14.1 Simple GUI I/O with JOptionPane

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

   Answer:

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

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

   Answer:

   ```java
   String firstname =
   JOptionPane.showInputDialog(null,
       "Enter first name:");
   ```

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

   Answer:
Solutions to Chapter 14 Quick Check Questions

```java
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.

   ```java
   BorderLayout borderLayout = 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.*