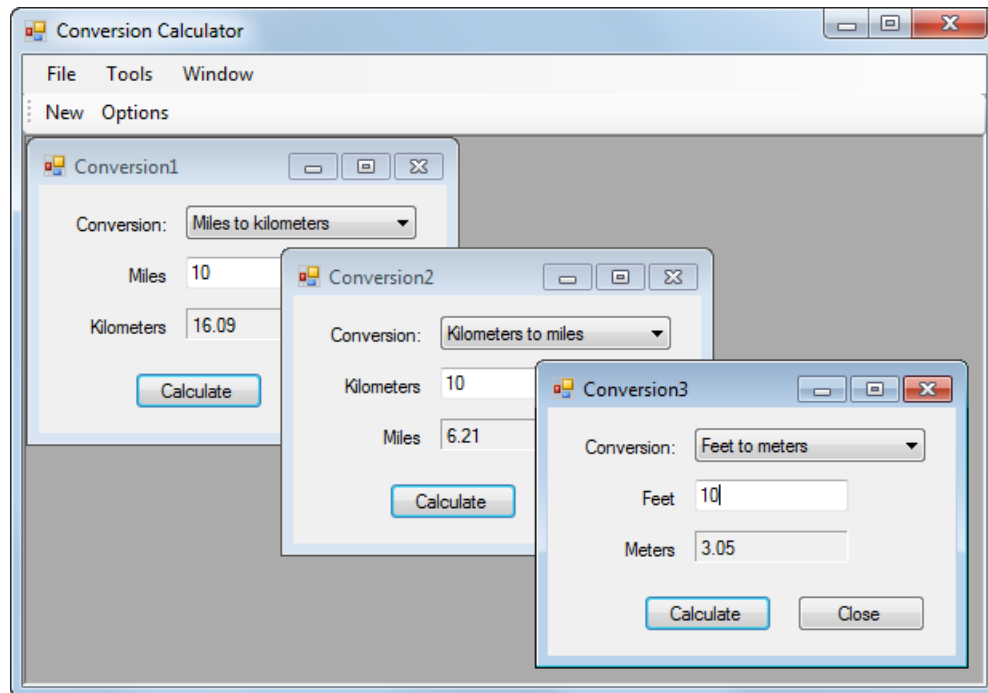


Lab Assignment 7

For this project, you'll develop an application that lets the user perform conversion calculations. This application requires a parent form that includes both a menu and a toolbar, a child form that lets the user calculate conversions, and two additional forms. It also uses two text files, an XML file, two business classes, and two database classes.

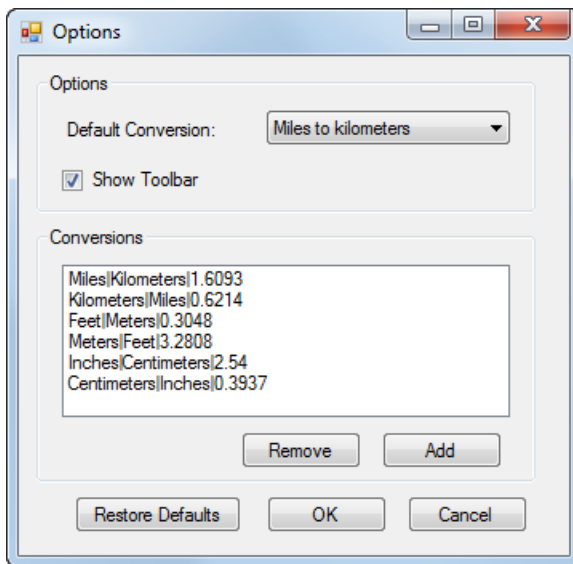
The design of the parent and child forms



Operation

- To display an instance of the Conversion form, the user selects the New Conversion command from the File menu or clicks the New button in the toolbar.
- To switch to an open Conversion form, the user clicks the form or selects the form from the Window menu.
- To close the active Conversion form, the user clicks the Close button or selects the Close command from the File menu.
- To change the conversion options, the user clicks the Options button in the toolbar or selects the Options command from the Tools menu to display the Options dialog box.
- To arrange the open Conversion forms within the parent form, the user selects the Cascade, Tile Vertical, or Tile Horizontal command from the Window menu.
- To perform a conversion, the user selects the conversion to be performed from the combo box list and the application modifies the labels that indicate the “from” and “to” lengths accordingly. Then, the user enters the “from” length and clicks the Calculate button.

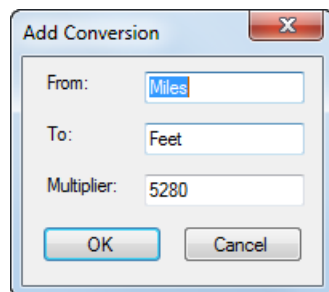
The design of the Options form



Operation

- To change the conversion that's displayed by default when a Conversion form is opened, the user selects the conversion from the Default Conversion combo box.
- To determine whether or not the toolbar is displayed, the user checks or unchecks the Show Toolbar option.
- To remove a conversion so it's not included in any new Conversion forms that are opened, the user selects the conversion in the list and then clicks the Remove button.
- To add a conversion to any new Conversion forms that are opened, the user clicks the Add button to display the Add Conversion dialog box.
- To restore the default options, the user clicks the Restore Defaults button.
- To save all the changes made to the options, the user clicks the OK button. To cancel the changes, the user clicks the Cancel button.

The design of the Add Conversion form



Operation

- To add a conversion, the user enters unit descriptions in the From and To text boxes and a multiplier that indicates the number of *To* units in a *From* unit in the Multiplier text box, and then clicks the OK button.

Specifications

- All user entries should be checked to be sure they're valid.
- When the application starts, the parent form should do the following:
 - (1) Read the conversion data from a text file named Conversions.txt that's stored in the same directory as the other project files and store it in an array;
 - (2) Read the current options from an XML file named Options.xml that's stored in the same directory as the other project files and store them in an instance of a class named Options; and
 - (3) Display one Conversion form.
- When a child form is displayed, the application should append a number to the text in its title bar.
- If any changes are made to the options, the Options.xml file should be updated.
- If conversions are added, removed, or restored, the Conversions.txt file should be updated.
- The default conversions are stored in a text file named ConversionsDefault.txt in the same directory as the other project files. These conversions are as follows:

From	To	Conversion
Miles	Kilometers	1 mile = 1.6093 kilometers
Kilometers	Miles	1 kilometer = 0.6214 miles
Feet	Meters	1 foot = 0.3048 meters
Meters	Feet	1 meter = 3.2808 feet
Inches	Centimeters	1 inch = 2.54 centimeters
Centimeters	Inches	1 centimeter = 0.3937 inches

- The code for working with the Conversions and ConversionsDefault files should be stored in a class named ConversionsDB. The code for working with the Options file should be stored in a class named OptionsDB. And the code for validating the user entries should be stored in a class named Validator.
- Your finished application should be deployable using one of the three deployment options identified in chapter 26.

Hints

- To refer to the text and XML files in the project directory, you can use this path:

..\..\

This means that the files are two directories above the directory that contains the executable file for the program, which is usually the bin\Debug directory that's subordinate to the project directory.

- To display a list of all the open Conversion windows in the Window menu, you can set the MdiWindowListItem property of the menu to True.
- To display a dialog box in the center of the parent window, you can set the StartPosition property of the dialog box to CenterParent.