Solutions to
Quick Check Questions

GUI and Event-Driven Programming

14.1 Simple GUI I/O with JOptionPane

1. Display the message I Love Java by using JOptionPane.

   Answer:

   ```
   JOptionPane.showMessageDialog(null, "I Love Java");
   ```

2. Using JOptionPane input dialog, write a statement to input the person's first name.

   Answer:

   ```
   String firstname =

       JOptionPane.showInputDialog(null,
                           "Enter first name:");
   ```

3. Using JOptionPane input dialog, write a statement to input the person's age (integer).

   Answer:

```
String str =

    JOptionPane.showInputDialog(null, "Enter age:");

int age = Integer.parseInt(str);
```

14.2 Customizing Frame Windows

No Quick Check Questions.

14.3 GUI Programming Basics

1. What is the purpose of a layout manager?

    The layout manager determines the placement of GUI objects on a container.

2. Which object generates events? Which object processes events?

    Event sources such as buttons generate events. Event listeners (any objects that implement the ActionListener interface) process the generated events.

3. A class that implements the ActionListener interface must implement which method?

    The actionPerformed *method.*

4. What does the getActionCommand method of the ActionEvent class return?

    It returns a String that is associated with the event source. For a button, the method returns the text displayed in the button.

14.4 Text-Related GUI Components

1. What is the purpose of the instanceof operator?

    This method is used to find out the class to which an object belongs.

2. What user action will result in a JTextField object generating an action event?

The enduser pressing the Enter (Return) key when the JTextField has a focus.

3. Does a JLabel object generate an event?

    No.

4. What is the difference between textArea.setText("Hello") and textArea.append("Hello")?

    The setText *replaces the current content, while the* append *adds the designated text to the end of the current content.*

14.5 Layout Managers

1. How does the flow layout places the components?

    It places the components in left-to-right, top-to-bottom order.

2. Which layout manager divides the container into grids of equal size?

    The GridLayout layout manager divides the container into grids of equal size.

3. Write a statement to create a border layout with 20-pixel gaps in both horizontal and vertical directions.

```
BorderLayout boderLayout =new BorderLayout(20, 20);
```

14.6 Effective Use of Nested Panels

No Quick Check questions.

14.7 Other GUI Components

No Quick Check questions.

14.8 Menus

1. To which object do we register an action listener: JMenu, JMenuItem, or JMenuBar?

    We register an action listener to JMenuItem.

2. How do we get the text of a selected menu item in the actionPerformed method?

    Call the getActionCommand *method.*

3. How do we place a horizontal bar between two menu items?

    Call the addSeparator *method.*

14.9 Handling Mouse Events

1. Which listener object listens to mouse movements? Which listener object listens to mouse button presses and clicks?

    The MouseMotionListener listens to mouse movements. The MouseListener listens to mouse button events.

2. What is the purpose of the isMetaDown method?

    It is used to detect whether the meta-modifier is pressed or not. In the Windows environment, the meta-modifier is equivalent to the pressing of the right mouse button. In the Mac environment, it is equivalent to the pressing of the Command key.

3. What is the difference between mouseClicked and mousePressed?

    When the mouse button is pressed, mousePressed *event occurs. When the mouse button is pressed and then released,* mouseClicked *event occurs.*