
epi info™
Guide Series
Epi Info™ Guide to Form Designer

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EPI INFO™ GUIDE

FORM DESIGNER

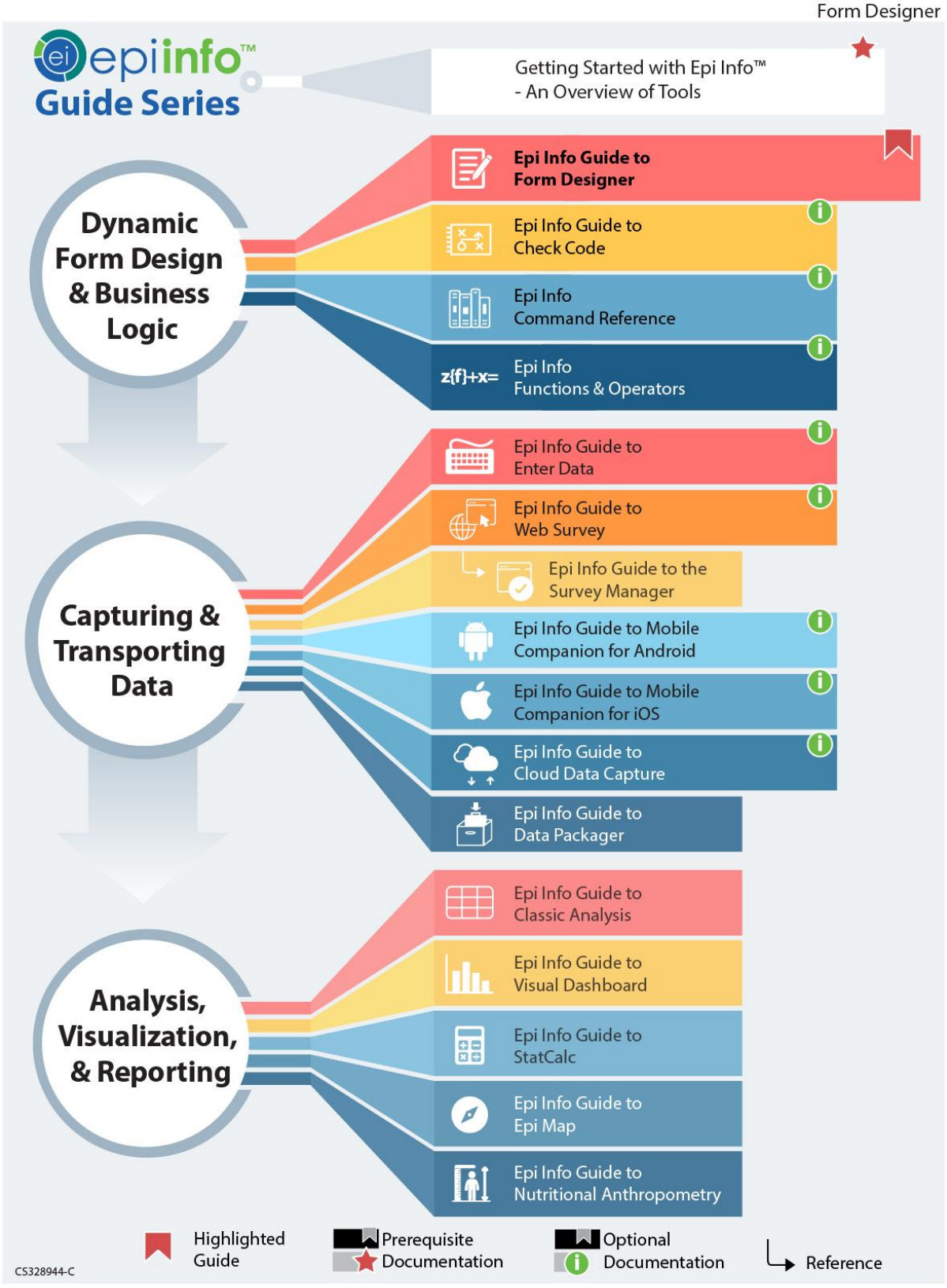
Centers for Disease Control and Prevention

Preface

Epi Info™ is a public domain suite of interoperable software tools designed for the global community of public health practitioners and researchers. Perform data analysis with epidemiologic statistics, maps, and graphs. Build data entry forms, construct a database, and customize statistics applications. Physicians, epidemiologists, and public health officials without a technical background can easily work with critical data using Epi Info™ tools.

Use this guide alone or as a supplement to other Epi Info™ guides. On the next page, view the complete collection of helpful guides available for Epi Info™ tools. The diagram shows how this guide, highlighted with the bookmark icon fits into the big picture of the Epi Info™ suite. Additional guides may offer prerequisite information for the tool you're working with. For example, if you're working with Epi Info™ Form Designer, you'll find it helpful by referencing the Epi Info™ Guide to Check Code, Command Reference, and Functions and Operators. The image below highlights the Guide to Form Designer with the prerequisite documentation icon ( ). You may find helpful other optional guides that are highlighted by the optional documentation icon ( ).

The image below shows the interrelationships among the guides in the series. This guide is **Getting Started with Epi Info™ Guide to Form Designer**.



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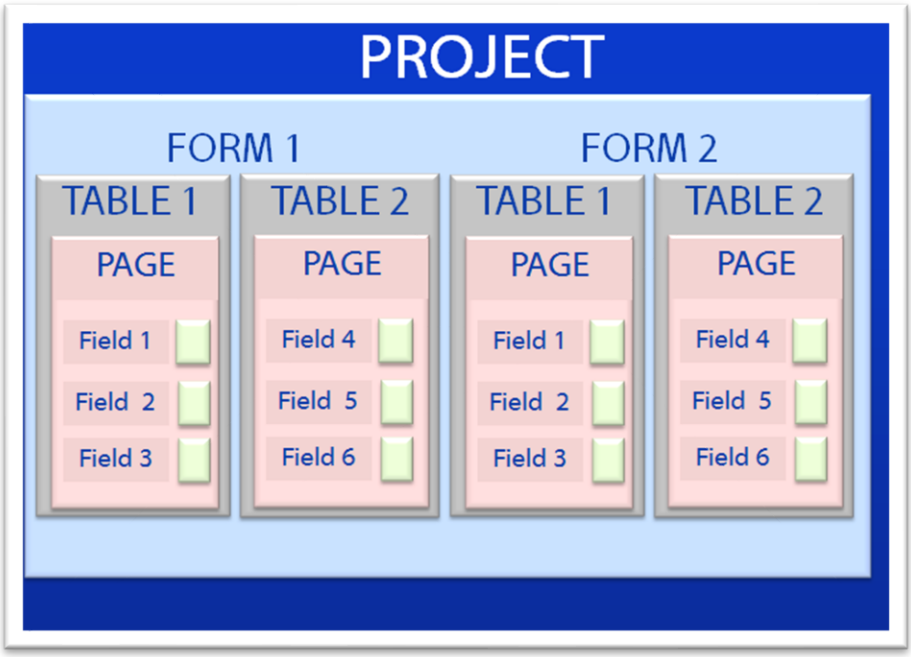
OVERVIEW

In Epi Info™ 7, the **Form Designer** and **Enter Data** work together to design the data entry process and collect data. You can use Form Designer to design surveys, questionnaires, and forms. You can customize the data entry screen and configure the data entry process and configure multiple options. Form designer helps you customize forms with validated data from the **Enter Data** tool.

Epi Info™ 7 collects data and organizes it by project. Projects can have multiple forms, with multiple pages. For each page, we've added data entry fields capable of collecting data.



Project Organization

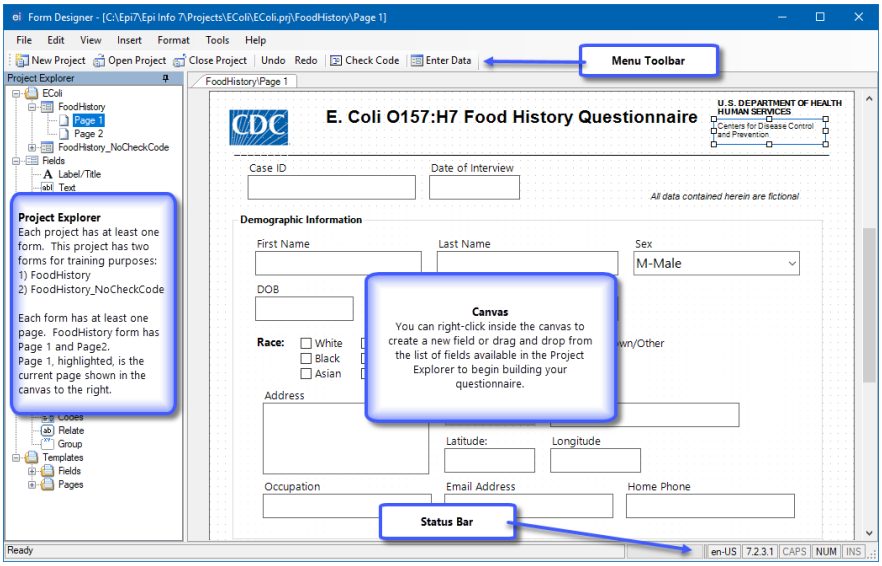
Choose fields on the page which correspond to your data format analysis method. Different fields range from labels, text, numeric, and date types. You can choose from advanced fields like drop-down lists, data grids, and command buttons. View a list of field types in Figure 2.21.

Epi Info™ 7 normally uses the Microsoft Access database format and stores new project data in the MS Access data file using an MDB extension. If you use Microsoft SQL Server, Epi Info™ 7 can natively uses SQL Server for data storage. Epi Info™ 7 manages the database, including table creation, managing keys, and other storage details. Building and designing forms shapes your database, so you can think of Form Designer as a unique database design tool.

Navigate the Form Designer Workspace

Open Form Designer by clicking **Create Forms** from the Epi Info™ 7 menu.

Create Forms Menu



Sample date: E. Coli project

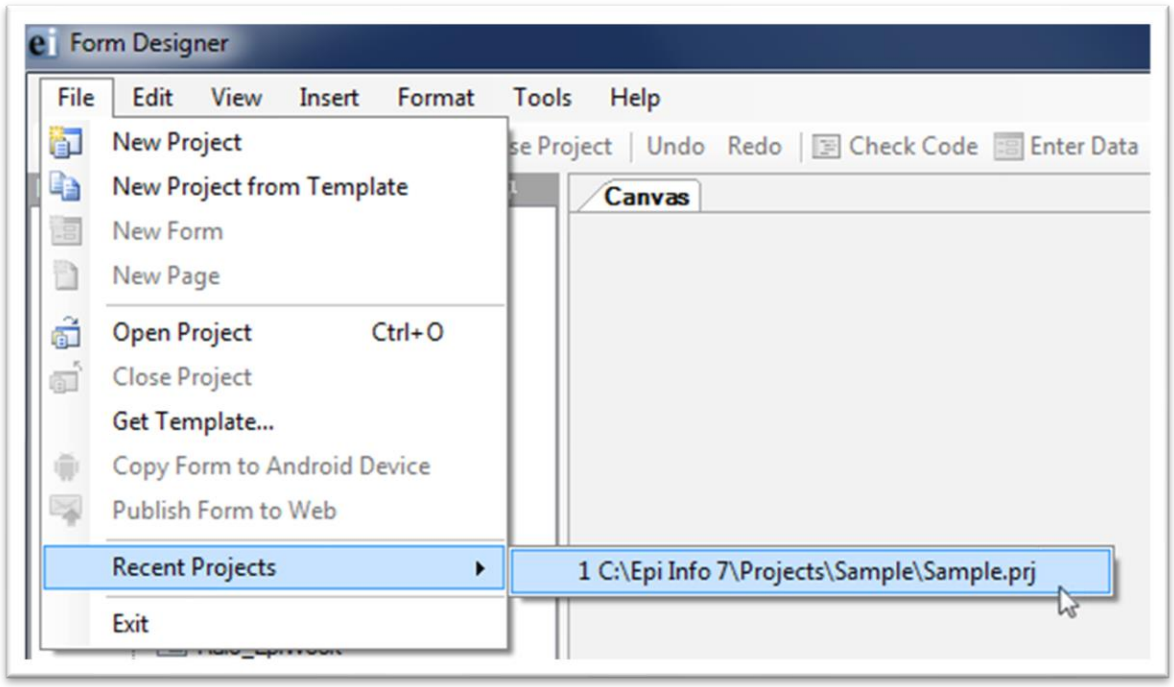
- **Menu toolbar** — provides an easy way to access projects and gives you tools to edit your forms, manage your projects, and customize your canvas.
- **Project Explorer —** Allows you to add pages, fields, and templates to a form. Expand or collapse each category by clicking the + or – buttons next to the category name.
- **The Canvas** — Design your forms on **The Canvas**. Use the **Field Definition** dialog box to design and edit your form. You can customize the workspace by selecting fonts, colors, and grid options.

Open a Recent Project

Epi Info™ 7 comes with 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 pre-collected data. Schools of public health use these sample projects for teaching Epi Info™ as a part of the science of epidemiology and statistics.

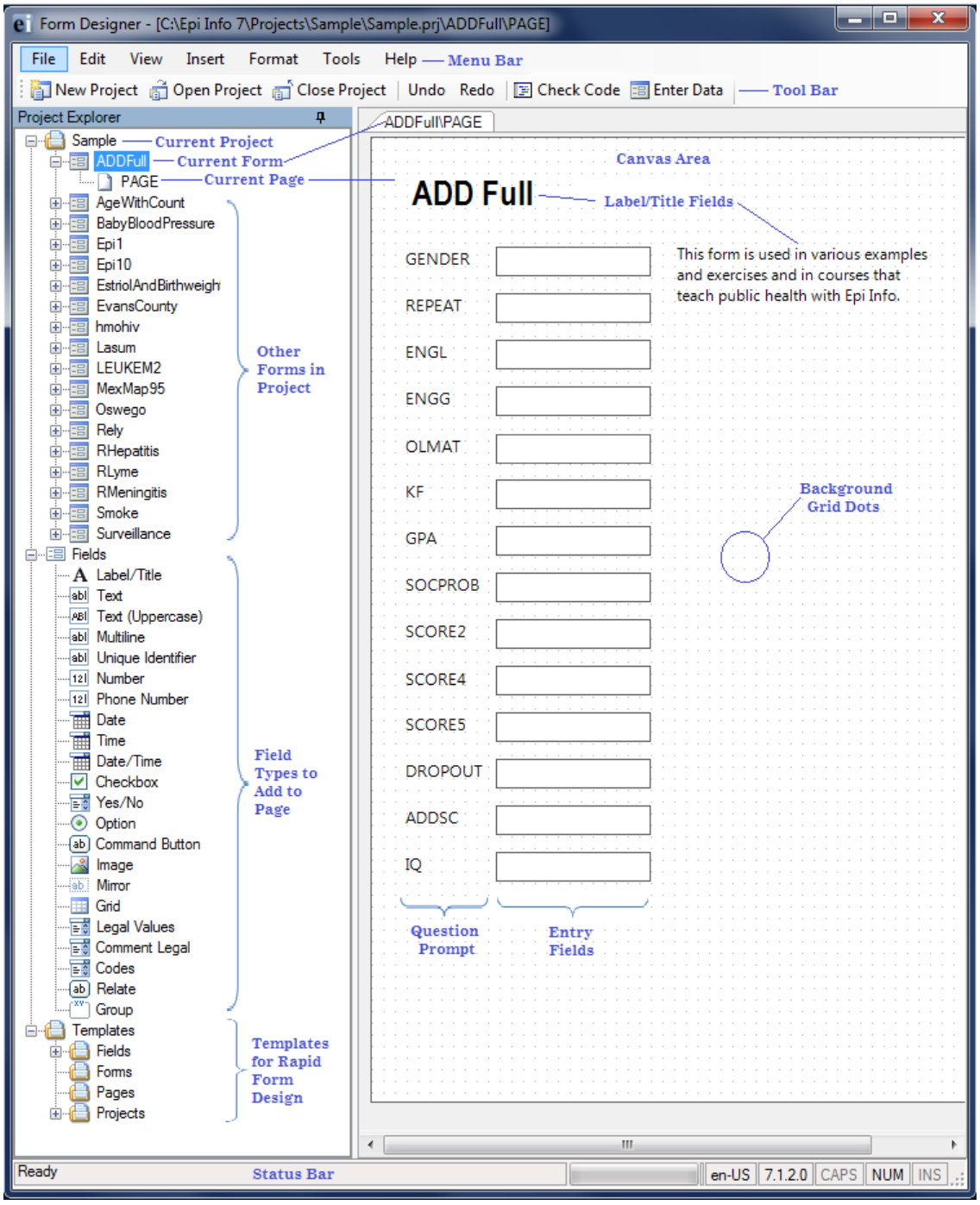
Open a recent project from the Form Designer menu, select **File > Recent Projects**.

You can see a list of recent projects. If you open Form Designer for the first time, the sample project displays in the list. Become familiar with Form Designer by trying the sample project.



Opening a Recent Project

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



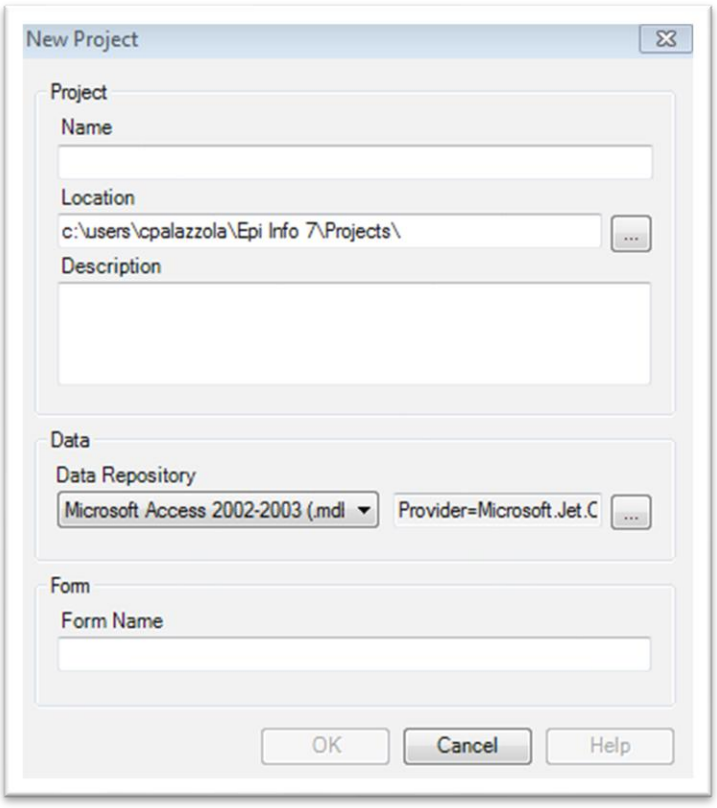
First Page of Project

Create a new blank project and form

Every Epi Info™ 7 project contains two files: the database file and a PRJ file, (project file) located in the project folder. The project file holds information about the database location and format. It also shows connection information, such as usernames and passwords. If you use Microsoft Access for your database, your project has an MDB file (Access database file) inside the project form. You can save the Access database file to any location. Projects that use an SQL Server database will only have a PRJ file in the project folder.

To create a new project with forms, follow these steps:

1. From the Epi Info™ main menu, select **Create Forms**. The Form Designer window opens.
2. Click the **New Project** button on the toolbar or select **File > New Project**. The **New Project** window opens.



New Project dialog box

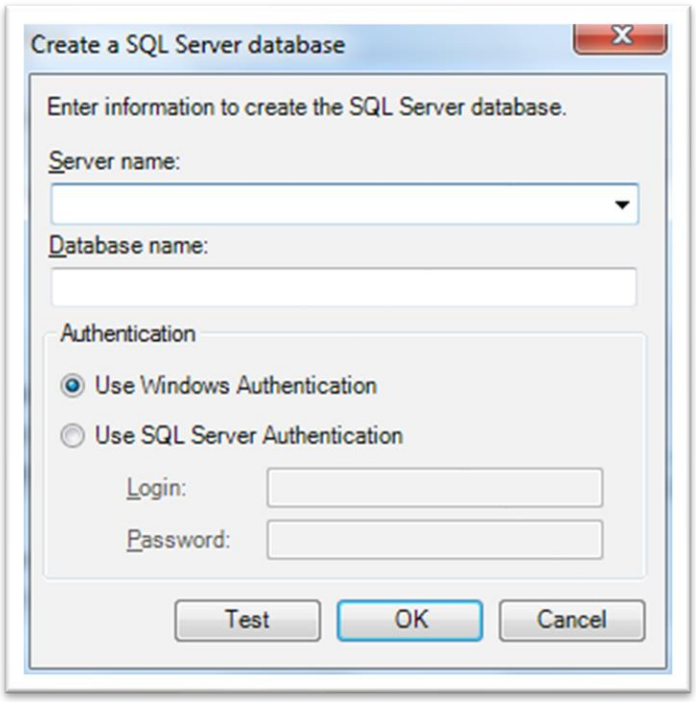
3. Enter a **Project Name**. Project names cannot contain spaces or non-alphanumeric characters. Underscores are permitted.

4. Set the 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. Name your folder. Try something like the project name.

6. Select the database format from the **Data Repository** drop-down list. The default option is Microsoft Access 2000-2003. You can use MS SQL Server if available.

7. If you selected Microsoft SQL Server for the **Data Repository**, then click the browse button. Enter the connection information for your SQL Server database. Contact your SQL Server administrator for help filling out the required fields in the dialog box below. Click **OK**.



SQL Server Database dialog box

- To set a new form name, tab to or click **inside** the **Form Name** field.
- Enter a **Form Name** and click **OK**. A new blank canvas displays with the new form name and page on the tab at the top left of the canvas. Follow these rules for selecting a name for your form:

Use only letters, numbers, and underscores.

- Do not start a form name with a number.
- Do not use any spaces. Use underscores like this: **Form_1**.

Before You Begin

Decide on a Naming Convention for Field Names

Before designing your form, it is helpful to have a standard way to name the data fields (a naming convention). While Epi Info™ auto-suggests a name based on thethe question or prompt, in many cases, these suggestions are too lengthy or cumbersome. Creating your own standard naming convention while you assign fields for your forms will simplify your analyses. The following suggestions may help:

- Keep field names short.
- Capitalize words within field names to help improve readability.
  For example, **PatientLastName** is easier to read than **patientlastname**.
- Use a prefix to keep related fields together in alphabetized lists.

Customize the Form Designer

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

Consider these aspects while thinking about your design.

- What font do you want the questions and entry fields to have? Set the **Default Prompt and Default Input Fonts**. You can specify the fonts. Go to **Format > Set Default Prompt Font** and **Set Default Input Font.**
- How much space between fields? Adjust the settings for the grid. The grid square size and other grid settings are in **Format > Grid Settings.**

- Do you need a printed copy? If so, what paper size? Try using a corresponding page size when designing the form. You specify the page size in **Format > Page Setup.**
- Decide on a portrait or landscape page orientation. Determine this by the data entry device or platform. Designing forms for websites or mobile devices, use a smaller page size and proper page orientation. You can set the page orientation 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 can set the question and prompt positioning in **Format > Page Setup.** Select **Vertical** or **Horizontal**.
- What screen resolution will probably be used for data entry? If the screen resolution is less than your defaults, reduce your resolution while designing the form. This maintains consistency of your field layout as you see it in the Enter Data tool.

You can change these format settings while designing your form, but considering these questions first will save you time and rework.

Note: Set the character font to **on** while adding fields to your form using the **Format menu**.

Set a Default Prompt or Input Field Font

Default Prompt Font

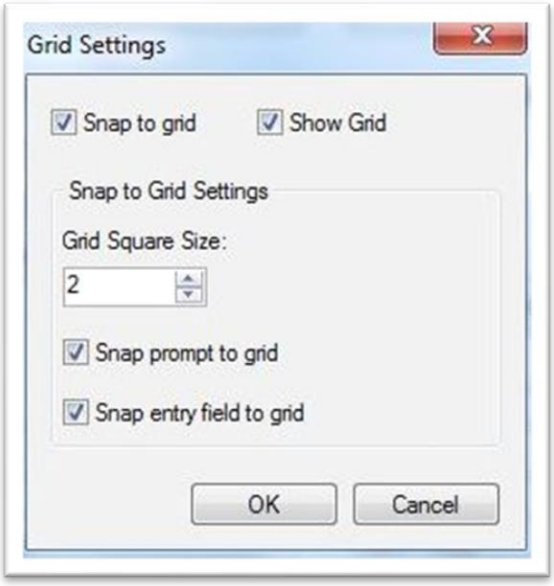
1. **Format > Set Default Prompt Font**. Shows the font dialog box.
2. Select a font, font style, and size.
3. Click **OK**.

Default Input Font

1. **Format > Set Default Input Font.**
2. Select a font, font style, and size.
3. Click **OK**.

Change Grid Settings

Use the **Format** settings to customize the Form Designer canvas. From the Form Designer toolbar, select **Format**. The drop-down menu opens, allowing you to customize your canvas. Select **Format > Grid Settings** to open the grid settings dialog box.

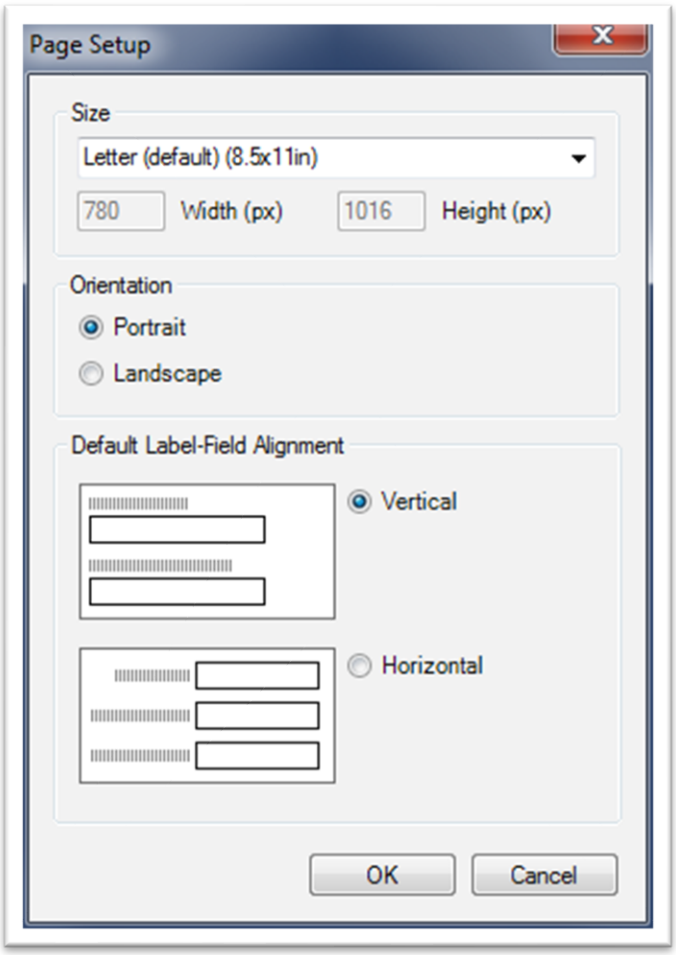


Grid Settings

- Check the **Snap to grid** box to force the form fields 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 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.
- Click **OK**. The Form Designer page displays with new settings.

Set the Page Size, Orientation, and Default Prompt Alignment

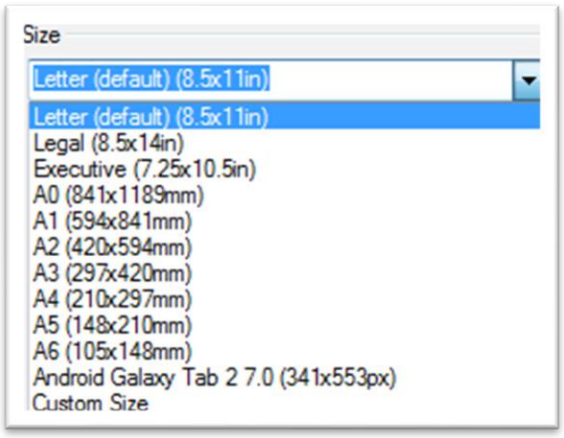
You can set the Page Size, Orientation, and Default Prompt Alignment using the Page Setup dialog.



Page Setup

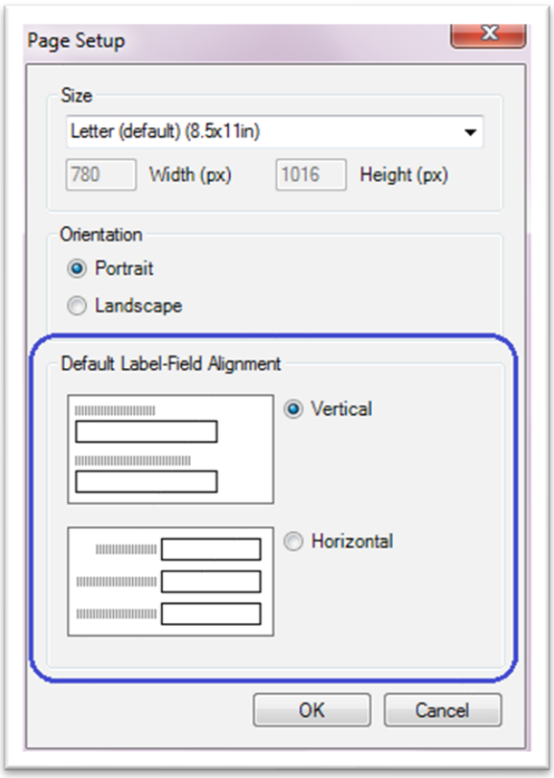
1. On the Form Designer menu, select **Format > Page Setup**.

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 pixel width and height.



Page Size Setup

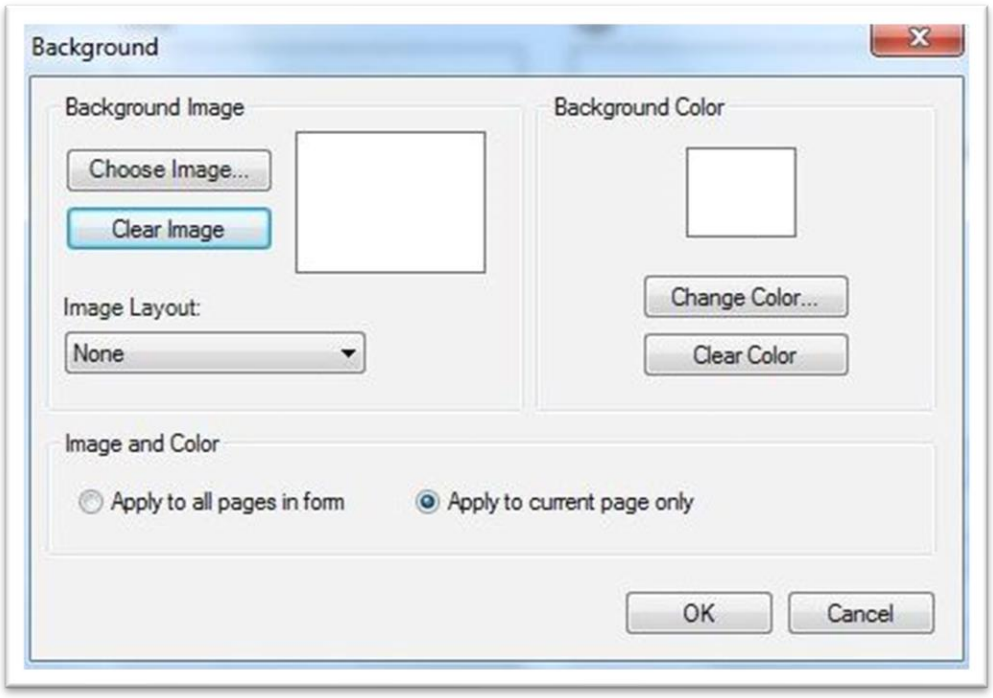
1. Set the preferred page orientation – **Portrait** or **Landscape**.
   - Portrait orientation is good when printing data entry forms and when data entry is done from printed forms that have a portrait orientation. Portrait orientation may also be preferred for form uploads to small mobile devices, such as smart phones or tablets.
   - Landscape orientation is better for publishing forms to a website, using an Internet browser on a laptop or desktop.
2. Set the default alignment to be vertical so the field is below the prompt and left aligned. Use horizontal alignment when the field is to the right of the prompt on the same row.



Default Label-Field Alignment

Insert a Background Image or Color

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



Background Format

1. Set a background image under the **Background Image** section of the dialog box, Click **Choose Image**. The **Background Image** box opens.

2. Locate the image file. Click **Open**. The image you select displays in the **Background Image** dialog box. Image formats include bitmap (bmp), picture (ico), and JPEG (jpg).

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

4. From the image and color section, use the option buttons to **Apply to all pages** or **Apply to the current page only**.

5. Click **OK**. The image displays in the form.

You can remove an image by following the steps below.

1. Select **Clear Image** from the **Background Image** box.
2. To set a background color, click **Change Color**. The color dialog box opens.
3. Select a **Background Color** from the palette or select **Define Custom Colors** to enter a more specific color request.
4. Click **OK**. Your color previews in the background box.
5. Choose either **Apply to all pages** or **apply to current page** from the image and color section,
6. Click **OK**. The color displays in the form of a background. 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 the forms, pages, fields, and Check Code that are specified in the project template. Try out the collection of Epi Info™ sample templates. Locate the templates in 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. Chose an available project template.
2. Select the project template.
3. Confirm the name and location of the new project, and the data format as shown in the window and make required changes.

4. Click **OK.** Form Designer begins constructing forms and fields. 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**. Your new form displays in the Project Explorer, and the first page is visible 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 you've opened, select **File > Recent Projects** and select the project from the list. Otherwise, click the **Open Project** button from the toolbar or select **File > Open Project**. This shows the **Open dialog box**. Follow these steps:

1. Navigate to the location of your project file and select a **PRI file (project file). If you do not have a project file already, you can navigate to the** Epi Info™ projects folder and select one of the sample projects.
2. Click **Open**. The project displays on the canvas.

Note: Epi Info™ will only display files in the Epi Info™ project file format (PRJ).

Close Project

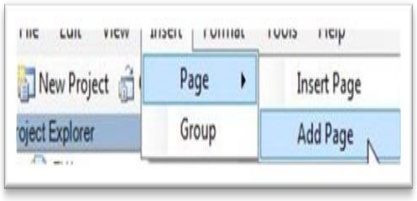
1. Click the **Close Project** button from the toolbar or select **File > Close Project**.

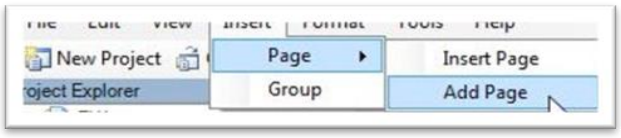
2. The project closes.

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

Add a Page

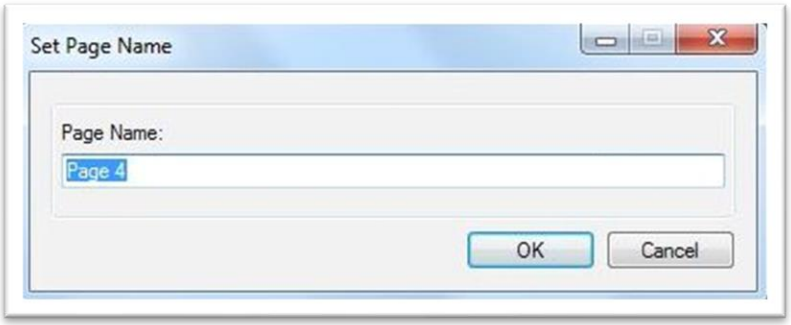
The Add Page function will add a blank page at the end of the form. To add a page, right click on the form in the Project Explorer and select **Add Page** from the context menu or select **Insert > Page > Add Page** from the toolbar.





Add a Page

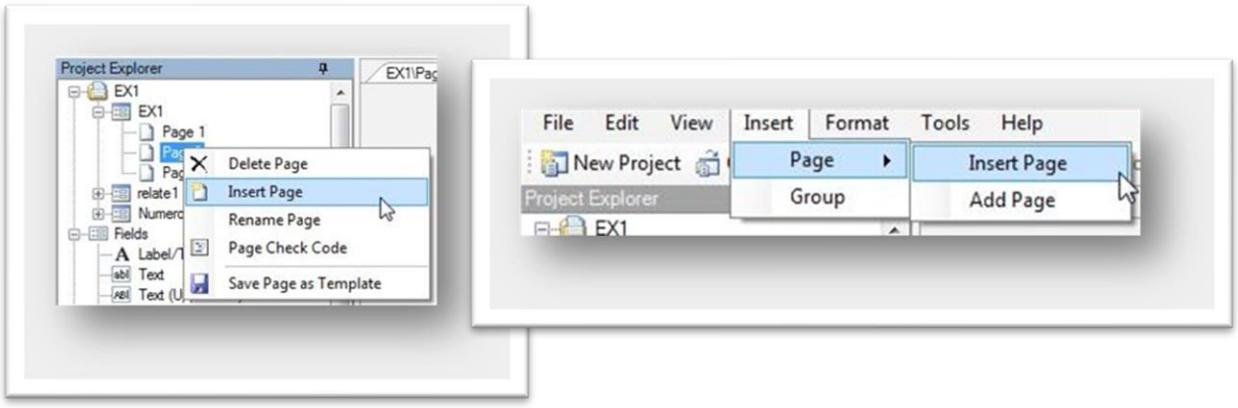
Enter a page name in the **Set Page Name** dialog box and click **OK**. The blank page displays on the canvas and in the Project Explorer at the end of the form.



Set Page Name

Insert Page

The Insert Page function adds a blank page immediately before the current page showing on the canvas. To insert a page, right click on the page in the **Project Explorer** and select **Insert Page** from the context menu or select **Page > Insert Page** from the toolbar.

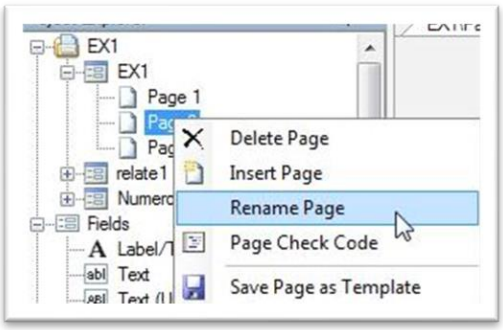


Insert Page

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

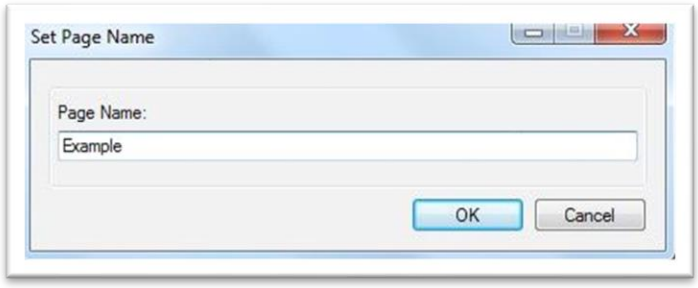
Name a Page

1. Right click on a page in the **Project Explorer**. Select **Rename Page** from the context menu.



Rename Page

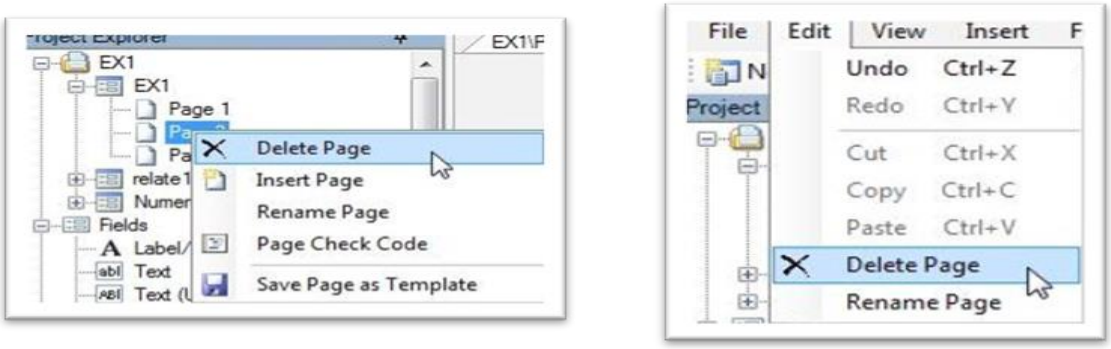
2. The **Page Name** dialog box opens. Enter a name in the **Page Name** field.



Set Page Name

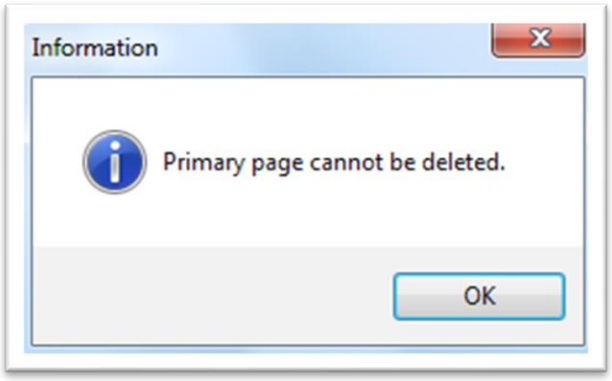
3. Click **OK**. The page name displays on the list of pages.

4. Right click on the page you want to delete and select Delete Page or select **Edit > Delete** Page from the toolbar.



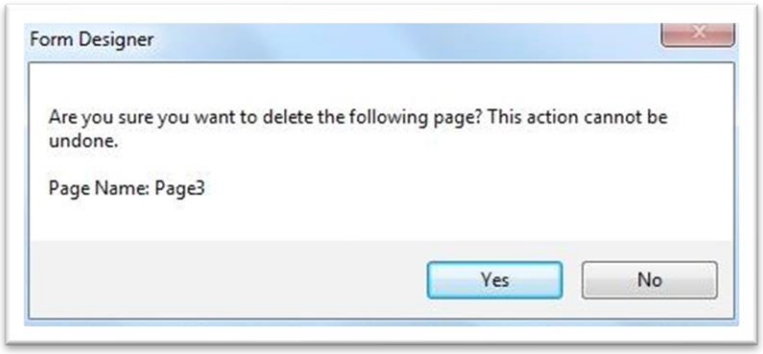
Delete a Page

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



Primary page no delete dialog box

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



Delete confirmation box

Undo / Redo

Most actions performed on the canvas are recorded including moving fields, copying and pasting fields, and changing field alignment. You can undo all recorded actions.

Click **Undo** from the toolbar or **Ctrl + Z** to undo the most recent action on the list. Form Designer begins recording actions when it starts. Therefore, you can undo all actions up to your first action after opening Form Designer.

Click **Redo** from the toolbar or **Ctrl + Y** to redo the most recent action. Therefore, you can click **Redo** repeatedly and reinstate actions retracted by **Undo.** You can keep clicking and retracting actions up to the first time **Undo** was clicked.

Form Designer remembers actions it can **Redo** but only for actions you changed by clicking **Undo**. As soon as you make new changes to the canvas, **Redo** actions are lost.

Check Code

Epi Info™ allows survey creators to guide the data entry process, adding data validation, automatic skip patterns, and automatic calculations. Check Code allows greater control and enhancements. Try out more complex functions such as mathematical or logical operations, comparing field values with each other, displaying helpful dialogs or creating custom error messages. Click the **Check Code** button to open the **Check Code Editor**. For more information about the Check Code Editor, refer to the Check Code section of the user guide.

Enter Data

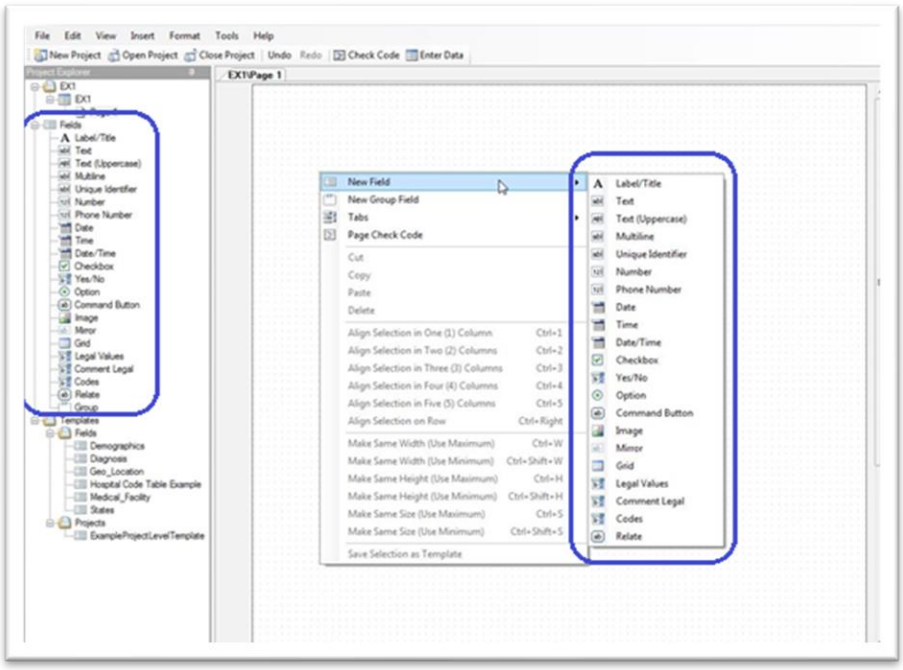
Use Enter Data tool to record data into the data entry forms in Epi Info™ 7. Click the **Enter Data** button to open the current form in **Enter Data**. Enter Data can open independent, stand-alone, or parent level forms. If the form is a child form related to another parent form, then you cannot open it by clicking the **Enter Data** button. You must open the top parent form first, and then use the **Relate** button for the parent form to access the child form. This matches the record hierarchy in **related table relationships**.

If a form does not yet contain a data table, Epi Info™ will ask you to create a data table. For information regarding the **Enter Data**, refer to the **Enter Data** section of the User Guide.

Fields

A **Field**, also known as a data entry field or input field, is where answers to questions are entered. Not all Epi Info™ 7 field types receive data though, such as **Label Fields** and **Command Buttons**.

Fields usually contain a question or prompt or some text describing collection data. In Epi Info™ 7, different fields collect data. View a list of fields in the Project Explorer under the **Fields** category. Also, you can view fields when you **right click** on the **Canvas** and select **New Field**.



New Field context menu

Field Attributes

Fields have properties or attributes that help control how they receive data. Each field type has a set of field attributes. Some options are not shown or disabled (grayed out) depending on the selected field type.

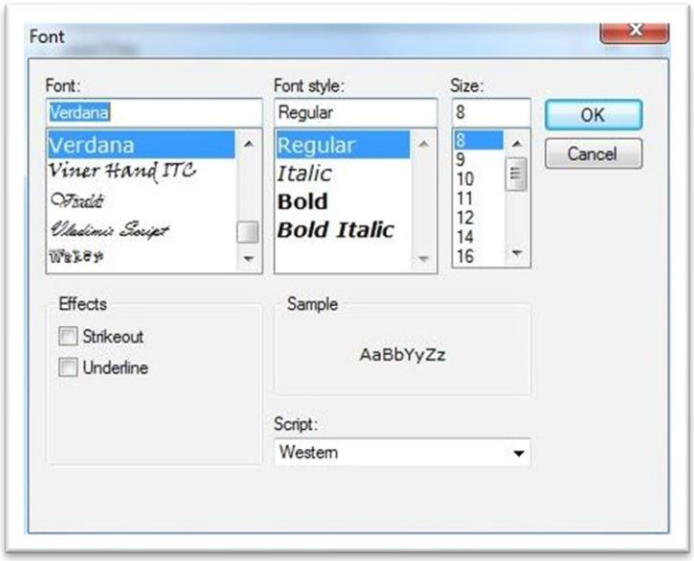
A required field attribute makes a field mandatory during data entry. If a page contains fields marked with the **Required** attribute, **Enter Data** will not allow navigation or saves for partially completed records. A value must be supplied in all required fields.

Caution! The **Required attribute** can cause a pause if the required information is not available at the time of data entry. It is best to use this attribute sparingly to avoid this situation.

Check Code can set or unset therequired status for fields. 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. Form Designer uses this to hold calculated or pre-populated values. You cannot place the cursor in the field. Also, since the cursor cannot enter a field with this attribute, Check Code written for this field won't run. The Read Only attribute is useful for calculated fields that will not be directly changed (i.e., age, epidemiological week). Read Only and the Required attributes are mutually exclusive and cannot be used in combination.
- **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 form image box.

- **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 for fields unless you check **Required Attribute**.
- **Repeat Last** – causes the field to populate with the last value shown in the field. This may speed up data entry for fields that have the same value as the last entered record. For example, if you enter many records from a clinic, set the **Clinic Name field** with **Repeat Last attribute** so it will add the clinic name from the last record.
- **Pattern** – the required format for a field response.



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

Field Type	Required	Read Only	Retain Image Size	Range	Repeat Last	Pattern	Web Survey Compatible	Companion for Mobile Compatible
Mirror								
Grids								
Legal Values	X	X			X		X	X
Comment Legal	X	X			X		X	X
Codes	X	X			X			
Relate								
Group							X	X

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.

You can also **right click** on the canvas in the location you want to add a field and select the field type from the **New Field** context menu.

A **Field Definition** dialog box displays. The contents of the Field Definition dialog depend on the type of field you want to add.

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 Data (circled in blue) based on the **FoodHistory** form of the sample **E.coli project**.

Label/Title Field

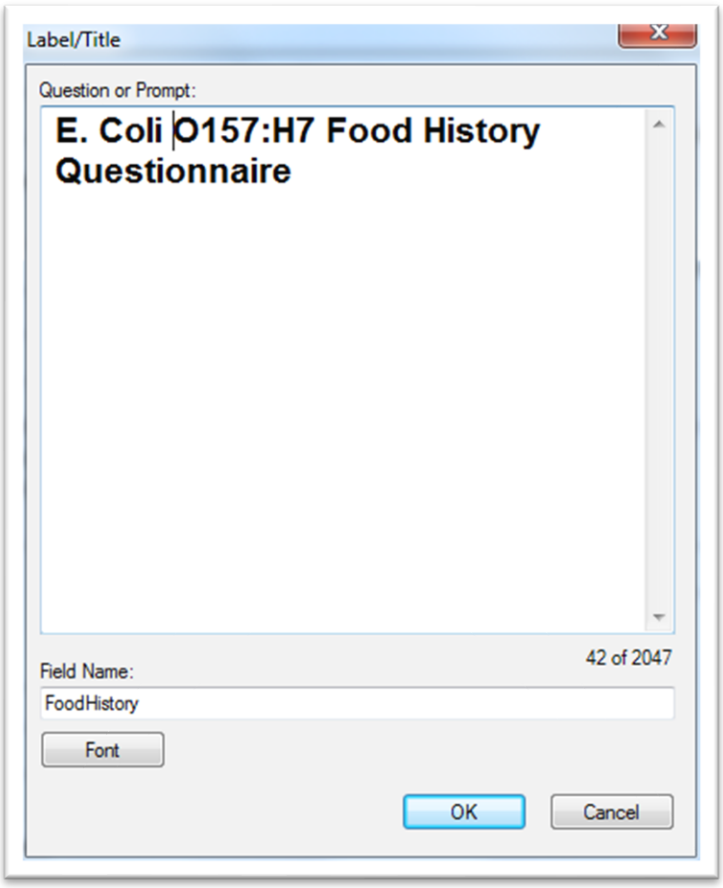
To complete the Label/Title Field Definition dialog:

1. Enter some text for the **Question** or **Prompt**. The text you enter in this field displays 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, and intuitive. Use the field name for data validation in Check Code and while performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

   Note: It is best to simplify the field name currently. You cannot change field names after data collection starts.

3. Click the **Font** button to adjust the Question or Prompt font settings. Configure Titles with larger font or bolder text.

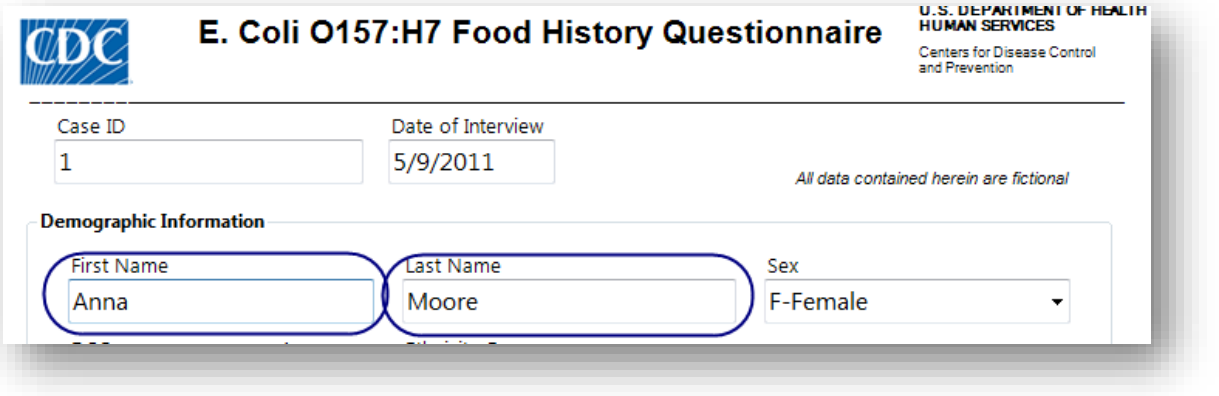


Label/Title Field Definition dialog box

4. Click **OK**. The **Label/Title** displays 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. Use Text fields for short questions such as name, address, occupation. The following figure shows how Text fields appear in Enter Data (circled in blue) based on the FoodHistory form of the EColi project.



Text field

To complete the Text Field Definition dialog box:

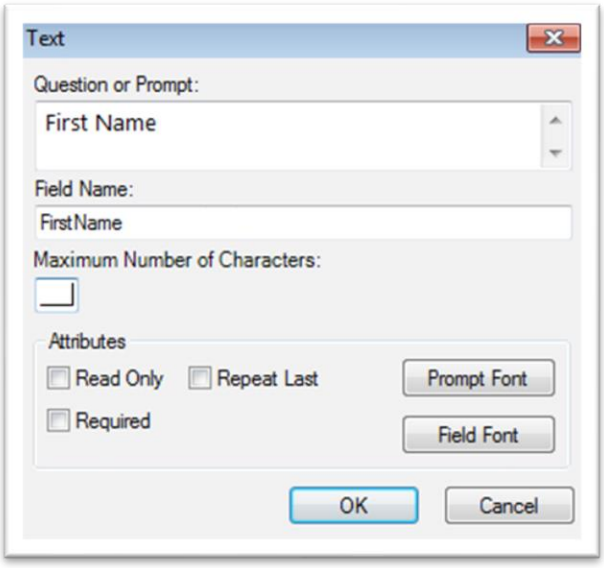
1. Enter the **Question**. The text you enter in this field will display on the canvas and prompt users to enter a response.

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

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

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

Note: Entering a maximum number of characters is optional.



Text Field Definition dialog box

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

Text Uppercase

The **Text Uppercase** field helps standardize entered data. All letters typed in this field are set to ALL CAPS. This field draws emphasis to the collected information. The following figure provides an example of how a **Text Uppercase** field displays in Enter Data (circled in blue) based on the Surveillance form of the Sample project.

Text (Uppercase) field

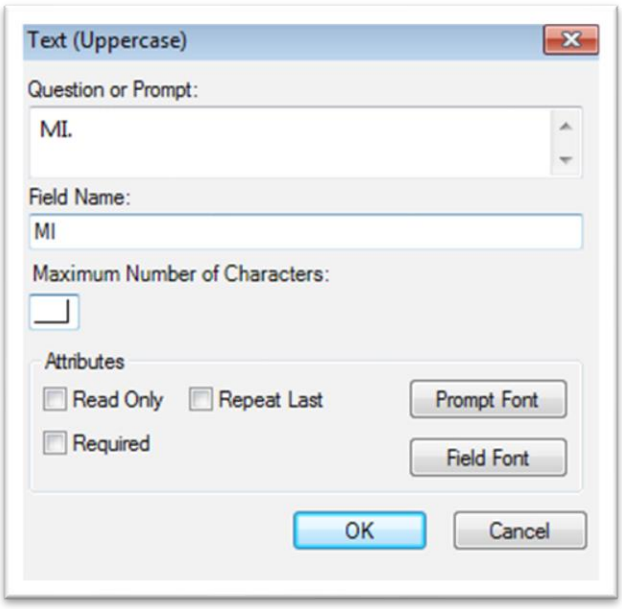
To complete the Text Uppercase Field Definition dialog box:

1. Enter the **Question** or **Prompt**. Added text in this field shows on the canvas and prompts users to enter a response.

2. Click in the **Field Name** text box or press the tab key. Epi Info™ suggests a field name based on the Question or Prompt. It's important that field names be short, and intuitive. Check Code uses the field name for data validation when performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

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

3. You can add typing limitations for the field value by specifying the maximum number of characters using a number (e.g., 10 for ten characters). If you leave the **Maximum number of characters** box blank, text fields can accept up to 255 characters.

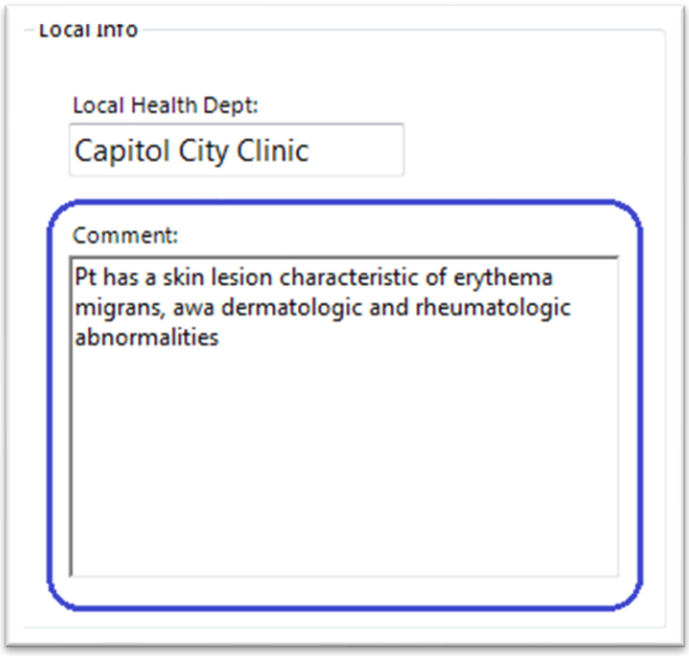


Text (Uppercase) Field Definition dialog box

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

Multiline

The Multiline field is like 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 for 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, it 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 displays in the **Comment** field (circled in blue) based on the Surveillance form of the Sample project.

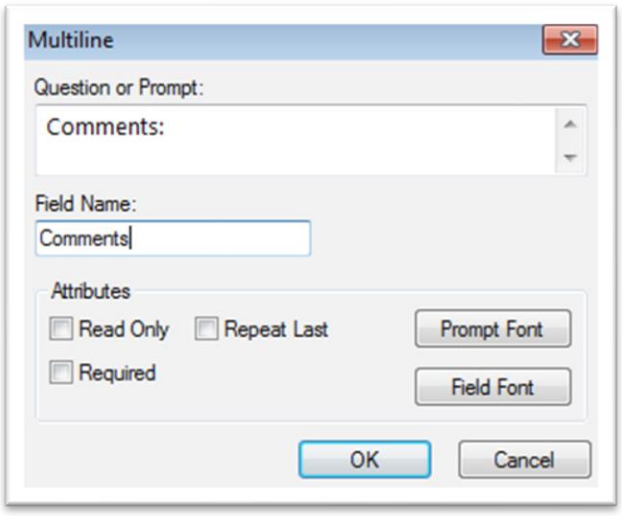


Multiline field

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™ suggests a field name based on the Question or Prompt. It's important that field names be short, and intuitive. Check Code uses the field name for data validation when performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

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



Multiline Field Definition dialog box

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

Number

The **Number** field only accepts numeric values. You cannot enter letters and most symbols into this type of field, apart from the negative sign (-) and the decimal point (.) Number fields can have a valid upper and lower range. You can specify a pattern for numbers that require a specific number of decimals. For example, if your data requires two decimal places, your number field could have a pattern that looks like **##.##** (where # is any decimal), which would allow a number between -9.99 to 99.99.

Note: The negative sign occupies a place in the number field.

Therefore, entering the number -7 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 a highlighted example of how a Number field displays in the CaseID box (Enter Data) based on the FoodHistory form in the EColi project.

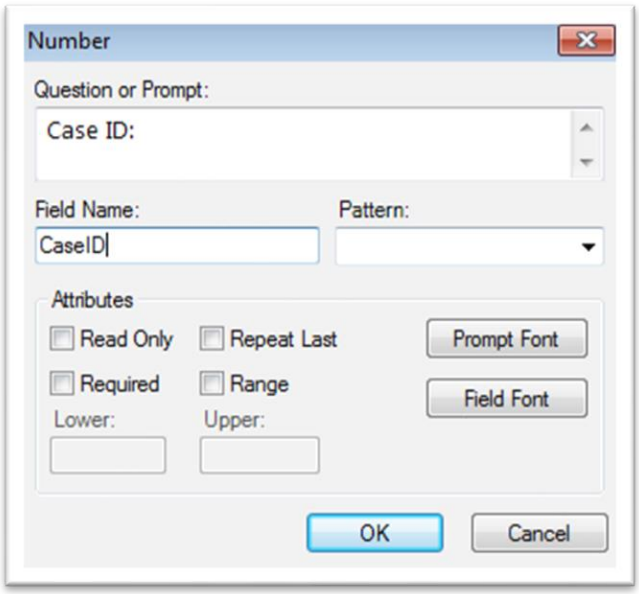
Case ID Enter Data field

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 displays on the canvas and prompts the user for 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. It is important that field names be short, and intuitive. Check Code uses the field name for data validation when performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

   Note: It is best to simplify the field name. Do not change field names after data collection starts.

4. You can choose pattern from the **Pattern** drop-down list (optional). You can also create a new number pattern. Type in your new 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.

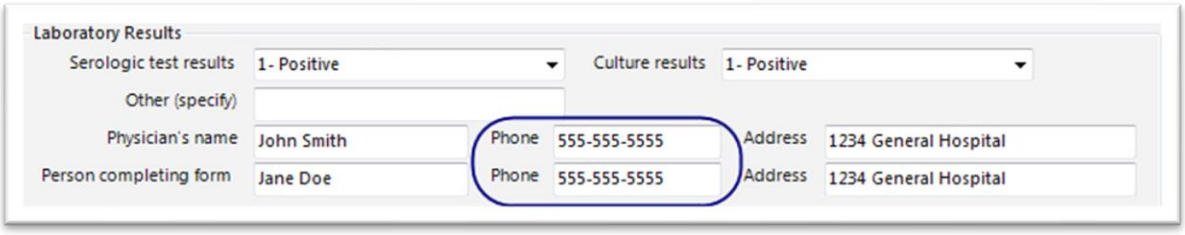


Number Field Definition dialog box

1. Click **OK**. The Number field displays on the canvas.

Phone Number

The **Phone Number** field is like 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 in Web Survey or the mobile application. The following figure provides a highlighted example of how a Phone Number field displays in the Phone fields (Enter Data) based on the Case Report form of the Lyme project.



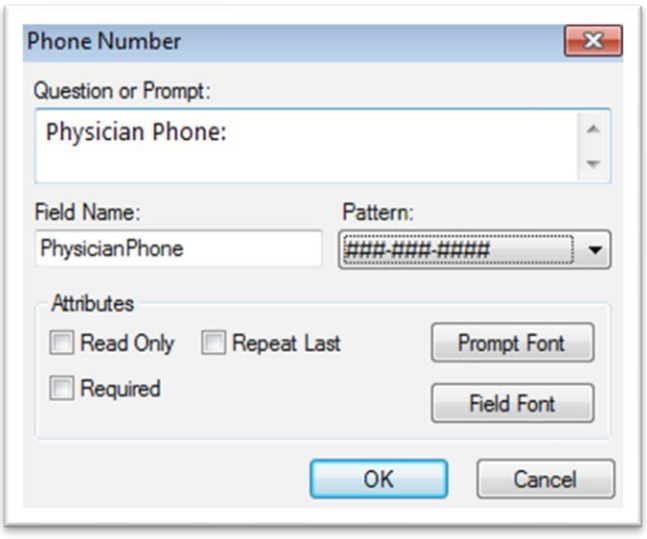
Phone Number field

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 displays on the canvas and prompts 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 and intuitive. Check Code uses the field name for data validation when performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

   Note: It is best to simplify the field name. You cannot change field names after data collection starts.

4. You can choose a pattern from the **Pattern** drop-down list. The default setting is **None**.



Phone Number Field Definition dialog box

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

Date

The **Date** field is used to enter a date. The date format for data entry is determined by the regional settings of your computer. You can change the date format on your compute, but you can't change the date format within Epi Info™ 7. The following figure provides a highlighted example of how date fields appear in Date of Interview field (Enter Data) based on the FoodHistory form in the EColi project.

Date of Interview field

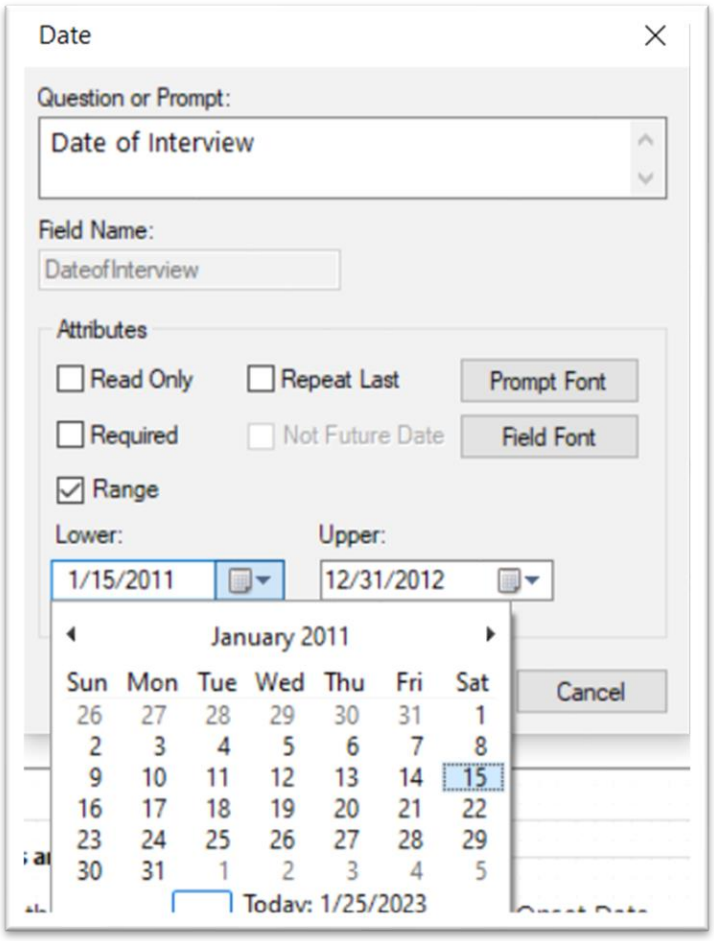
To add a Date field:

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™ suggests a field name based on the Question or Prompt. It's important that field names be short, and intuitive. Check Code uses the field name for data validation when performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore).

   Note: You can simplify the field name. You can't change field names after data collection starts.

4. You can limit the range of responses by checking 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.



Date Field dialog box

1. Click **OK**. The Date field displays on the canvas.

Time

The **Time** field is used to collect time data in 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 changed. You cannot change the time pattern within Epi Info™ 7.

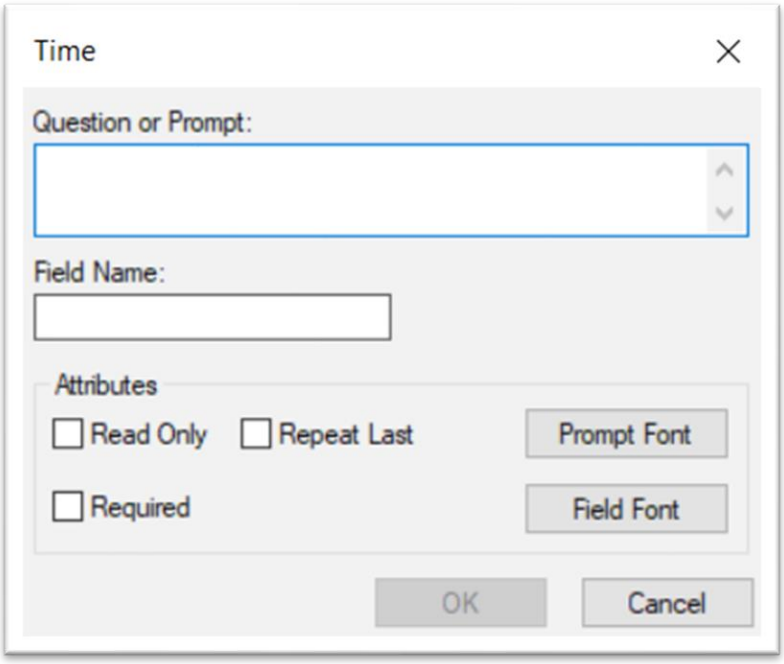
To add a Time field:

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, and intuitive. Epi Info™ uses the field name 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).

Note: Simplify the field name currently. You can't change the Field names after data collection starts.

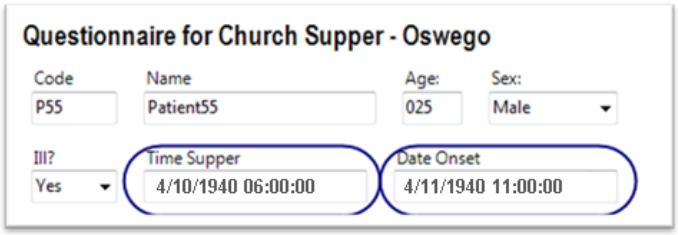


Time Field Definition dialog box

4. Click **OK**. The Time field displays 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. You can change the format using your computer's settings, but you can't change the date-time format in Epi Info™ 7. This field type is not supported with forms published to Web Survey or the mobile application. The following figure shows a highlighted example of how a Date-Time field displays in Time Supper and Date Onset fields (Enter Data) based on the Oswego form of the sample project.



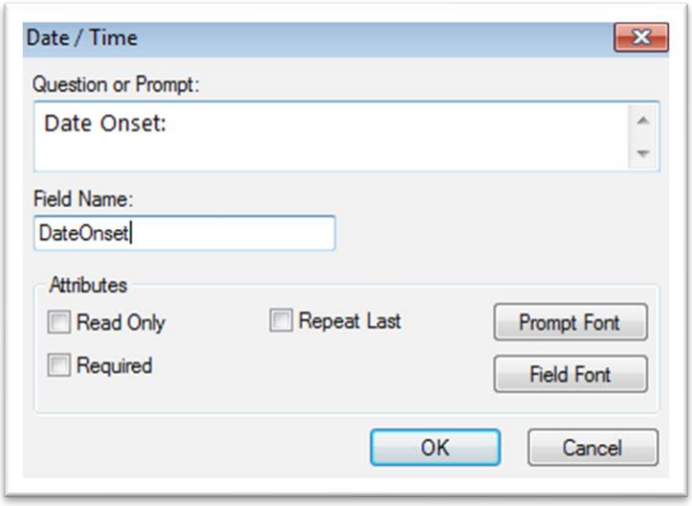
Date-Time field

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 displays on the canvas and prompts the user to enter a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info™ suggests a field name based on the Question or Prompt. It's important that field names be short, and intuitive. Check Code uses the field name for data validation when performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore).

Note: You should simplify the field name. You can't change Field names after data collection starts.

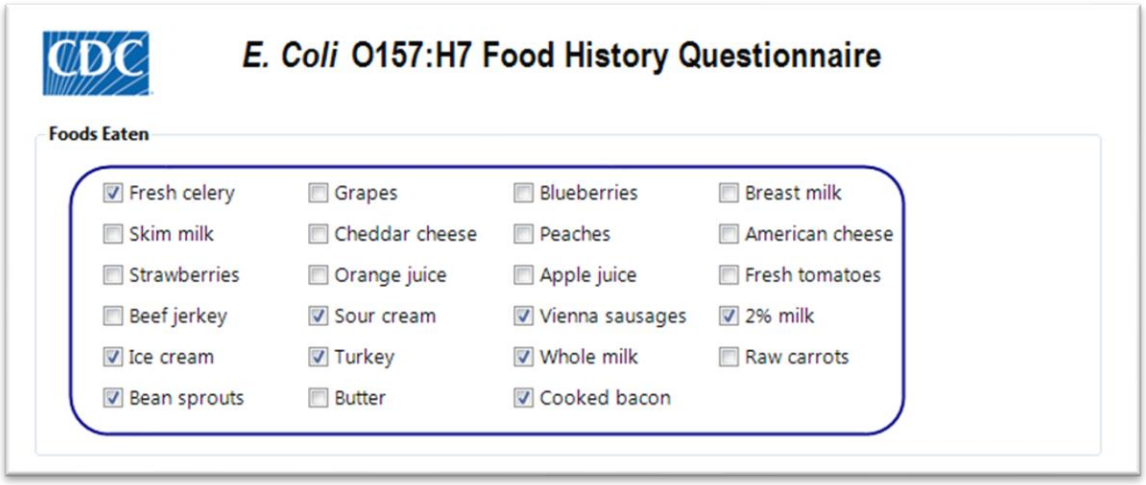


Date-Time Field Definition dialog box

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

Checkbox

The **Checkbox** field allows you to collect data by checking or unchecking a box. You can use multiple checkboxes to enter multiple responses in a study (e.g., symptoms or foods eaten). Checkbox fields collect binary data such as 0 or 1, true or false, yes or no. Responses are stored in the database as a 1 or 0 where 1 equates to yes and 0 equates to no. When writing Check Code, (+) and (–) point to yes and no, respectively. Unlike the **Yes-No** field type, **Checkbox fields** do not contain missing values, so by default, regard checkbox fields as **No.** This changes when the box is checked during data entry or when Check Code assigns them a **Yes** value. Checkbox fields can be assigned a yes or no value and can never be set as required fields. The following figure provides a highlighted example of how Checkbox fields appear in the Foods Eaten field (Enter Data) based on the FoodHistory form of the EColi project.



Checkbox field

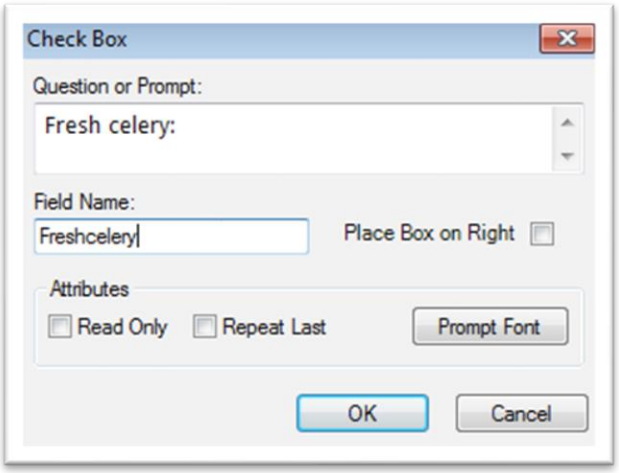
To add a Checkbox field:

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

2. Enter the **Question** or **Prompt**. The text in this field displays on the canvas and prompts the user for a response.

3. Click in the **Field Name** text box or press the tab key. Epi Info™ suggests a field name based on the Question or Prompt. It's important that field names be short, and intuitive. Check Code uses the field name for data validation when performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

   Note: It is best to simplify the field name. You cannot change Field names after data collection starts.

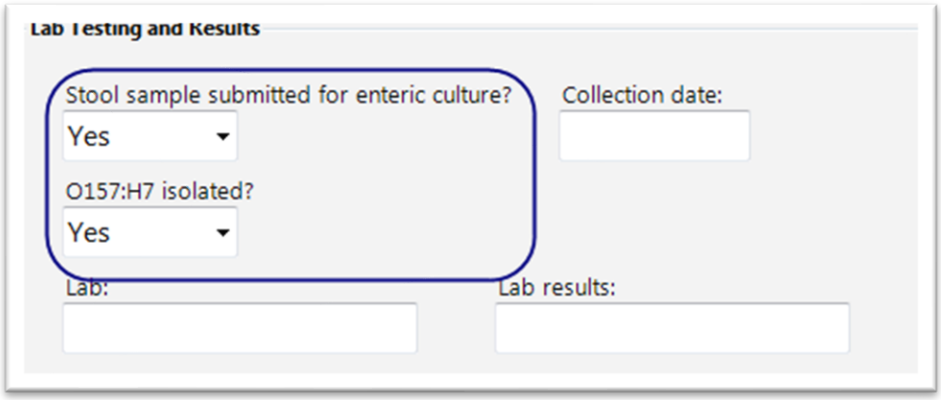


Check Box Field Definition dialog box

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

Yes-No

The **Yes-No** field displays as a drop-down list on the canvas. Collected field data is a 1 or 0 where 1 = Yes and 0 = No. When adding Check Code, use **(+)** and **(–)** to identify a response as yes or no. The default value for this field is **blank**. Check Code identifies a missing value as a **(.)**. The figure below provides a highlighted example of how a Yes-No field displays in the stool sample and isolated fields (Enter Data) based on the FoodHistory form of the EColi project.



Yes-No field

In Enter Data the values for fields, **Yes-No** display in a variety of ways. You can customize data for your own analytics, including language translation. Keep in mind that database values are always 1 or 0.

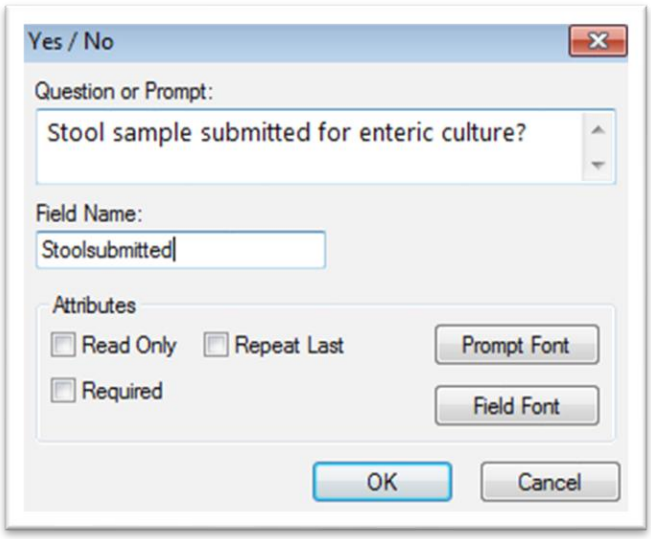
Yes-No Data:		
Yes	No	Missing
True	False	Unknown
(+)	(-)	(.)

Yes-No Data:		
Yes	No	Missing
<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 in this field displays on the canvas and prompts users 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 and intuitive. Check Code uses the field name for data validation when performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

   Note: Simplify the field name. You can't change Field names after data collection starts.

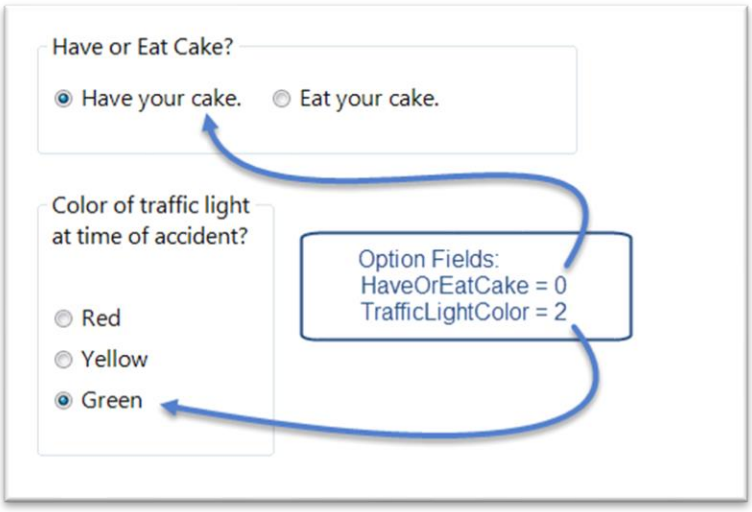


Yes-No Field Definition dialog box

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

Option

The **Option** field creates a group box containing radio buttons. The radio buttons work for one-answer fields. Choosing a radio button influences other available options in the field. Database values are in 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. You may select only one option. The field name 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).



Option Field

To add an **Option** field:

1. Open the Option Field Definition dialog box and enter the **Question** or **Prompt**. The text you enter in this field displays on the canvas and prompts the user for a response.

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

Note: It's best to simplify the field name. You cannot change field names after data collection starts.

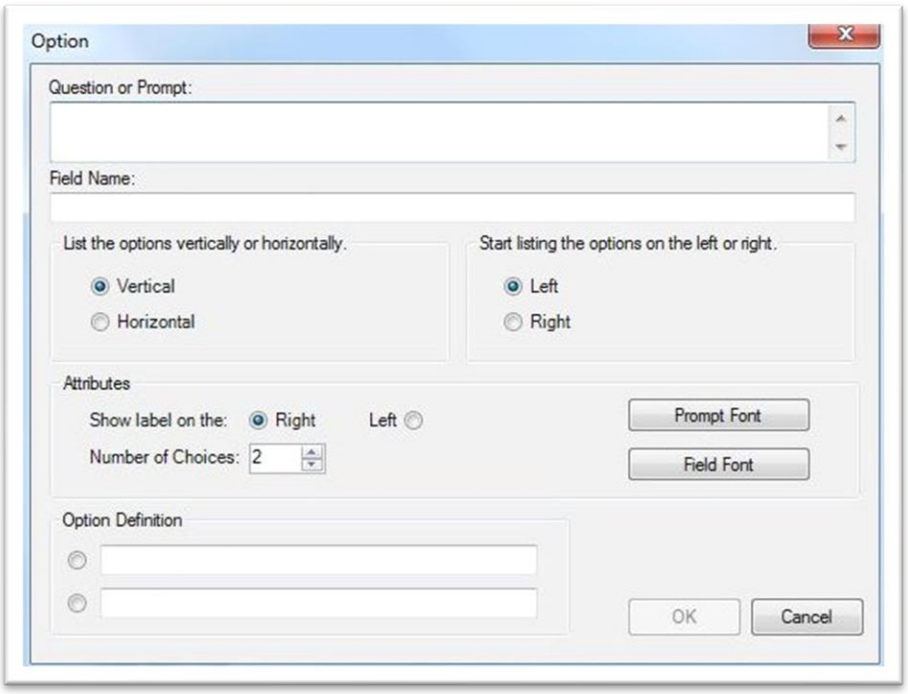
3. Choose how the options display in the **Option field** by selecting **Vertical** or **Horizontal** from **List options.**

4. Choose the **Options** location by selecting **Left** or **Right** in the **Start listing options on the left or right** field.

5. Use the **Attributes** field by select **Right** or **Left.** You can determine how the radio buttons align with the option text.

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

7. Enter the option name in each row of the **Option Definition** section. Click **OK**. The Option field displays on the canvas.



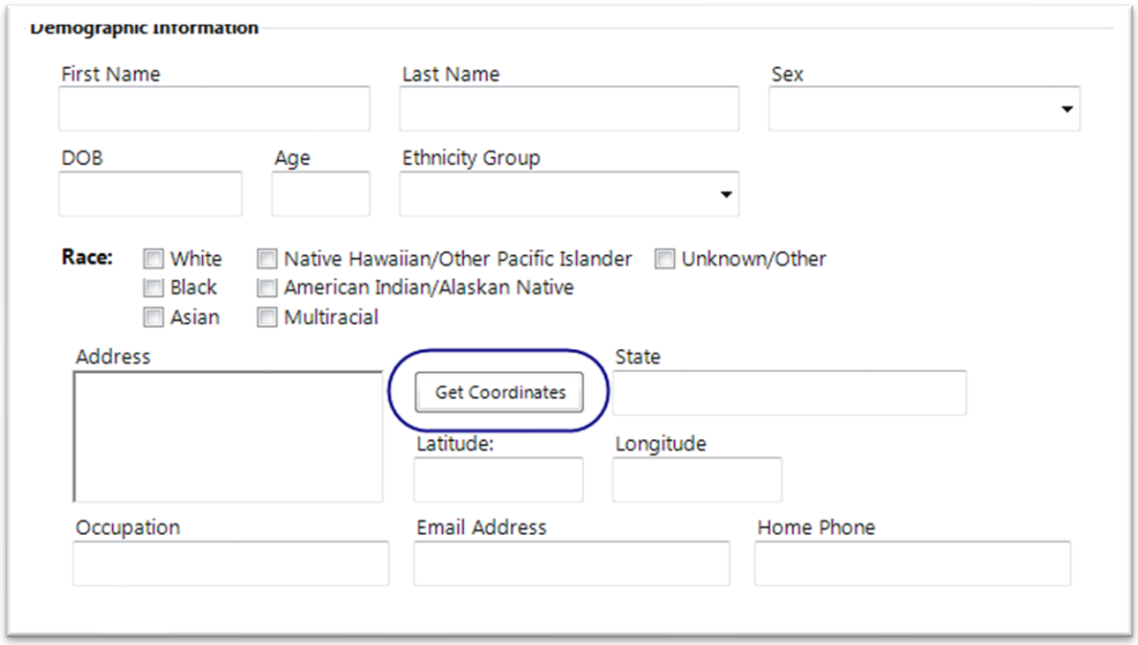
Option Field Definition dialog box

Command Button

The **Command Button** creates a clickable button on your form. You can use the button to run a specific block of Check Code. Below are examples of how you can use a Command Button (and its Check Code):

- Compare the field values and perform automatic calculations.
- Navigate through different pages within a form
- Go back to a parent form if using a child form
- Capture longitude and latitude coordinates from an address field.
- Link to a website
- Scan a barcode (when using mobile application)
- Run a pre-written program in Classic Analysis.
- Open a saved canvas in the Visual Dashboard.
- Start other programs outside of Epi Info™ 7, such as Microsoft Excel or Outlook.

Web Survey doesn't support the command button feature. The following image provides an example of how a Command Button displays in Enter Data (circled in blue) based on the FoodHistory form found in the EColi project.

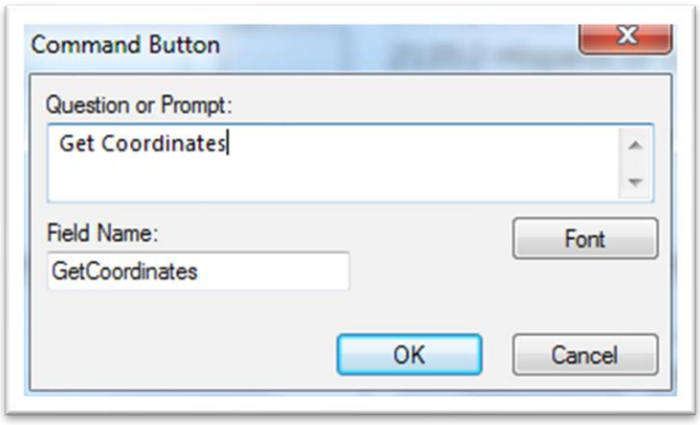


Command Button

Add a Command Button field:

1. Open the **Command Button Field** Definition dialog box.
2. Enter the **Question** or **Prompt**. The text in the field displays on the canvas and prompts 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 and intuitive. Check Code uses field names for data validation while performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

Note: Simplify the field name. You can't change Field names after data collection starts.



Command Button dialog box

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

Image

The **Image** field allows for adding images to records. Examples of stock images: a patient's photo, an image of a wound, rash or insect bite, a bacteria culture dish, or a sample vial barcode. If your data collection device is a smart phone or tablet, you can use your onboard mobile camera to add your own images.

You can browse your device for images by clicking in the image field. Any of these formats will work: Portable Network Graphics (PNG), Graphics Interchange Format (GIF), Joint Photographic Expert Group (JPG or JPEG), and Windows Bitmap Format (BMP).

Caution: Windows Bitmap will not work with Web Survey.

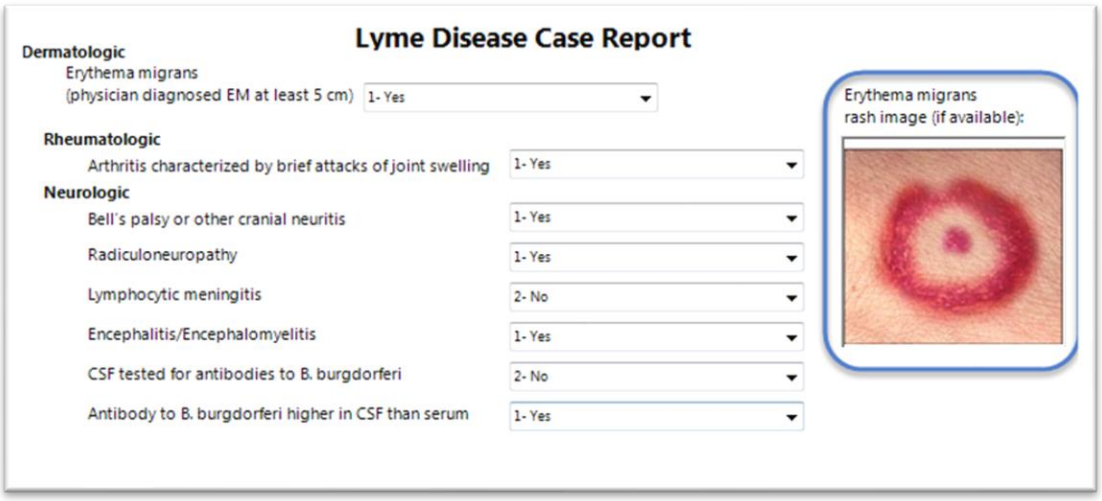


Image field

To add an **Image** field:

1. Open the **Image Field Definition** dialog box.
2. Enter the **Question** or **Prompt**. The Field text displays on the canvas and prompts 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**. It's important that field names be short and intuitive. Check Code uses field names for data validation while performing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

   Note: It's best to simplify the field name. You can't change field names after data collection starts.

1. You can disable the autofit feature by checking the **Retain Image Size** checkbox. By default, Epi Info™ expands/contracts the image to fit in the size of the **Image** field.

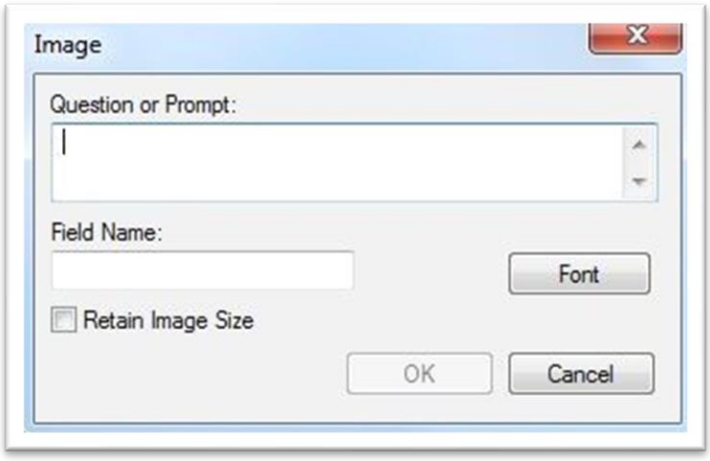


Image Field Definition box

2. Click **OK**. The Image field displays on the canvas.

Mirror

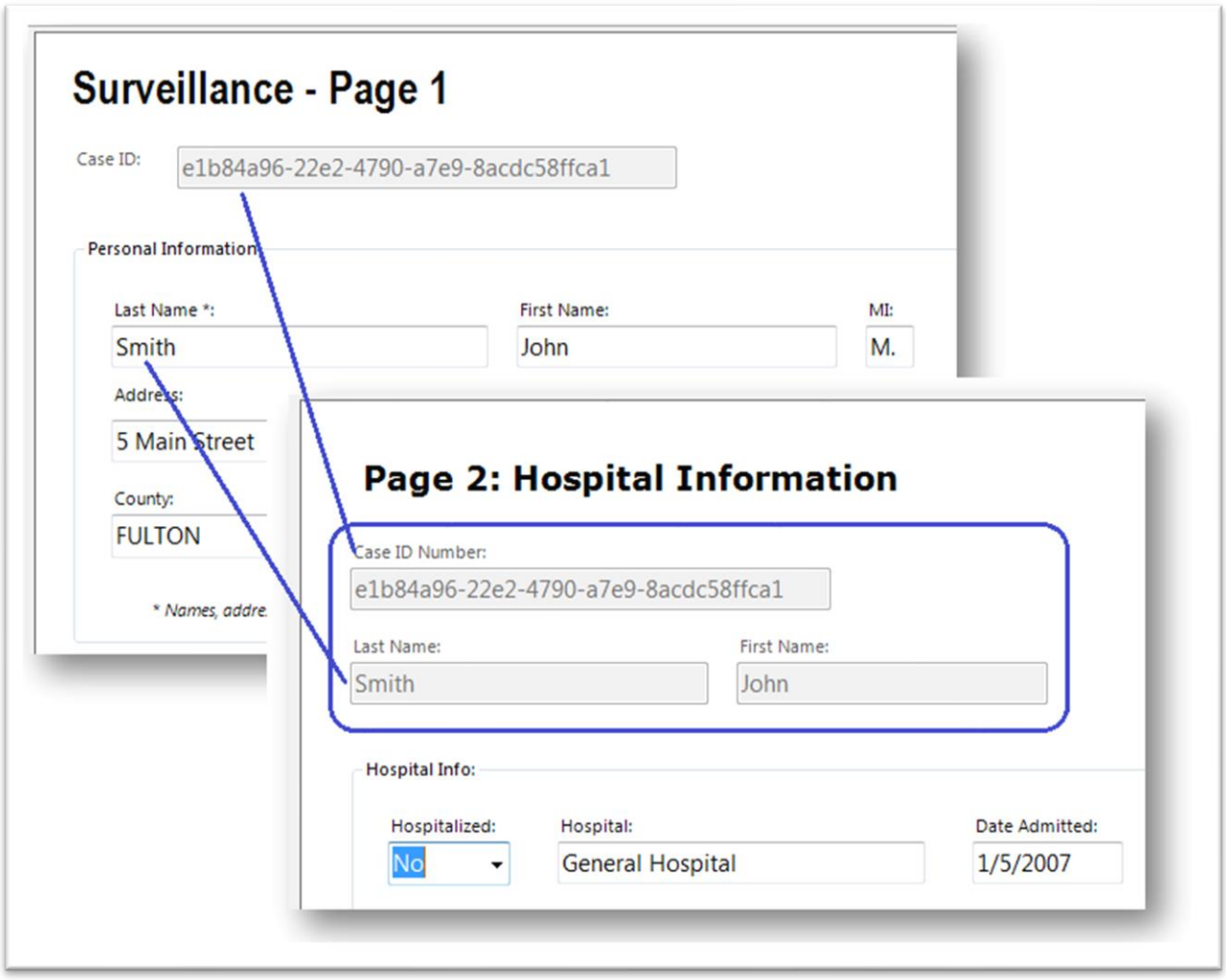
The **Mirror** field displays data captured in one field of the survey and adds it to another field usually located on a different page. It does not store data like the Windows clipboard, it only reflects data captured in other fields. This is useful when the same information wants to be displayed on multiple pages in a form (i.e., Patient Name, CaseID). Check Code cannot run on this field, and Mirror fields are not searchable because it doesn't allow any data entry or have its own column in the database.

Mirror fields also have the following attributes:

- Mirror fields are read only.

- When the source field receives data or when it's assigned a value in Check Code, the value of the field reflects in the Mirror field.
- You can copy and paste Mirror fields to subsequent pages while in Form Designer. Mirror fields are read-only.
- You can't mirror Command buttons.

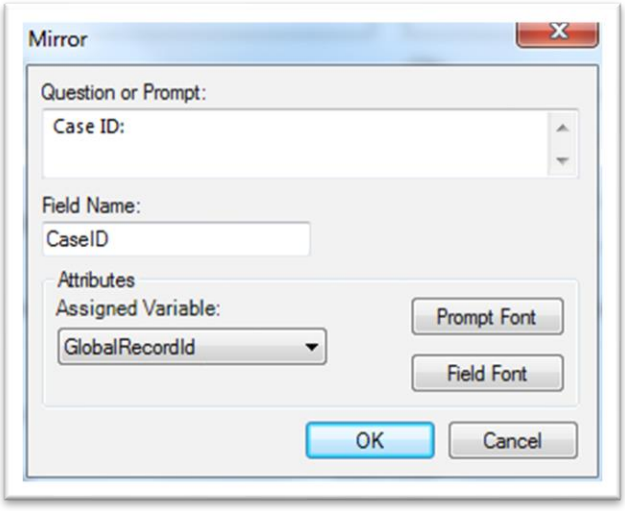
The following figure is an example showing a form with three fields mirrored from Page 1 to Page 2. The Mirror fields on Page 2 are circled in blue.



Mirror fields reflecting data

To add a Mirror field:

1. Open the Mirror Field Definition dialog box.
2. Enter the **Question** or **Prompt**. The displayed text in this field shows on the canvas and prompts you for a response.
3. Click in the **Field Name** text box or press the tab key. Epi Info™ suggests a field name based on the Question or Prompt. It's important that field names be short, and intuitive. Field names are useful for hiding or revealing mirror fields in Check Code. Field names can't start with a number or contain any spaces or non-alphanumeric characters (except the underscore).
   Note: It is best to simplify the field name. You can't change Field names 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.

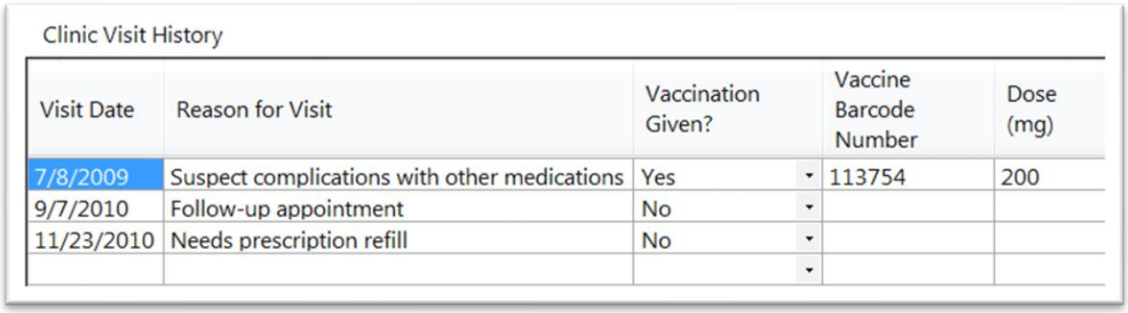


Mirror Field Definition dialog box

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

Grid

The Grid field allows users to enter data in 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, and its size and properties.



Grid Field

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

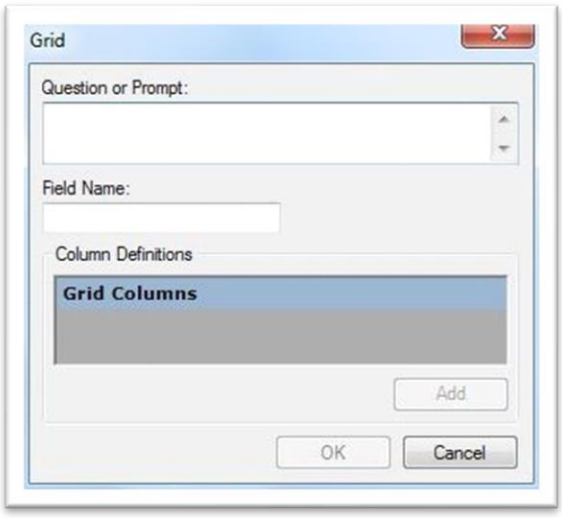
- Some Field types are not supported as grid columns. Supported Field types include Text, Number, Date, Time, Date-Time, Phone Number, Checkbox, Yes-No, Legal Value, and Comment Legal.
- Grid fields do not support Check Code. Check Code features like automatic calculations, skip patterns, enabling/disabling of fields, or other data validations, are not available to Grid fields.
- Within Grid columns you can't change the tab order. 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.

- Grid fields are not supported on Web Survey or mobile application.
- Data on a grid field is stored as a separate table in the database. The table name in the database corresponds to the name of the field on the form.

Steps for adding a grid field:

1. Open the **Grids Field Definition** dialog box.
2. Enter the **Question** or **Prompt**. The text displays on the canvas and prompts you for a response.
3. Click in the **Field Name** text box or press the tab key. Epi Info™ suggests a field name based on the Question or Prompt. However, it is very important that field names be short, and intuitive. When conducting analyses, Check Code uses the field name for data validation. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

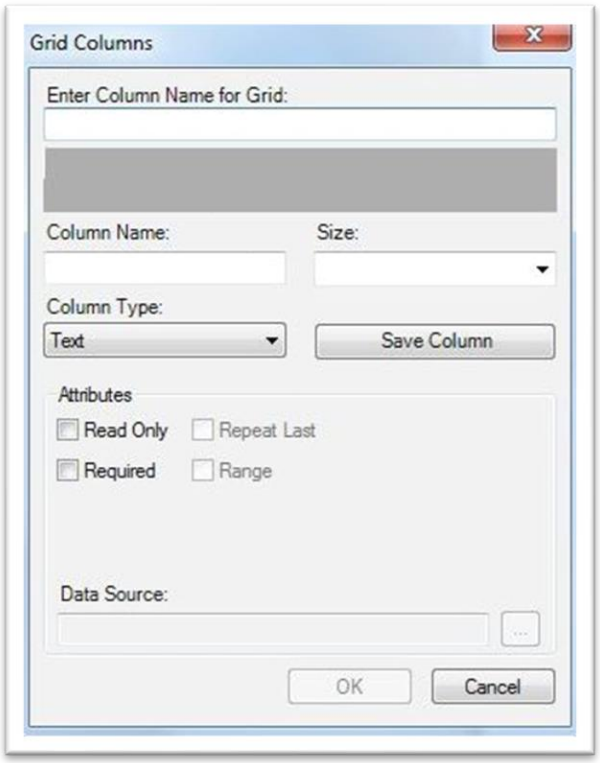
   Note: Simplify the field name. You can't change Field names after data collection starts.



Grids Field Definition dialog box

You can click the **Add** button only after setting the Grid field Question or Prompt and it's Field Name.

4. Click the **Add** button.



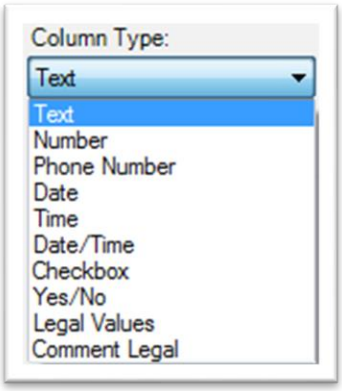
Grid Columns

1. Type the column heading into the **Enter Column Name for Grid** text box. This text displays as a column heading on the form.

2. Press **Tab** or click in the **Column Name** text box. Epi Info™ suggests a column name based on the Enter Column name for Grid field, however, it's important that column names be short, and intuitive. The column name cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

Note: Simplify the column name currently. You can't change column names after data collection starts.

3. Select the **Column size** from the **Size** drop-down list. **Column size** determines the number of characters that can fit in the column. The **Column size** setting works for **Text type** columns. Select the column format from the **Column Type** drop-down list.



Grid Column Types

4. After selecting **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.

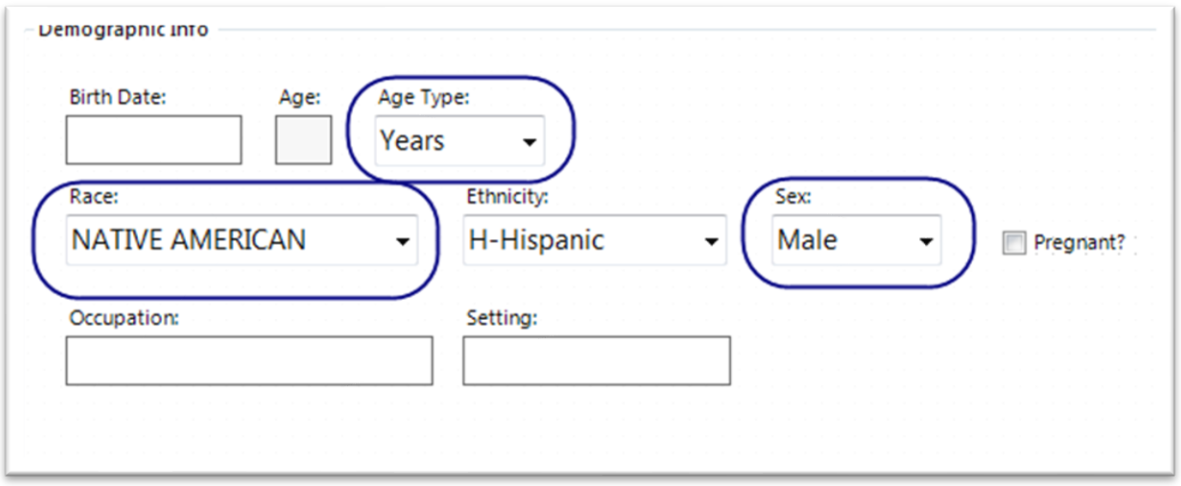
5. Click **Save Column** to add the column to the grid.

6. Repeat steps 1-5 for all the columns you want.

7. Click **OK**. The **Grid** field displays on the canvas.

Legal Values

A Legal Values field creates a drop-down list of choices on the field. Listed responses are the only respondent choices available. The following figure provides a highlighted example of how **Legal Value** fields appear in the Age, Race and Sex fields (Enter Data).



Legal Values field

To add a field for Legal Values:

1. Open the **Legal Values Field** Definition dialog box.
2. Enter the **Question** or **Prompt**. Your text displays in this field and on the canvas. Form Designer prompts you for a response.

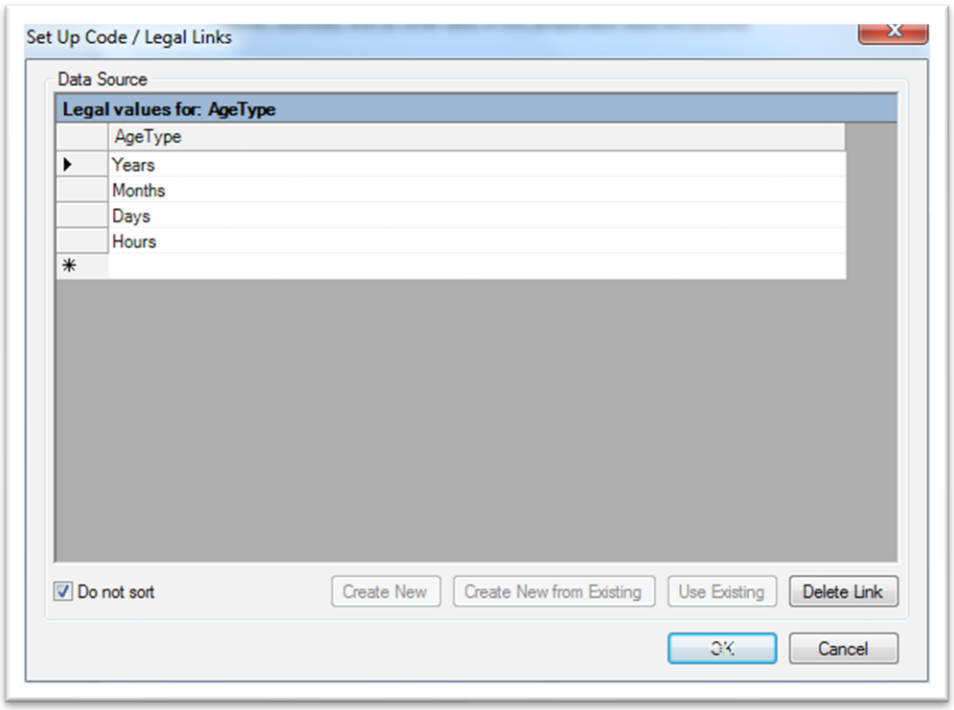
3. Click in the **Field Name** text box or press the tab key. Epi Info™ suggests a field name based on the Question or Prompt. The field names be short, and intuitive. Check Code uses Field names for data validation during analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore).

Note: Simplify the Field name. You can't change Field names after data collection starts.

Legal Values Field Definition dialog box

1. Browse options for the Data Source field by clicking the **Ellipsis** (…) button to the right of the **Data Source** text box.

2. Click **Create New** and enter your answer.



Set Up Code / Legal Links

1. Enter the first value (e.g., **Years**). Press **Enter** or **Tab** and advance to the next value.
2. Enter additional values until all your choices are in the drop-down list.
3. Selecting **Do Not Sort** prevents values from appearing in alphabetical order. Otherwise, values show in the same order as they were entered. Click **OK**.

Create legal values from Existing tables.

1. Click **Create New from Existing.**

Note: Create New from Existing uses a copy of the selected table. Changes to the original table won't affect the new table.

2. Click **Use Existing** (Alternative to **Create New from existing**). **Use Existing** establishes a connection between your selected table and a new table. New changes made to the original table modifies the new table.

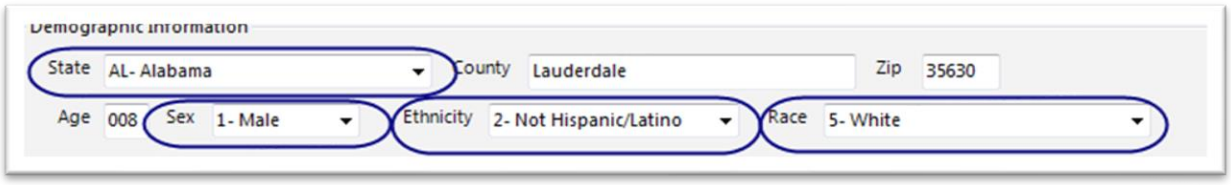
3. Select a table from the drop-down list. Click **OK**.

4. Click **OK** from the Field Definition box. The new field displays as a drop-down list of values.

You can import data from outside sources like MS Excel, and CSV files. Link it to the Legal Value field on your form. For information regarding importing data from outside sources, refer to the Visual Dashboard section – How to import data from a data source to use in a field.

Comment Legal

Comment Legal fields, like Legal Values, create a drop-down list of choices on the field. They are a list of values with character(s) typed in front of the values using a hyphen. During data entry you can see the code, hyphen, and the value such as **M-Male**. However, only the code value in front of the hyphen is stored in the table like **M** in **M-Male**. The following figure shows how Comment Legal fields show in the State, Ethnicity, Race and Sex fields (Enter Data). In the figure below, the value of 1 is stored in the database if the Sex selected for the record is Male, 2 if the Ethnicity selected is Not Hispanic/Latino, and 5 if the Race selected is White.

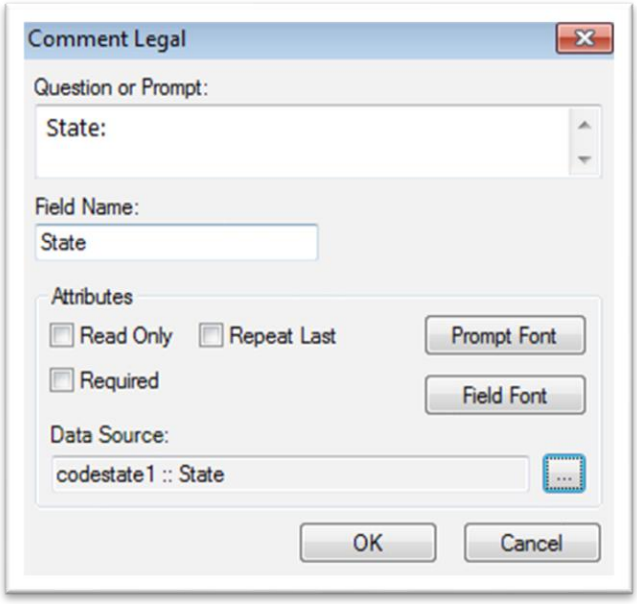


Comment Legal field

To add a Comment Legal field:

1. Open **the Comment Legal Values** Field Definition dialog box.
2. Enter the **Question** or **Prompt**. The text you enter displays on the canvas and prompts you for a response.
3. Click in the **Field Name** text box or press the tab key. Epi Info™ suggests a field name based on the Question or Prompt. It is important that field names be short, and intuitive. Check Code uses field names for data validation during analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric code (except the underscore).

Note: We recommend that you simplify the field name. You can't change Field names after data collection starts.

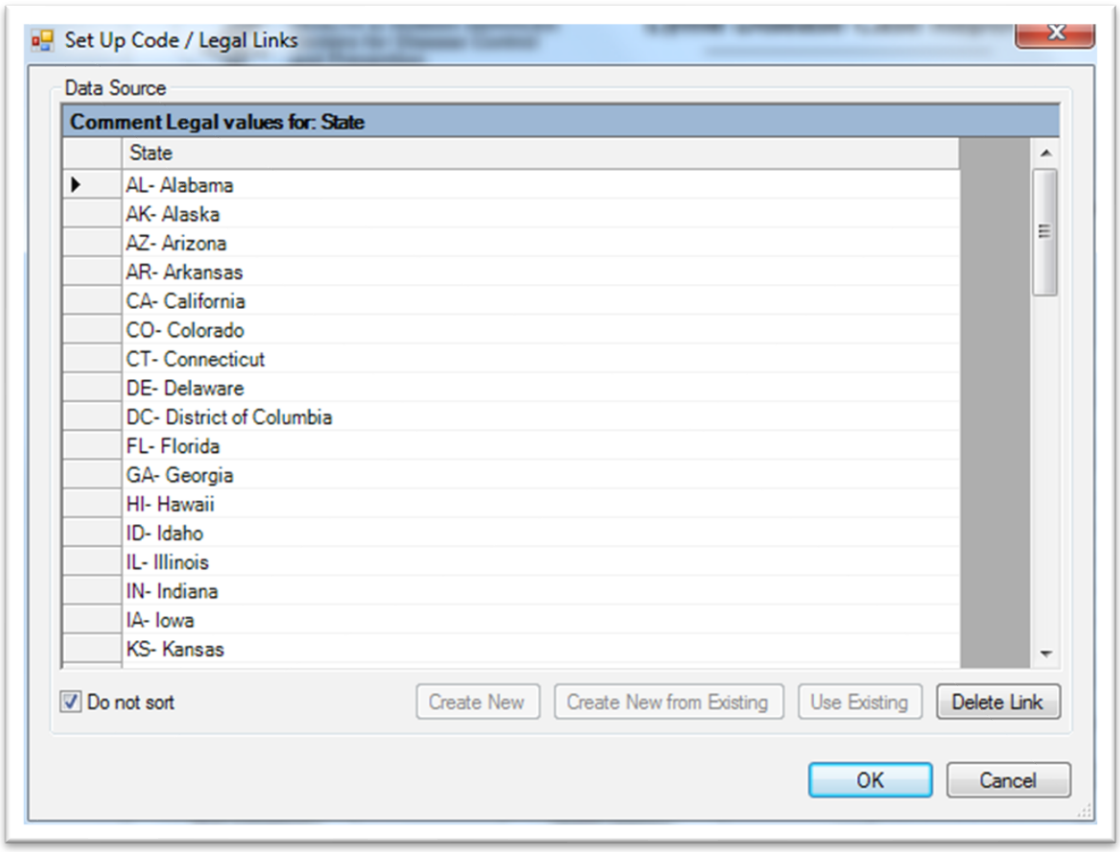


Comment Legal Field box

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

From the Comment Legal values Data Sources, follow these steps:

1. Click **Create New** and enter choices for the question.



Set Up Code / Legal Links

2. Enter the first value using the form **code-hyphen-description** as in **AL-Alabama** where AL is the code and Alabama is the description. Pressing **Enter** or **Tab** advances you to the next value.

3. Enter additional values using the same **code-hyphen-comment** format. All your items are added to the drop-down list.

4. Selecting **Do Not Sort** results in values appearing in the order they were entered, not alphabetically. Click **OK**.

5. Use existing tables to create **Comment Legal fields**.

Create Comment Legal Fields from Existing Tables

1. Click **Create New from existing** (uses a copy from a selected table). Remember that changes to the original table won't affect the new table.

2. **Use Existing** (establishes a connection between the field and the existing table). Any changes made to the original table reflect in all fields that use this table as the source.

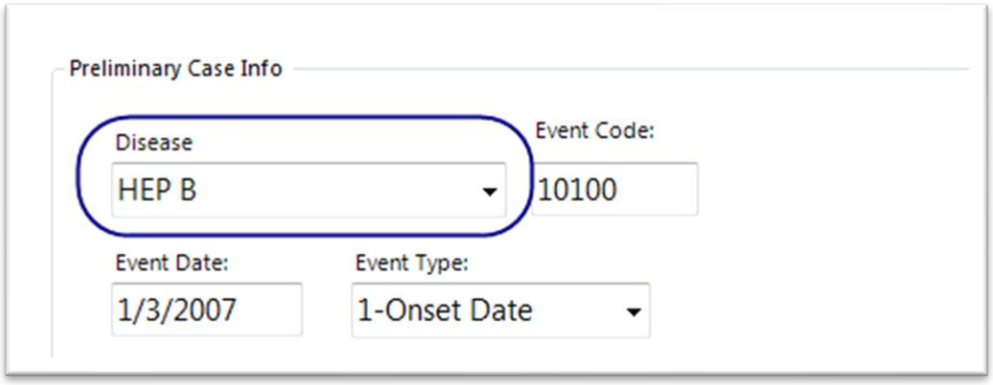
3. Select a table from the drop-down list. Click **OK**.

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

You can import data from outside sources like MS Excel, and CSV files. Link it to the Comment Legal Value field on your form. For information regarding importing data from outside sources, refer to the Visual Dashboard section – How to import data from a data source to use in a field.

Codes

Like the Legal Values field, the Codes field creates a drop-down list of choices. The responses in the drop-down are the only choices available to the respondent. However, the values for the drop-down you select influence other values. Like a domino effect, other fields populate 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 populate, based on the primary values in the code table. The Codes field creates accurate user data. View the figure below. The Codes field displays to the right of the Disease field highlighted in blue (Enter Data).



Codes field

Create a New Code Table

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

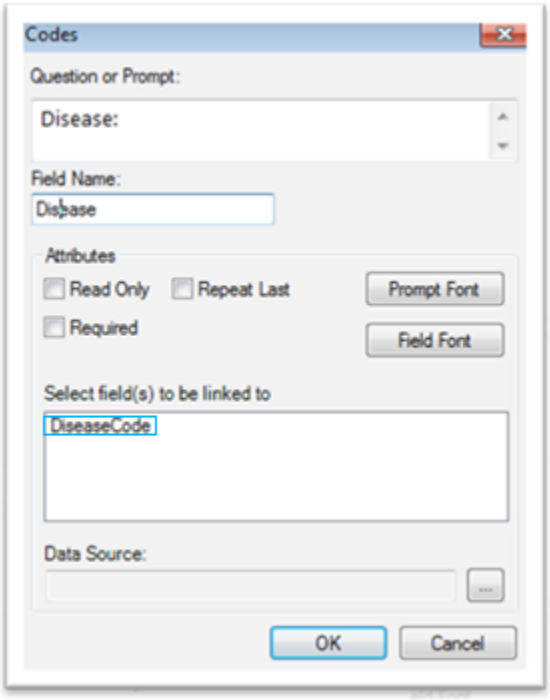
2. Enter the **Question** or **Prompt**. The text displays on the canvas and prompts the respondent for an answer.

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's important that field names be short, and intuitive. Check Code uses field names for data validation during analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

   Note: We recommend you simplify the field name. You can't change Field names after data collection starts.

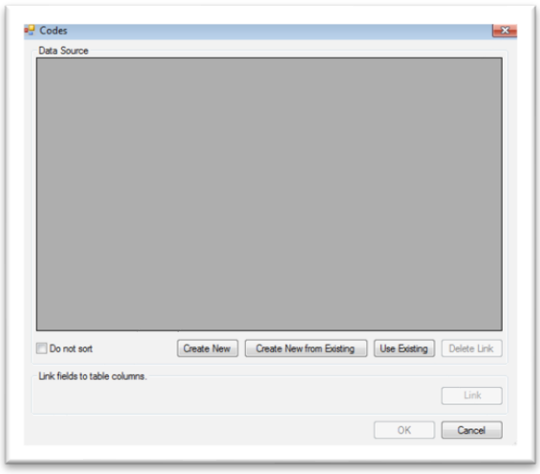
4. Click on the **field(s)** to be linked from the **Select field(s) to be linked to** section. To select multiple fields, hold down the **CTRL** key and click each **field**. This means that the fields to be linked to will need to be created before the **Codes** field.

5. Click on the Data Source browse button.

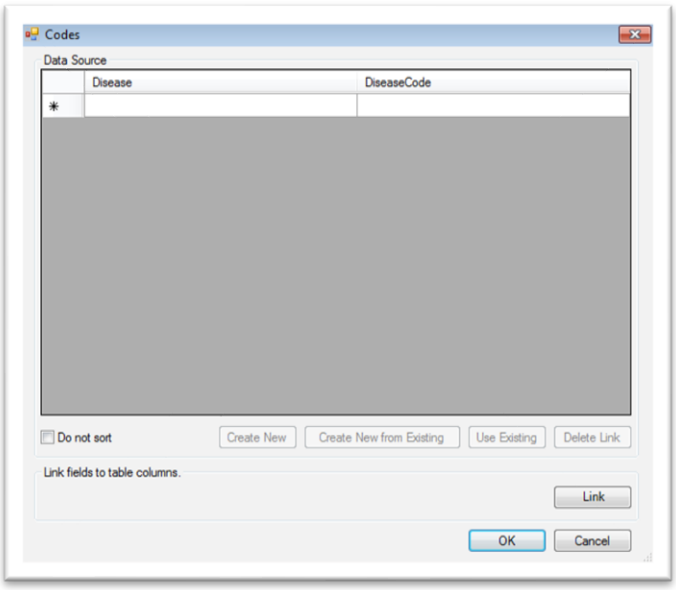


Disease Code field

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



New Code fields

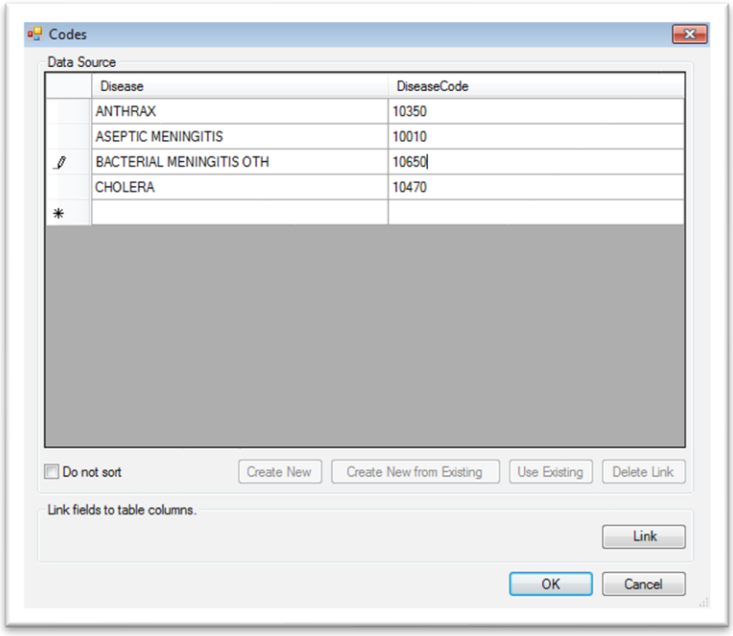


New Link fields

2. The left-most column displays the selection field(s) in the Fields Definition dialog box. The column on the right shows the codes for each selection field.

3. Enter the codes for each field.

4. Select the **Tab** key to move to the next field, or to the next row if you are at the end of a row. Click **OK** to accept the codes for each field.



Selected Codes

Use existing tables to create code tables.

- Click **Create New from Existing** copies the selected table, but changes to the original table won't be added.
- **Use Existing** establishes a connection between the selected table and the new table. Changes made to the original table will modify the new table.

Follow these steps:

1. Select a table from the drop-down list, and then click **OK**.
2. Click **OK** to close the **Field Definition** dialog box and place the fields in the form.

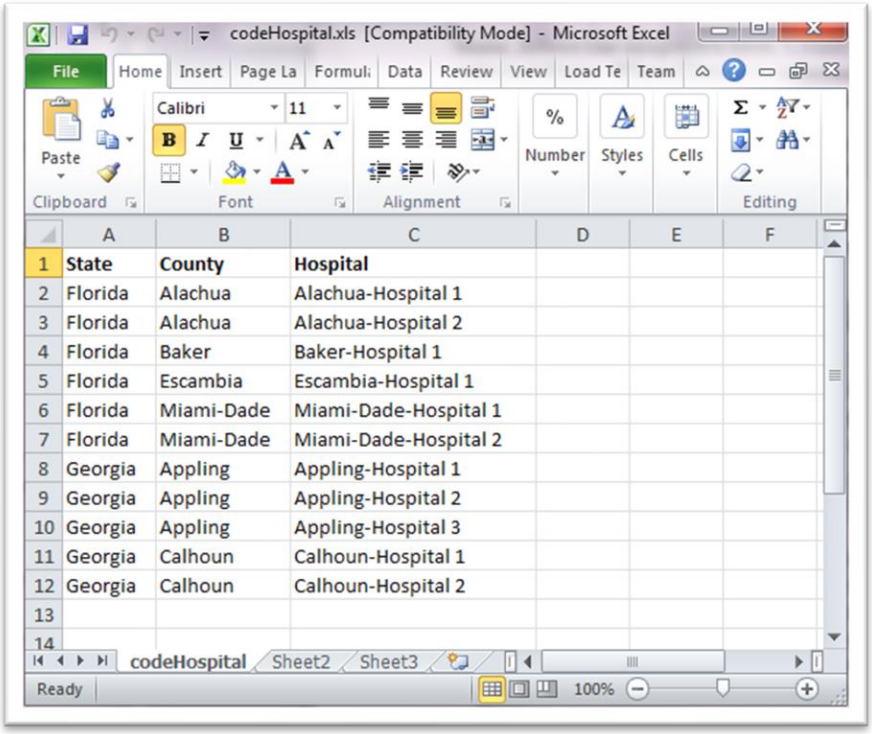
3. Test the code table by opening **Enter Data** and verify that both fields populate based on selections in the drop-down list.

You can import data from outside sources like MS Excel, and CSV files. Link it to the Legal Value field on your form. For information regarding importing data from outside sources, refer to the Visual Dashboard section – How to import data from a data source to use in a field.

Create Cascading Drop-Down Fields

Cascading Drop-Down fields are multiple fields such as Code, Legal Value, or Comment Legal fields linked together. Each field filters the fields that come after it. Subsequent fields filter from earlier field selections. In the figure below, the drop-down field for State filters the drop-down field for County. The county field only shows those counties in the State. When you select county, the drop-down field for hospital shows only regional county hospitals.

For cascading drop-down fields, create a table complete with all the linked values you want to import into Epi Info™ 7. View the Excel spreadsheet shown below, named **codeHospital**. This is an example of a completed table with linked values. You must have a prefix code when importing this table into your Epi Info™ 7 project. Here, it is **codeHospital**.



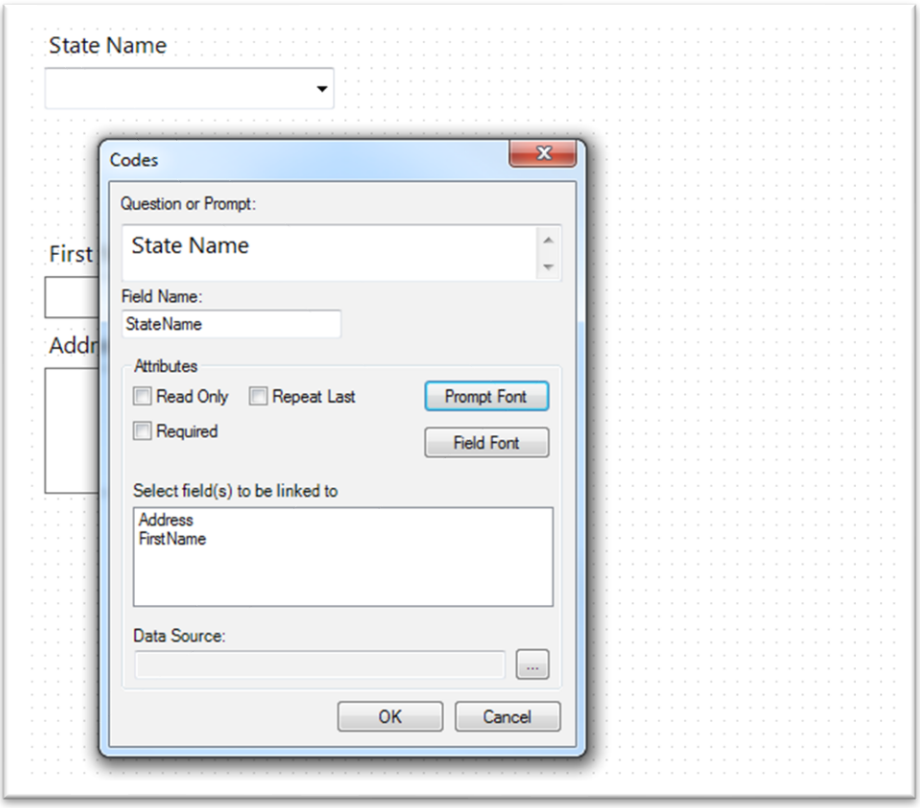
	A	B	C
1	**State**	**County**	**Hospital**
2	Florida	Alachua	Alachua-Hospital 1
3	Florida	Alachua	Alachua-Hospital 2
4	Florida	Baker	Baker-Hospital 1
5	Florida	Escambia	Escambia-Hospital 1
6	Florida	Miami-Dade	Miami-Dade-Hospital 1
7	Florida	Miami-Dade	Miami-Dade-Hospital 2
8	Georgia	Appling	Appling-Hospital 1
9	Georgia	Appling	Appling-Hospital 2
10	Georgia	Appling	Appling-Hospital 3
11	Georgia	Calhoun	Calhoun-Hospital 1
12	Georgia	Calhoun	Calhoun-Hospital 2
13			
14			

Completed table with links

You can import data from outside sources like MS Excel, and CSV files. Link it to the Codes field on your form. For information regarding importing data from outside sources, refer to the Visual Dashboard section – How to import data from a data source to use in a field.

Add cascading drop-down fields by following these steps:

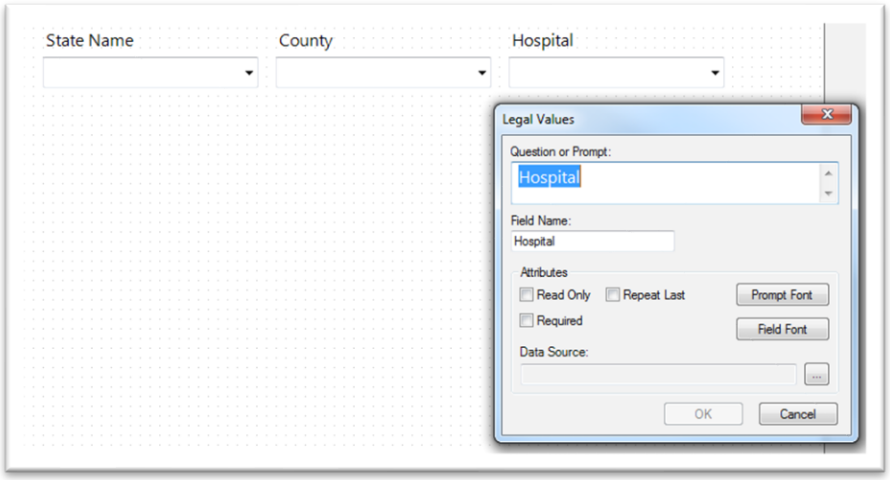
1. Add the first **Codes** field to the page but wait to link this field to other fields. You will do this a later step. In this example, we named the field **StateName**.



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'll name the second field **County**. Repeat this step for all but the last field in the 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 sequence. The last field should be a type other than a Codes field, such as Legal Value or Comment Legal. Since we won't link other fields to this last field, avoid using the Codes fields. In our example, we have two Codes fields named **StateName** and **County**, and one Legal Value field named **Hospital**.

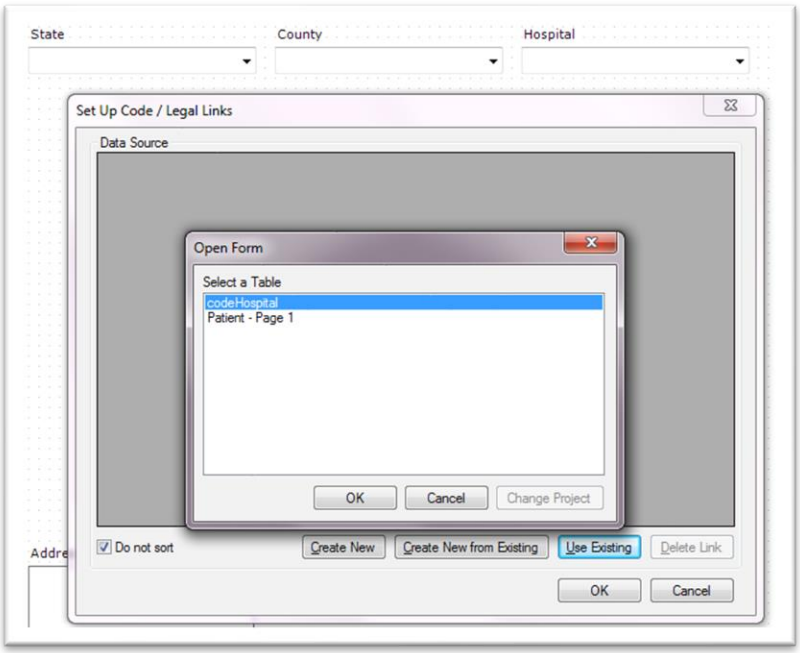


Adding Legal Values to cascading drop-down fields

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

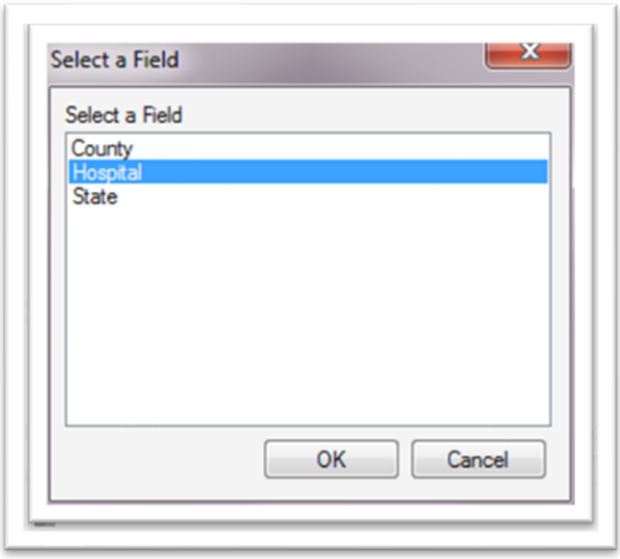
5. Click **Use Existing**, which opens the **Open Form–Select a Table** dialog box.

6. Select the imported code table and click **OK**. In this example, we selected the **codeHospital** table.



Open Form Dialog Box

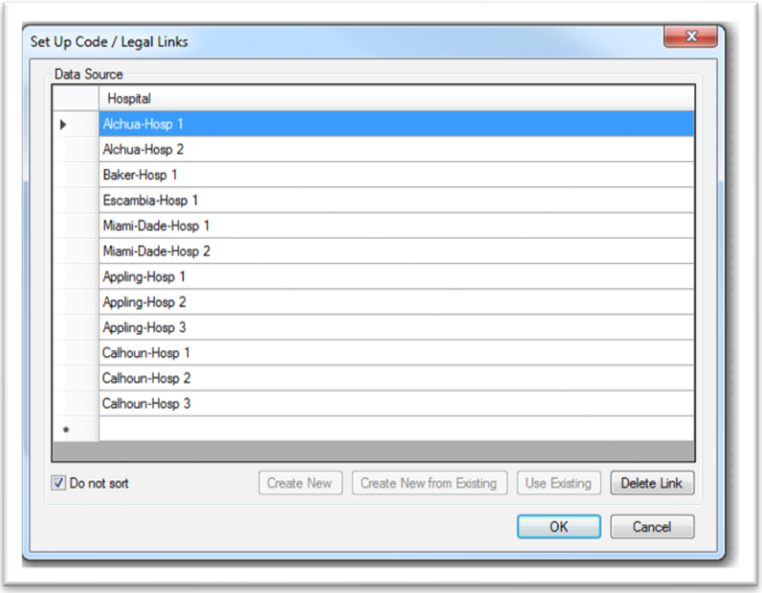
1. Click **OK**. The **Select a field** dialog box opens showing the columns in the **codeHospital** table are linkable.



Select a Field dialog box

2. Select the correct **field**. Because we are linking the **Hospital** field, we selected **Hospital** in this example.

3. 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 the table.



Data Source shows values for Hospital

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

5. Click **OK** on the field definition dialog.

The next steps are for linking the fields with remaining Codes fields.

1. **Open** the properties for the first **Codes field** by right-clicking the field and selecting **Properties**. Our first field was **StateName** and we want to link this field to the **County field.** Selecting **StateName** displays only counties in the State.

2. Select the field you want to filter. Select the **County field** since we want to filter Counties within a State. Click the **Browse** button to the right of **Data Source**. The Codes dialog opens.

3. Click **Use Existing** which opens the **Select a Table** dialog box.

4. Select the same code table for linking the last field. In our example, choose **codeHospital.**

5. Click **Link** which opens the **Match Fields** dialog box. Here, we match our fields in cascading sequence to columns in the code table.

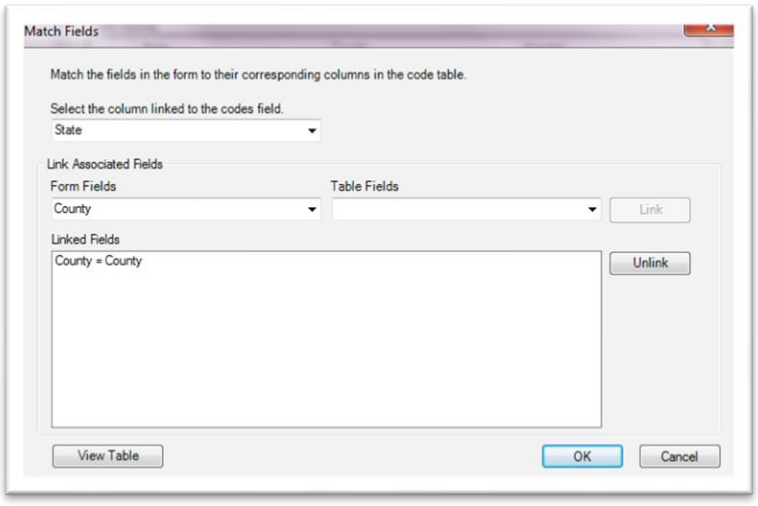
6. Select the column you want to link to the first **Codes** field. Since our first field is **StateName**, lets select the column from our imported table named **State**.

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

In this section, we'll work with Form Fields and Table Fields.

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

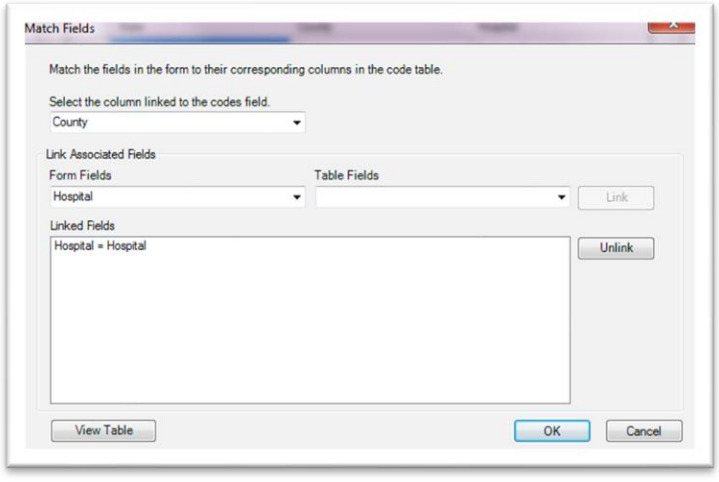
2. Click **Link**. The linked field **County** displays in the **Linked Fields** box.



Match Fields Dialog Box

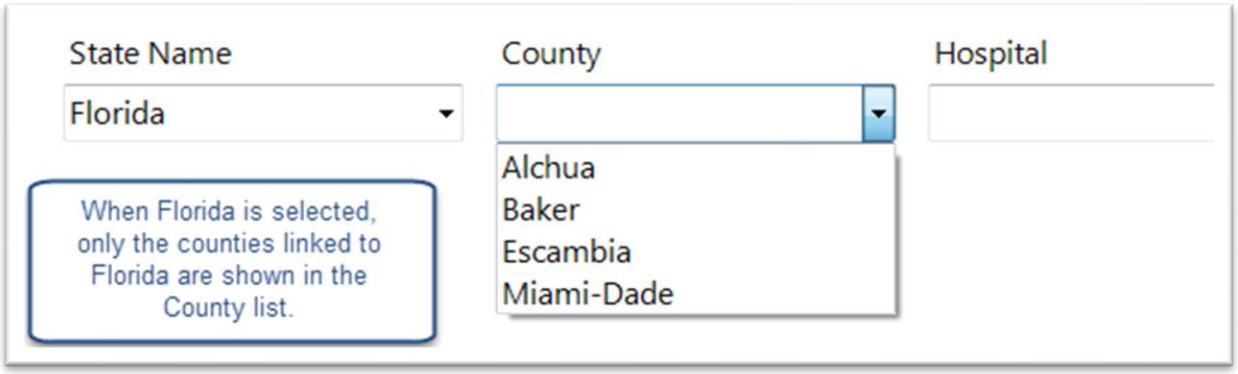
3. Click **OK** to close the **Match Fields** dialog.

4. **Repeat** the steps 12 through 21 for each remaining **Codes field** in the cascading sequence. You can 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 link remaining in the **Code field.** We'll link this field to **Hospital**.



Linked Fields

This completes the process of creating a series of cascading drop-down fields. Open the form in Enter Data. The first field will sequentially filter the values down to the next field. In our example, when selecting Florida for the State Name results in a list for only Florida Counties.



State Name field filters values

The StateName Codes field filters the County codes field**.** They are linked and display Florida counties like Alachua, Baker, Escambia, and Miami-Dade. They are the only Counties on the same row as Florida in the **codeHospital** table.

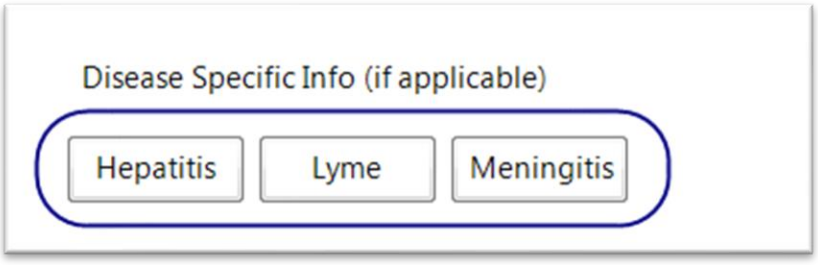
	A	B	C	D	E	F
1	**State**	**County**	**Hospital**			
2	Florida	Alachua	Alachua-Hospital 1			
3	Florida	Alachua	Alachua-Hospital 2			
4	Florida	Baker	Baker-Hospital 1			
5	Florida	Escambia	Escambia-Hospital 1			
6	Florida	Miami-Dade	Miami-Dade-Hospital 1			
7	Florida	Miami-Dade	Miami-Dade-Hospital 2			
8	Georgia	Appling	Appling-Hospital 1			

The codeHospital table

Likewise, when you select the county Alachua, only the values Alchua-Hosp1 and Alchua-Hosp2 display in the Hospital legal values field.

Relate

A Relate field is 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 general patient information. This form may be related to another form to record the many hospital visits that each patient may have. Related forms are linked automatically by unique keys generated by Epi Info™ 7. In Enter Data, click the **Relate Form** button. The Relate Form button opens the first page of a related form. Using Check Code, you can make the **Relate button** conditionally accessible if you wanted to show a specific form for a particular disease. The following example shows how a Relate field displays on a form under **Disease Specific Info** as captured on the Surveillance form of the Sample project.



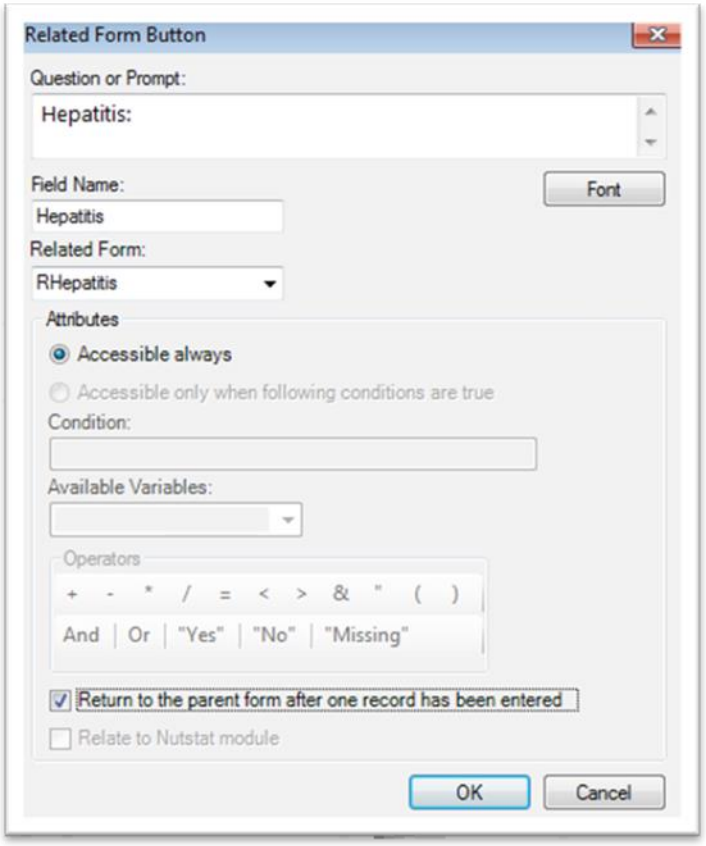
Relate field

To add a Relate field:

1. Open the **Relate Field Definition** dialog box.
2. Enter the Question or Prompt. The text you enter displays on the canvas and prompts the user to enter a response.

3. Click in the **Field Name** text box or press the **tab key**. Epi Info™ suggests a field name based on the Question or Prompt. It's important that field names be short, and intuitive. Check code uses the field for data validation when doing analyses. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character). For Relate fields, it is recommended to match the field name to the name of the related form.

Note: You should simplify the field name. Field names cannot be changed after data collection starts.



Relate Form Button dialog box

4. Select **Create new form** from the Relate Form drop-down list. 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 the following conditions are true** selector is not available in this version of Epi Info™ 7.

    - **Accessible always** creates an always active **Relate button** in the form during data entry.

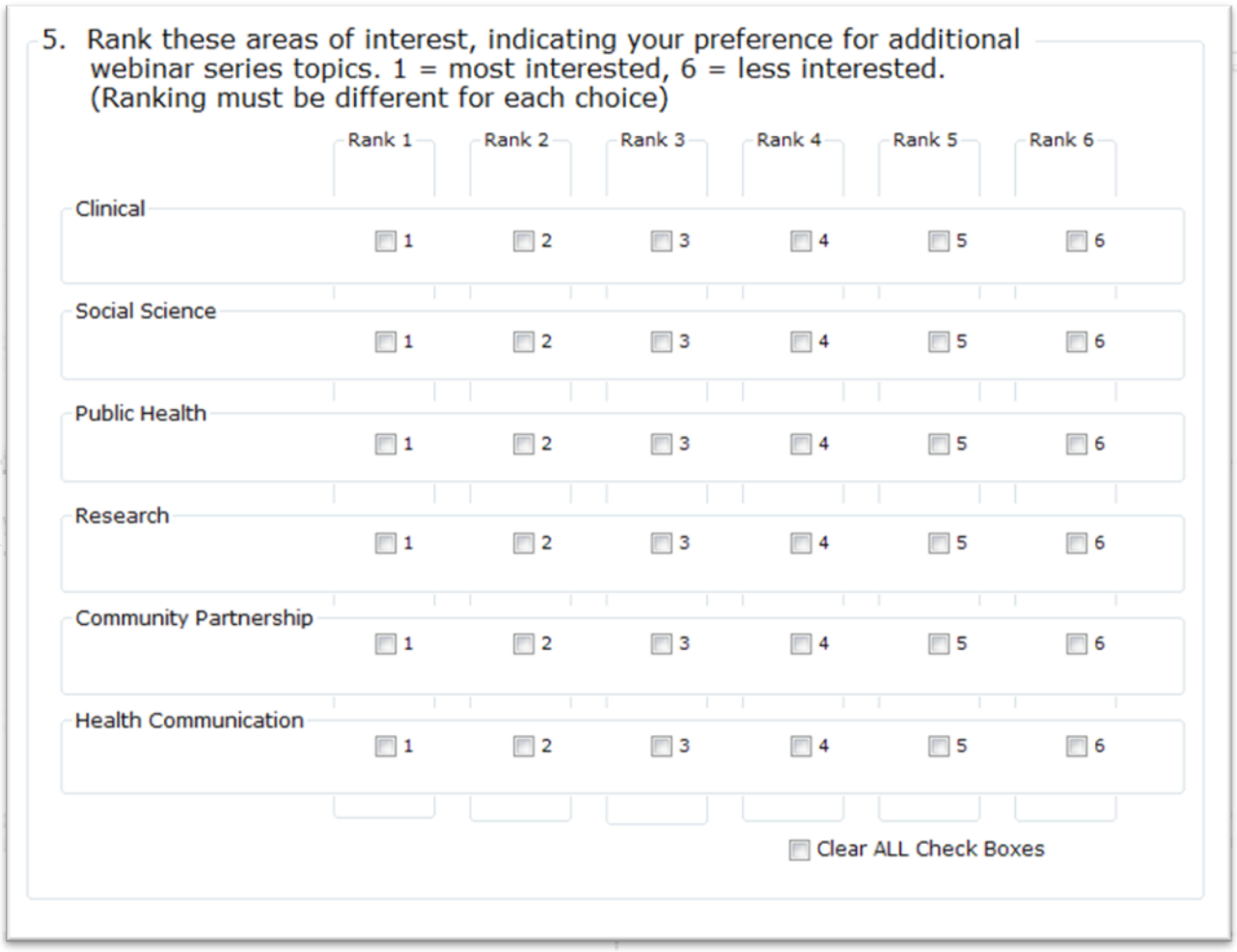
    - **Accessible only when following conditions are true selector** will be available in a future Epi Info™ release. However, you can create a conditional statement using Check Code see Epi Info™ 7 – Check Code. You can use Check Code to associate with the button and create a condition statement.

5. Select **Return to the parent form after one record has been entered.** If you desire multiple entries, then leave this option unselected. This allows only one entry in the related form for each record in the parent form. In Enter Data, after saving a record in the related form, you'll go back to the parent form.

6. Click **OK**. The **Relate Form** button displays on the canvas.

Group

A Group field organizes multiple fields on a page for visual and practical purposes. Visually, a group field helps tie similar fields together into a common category. Group fields also provide organization and structure to a form. Add background color to a group to enhance its appearance. You can nest groups and arrange them, so specific fields overlap for Venn style diagramming on your form.



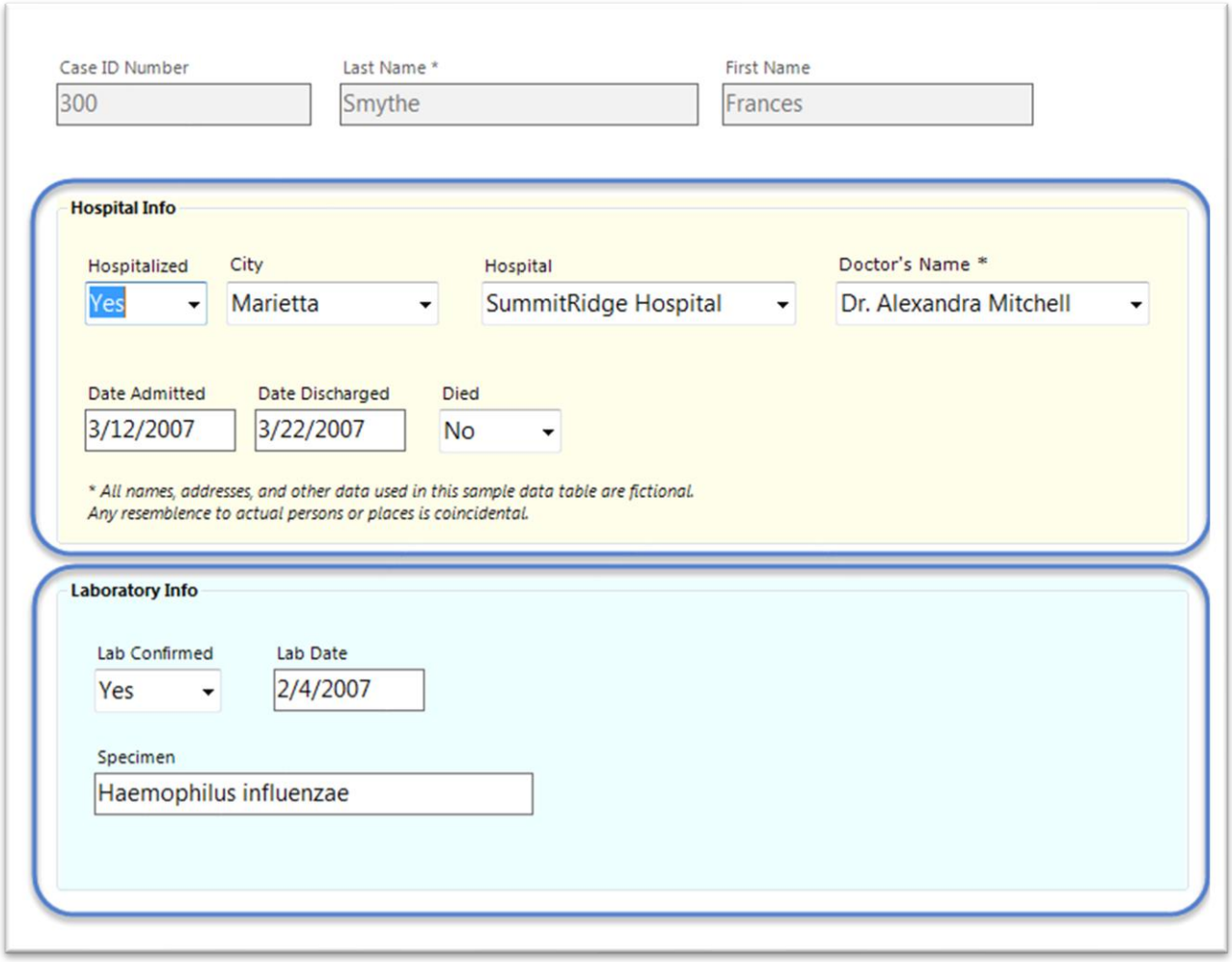
Nested Venn-style Group fields

Group fields also have several practical purposes. In Classic Analysis and Visual Dashboard, you can run statistics on individual fields. If your fields belong within a group, then you can run some statistics on all fields within a Group field.

Similarly, run several Check Code commands on all fields within a group by using just the group name. This makes commands such as Enable, Disable, Clear, Highlight, Set-Required, Set-Not-Required, among others, much easier.

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 group box boundary. Likewise, dragging the group box moves all fields within the group. Any fields within the boundaries of the group box are automatically members of the group field for analyses and Check Code execution.

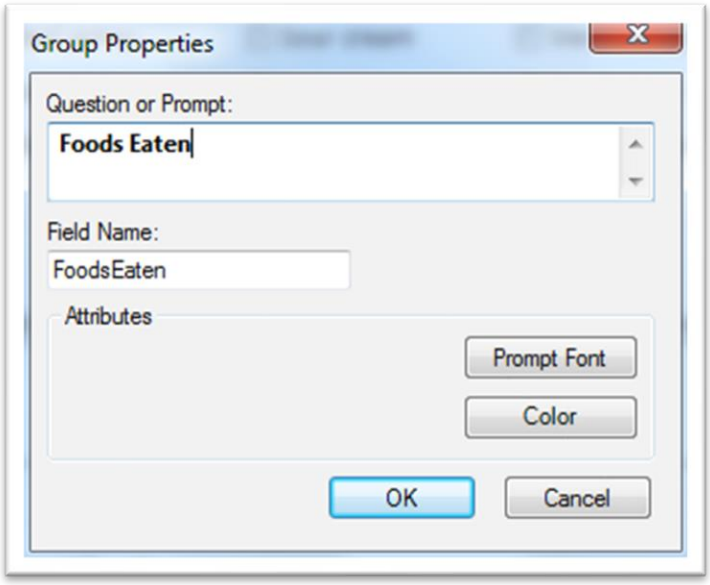
The following example shows how group fields (highlighted in blue) appear in Enter Data.



Group field

Follow these steps to create a Group field.

1. Click and drag a **rectangle** around the fields you want to group.
2. Each field in the selection is highlighted with a rectangle.
3. From the Form Designer toolbar, select **Insert > Group** or right click on a blank part of the canvas and select **New Group Field** from the context menu. The **Group Properties** dialog box displays.



Group Field Properties

- Enter the **Question** or **Prompt**. The text you enter in this field shows on the canvas and prompts the user to enter a response.
- 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. You can use the field name 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).

Note: It is best to simplify the field name. You can't change the field names after data collection starts.

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 of the box to the desired dimensions. If the new size includes additional fields, they become members of the group.
- Fields and group fields sort the same way 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, displaying the Field Definition dialog box. Make your 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, you cannot change them after you create the data table.

Establish a concise and usable naming convention for your field names when starting a data entry form. Although Epi Info™ 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. It's convenient when the question is only a few short words. If your Question or Prompt frequently begins with "Please enter the" or "What is the," suggested field names will display the same way. This creates a challenging and tedious experience. Searching for specific fields when writing Check Code, using Analysis Gadgets or Visual Dashboard becomes problematic.

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

When testing a form in Enter Data, a data table is initially created. The field name cannot be changed after the data table is created. If the data table has no data or only expendable test data, you can delete the data table so you can 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, the pre-populated 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.

You can search fields by name in the database. Choose a unique name that doesn't already exist in another field or form.

Finally, Epi Info™ needs to reserve some words for internal use to avoid conflicts related to database interaction. For a complete list of reserved words, please see **Appendix A: Reserved Words**.

If Epi Info™ flags your field name as invalid, it will appear in red font and the OK button won't work. To avoid this, change the field name slightly, perhaps add a suffix or prefix and make an acceptable variation of the name. Then click **OK**.

Delete a Field

1. Right click on the **field**, opening the context menu.
2. Click **Delete**.

Warning! The field any data are deleted from the form and database. Deletions occur immediately. No delete confirmation message displays before the field and its data are deleted. You can use undelete to recover the field, but once deleted, your data is unrecoverable.

Copy, Cut, and Paste Fields

1. Click and drag a **rectangle** around the fields you want to copy 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™ suggests a field name based on the name in the original field. To ensure the field name is unique, Epi Info™ adds a number. For example, if the copied field name is **Age**, then the pasted field is automatically named **Age1**. Copying and pasting this field again results in a third field named **Age11**. So, you can avoid errors while conducting analyses and when using in Check Code, you can change the field name. Follow these steps:

For each cut and paste Field, do the following:

1. Right-click the new **Field question or prompt** and select **Properties** from the context menu.
2. Click the text in the **Field Name**. You can now change the field name. Use clear, unique, and intuitive wordage.
3. Field names cannot start with a number or contain any spaces or non-alphanumeric characters (except the underscore character).

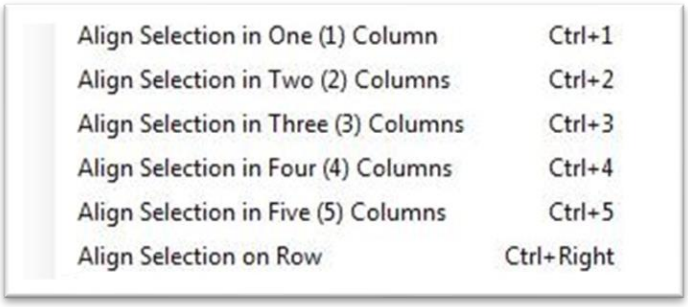
Note: You can't change field names after starting data collection, or with an existing data table.

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 cut and paste a Fields.

Align Fields

There are several ways to align fields in Form Designer. Aligning fields with consistent formatting makes Forms look professional. Start aligning Fields by selecting the ones you want, and continue with the following steps:

1. Click and drag a **rectangle** around the **Fields** so you can align them.
    - To align the **Fields** vertically, select **Format > Alignment > As Stack.**
    - To align the **Fields** horizontally, select **Format > Alignment > As Table.**
    - For more options, right-click on the canvas to display all alignment configurations. Use **Ctrl +** (any whole number) to create additional alignment formats (e.g., Ctrl + 7 for seven columns).



Field Alignment Options

2. Choose additional options alignment options:
    - **Align Selection in Column (s)**—vertically aligns all fields with the correct number of columns (like **Format > Alignment > As Stack**).
    - Align Selection on Row—aligns all fields horizontally (like **Format > Alignment > As Table**).

Set Field Size

You can choose several field sizing options in Form Designer. Making field sizes consistent will allow you to make the look of your Forms more professional. Standardizing the **Field** size by selecting the them. Follow the steps below:

1. Click and drag a **rectangle** around the **Fields** you want to re-size.

2. Right-click on the canvas to display all sizing configurations.

Adjust Field Size

3. Choose an option below:

   - **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

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

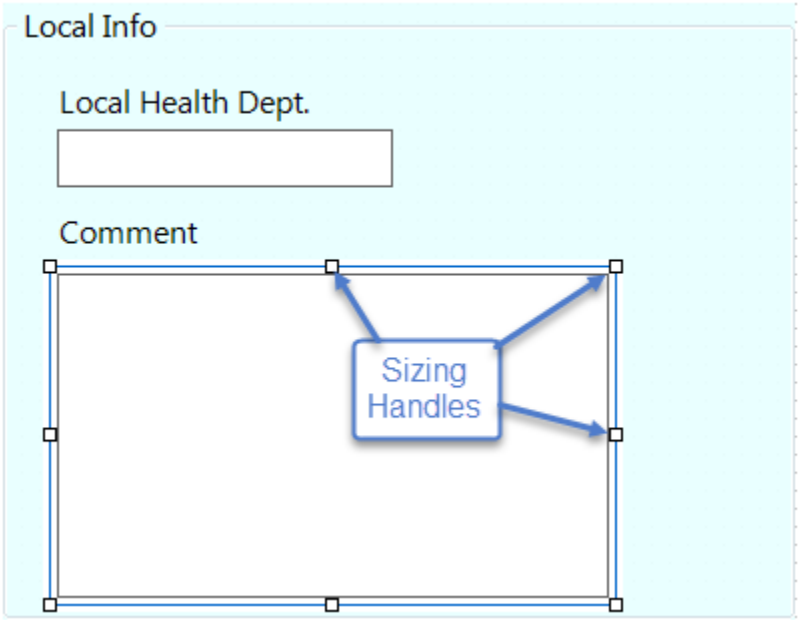
   o **Make Same Size (Use Minimum)** — Adjusts selected fields' height and width to match the smallest field of the selection

Manually Set Field Size

1. Hover your mouse over the **Field** to see the **Field 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.



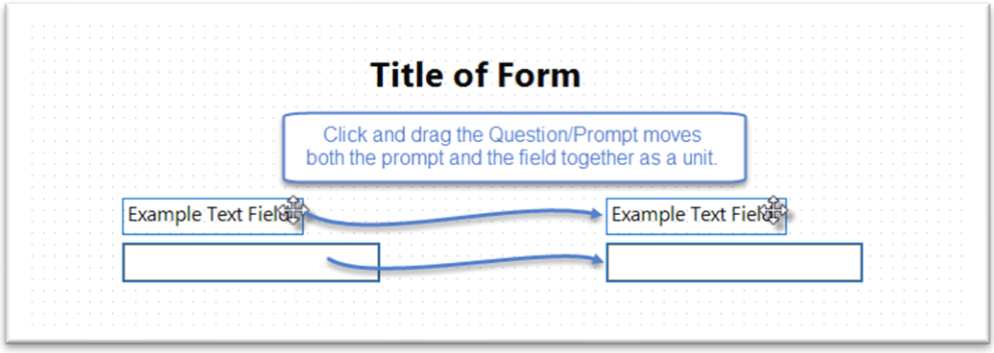
Manually Adjust Field Size

Manually Set Field Position

In certain cases, you'll need to adjust the Field reposition it. 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.

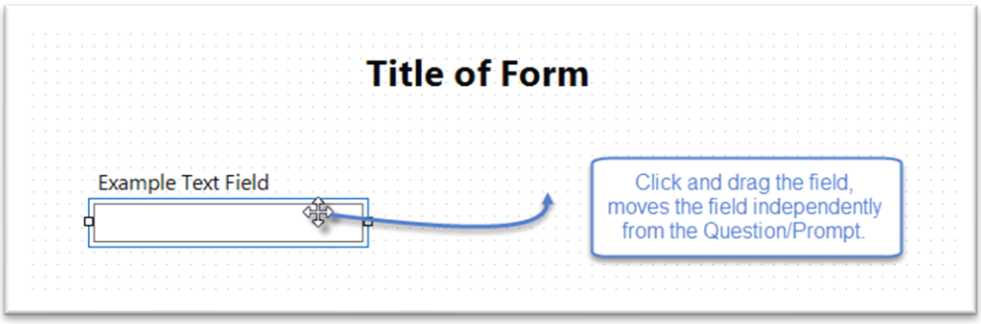
Manually Adjust Field Position

The following example is based on a form containing a Label/Title field and a text field.



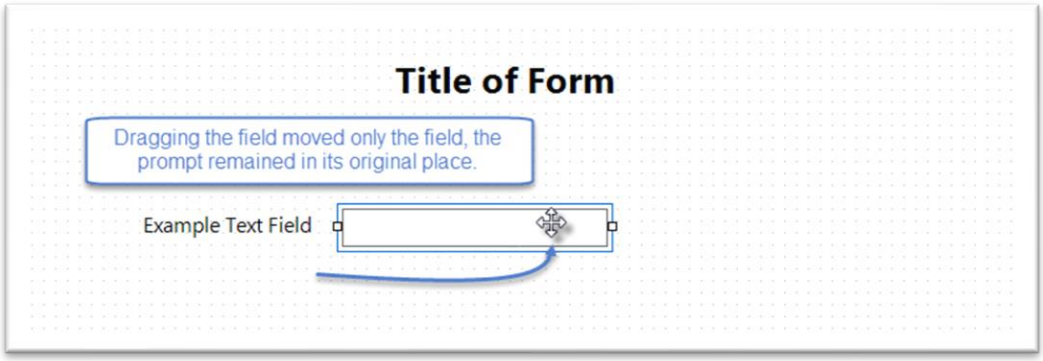
Prompt and Entry Field Selection

1. Click and drag the **Field** prompt to move a **Field** and **question** together,
2. Click and drag the **entry field**, not the prompt, and you can move the **Field** and **prompt** separately as shown below.

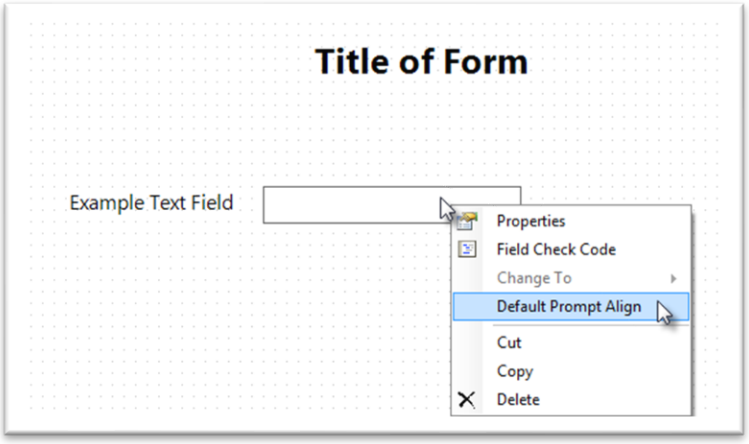


Select Entry Field

1. **Release** the **Entry Field** at the position you prefer.



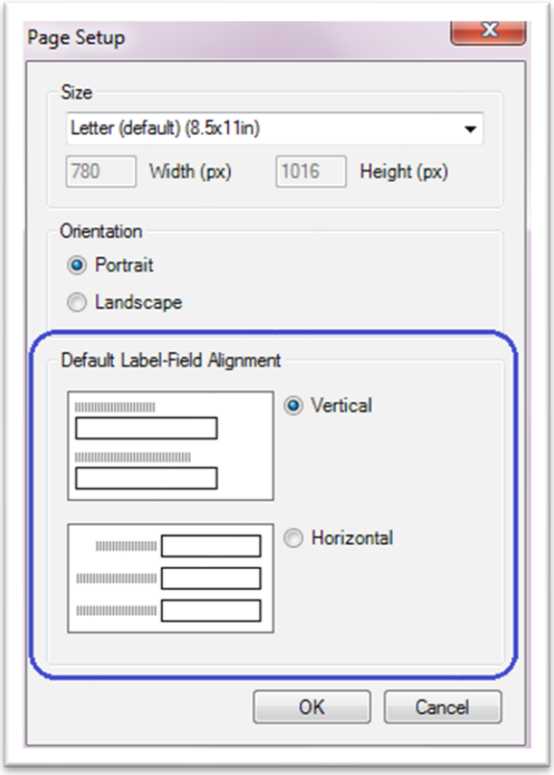
Adjust Entry Field Location



Default Prompt Alignment

1. Right-click on the **Field** or prompt and select **Default Prompt Align** to restore the original field and prompt alignment to the default configuration,

2. Select **Format > Page Setup** from the Form Designer menu bar. You can set the default alignment to vertical so the Field is below the prompt and aligned to the left, or horizontal where the field is to the right of the prompt.



Default Label-Field Alignment

Tab Order

In the Enter Data module, during data entry, pressing the **Tab** or **Enter** key will move the cursor to the next field. Tab Order is the order or sequence that the cursor moves from field to field. The order that you've add fields to the form determines the initial tab order. 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. Also, 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, tab order determines how Fields display on a mobile device.

Show the tab order by right-clicking on the canvas and select **Tabs > Show Tab Order**. You can find the tab order for each field in a rectangle near the entry field. Red rectangles indicate the field is **read only** or the cursor cannot rest in that field, such as Label/Title fields. You cannot rest the cursor in group fields. A tab number is reserved for the group field, even though the tab order number for a group box is not shown.

Show Tab Order

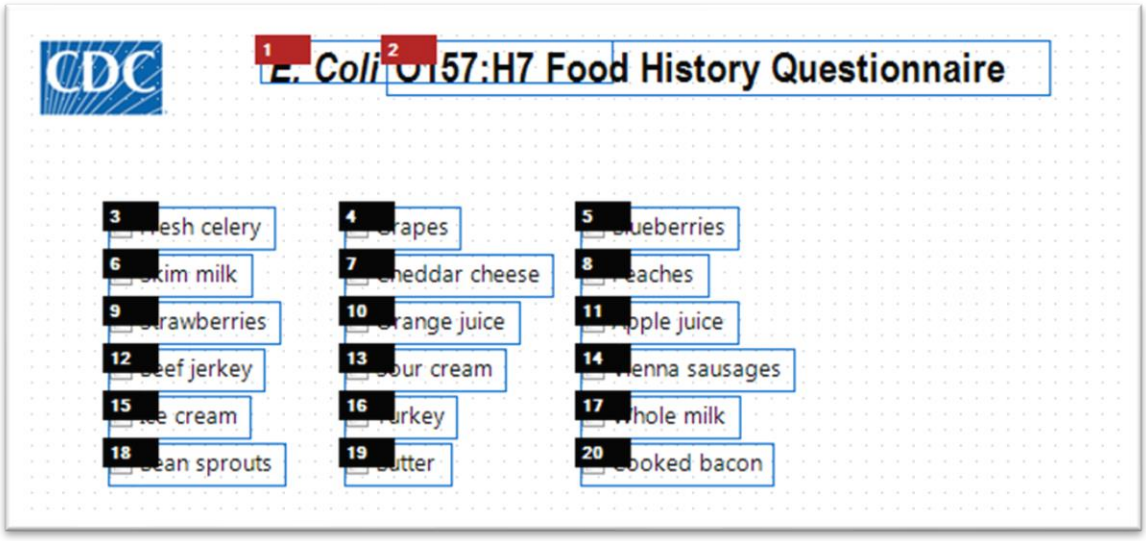
Start New Tab Order

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 field position from left to right, then top to bottom.

Customize the Tab Order

You can customize the tab order for your questionnaire requirements. 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 E.coli project, found 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.



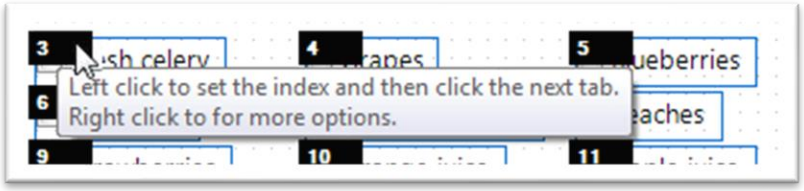
Show Tab Order

In the example shown in the figure above, the cursor moves in numbered sequence 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 to **Butter**, and then over to **Blueberries** in the third column. There are a couple of methods to do this.

Customize Tab Order using the mouse.

1. Hover your mouse pointer over the field with the tab order showing what item you want as the first field in the sequence. In this example, we want to start the sequence with **Fresh celery** at tab order 3. A pop-up window displays showing the options available to reset the tab order.



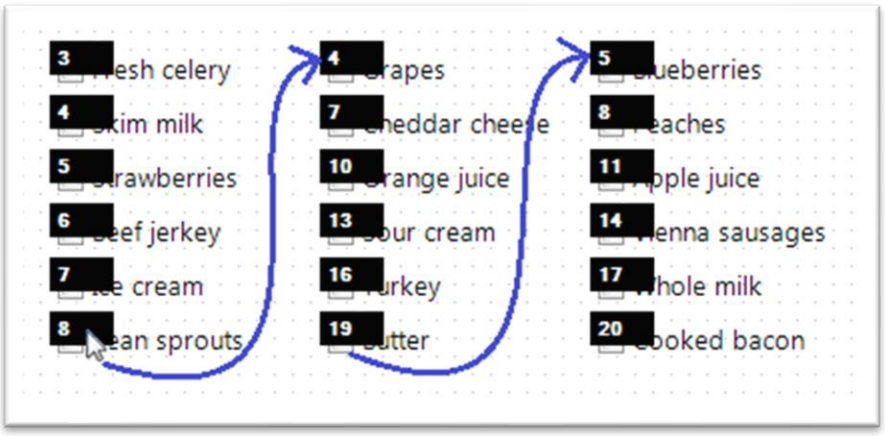
Tab Order Prompt

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

3. Click on the tab order **black box number** for the next field you want to follow the index field. In our example, the field below **Fresh celery** (position 3) is **Skim milk** (position 4), followed by **Strawberries** (position 9). When we click on **Strawberries**, the number changes to follow our index field. **Strawberries** is now in position 5. The index field displays in a sequential order.

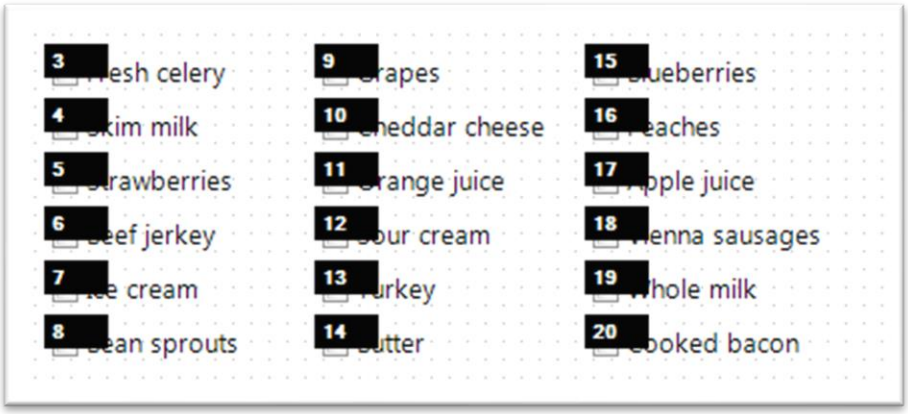
Tab Order Adjusted Manually – Before and After

4. Click each successive field **tab order box** to adjust the flow of numbers. Numbers are in sequence. 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.



Additional Tab Order Options

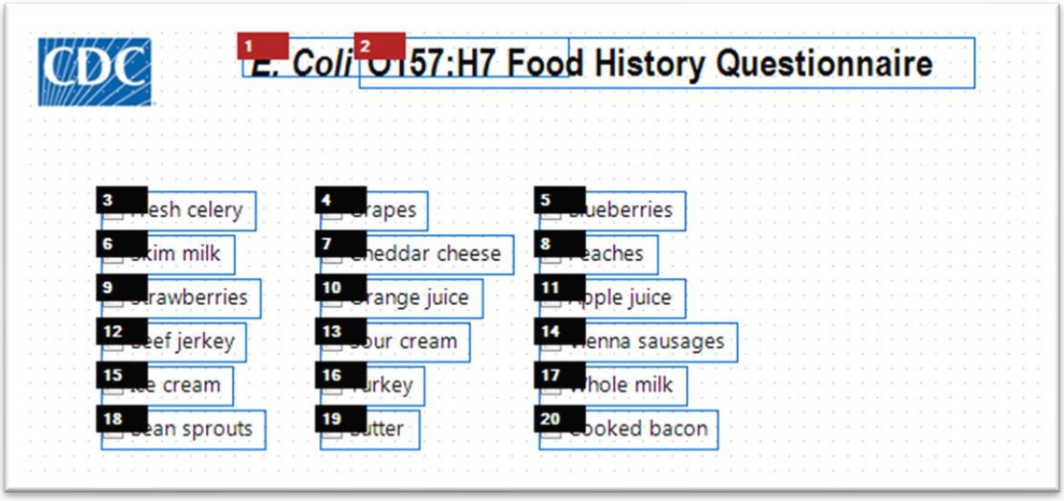
5. After clicking the **tab number** at the bottom of the first column, move the mouse up to the **first field** of the second column to continue the sequence. Continue clicking each successive **tab order number** until numbers are in sequence. Click anywhere on the canvas to hide the tab order numbers.



Additional Tab Order Options

Customize Tab Order using: Continue Tab Order

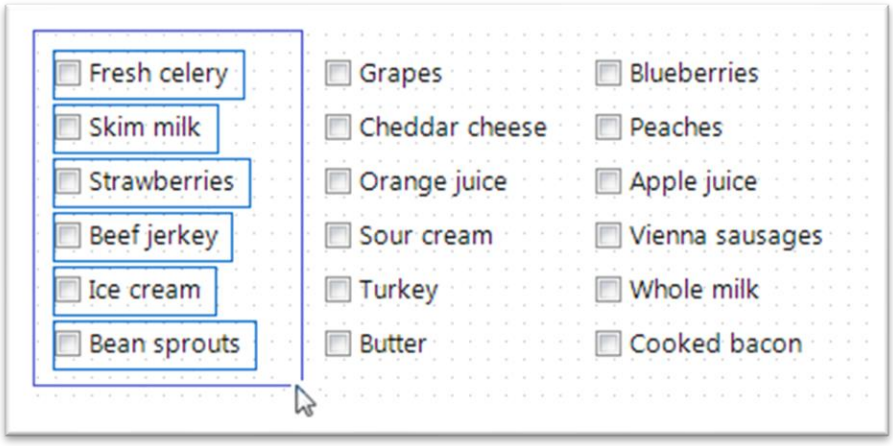
The continue tab order feature sets the tab order numbers in sequence, for a selected set of fields based on the current index value. As an example, the figure below shows the original tab order in the food history form of the **E.coli project** in the projects folder.



Customize Tab Order

Here is how you can arrange the order to run down the first column, from **Fresh celery** to **Bean sprouts.** Then start with **Grapes** in the second column using continue tab order. Follow these steps:

1. Click and drag a rectangle around the first column of fields. This will select just those fields.

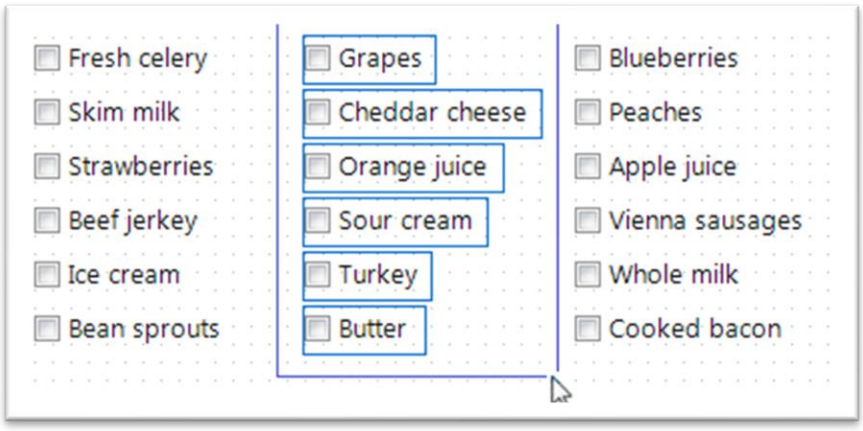


Click and Drag Column of Fields

1. 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.

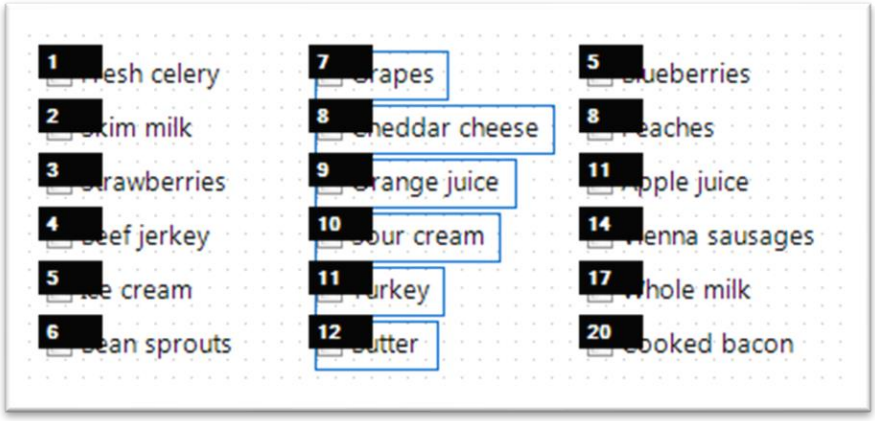
Start new tab order

2. **Click** and **drag** a **rectangle** around the second column of fields to select them.



Grouping tab order

3. 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.



Continue Tab Order

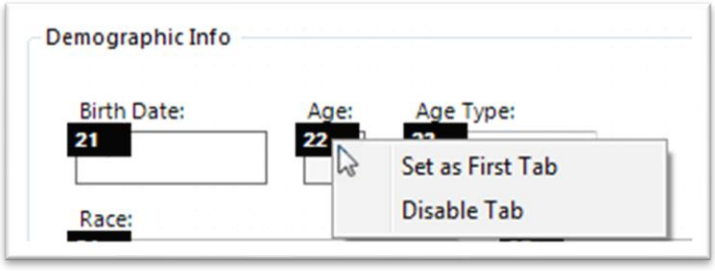
Repeat steps 2 and 3 until the fields display in the proper sequence.

Disable Tab

The disable tab feature makes the field essentially a **read-only** field. You cannot place the cursor in a read-only field. In the following examples, Check Code calculates the **Age field** by birth date. Therefore, you can design this form so that the cursor skips the **Age field** by disabling its tab.

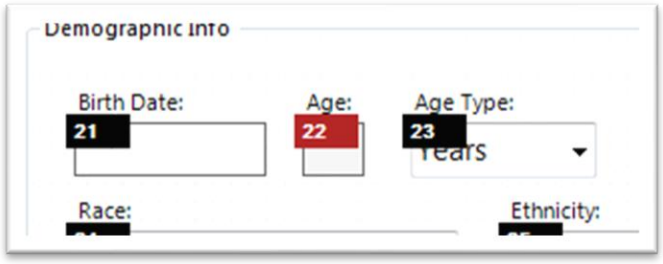
1. Right-click the canvas and select **Tabs > Show Tab Order** from the context menu.

2. Right-click on the **Field Tab** order box and select **Disable Tab**.



Disable Tab

After disabling the tab for a field, the tab order box becomes red to show that it is no longer an adjustable field, and you cannot set the cursor there. Pressing the tab key will bypass any disabled tabs.



Bypassing disabled tabs

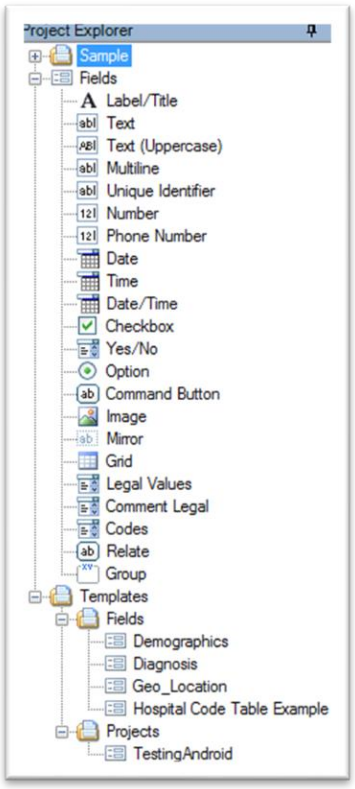
Note: Check Code only runs when the cursor enters a field. If the tab order is disabled, Check Code will not run for that field.

Templates

Templates are a timesaving feature that allows you to save all or part of your project for reuse in other projects. You can share templates with other Epi Info™ 7 users without sharing project data. For example, you can save and use certain fields in a later form you want to build, so you don't need to re-build the same fields again such as if you are working with case demographic information. You can build a library of fields that are ready to go in case of a public health emergency. You can find saved templates in 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 comes with project and field level templates, showing many of the various field types and features of Epi Info™ 7, including Check Code examples. You can find a list of templates in the Project Explorer under the templates category.

You can view some of the best methods and practices for Epi Info™ by building projects using project and field templates. Try out a new project from one of the sample Project Templates in Form Designer and take note of how they work.



Project Explorer template

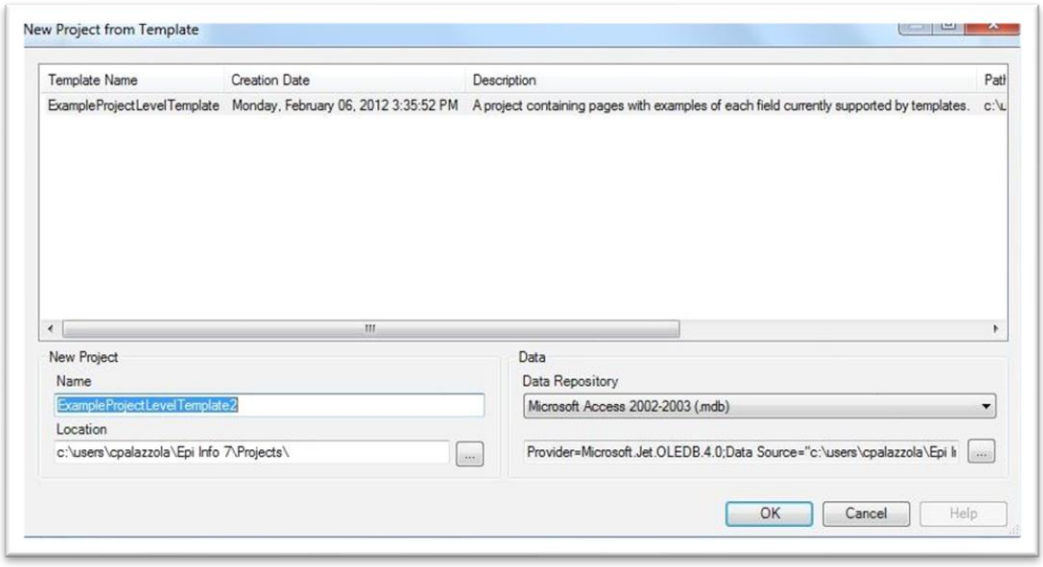
Project Templates

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 the above, including saved Check Code already included 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

You can find template samples 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 box opens.



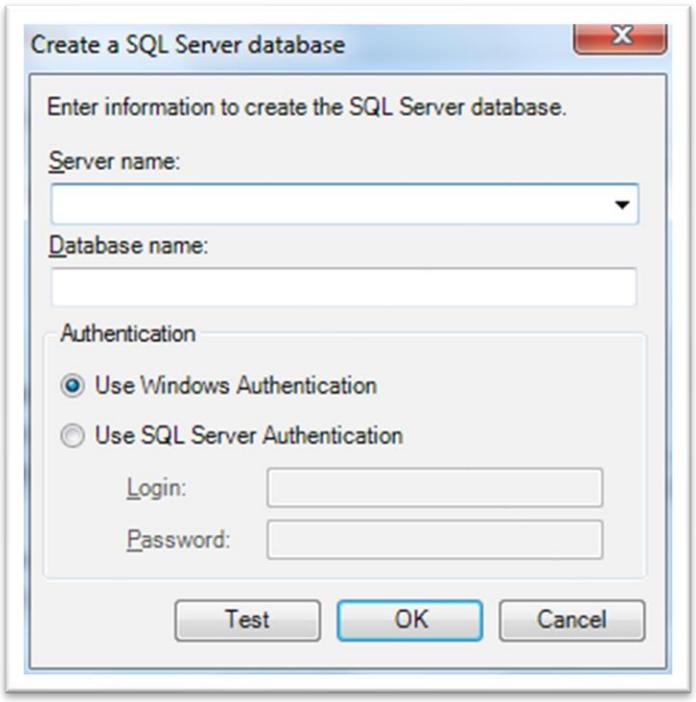
Project from Template

2. Select a template from the list. The current name and database type show in the fields under **New Project** and **Data**.

3. **Edit** the **Project Name** if necessary (optional). The default location for the project is the **Projects folder** within the Epi Info™ folder. Specify another location if necessary (optional).

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

5. Click the browse button (…) to the right of the Data Repository field to enter the connection information if you selected **SQL Server database**. Contact your SQL Server database administrator for the required information requested in this dialog.



SQL Server Database Dialog Box

1. Click **OK**. Form Designer creates the project and after a few seconds. The new project (with form page) displays on the canvas.

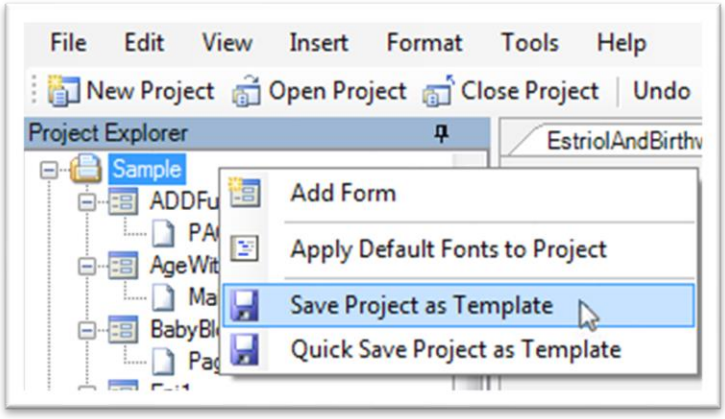
For additional information on creating new projects, refer to the topic **Create a New Blank Project and Form**.

Create a Project Template

There are two options for you when you want to build a project template that includes all the forms, pages, fields, and Check Code. **Save Project as Template** allows you to specify a template name and description, and **Quick Save Project as Template** which 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 Project as Template** does not allow for custom names and descriptions.

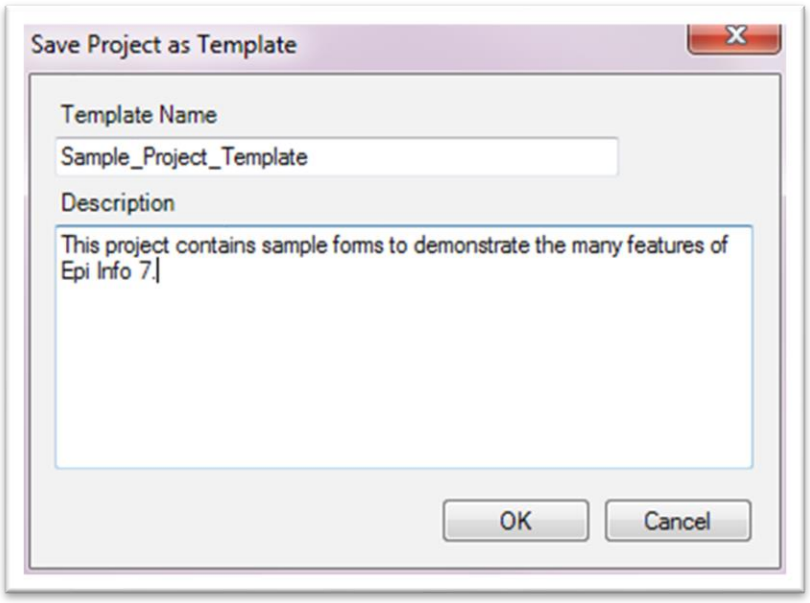
1. In the Project Explorer, right-click on the **project name**. The project name is the topmost item in the Project Explorer.

2. From the drop-down list, select **Save Project as Template** or **Quick Save Project as Template**. If you select **Quick Save Project as Template** the template is immediately saved to the **Templates > Projects folder** with the name of the project and a timestamp.



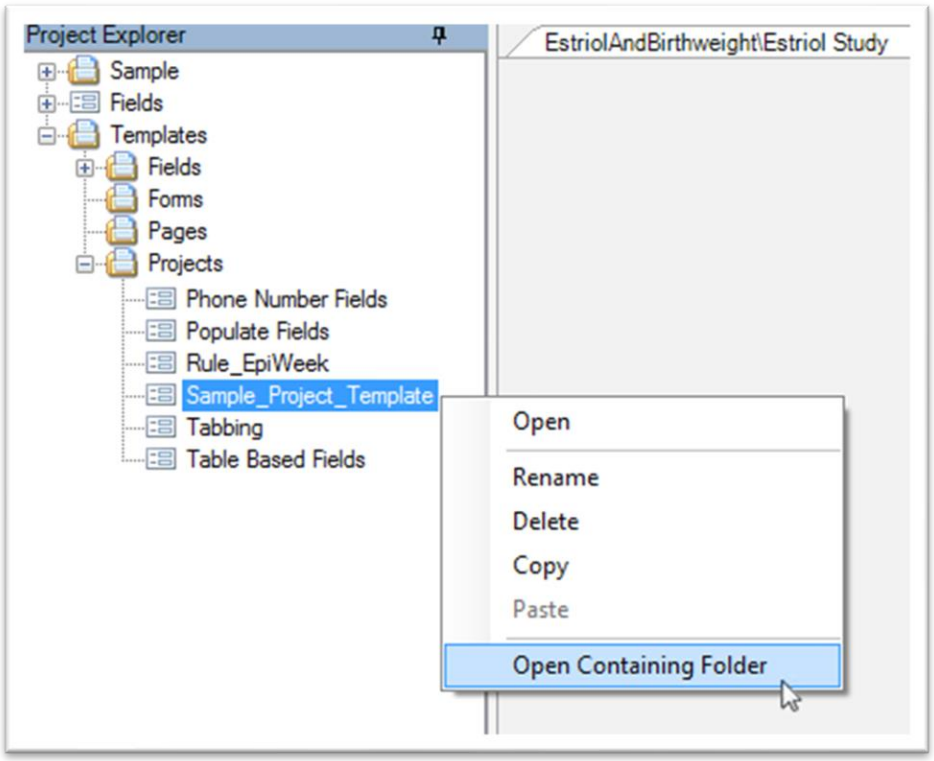
Save Project as Template

1. If you select **Save Project as Template**, a pop-up box allows you to add a template name and an optional description.



Pop-up box for template description

1. Click **OK**. The template saves to the **Templates > Projects** folder.
2. To retrieve and send the template to someone, locate the project template in the **Project Explorer** under the **Projects folder**.
3. Right-click the template name and select **Open Containing Folder**. This opens the folder in Windows Explorer. Share the XML template file with others. Copy and paste the XML template file into an email or save it to a shared network location.

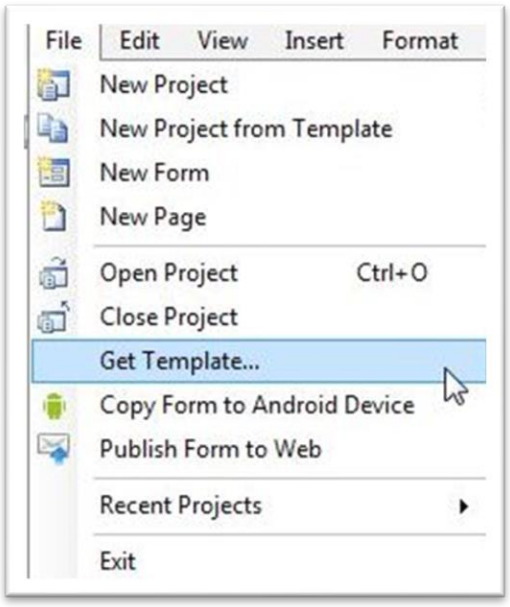


Open Containing Folder

Get Template

If you receive a template from someone else, 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 displays.
2. Locate the template file.
3. Click **Open**. The template saves 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 box opens.



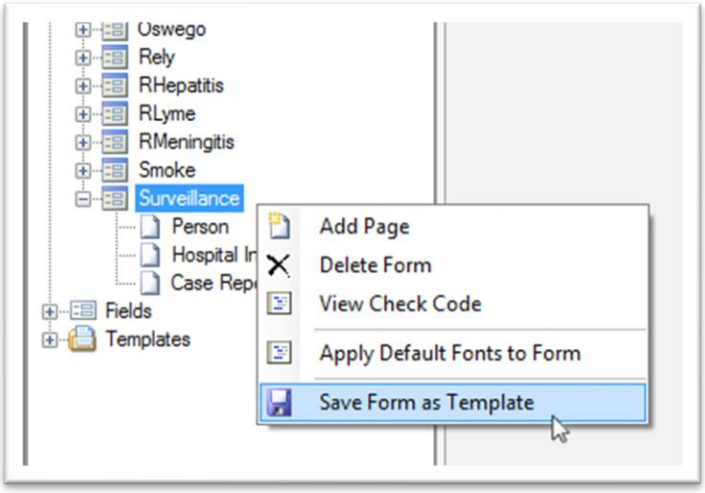
Get Templates Option in Project Explorer

Form and Page Templates

You can build and use form and page templates in similar ways. Key differences are the context menu item selection (right-click to get there). Also, you can use form templates and create a single form project. You can only add a page template to a form from an existing project.

Create a Form Template

If you want the template to include all pages and associated Check Code for a 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**, are included in the template along with all associated Check Code.

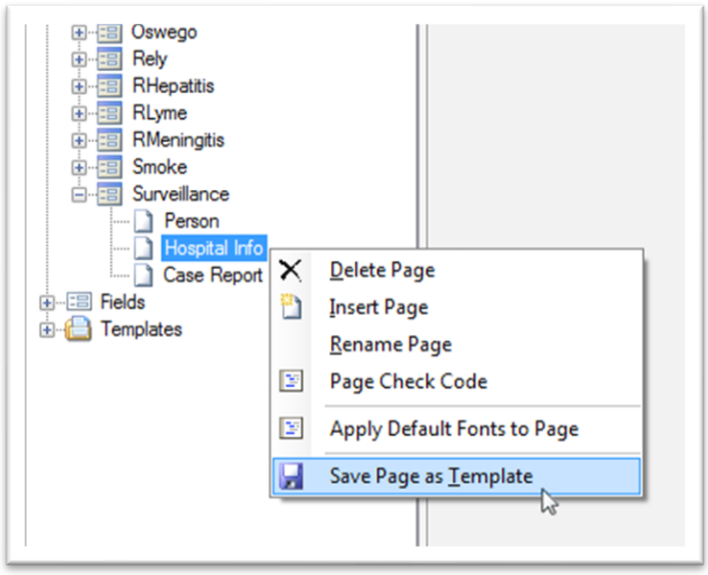


Save Form as Template

Create a Page Template

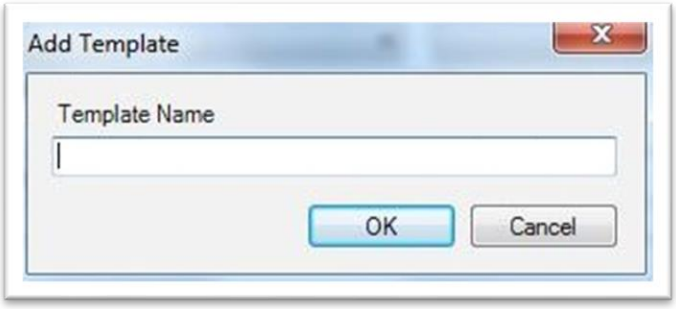
If you want the template to include the contents of a specific page and the Check Code for the page fields, then right-click the **page name** in **Project Explorer**.

1. Select **Save Page as Template**. In this example, only the selected page **Hospital Info** and its Check Code are in the template.



Save Page as Template

2. Enter a **Template Name**.



Add Template dialog box

3. Click **OK**. The page template saves to the respective folder under **Templates** in the **Project Explorer.**

How to Use Form and Page Templates

You can use form and page templates in very similar ways. 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 instructions to create a set of pages, each with one or more fields and Check Code. A page template has only the page layout information and instructions to create fields on a single page along with Check Code.

Since all field names and page names must be unique, a new form created from a template requires very little additional work. The form is usable after creation from the template.

On the other hand, you can use a page template repeatedly on a 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. There is no synchronization for field names within the Check Code. Therefore, you must manually update the Check Code with 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, use the **File > Get Template** feature and browse for the template.

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

4. Click and drag the page to the appropriate position, if you want to change the page order for a previously used page template.

Field Templates

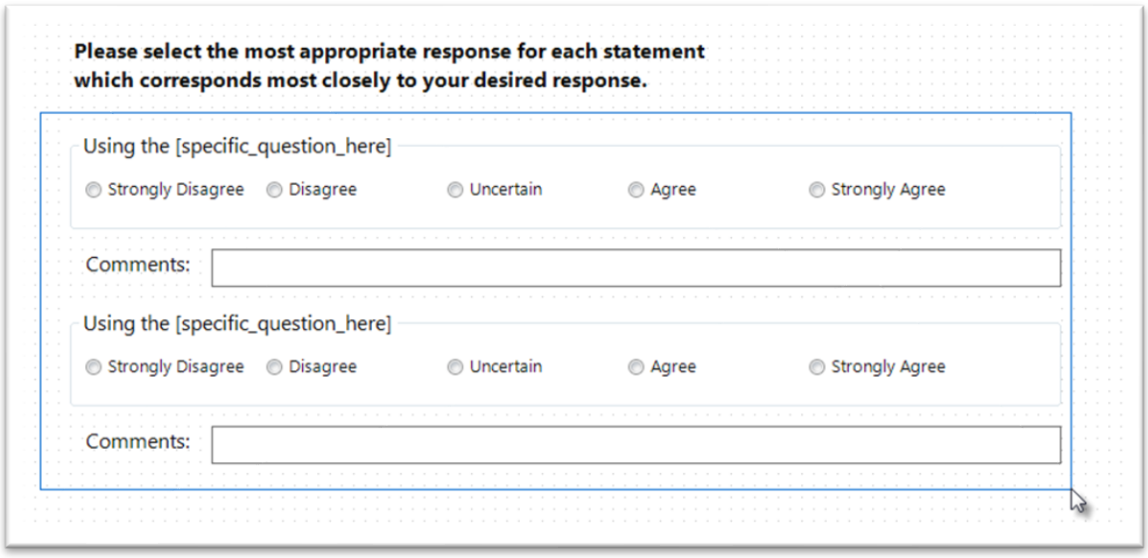
Field templates allow for easy and concise duplication and sharing of fields and enable consistent collection of routine information. When a survey needs to have several questions asked in the same way, as in a **Likert scale**, it is easiest to set up one or two or a few of these questions, save them 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 is available in the Project Explorer under **Templates > Fields.**

How to Create a Field Template

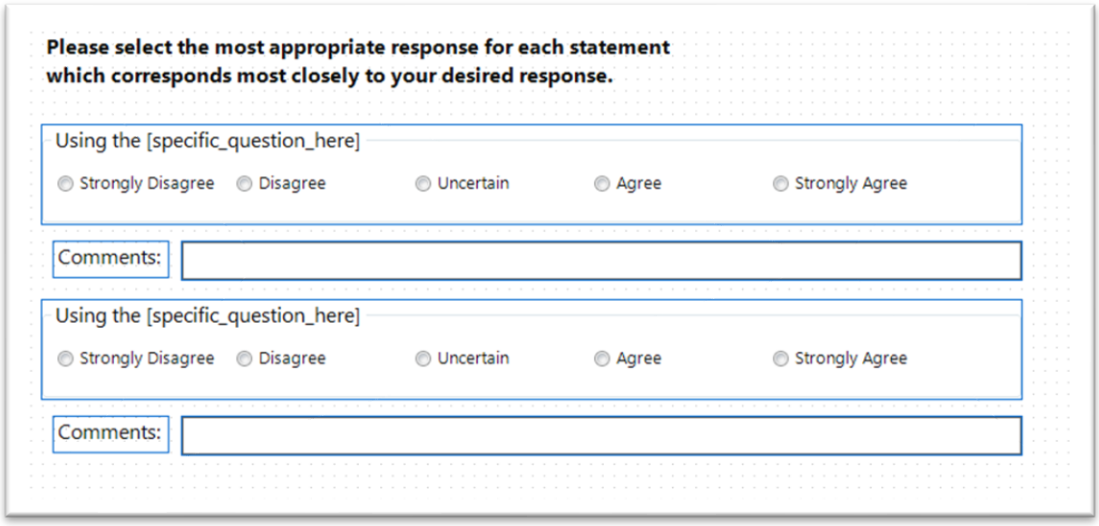
A convenient way to reuse a field or set of fields along with their Check Code or to share fields with a colleague is to create a Field Template. To do this, follow these steps:

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 required fields are in the blue box.



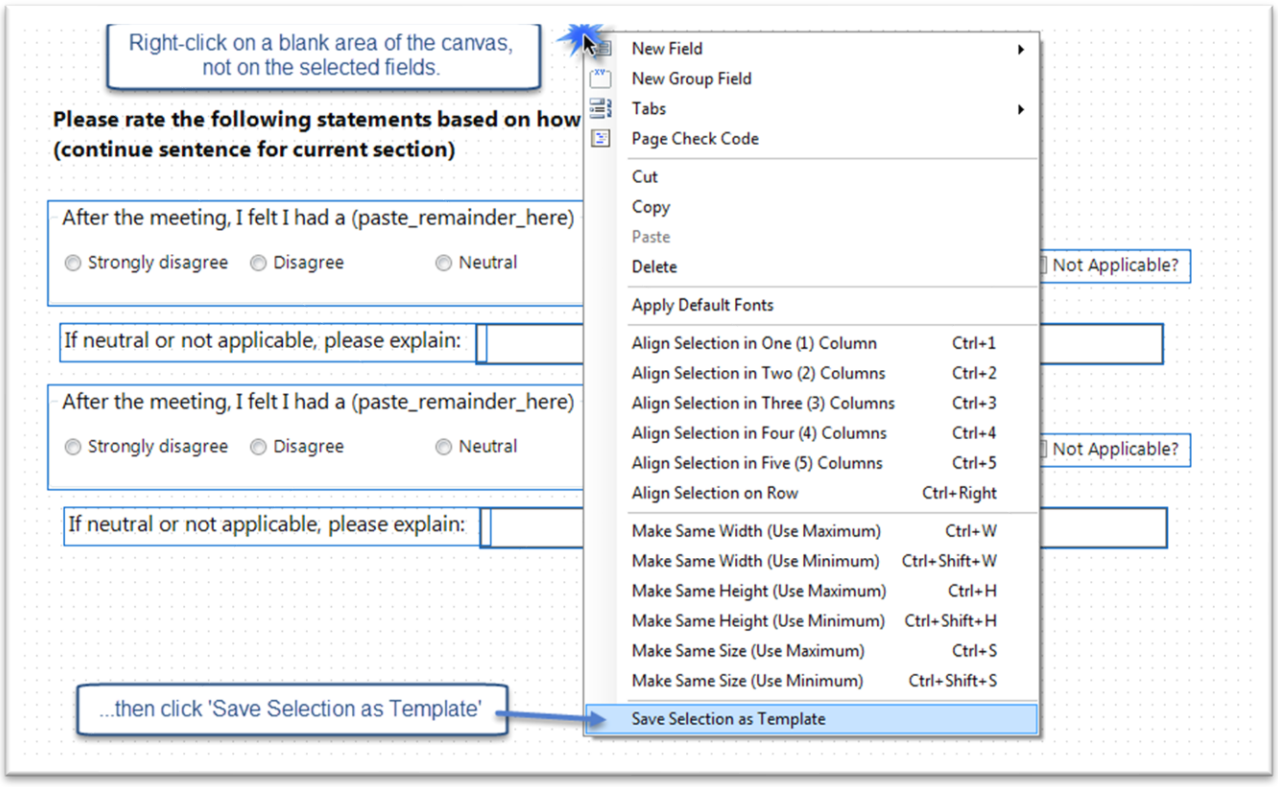
Drag a rectangle to Select Fields

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



Selected Fields appear with blue border

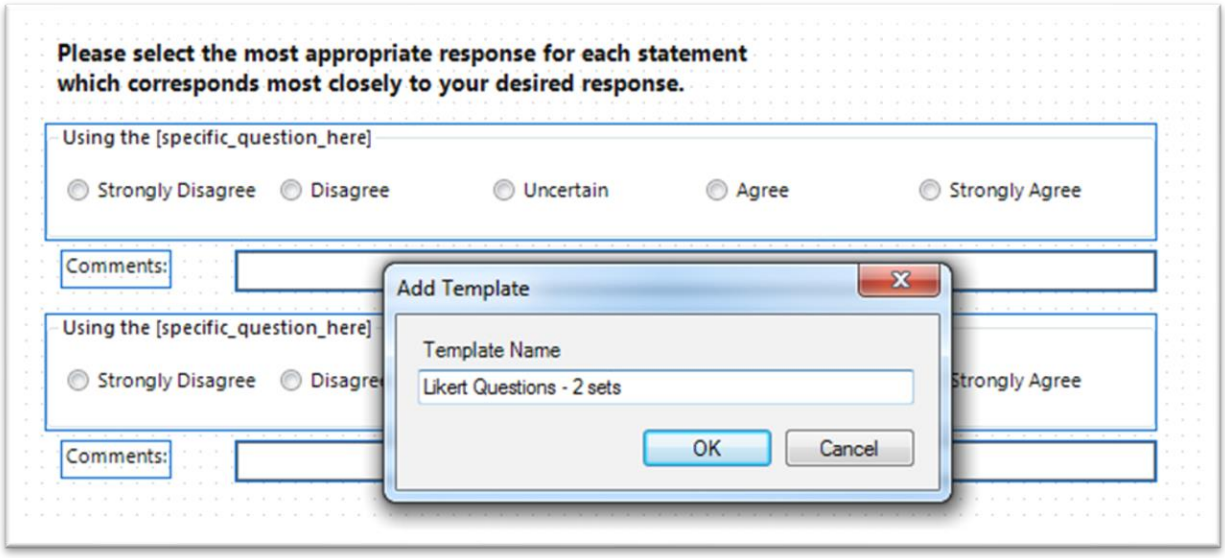
3. Right click on a blank area of the canvas. Select **Save Selection as Template** from the context menu.



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.



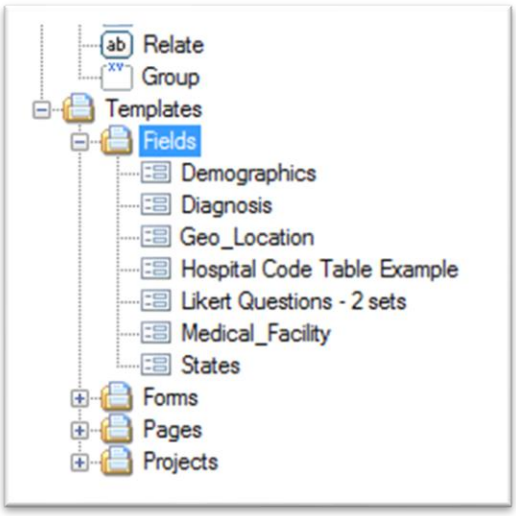
Field Template Name

5. Click **OK**. The field template displays 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 **Templates>Fields** folder in the Project Explorer.

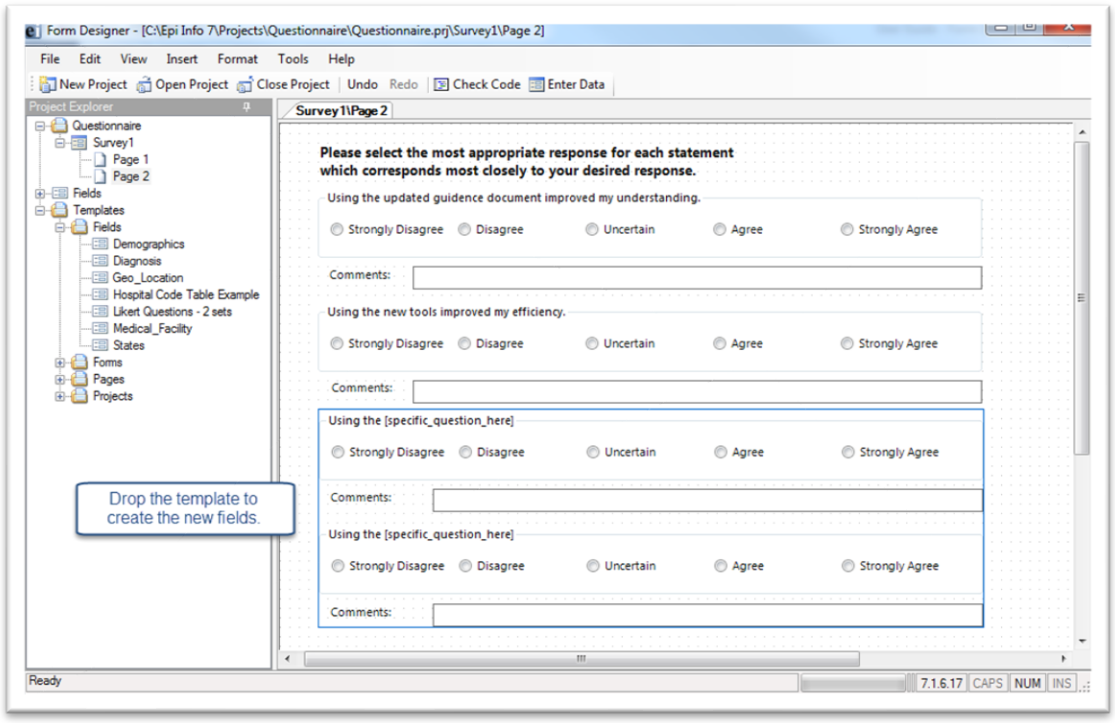


Field Template drop-down list

1. If you cannot find the template you need, use the **File > Get Template** feature and browse for the template.

2. **Click** and **drag** the desired template from the **Project Explorer** onto the page location you desire. 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.

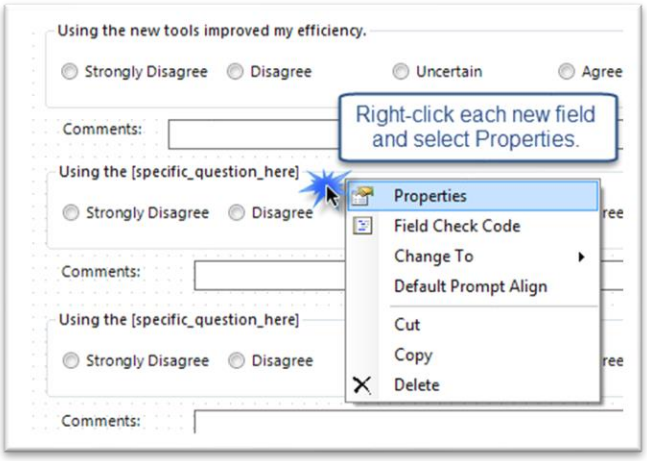
3. **Drop** the template where you want to place new fields. Epi Info™ 7 creates new fields and copies the associated Check Code into the Check Code Editor.



Drag Field Template to Canvas

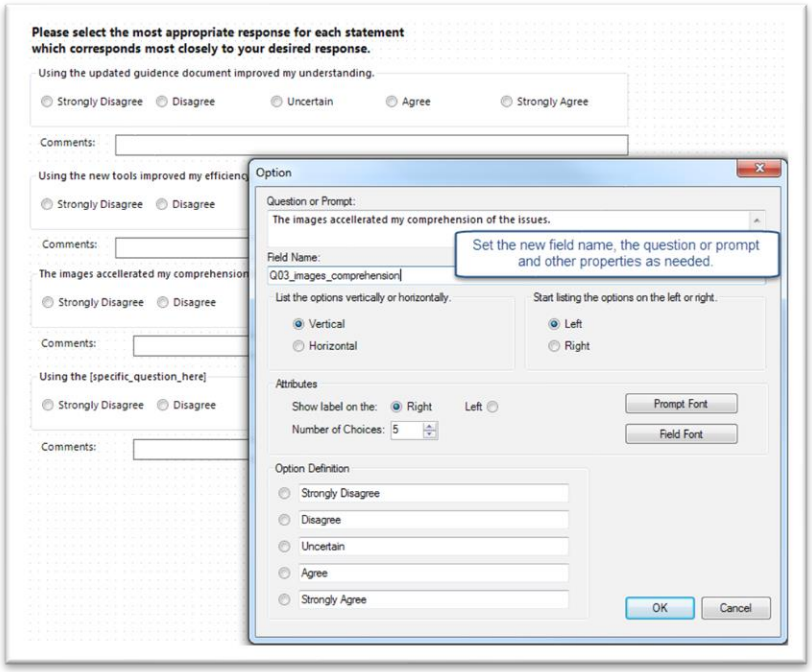
Epi Info™ 7 creates fields from Field Templates using the field name specified in the template, unless a field by that name already exists anywhere on form. Epi Info™ avoids duplicate field names within a form by automatically adding a number to current field names. Unfortunately, this has the side effect of potentially breaking the Check Code that may exist for new fields. The field names within the Check Code are not synchronized. Therefore, you must manually update the Check Code with added field names.

4. 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.



Open the Properties for new fields.

5. If a form doesn't have a data table, edit the **Field Name** and other properties as needed.



Customize the new fields' names, question, and properties.

Sample Field Templates for Demonstration

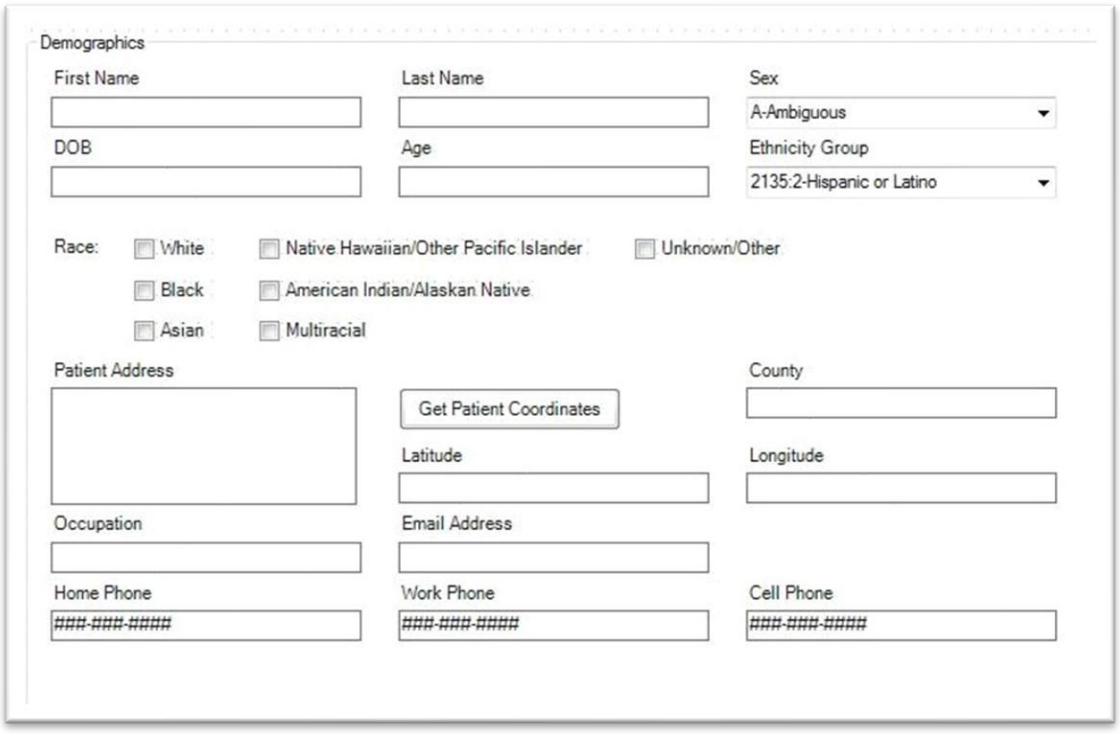
There are several demo field templates with the Check Code that are packaged with Epi Info™ 7. You can use for data collection, but they're primarily for feature illustrations of Epi Info™ 7.

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:

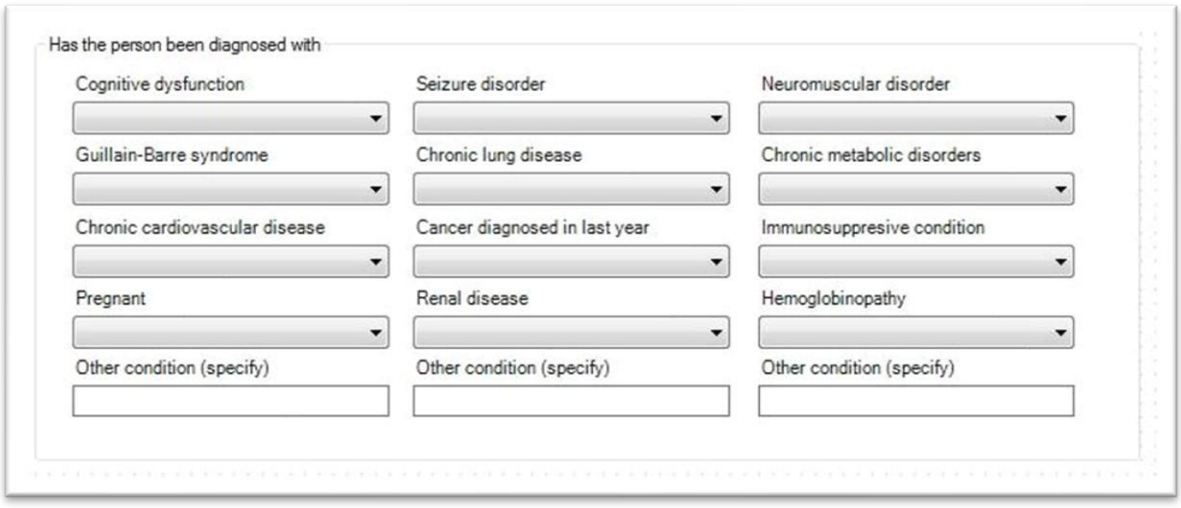
- Text
- Comment Legal
- Drop Down
- Phone Number
- Checkbox
- Group
- Number
- Multiline
- Command Button



Demographics Field Template

Diagnosis

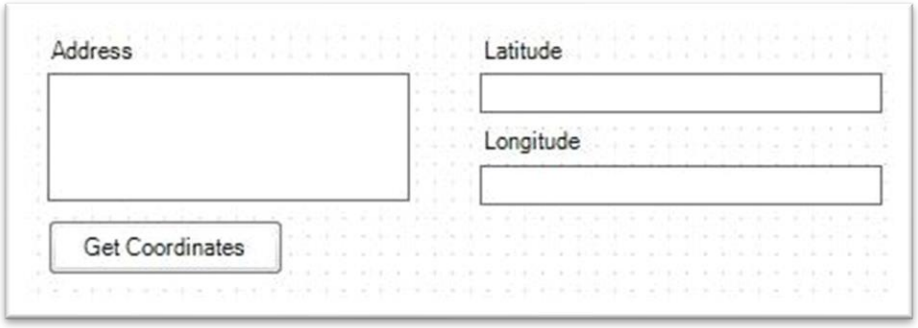
The diagnosis template contains multiple **Yes\No** fields related to common patient diagnoses. The template also includes text fields for collecting additional information.



Diagnosis Field Template

Geo-location

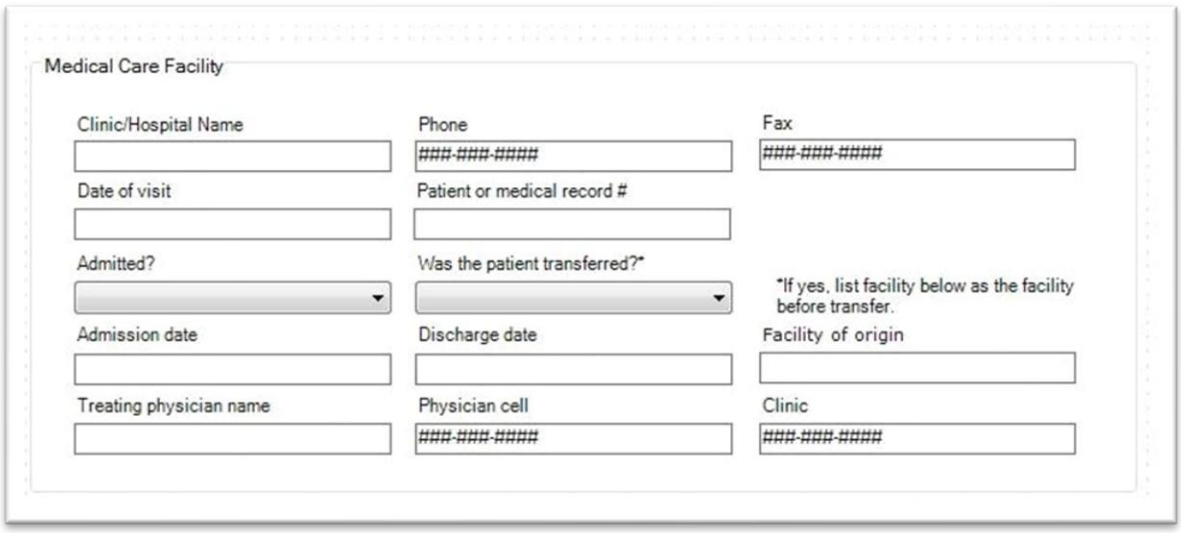
The geo-location field template contains fields for Address, Latitude, and Longitude. It also has a command button, **Get Coordinates.** We used the **GEOCODE command** to write the Check Code for Get Coordinates. This command uses a geolocation service to populate the **Latitude** and **Longitude** fields with coordinates based on entered locations in the **Address** field. These coordinates help to map functions in the Epi Info™ **Maps**.



Geo_Location Field Template

Medical Facility

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



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 you can see the full description 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).

States Field Template

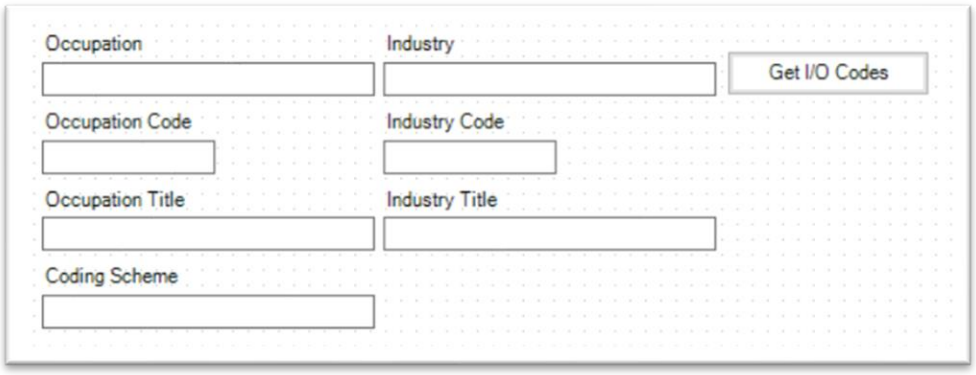
Industry and Occupation

The I**ndustry and Occupation** field template contains eight fields: two input fields, five output fields, and a command button. The two input fields are multiline text fields for entering free-text descriptions of a subject's industry and occupation of employment.

The output fields include number fields for industry and occupation codes, multiline text fields for industry and occupation titles, and a multiline text field for the coding scheme in use.

The command button, Get I/O Codes, invokes check code written with the IOCODE command. This command uses a machine-learned, auto-coding program within Epi Info™ to assign both standard industry and occupation codes, based on provided, free-text descriptions. The resulting codes and their corresponding titles populate the industry and occupation code and title output fields.

The coding scheme output field is automatically populated with the name of the coding scheme used by the auto-coding program. No internet connection is required to run the program. No data is transferred outside of Epi Info™ during the coding process.



Get I/O Codes button

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. You can create a line using the Label/Title field.

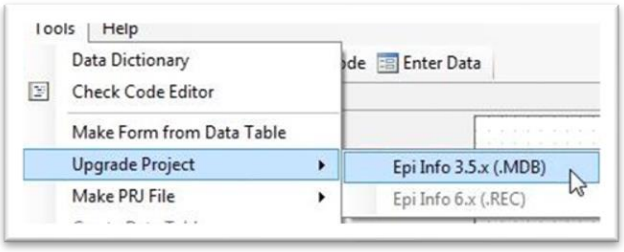
Figure 0.1: Horizontal Line Functionality.

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 and **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 displays in the form.
8. You can resize the line, move, copy and paste as needed.

Upgrade Project

To use a project from a previous version of Epi Info™ in Epi Info™ 7, you must upgrade the project to the latest version. The upgrade project tool allows users to browse and identify previous projects and upgrade the projects for Epi Info™ 7. Select **Tools > Upgrade Project > Epi Info 3.5x (.MDB).**



Upgrade Project

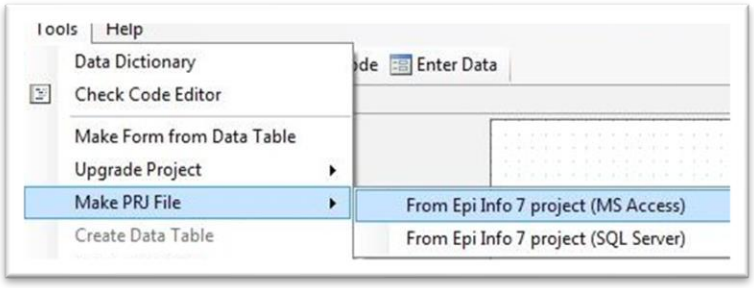
Browse and select the desired project. Click **Open**. Epi Info™ 7 upgrades the project to its current version.

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 you do not have the corresponding PRJ file (project file), then Epi Info™ 7 won't work until you create a new PRJ File.

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

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



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**. The source MDB file creates a new PRJ file. You can open the original MDB file again in older versions after the migration. Any changes, any changes made to the original database will remain, and will not add to the new version.

4. For SQL Server databases, you'll need connection information for the SQL Server. See your SQL Server Database Administrator for the 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 displays.

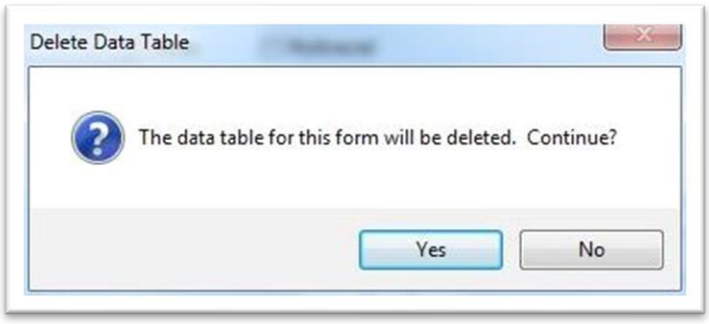


Figure 0.2: Delete Data Table.

2. Click **Yes**. This deletes the data table associated with your form. The form remains intact. If you have created a relational database setup, deleting the data table from the parent form will delete the data tables for any of the child forms.

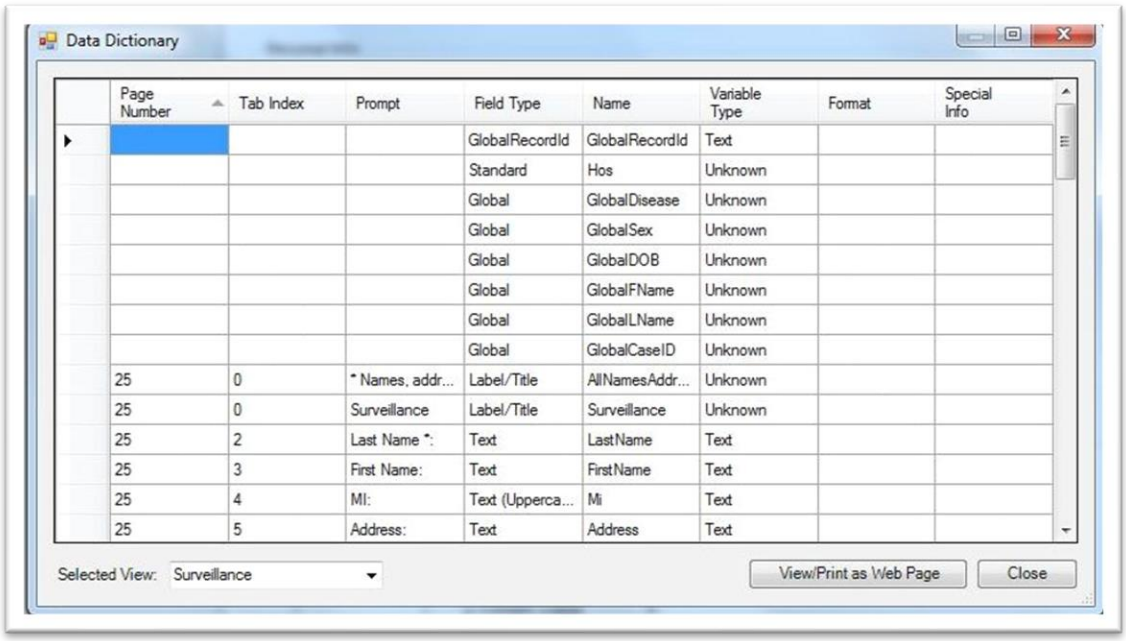
- Deletion of the data table results in the deletion of any entered data associated with the form. Be sure you do not need the records.

Note: Use this function only if your data is expendable. Your data will be unrecoverable.

View a Data Dictionary

The Data Dictionary displays form (s) and defined variables for an open project. Fields or variables sort and display 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 displays on the canvas.



Data Dictionary

- **Page Number** values are generated as pages are added into a form. The Page Number 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.
- The resulting grid shows the name of the fields in the Name column. These names correspond to the column names in the data tables you'll need when performing analyses.
- Format column values include anything with a pattern. Pattern for number, date, date-time, phone number fields and sorted for combo boxes. A **Combo box** is a combination of the list box and a drop-down list.
- **Special Info column values** include all properties available from the **Field Definition dialog box**. Properties include read only, repeat last, code table, groups, required, range, and image size. The **Special Info column** also holds the values for pre-defined variables like standard, global, or permanent. During field creation, the **Special Info** column includes information in related fields showing whether they contain one or unlimited records. The default is **Unlimited Records**. If you check the **If the Return to the Parent Form after One Record has been Entered** box, the format shows as one record.

To view a data dictionary for another form:

1. Click **Selected Form/Code Table**. The Selected Form/Code Table drop-down list opens.

2. Select the **form** or **code table** to view. 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, you can print data by going to **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.

ata Dictionary for View [Surveillance]
:\Users\cpalazzola\Epi Info 7\Projects\Sample\Sample.prj:Surveillance
onday, April 22, 2013 5:05:16 PM

Page Number	Tab Index	Prompt	Field Type	Name	Variable Type	Format	Special Info
			GlobalRecordId	GlobalRecordId	Text		
			Standard	Hos	Unknown		
			Global	GlobalDisease	Unknown		
			Global	GlobalSex	Unknown		
			Global	GlobalDOB	Unknown		
			Global	GlobalFName	Unknown		
			Global	GlobalLName	Unknown		
			Global	GlobalCaseID	Unknown		
25	0	* Names, addresses, and all other data in this sample data table are fictional.	Label/Title	AllNamesAddresses	Unknown		
25	0	Surveillance	Label/Title	Surveillance	Unknown		
25	2	Last Name *:	Text	LastName	Text		
25	3	First Name:	Text	FirstName	Text		
25	4	MI:	Text (Uppercase)	Mi	Text		
25	5	Address:	Text	Address	Text		
25	6	City:	Text	City	Text		
25	7	County:	Codes	CountyName	Unknown		
25	8	County Code:	Text	County	Text		
25	9	Zip Code:	Number	ZipCode	Number	#####	
25	10	Disease	Codes	Disease	Unknown		
25	11	Event Code:	Text	EventCode	Text		
25	12	Event Date:	Date	EventDate	Date	MM-DD-YYYY	

Data Dictionary as an HTML Page

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

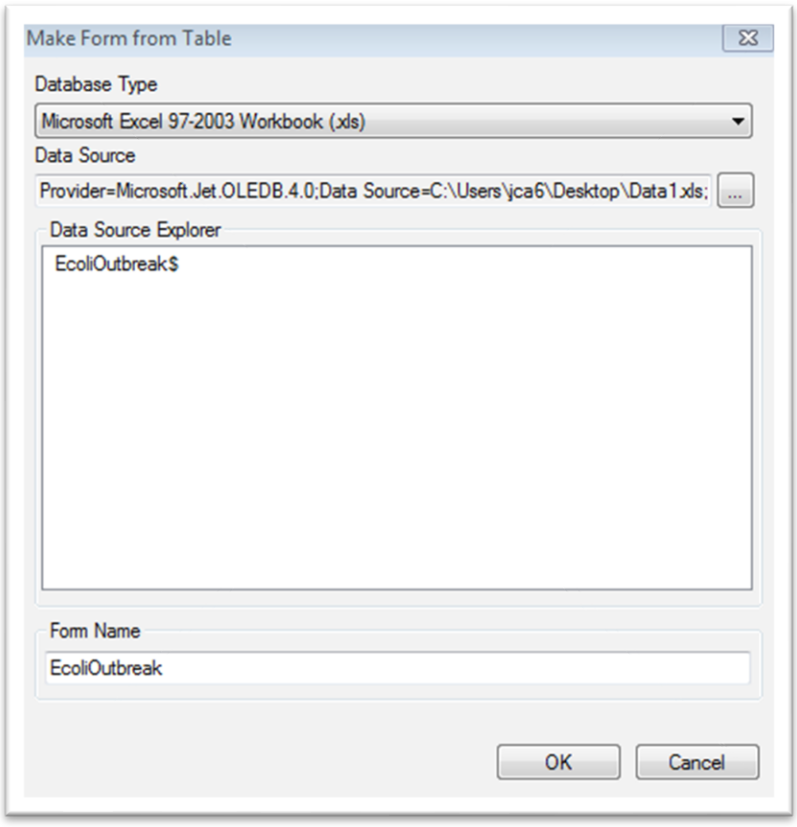
Make Form from Data Table

The Make Form from Data Table feature allows you to auto-generate an Epi Info™ 7 form with the corresponding data based on an existing database file. Once completed, the initial structure of a form is customizable. You can specify field types, code reference tables, and field prompts during the process. Formats supported include MS Excel, MS Access, .CSV, SQL Server and MySQL, among other types.

For example, you have an Excel spreadsheet with data that you have historically maintained. You would like to create an Epi Info™ project and leverage the benefits of entering data in Epi Info™ 7. This feature allows users to do so.

In order to make a form from a data table, complete these steps:

1. From the Epi Info™ main menu, select **Utilities > Make Form from Data Table**. The **Make Form from Table** dialog opens.
2. Select the database type you want. 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 want to import into Epi Info™ 7.
5. Specify a form name. Click **OK**. The Table-to-Form dialog opens.



Make Form from Table dialog

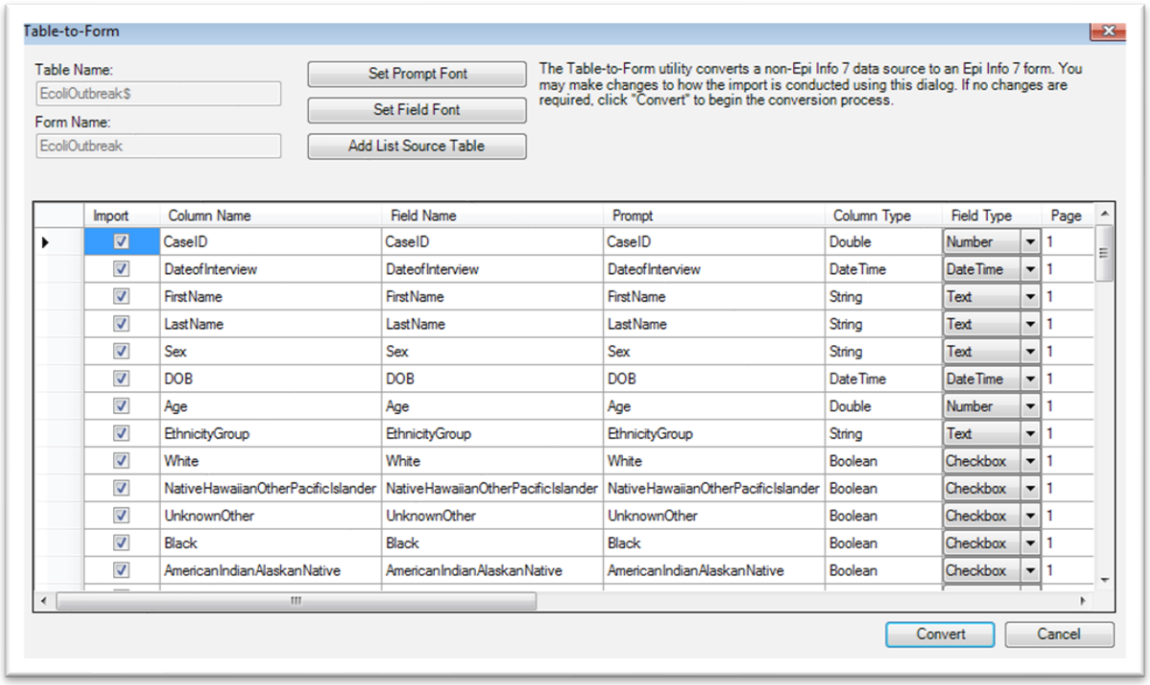


Table-to-Form dialog

6. Click **Set Prompt Font** and **Set Field Font** to set the fonts for the question/prompts and the input fields, respectively.

7. Use **Add List Source Table** for any Legal Value field columns in the source table. Then click and browse for the table containing the list of valid values. The **ListSourceTableName** column requires these values.

Here is a description of each column:

- **Import** – This check box allows you to select the fields you want to import into the form. You can turn off the import for other fields. All fields are checked by default.

- **Column Name** – This specifies the column name from the source table. The column name cannot be edited.

- **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 can change the suffix if you choose.

Note: Be sure these field names are adequate before starting the conversion. You can't change field names after the data tables are created.

- **Prompt** – The prompt is initially the same as the field name. You can change it now, or later by visiting the properties for the field.
- **Column Type** – Shows the type of data that Epi Info™ 7 detected. The column type cannot be edited.
- **Field Type** – 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 suggests a field type, like a text field. You can override the suggestion if you prefer another field type that works better for your data. For example, if the column contains only Yes and No values, Epi Info™ may suggest the text field, but you may decide the **Yes and No** field type is more appropriate. You can choose from the following field types: Text, Multiline, Number, Yes\No, Checkbox, Date, Date-Time, Time, and Legal Values.
- **Page** – For tables having many columns, Epi Info™ places the fields on the form in the order they appear on the source table. It will stack as many fields as will fit on the first page and continue to add pages and fields until all the columns are full. You can use the **Page column** to instruct Epi Info™ to keep certain fields together on a specific page.

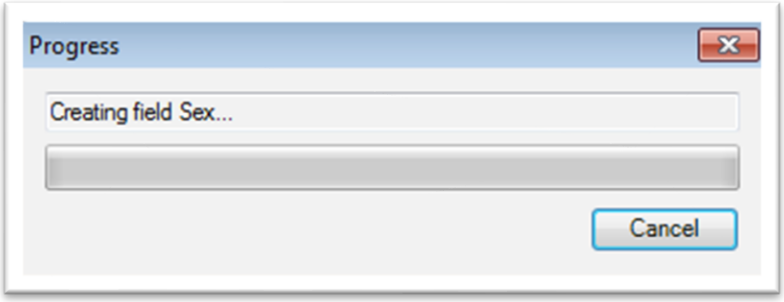
Note: There is a limit of 250 fields on a page.

- **Tab** –The order of the fields 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 is disabled. By default, it is unchecked.
- **Required** – Fields where data entry is mandatory should have this required attribute checked. By default, it is unchecked.
- **Repeat last –** When checked, the Repeat Last attribute causes the values in the most recently viewed record to pre-populate for a new record. By default, it is unchecked.
- **Range** – Allows for a specified value between a range of values. 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** – Specifies the lowest value that can be entered into the field.
- **Upper** – Specifies the highest value that can be accepted by the field.
- **List Source Table Name** – Imported reference tables using the **Add List Source Table** option allow for the linking of fields to imported tables. This only applies to **Legal Value fields**.

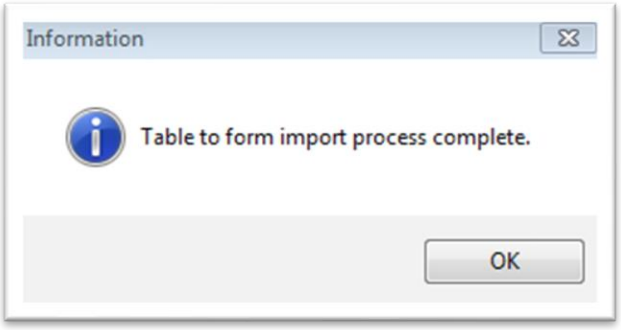
- **List Source Text Column Name**—If multiple columns are available on the imported reference table, specify which column name for mapping to fields from within the table.
- **List Source Table**- Remove Fields from the **View Fields** list using the **back single arrow** or **back double arrows**.

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

Form creation and with data importing. Once the process completes the **Table to form import process complete** message displays.

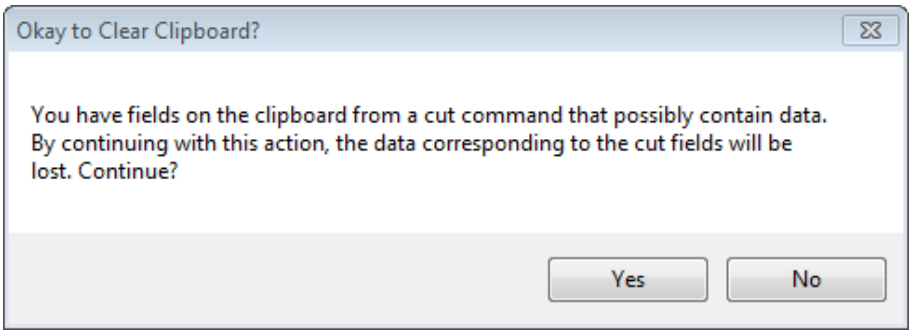


In Progress dialog window



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 make a copy of the imported project file, then use the **Delete Data Tables** option in Form Designer, move the fields to the necessary pages, then **Use the MERGE Command** in Classic Analysis to merge the data into the revised form.



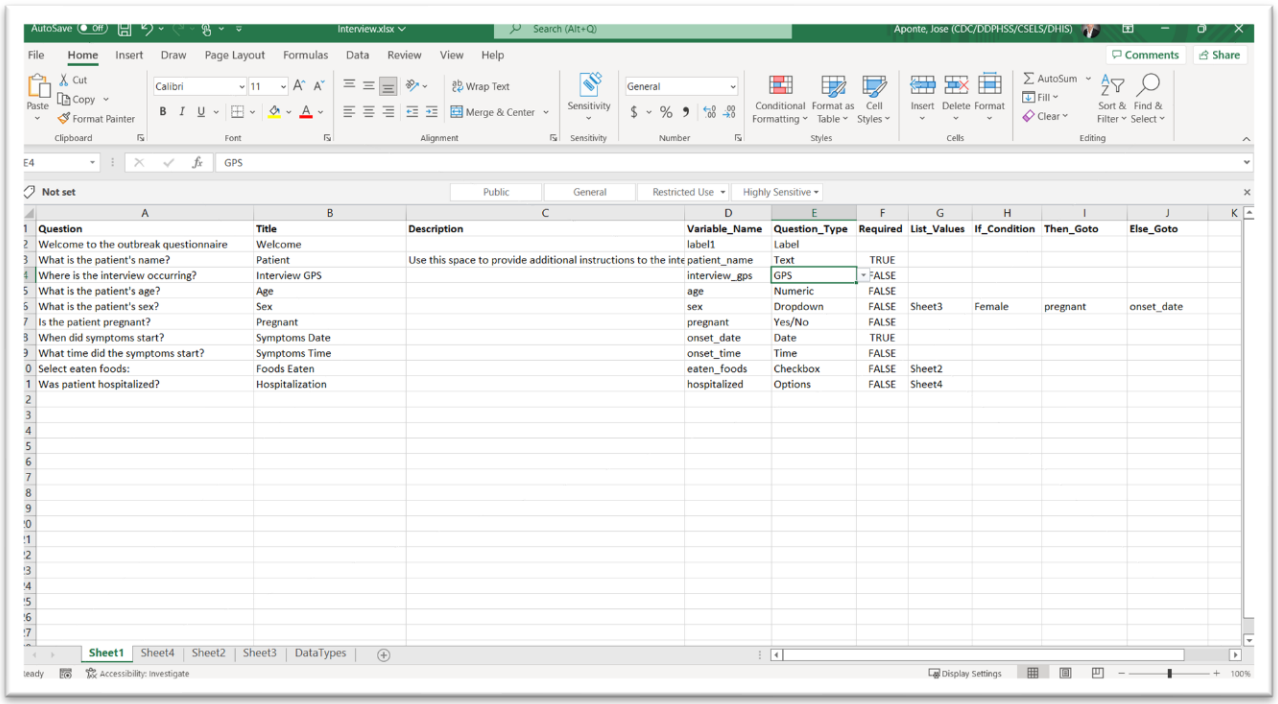
Cutting and Pasting fields

New Project from Data Dictionary

The New Project from Data Dictionary feature allows you to auto-generate Epi Info™ 7 forms with fields based on your MS Excel templates. Once you've formatted your MS Excel template, you can begin building the kind of form you prefer. You can customize the form later if you wish. When using the MS Excel template, you can specify field prompts, field types, code reference tables, and implement limited skip patterns.

Download the MS Excel template from the Epi Info™ Form Designer section: **Click here to view an example** under the **File > New Project from Data Dictionary** menu option. The MS Excel template contains the following columns:

- **Question** – Prompts user to create a field.
- **Title** – Creates a header shows for each question. This is optional.
- **Description** – Optional content for the data entry field displayed with the question.
- **Variable_name** – Assignment of a field name to the question.
- **Question_type** – Specifies the Epi Info™ field type. Only certain field types are supported when using this feature; Text, Numeric, Yes/No, Option, Dropdown, Date, Time, GPS, Label
- R**equired** – Attribute that specifies required fields during data collection. Parameters accepted in the column are TRUE or FALSE.
- **List_values** – Reference the worksheet name in this column, containing the list of values corresponding to a dropdown field. The actual values must be listed on a separate worksheet. For example, if you want a drop-down field to include the values, Male, Female, and Other, you will add these three values in a different worksheet and make a reference to the worksheet name in the List_values column.
- **If_Condition** – Implement only an IF/THEN/GOTO conditional statement using the MS Excel template. Add more conditional assignments using the Check Code editor once the form has been created. Add Check code using the next three columns in the MS Excel template. For example, if you want a skip pattern for a dropdown field, specify the evaluated value in the IF_Condition column. Specify the destination field if the condition is met in the THEN_GOTO column, and then use the ELSE_GOTO column to specify the next field to move to if the condition is not met.
- **Then_Goto –** Specify **a** field name destination if the condition is met.
- **Else_Goto** – Specify **a** field name destination if the condition is not met.



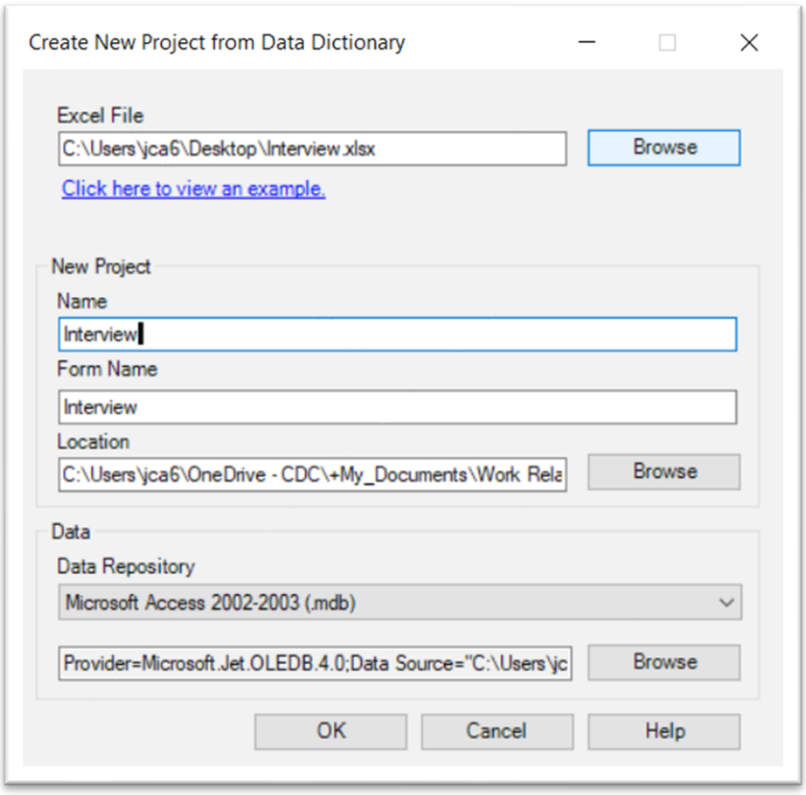
Question	Title	Description	Variable_Name	Question_Type	Required	List_Values	If_Condition	Then_Goto	Else_Goto
Welcome to the outbreak questionnaire	Welcome		label1	Label					
What is the patient's name?	Patient	Use this space to provide additional instructions to the inte	patient_name	Text	TRUE				
Where is the interview occurring?	Interview GPS		interview_gps	GPS	FALSE				
What is the patient's age?	Age		age	Numeric	FALSE				
What is the patient's sex?	Sex		sex	Dropdown	FALSE	Sheet3	Female	pregnant	onset_date
Is the patient pregnant?	Pregnant		pregnant	Yes/No	FALSE				
When did symptoms start?	Symptoms Date		onset_date	Date	TRUE				
What time did the symptoms start?	Symptoms Time		onset_time	Time	FALSE				
Select eaten foods:	Foods Eaten		eaten_foods	Checkbox	FALSE	Sheet2			
Was patient hospitalized?	Hospitalization		hospitalized	Options	FALSE	Sheet4			

Excel Template for New Project from Data Dictionary

After adding all your content (fields, and parameters for each column) to the MS Excel template you're ready to create the form using the New Project from Data Dictionary feature.

Create the form using the New Project from Data Dictionary feature, complete these steps:

1. Select **File > New Project from Data Dictionary**, from the Epi Info™ Form Designer module. This shows the **New Project from Data Dictionary** dialog screen.



Create New Project from Data Dictionary Window

2. Navigate to the location of the MS Excel file.
3. Specify a name for the project.
4. Specify a name for the form.
5. Click the **browse** button and navigate to the location where you would like to save the new Epi Info™ project.
6. Click **OK**.

Epi Info™ starts building the form based on the parameters in the MS Excel template. The completed process builds a form containing the fields specified from the template. This feature currently creates one page for each field, but you could move around fields from one page to the other using the Form Designer Cut and Paste feature. Future releases of Epi Info™ will have the capability of incorporating multiple fields within a page.

Appendix A: Reserved Words

There are certain words in Epi Info™ 7 that may not be used for variable names, field names and form names. When the user attempts to use a reserved word for any of these elements, a message will be displayed to the user requiring the name of the variable, field, or form name to be changed. Below is a list of the reserved words in Epi Info™ 7.

RESERVED WORDS				
1 ABSOLUTE	41 CHARACTER	81 DATEFORMAT"	121 EXCEPTION	161 HELP"
2 ACTION	42 CHARACTER_LENGTH	82 datetime	122 EXEC	162 HIDE"
3 ADA	43 CHECK	83 DAY	123 EXECUTE	163 HIVALUE"
4 ADD	44 CLEAR"	84 DBVALUES"	124 EXISTS	164 HOUR
5 ALL	45 CLIPBOARD"	85 DBVARIABLES"	125 EXIT"	165 HYPERLINKS"
6 ALLOCATE	46 CLOSE	86 DBVIEWS"	126 EXTERNAL	166 identity
7 ALPHANUMERIC	47 CLOSEOUT"	87 DEALLOCATE	127 EXTRACT	167 IEEEDOUBLE
8 ALTER	48 CMD"	88 DEC	128 FALSE	168 IEEESINGLE
9 ALWAYS"	49 COALESCE	89 decimal	129 FETCH	169 IF"
10 and	50 CODE	90 DECLARE	130 FIELDVAR"	170 IGNORE"
11 ANY	51 COLLATE	91 DECOMPRESS"	131 FILESPEC"	171 IMMEDIATE
12 APPEND"	52 COLLATION	92 DEFAULT	132 FIRST	172 IMP
13 ARE	53 COLUMN	93 DEFERRABLE	133 FKEY" H");	173 in
14 AS	54 COLUMNSIZE"	94 DEFERRED	134 float	174 INCLUDE
15 asc	55 COMBINE"	95 DEFINE"	135 FLOAT4	175 INDEX
16 ASCENDING"	56 COMMANDLINE"	96 delete	136 FLOAT8	176 INDICATOR
17 ASSERTION	57 COMMIT	97 DELETED"	137 FOR	177 INITIALLY
18 ASSIGN"	58 COMPRESS"	98 DENOMINATOR"	138 FOREIGN	178 INNER
19 AT	59 CONNECT	99 desc	139 FORTRAN	179 INPUT
20 AUTHORIZATION	60 CONNECTION	100 DESCENDING"	140 FOUND	180 INSENSITIVE
21 AUTOINCREMENT	61 constraint	101 DESCRIBE	141 FREQ"	181 INSERT
22 AUTOSEARCH"	62 CONSTRAINTS	102 DESCRIPTOR	142 FREQGRAPH"	182 int
23 AVG	63 CONTINUE	103 DIALOG"	143 from	183 integer
24 BEEP"	64 CONVERT	104 DISALLOW	144 FULL	184 INTEGER1
25 BEGIN	65 CORRESPONDING	105 DISCONNECT	145 GENERAL	185 INTEGER2
26 BETWEEN	66 count	106 DISPLAY"	146 GET	186 INTEGER4
27 BINARY	67 COUNTER	107 DISTINCT	147 GLOBAL	187 INTERSECT

28 bit	68 COXPH"	108 DISTINCTROW	148 GLOBALID	188 INTERVAL
29 BIT_LENGTH	69 CREATE	109 DLLOBJECT"	149 GO	189 INTO
30 BITMAP"	70 CROSS	110 DOMAIN	150 GOTO	190 IS
31 BOOLEAN	71 CURRENCY	111 double	151 GRANT	191 ISOLATION
32 BOTH	72 CURRENT	112 DROP	152 GRAPH"	192 JOIN
33 BY	73 CURRENT_DATE	113 ELSE	153 GRAPHTYPE"	193 KEY
34 byte	74 CURRENT_TIME	114 ELSEIF"	154 GRIDLINES"	194 KEYVARS"
35 CASCADE	75 CURRENT_TIMESTAMP	115 END	155 GRIDTABLE"	195 KMSURVIVAL"
36 CASCADED	76 CURRENT_USER	116 ENDBEFORE"	156 GROUP	196 LANGUAGE
37 CASE	77 CURSOR	117 END-EXEC	157 GROUPVAR"	197 LAST
38 CATALOG	78 DATABASE	118 EQV	158 GUID	198 LEADING
39 char	79 DATABASES"	119 ESCAPE	159 HAVING	199 LEFT
40 CHAR_LENGTH	80 date	120 EXCEPT	160 HEADER"	200 LET"

RESERVED WORDS (continued)

201 LEVEL	245 NULLIF	289 RECDELETED"	333 SQLSTATE	377 UNDEFINE"
202 like	246 NUMBER	290 RECODE"	334 SQLSTRING	378 UNDELETE"
203 LINENUMBERS"	247 numeric	291 RECORDCOUNT"	335 SQLWARNING	379 UNHIDE"
204 LINKNAME"	248 OCTET_LENGTH	292 RECSTATUS" H");	336 STARTFROM"	380 UNION
205 LIST"	249 OF	293 references	337 STATISTICS"	381 UNIQUE
206 LOCAL	250 OFF"	294 REGRESS"	338 STATUSBAR"	382 UNIQUEKEY" H");
207 LOGICAL	251 OLEOBJECT	295 RELATE"	339 STDEV	383 UNKNOWN
208 LOGICAL1	252 on	296 RELATIVE	340 STDEVP	384 update
209 LOGISTIC"	253 ONLY	297 REPLACE"	341 STRATAVAR"	385 UPPER
210 LONG	254 OPEN	298 REPORT"	342 SUBSTRING	386 USAGE
211 LONGBINARY	255 OPTION	299 REPORTDATA"	343 SUM	387 USEBROWSER"
212 LONGTEXT	256 or	300 RESPONSEVAR"	344 SUMOF"	388 USER
213 LOVALUE"	257 ORDER	301 RESTRICT	345 SYSTEM_USER	389 USING
214 LOWER	258 OUTER	302 REVOKE	346 SYSTEMDATE"	390 VALUE
215 MAP"	259 OUTPUT	303 RIGHT	347 SYSTEMTIME"	391 values
216 MATCH	260 OUTTABLE"	304 ROLLBACK	348 SYSLATITUDE	392 VALUEVAR"
217 MATCHING"	261 OVERLAPS	305 ROUTEOUT"	349 SYSLONGITUDE	393 VAR
218 MATCHVAR"	262 OVERLAYNEXT"	306 ROWS	350 SYSBARCODE	394 varbinary
219 MAX	263 OWNERACCESS	307 RUNPGM"	351 TABLE	397 varchar
220 MEANS"	264 PAD	308 RUNSILENT"	352 TABLEID	398 VARP
221 MEMO	265 PARAMETERS	309 SCHEMA	353 TABLES"	399 VARYING
222 MERGE"	266 PARTIAL	310 SCROLL	354 TEMPLATE"	400 VIEW
223 min	267 PASCAL	311 SECOND	355 TEMPORARY	401 VIEWNAME"
224 MINUTE	268 PERCENT	312 SECTION	356 text	402 WEIGHTVAR"
225 MISSING"	269 PERCENTS"	313 SELECT	357 TEXTFONT"	403 WHEN
226 MOD"	270 PERMANENT"	314 SESSION	358 TEXTINPUT"	404 WHENEVER
227 MODDATE	271 PGMNAME"	315 SESSION_USER	359 THEN	405 where
228 MODULE	272 PIVOT	316 set	360 THREED"	406 WITH
229 MODUSER	273 POSITION	317 SHORT	361 TIME	407 WORK
230 money	274 PRECISION	318 SHOWOBSERVED"	362 timestamp	408 WRITE
231 MONTH	275 PREPARE	319 SHOWPROMPTS"	363 TIMEUNIT"	409 XOR"
232 MULTIGRAPH"	276 PRESERVE	320 SHOWSINGLECASES"	364 TIMEVAR"	410 YEAR
233 NAMES	277 PRIMARY	321 single	365 TIMEZONE_HOUR	411 YESNO
234 NATURAL	278 PRINTOUT"	322 SIZE	366 TIMEZONE_MINUTE	412 YN"
235 nchar	279 PRIOR	323 smallint	367 TITLETEXT"	413 ZONE
236 NEWPAGE"	280 PRIVILEGES	324 SOME	368 TO	414 CANCEL"
237 NEXT	281 PROCEDURE	325 SORT"	369 TOP	415 REPEAT"
238 NO	282 PROCESS"	326 SPACE	370 TRAILING	
239 NOIMAGE"	283 PSUVAR"	327 SQL	371 TRANSACTION	
240 NOINTERCEPT"	284 PUBLIC	328 SQLCA	372 TRANSFORM	
241 NONE	285 PVALUE"	329 SQLCODE	373 TRANSLATE	
242 NOT	286 QUIT"	330 SQLERROR	374 TREE	
243 NOWRAP"	287 READ	331 SQLNULL	375 TRIM	
244 null	288 real	332 SQLREAL	376 TYPEOUT"	

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