**Chapter 12**

**Knowledge Goals**

* To learn what a graphical user interface (GUI) is.
* To learn what a GUI component is.
* To learn about the various component classes used in a GUI, in particular: JFrame, JPanel, JLabel, JTextField, JPasswordField, JTextArea, JButton, JRadioButton, JCheckBox, and JComboBox.
* To understand the difference between the components in the javax.swing and java.awt packages.
* To learn about event-driven programming and how it works.
* To learn about the various event classes and listener interfaces used in a GUI, in particular: ActionEvent, ActionListener, ItemEvent, ItemListener, MouseEvent, MouseListener, MouseMotionListener.
* To learn about organizing GUI components using a layout manager.
* To learn about the various layout manager classes used in a graphical user interface, in particular: FlowLayout, BorderLayout, GridLayout.
* To understand the Model View Controller architecture and how it works.
* To learn how to nest components.

**Skill Goals**

*To be able to:*

* Use a variety of GUI components in a graphical application.
* Write code to capture and handle events generated by GUI components or mouse activity.
* Organize components using a layout manager.
* Design and code a graphical application in an organized and reusable manner using the Model View Controller architecture.
* Organize components inside another component such as a JPanel.