.
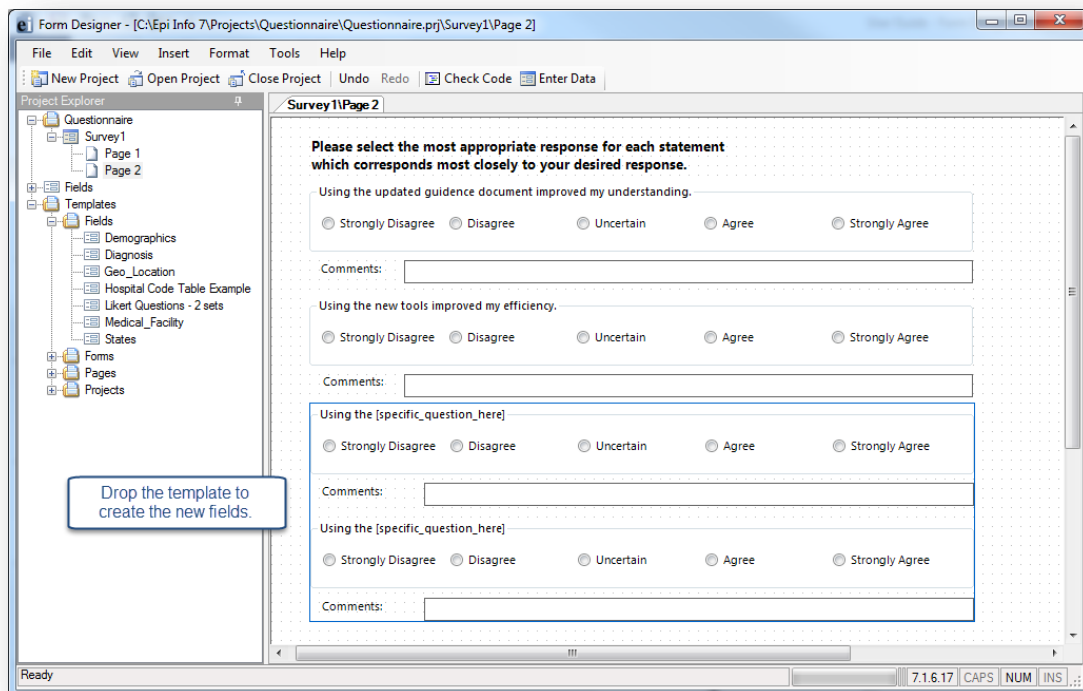
Figure Error! No text of specified style in document..**117:** Drag Field Template to Canvas

Epi Info™ 7 creates fields from Field Templates using the field name specified in the template UNLESS a field by that name already exists on the form, perhaps on another page. To avoid duplicate field names within a given form, Epi Info™ 7 automatically appends a number to the field name of any field that already exists in the same Epi Info Form. Unfortunately, this has the side effect of potentially breaking the Check Code that may exist for the new fields. The field names within the Check Code are not synchronized. Therefore, the Check Code must be manually updated with any new field names.

5. For each new field created from the template, right click the field and select Properties. The **Field Property** dialog box for the selected field opens. Notice the Field Name.
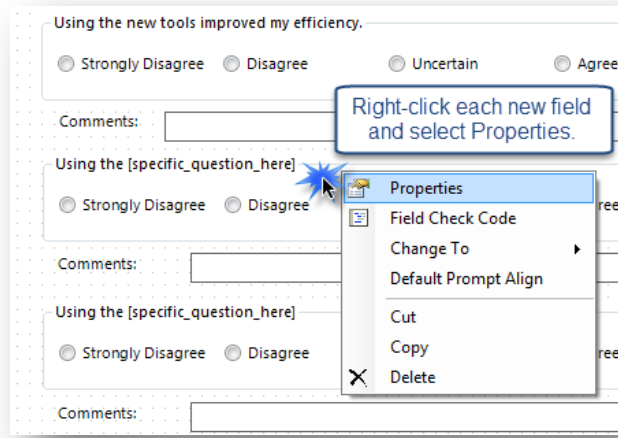
*Figure Error! No text of specified style in document.***.118:** Open the Properties for new fields.

6. If a data table has not been created for the form, edit the **Field Name** and other properties as needed.
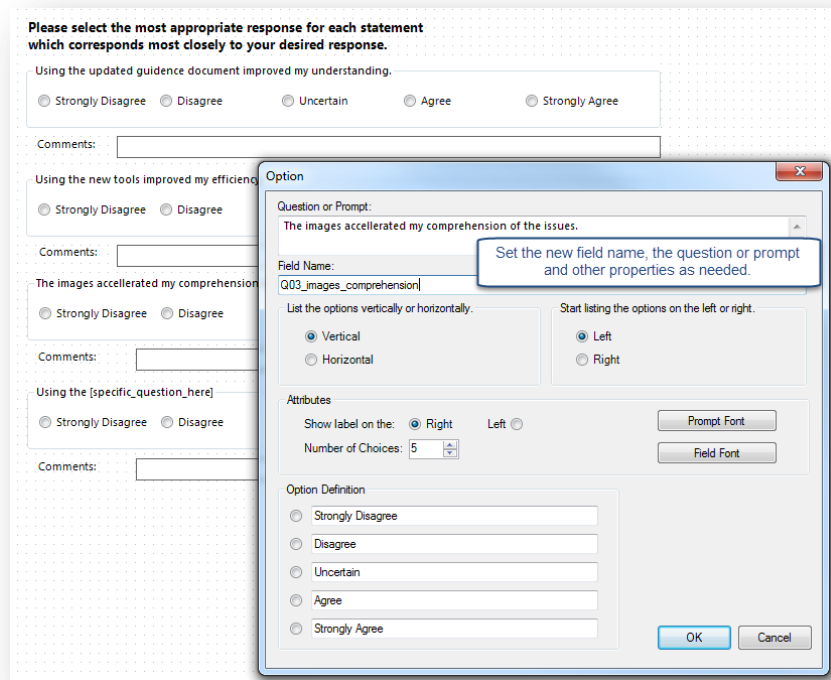
*Figure Error! No text of specified style in document.***.119:** Customize the new fields' names, question, and properties.

Sample Field Templates for Demonstration

There are several field templates that are packaged with Epi Info™ 7 for demonstration purposes. While these fields could be used "As Is" for data collection, these field templates and the Check Code they contain are meant to illustrate the features and functions of Epi Info™ 7.

Demographics

The demographics template has common fields used to for patient information. Some of the fields originate from the Public Health Information Network (PHIN) vocabulary set such as Sex and Ethnicity Group.

Field Types Illustrated:

- Text
- Comment Legal Drop Down

- Phone Number
- Checkbox
- Group

- Number
- Multiline
- Command Button

Diagnosis

The diagnosis template contains multiple Yes-No fields related to common patient diagnoses. The template also includes text fields for collecting additional information.

Figure Error! No text of specified style in document.**.121:** Diagnosis Field Template

Geo-location

The geo-location field template contains fields for Address, Latitude, and Longitude. It also has a command button, **Get Coordinates** for which Check Code was written using the GEOCODE command. This command uses a geolocation service to populate the **Latitude** and **Longitude** fields with coordinates based on the information entered into the **Address** field. These coordinates can then be used in mapping functions in the Epi Info™ Maps tool.

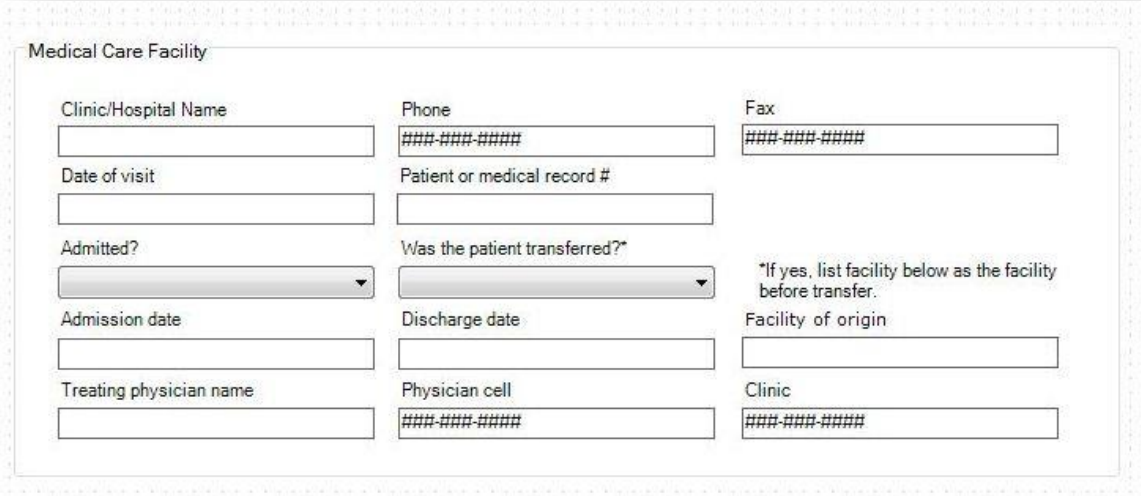**Figure** Error! No text of specified style in document.**.122**: Geo_Location Field Template

Medical Facility

The Medical Facility template contains fields commonly used to collect medical facility information.

Figure Error! No text of specified style in document..**123:** Medical Facility Field Template

States

The States field template is an example of a comment legal field. Comment legal fields store only the code or abbreviation in the database, but the full description is shown in the drop-down list. The data source for this field includes all state and territory names and abbreviations for the United States of America in sorted order (alphabetical).

Figure Error! No text of specified style in document..**124:** States Field Template

Additional Functionality in Form Designer

Insert a Line

It is sometimes helpful to add a horizontal line between groups of fields to give a visual separation between sections of the page. A line can be created using the Label/Title field.

Figure Error! No text of specified style in document..**125:** Horizontal Line Functionality

To create a line on your page, follow these steps:

1. Right click on the canvas where you want to add a line. Select **New Field > Label/Title**.

2. In the Question or Prompt field, hold the **SHIFT key** and type an **underscore** to create a line.

3. Click the **Font** button. The Font dialog box opens.

4. Select a font **size** and **bold**.

5. Click **OK**.

6. Create a **Field Name** for the label field.

7. Click **OK**. The line appears in the form.

8. The line can be resized, moved, copied and pasted as needed.

Upgrade Project

To use a project from a previous version of Epi Info™ in Epi Info™ 7, the project must be upgraded to the proper format. The upgrade project tool allows users to browse and identify previous projects and upgrade the projects for use in Epi Info™ 7. Select **Tools > Upgrade Project > Epi Info 3.5x (.MDB).**
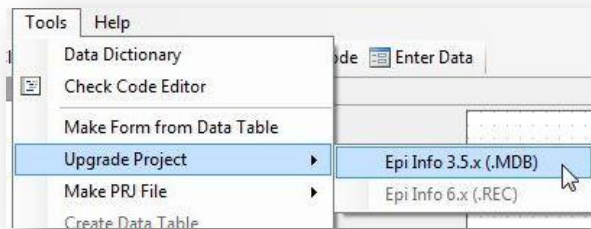
Figure Error! No text of specified style in document..**126:** Upgrade Project

Browse and select the desired project. Click **Open**. The project is upgraded to Epi Info™ 7 and is available for use.

Make a Project File (PRJ)

Occasionally, you may receive an Epi Info™ 7 database--either the Access .MDB file or the location of the database on a SQL Server. If this database is by itself, and if you do not have the corresponding Project File (.prj), then Epi Info™ 7 will not be able to work with it until you create a new Project File.

To create a new Project File for a given Epi Info™ 7 database, follow these steps:

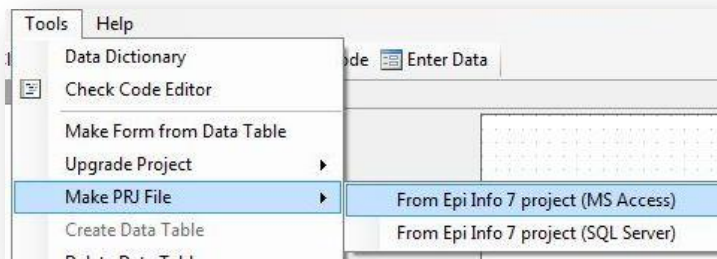1. From the Form Designer Tools menu, select **Make PRJ File.**

Figure Error! No text of specified style in document..**127:** Make PRJ file

2. If the database you are attempting to use is a Microsoft Access database, .MDB, then select **From Epi Info™ 7 project (MS Access).**
    For a SQL Server database, select **From Epi Info™ 7 project (SQL Server)**.

3. For Access files, browse for the desired MDB file and click **Open**. A new project file is created from the source MDB. The original MDB is not changed so it can be opened in the older version after the migraion, however, any changes made to that original database will not be in the new upgraded version.

4. For SQL Server databases, you will be asked for the connection information for the SQL Server. See your SQL Server Database Administrator for the necessary connection information.

Delete an Existing Data Table Without Deleting the Form

To delete an existing data table without deleting the form, perform the following steps:

1. From the Form Designer toolbar, select **Tools > Delete Data Table**. The Form Designer warning message appears.
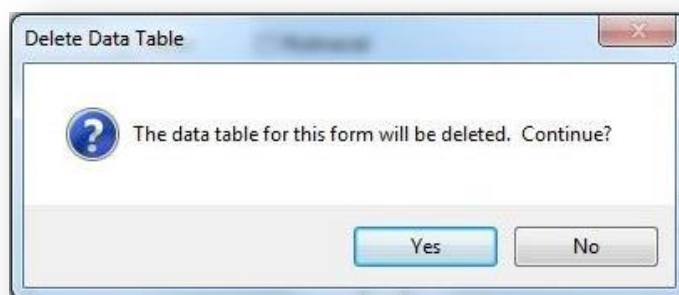
2. Click **Yes**. The data table associated with your form is deleted. The form remains intact.

    • If the data table is deleted, any entered data associated with the form are deleted from the project. Be absolutely sure you do not need the records.

Note: This function should be used only if the data is expendable. This action is permanent and irreversible.

View a Data Dictionary

From the Form Designer toolbar, select. The resulting grid shows the name of the fields in the "Name" column. These names correspond to the column names in the data tables that you will need to use when performing analyses.

The Data Dictionary displays form(s) and defined variables for an open project. Fields or variables are sorted and displayed by page number in the form with defined variables appearing at the end of the listing. Information retrieved from the form includes Page Number, Tab Index, Prompt, Field Type, Name, Variable Type, Format, and Special Info.

From the Form Designer toolbar, select **Tools > Data Dictionary**. The Data Dictionary table appears on the canvas.

Figure Error! No text of specified style in document..**129**: Data Dictionary

- Page Number values are developed each time a page is added and corresponds to the page location in the Project Explorer.

- Tab Index corresponds to the tab order for each field.

- Prompt, Field Type, Name and Variable type correspond to the specifications in the Field Definition dialog box for each variable.

- Format column values include selected patterns for number, date, date-time, phone number (anything with a pattern or format) fields and sorted for combo boxes. Combo box is a combination of list box and a drop-down list (legal values, combo).

- Special Info column values include all properties available from the Field Definition dialog box. Properties include Read Only, Legal Value, Repeat Last, Code Table, Groups, Required, Range, and Image Size. The Special Info column also holds the defined variables values of Standard, Global, or Permanent. The Special Info column includes information on related fields to indicate whether they contain one record or an unlimited number of records. This is developed when the related field is created. The default is Unlimited Records. If the Return to the Parent Form after One Record has been Entered box is checked, the format will appear as one record.

To view a data table located in another form:

1. Click **Selected View**. The Selected View drop-down list opens.

2. Select the **form** to view.

3. The Data Dictionary for the selected form opens. Note that only the Data Dictionary for the selected form opens.

To open the Data Dictionary as an HTML page inside the browser window:

1. Click **View/Print as Web Page**.

Note: From the browser, the data can be printed with **File > Print,** or saved with **File > Save As**.

2. Right click on the **HTML page** to show the context menu. You can export the data directly to an Excel spreadsheet or print the document.

Figure Error! No text of specified style in document.**.130:** Data Dictionary as an HTML Page

3. Click **Close** to exit the Data Dictionary.

Make Form from Data Table

The Make Form from Data Table feature allows you to automatically generate an Epi Info 7 form based on an existing database file. Once completed, you will have the initial structure of a form that could be modified further if needed. Field types, code reference tables and field prompts can be specified during the process. Formats supported include MS Excel, MS Access, Flat ASCII, SQL Server and MySQL among other types.

For example, let's say that you have an Excel spreadsheet with data that you have historically maintained using MS Excel but would like to create an Epi Info project to collect the data and enjoy the benefits that can be obtained from entering data using Epi Info 7. This feature allows users to do so.

The first step will require you to create an Epi Info 7 project. When prompted for a Form Name, assign any name to the form. This initial form will be deleted eventually after the import process from the MS Excel file is completed.

1. From the Epi Info main menu, select **Utilities > Make Form from Data Table**. The **Make Form from Table** dialog opens.
2. Select the desired Database Type. In this example, we will select Microsoft MS Excel 97-2003 Workbook.
3. Navigate to the location of the file.
4. Click on the name of the spreadsheet that contains the dataset you would like to import into Epi Info 7.
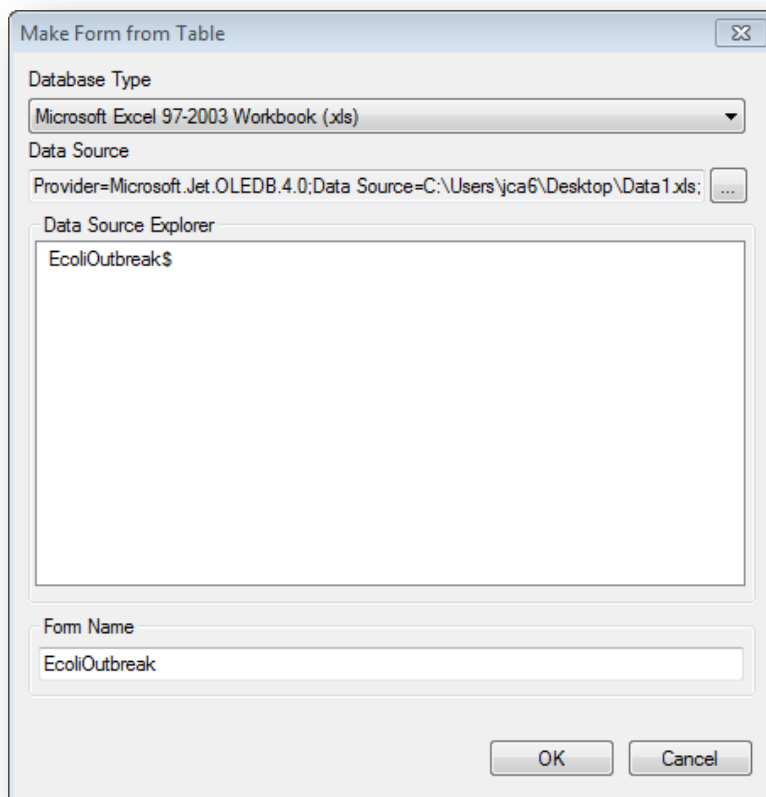5. Specify a form name.

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Figure Error! No text of specified style in document..131: Make Form from Table dialog

6. Click **OK**. The Table-to-Form dialog opens.

7. Click **Set Prompt Font** and **Set Field Font** to set the fonts for the question/prompts and the input fields, respectively.
8. If any of the columns in the source table are to become a Legal Value field type, then click **Add List Source Table** and browse for the table that contains the list of valid values. This will be needed below for the **ListSourceTableName** column.

A series of columns are displayed. Here is a description of each column:

- **Import-** This check box allows you to select which fields should be imported into the form and turn off the import for other fields.. By default, all fields are checked.
- **Column Name**- This specifies the column name from the source table. The column name is initially used for the field name and prompt.
- **Field Name**- The field name is initially the same as the column name, but you can change it now. If the field name is an Epi Info reserved word, the Table-to-Form process will change it automatically by adding a suffix of "_RW". You may want to change this name to something more relavent. *Note: Be sure these field names are adequate before starting the conversion because they cannot be changed after the data tables are created.*
- **Prompt**- The prompt is initially the same as the field name. You can change it now here, or later by visiting the properties for the field.

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- **Column Type** – This is the type of data that Epi Info™ 7 detected.
- **Field Type** – This specifies the type of field that probably corresponds to the Column Type. For example, if Epi Info™ 7 detects string data for the column type, then it will suggest the type of field to hold this data might be a Text field. You can override this decision if you know what the data repesent. For example, if the column contains only "Yes" and "No" values, Epi Info™ may suggest the Text field, but you may decide the YesNo field type is more appropriate. Available field types include: Text, Multiline, Number, YesNo, Checkbox, Date, Date-Time, Time, and Legal Values.
- **Page**- For tables having many columns, Epi Info™ will place the fields on the form based on the order they appear on the source table. It will stack as many fields as will fit on the first page, then it will continue to add pages and stacking fields as needed to accommodate the all of the columns. You can use the Page column to instruct Epi Info™ to keep certain fields together on a specific page.
  Note: There is a limit of about 250 fields on any given page.
- **Tab**- This specifies the order of the field within the page during data entry.
- **Tab stop**- If data entry will occur for a field, then this should remain checked. Some fields are automatically calculated, so these would not need a Tab stop and therefore the Tab stop checkbox should be unchecked. When Tab Stop is unchecked, the cursor will not move into the field during data entry.
- **Read only**- This check box sets the Read Only attribute of the field. If checked, the field will be disabled. By default, it is unchecked.
- **Required** – Fields where data entry is manditory should have this Required attribute checked. By default, it is unchecked.
- **Repeat last** - When checked, the Repeat Last attribute causes the value of the most recently viewed record to become the pre-populated values when a new record is created. By default, it is unchecked.
- **Range** - Allows for a specified value between one value and another. During data entry, if you attempt to enter a value outside the specified range, you'll get a warning message that the value is out of range. Missing values are accepted. By default, it is unchecked. If you check the Range check box, then also specify the Lower and Upper ranges as described below.
- **Lower**- Specify the smallest or lowest value that can be entered into the field.
- **Upper** - Specify the largest or highest value that can be accepted by the field.
- **List Source Table Name** – If a reference table has been imported using the *Add List Source Table* option, the field can be linked to one of the imported tables. This only applies to Legal Value fields.
- **List Source Text Column Name** – If more than one column is available on the imported reference table, specify which column name should be used to map to the field from within the table.
- **List Source Table**- Fields can be removed from the View Fields list using the **back single arrow** or **back double arrows**.

9. Click **Convert** to start the import process.

The process of creating the form and importing the process begins. Once the process is completed, the message "Table to form import process complete" message appears.
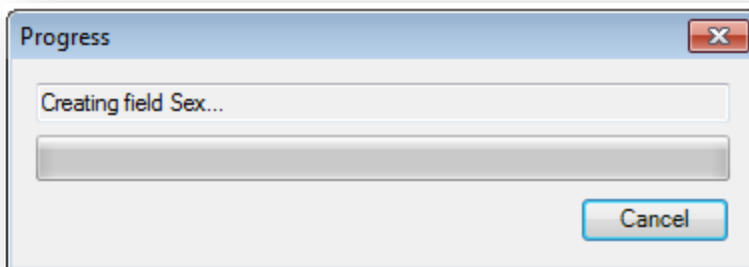
Figure Error! No text of specified style in document..133: In Progress dialog window
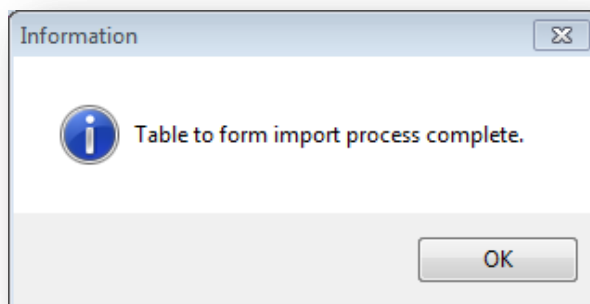

Figure Error! No text of specified style in document..134: Process completed dialog window

After the import process has completed, you can make some changes to the form such as alignment, font, and adding labels and titles. However, do not cut and paste fields from one page to another. If you intend to move fields across pages after the import, we strongly recommended that you first **Delete Data Tables Without Deleting the Form**, move the fields to the necessary pages, then **Use the MERGE Command** in Classic Analysis to merge the data into the revised form.
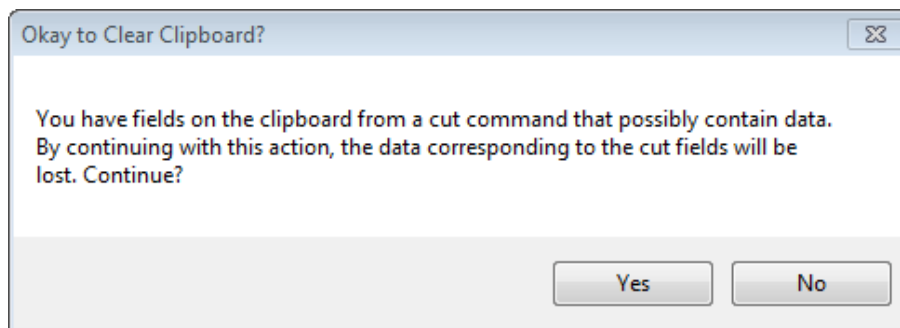

Figure Error! No text of specified style in document..135: Cutting and Pasting fields