Problem A:

![Calculator GUI](image)

Because you are creating only GUIs, your applications will not be fully operational. For example, the Calculator GUI in Exercise 3.11 will not behave like a calculator when its buttons are clicked. You will learn how to make your applications fully operational in later tutorials. Create each application as a separate project.

3.11 (Calculator GUI) Create the GUI for the calculator shown in Fig. 3.33.

a) **Creating a new project.** Create a new Windows Application named Calculator.

b) **Renaming the Form file.** Name the Form file Calculator.vb.

c) **Manipulating the Form’s properties.** Change the Size property of the Form to 272, 192. Change the Text property of the Form to Calculator. Change the Font property to Tahoma.

d) **Adding a TextBox to the Form.** Add a TextBox control by double clicking it in the Toolbox. A TextBox control is used to enter input into applications. Set the TextBox’s Text property in the Properties window to 0. Change the Size property to 240, 21. Set the TextAlign property to Right; this right aligns text displayed in the TextBox. Finally, set the TextBox’s Location property to 8, 16.

e) **Adding the first Panel to the Form.** Panel controls are used to group other controls. Double click the Panel icon ![Panel](image) in the Toolbox to add a Panel to the Form. Change the Panel’s BorderStyle property to Fixed3D to make the inside of the Panel appear recessed. Change the Size property to 86, 112. Finally, set the Location property to 8, 48. This Panel contains the calculator’s numeric keys.

f) **Adding the second Panel to the Form.** Click the Form. Double click the Panel icon in the Toolbox to add another Panel to the Form. Change the Panel’s BorderStyle property to Fixed3D. Change the Size property to 72, 112. Finally, set the Location property to 112, 48. This Panel contains the calculator’s operator keys.

g) **Adding the third (and last) Panel to the Form.** Click the Form. Double click the Panel icon in the Toolbox to add another Panel to the Form. Change the Panel’s BorderStyle property to Fixed3D. Change the Size property to 48, 72. Finally, set the Location property to 200, 48. This Panel contains the calculator’s C (clear) and C/A (clear all) keys.

h) **Adding Buttons to the Form.** There are 20 Buttons on the calculator. To add a Button to a Panel, double click the Button control ![Button](image) in the Toolbox. Then add the Button to the Panel by dragging and dropping it on the Panel. Change the Text property of each Button to the calculator key it represents. The value you enter in the Text property will appear on the face of the Button. Finally, resize the Buttons, using their Size properties. Each Button labelled 0–9, x, /, −, = and should have a size of 24, 24. The 00 and OFF Buttons have size 48, 24. The + Button is sized 24, 64. The C (clear) and C/A (clear all) Buttons are sized 32, 24.

i) **Saving the project.** Select File > Save All to save your changes.