

12.6 Which of the following statements have syntax errors?

```
Component c1 = new Component();
JComponent c2 = new JComponent();
Component c3 = new JButton();
JComponent c4 = new JButton();
Container c5 = new JButton();
c5.add(c4);
```

12.6 Answer

"Component c1 = new Component();" and "JComponent c2 = new JComponent();" have syntax errors. This is because Component and JComponent are abstract classes, so that cannot instantiate them.

12.7 Why do you need to use layout managers? What is the default layout manager for a frame? How do you add a component to a frame?

12.7 Answer

By using layout managers, you can set relative positions of components easily. Otherwise, you have to fix coordinates of each component. The default layout manager for a frame is BorderLayout, which components are divided into left, right, top, bottom, and center. To add a component to a frame, you need to create a Container object, and then use the add method, which is defined in Container class. For example, you can write this method as "*containerObjectName.add(yourComponentName);*".

12.12 What is the default layout manager for a JPanel? How do you add a component to a JPanel?

12.12 Answer

The default layout manager for a JPanel is FlowLayout, which arranges components from left to right, and from top to bottom like text. To add a component to a JPanel, you can also use the add method as "*panelObjectName.add(yourComponentName);*".

12.18 Show the output of the following code:

```
public class Test {
    public static void main(String[] args) {
        JButton jbtOK = new JButton("OK");
        System.out.println(jbtOK.isVisible());
        JFrame frame = new JFrame();
        System.out.println(frame.isVisible());
    }
}
```

12.18 Answer

```
true
false
```

16.7 If class A is an inner class in class B, what is the .class file for A? If class B contains two anonymous inner classes, what are the .class file names for these two classes?

16.7 Answer

The .class file for A is B\$A.class. Similarly, "B\$" is added before the class names for two anonymous classes.

16.10 What method do you use to get the source of an event? What method do you use to get the timestamp for an action event, a mouse event or a key event? What method do you use to get the mouse-point position for a mouse event? What method do you use to get the key character for a key event?

16.10 Answer

To get the source of an event, using getSource() method, which is defined in java.util.EventObject.

To get the timestamp for an action event, a mouse event or a key event, you use getWhen() method that returns a long value, which is defined in java.awt.event.ActionEvent.

To get the mouse-point position for a mouse event, you use getPoint() method that returns the x,y position, which is defined in java.awt.event.MouseEvent.

To get the key character for a key event, you use getKeyChar() method that returns a char value, which is defined in java.awt.event.KeyEvent.

16.14 How do you create a timer? How do you start a timer? How do you stop a timer?

16.14 Answer

To create a timer object, first you instantiate an object by using Timer class as "Timer timer = new Timer(1000, this);". The first argument is the time interval, and is measured in milliseconds. The second argument is the ActionListener.

To start a timer, you use the start method as "timer.start();". To stop a timer, you use the stop method as "timer.stop();".

17.3 How do you create a checkbox? How do you create a checkbox with the box checked initially? How do you determine whether a checkbox is selected?

17.3 Answer

To create a checkbox, you use JCheckBox class. You need to instantiate a JCheckBox object as "JCheckBox checkbox = new JCheckBox("checkbox)". You can add a string as its name to the argument.

To create a checkbox with the box checked initially, You add "true" to the argument as "JCheckBox checkbox = new JCheckBox("checkbox", true)".

To determine whether a checkbox is selected, you use isSelected method that returns a boolean value, which is defined in AbstractButton class. You can write this method as "checkbox.isSelected();".

17.4 How do you create a radio button? How do you create a radio button with the button selected initially? How do you group radio buttons together? How do you determine whether a radio button is selected?

17.14 Answer

To create a radio button, you use `JRadioButton` class. You need to instantiate a `JRadioButton` object as `"JRadioButton radiol = new JRadioButton("radiol");"`. You can add a string as its name to the argument.

To group radio buttons together, you instantiate a group object by using `ButtonGroup` class as `"ButtonGroup group = new ButtonGroup();"`. And then, you add radio buttons to the group by using the `add` method as `"group.add(radiol)"`, `"group.add(radio2)"`, and so on.

To determine whether a radio button is selected, you can also use `isSelected` method as `"radiol.isSelected();"`.