Due to the print book page limit, we cannot inlcude all good CheckPoint questions in the physical book. The CheckPoint on this Website may contain extra questions not printed in the book. The questions in some sections may have been reordered as a result. Nevertheless, it is easy to find the CheckPoint questions in the book on this Website. Please send suggestions and errata to Dr. Liang at y.daniel.liang@gmail.com. Indicate the book, edition, and question number in your email. Thanks!

Chapter 16 Check Point Questions

Section 16.2

▼16.2.1
How do you create a label with a node without a text?

First create a Label using its no-arg constructor and then set its graphic property to a node.

Hide Answer

▼16.2.2
How do you place a text on the right of the node in a label?

Use label.setContentDisplay(ContentDisplay.LEFT).

Hide Answer

▼16.2.3
Can you display multiple lines of text in a label?

Use '\n' character in the text. For example, label.setText("Welcome\nto\nJava").

Hide Answer

▼16.2.4
Can the text in a label be underlined?

Yes. Use label.setUnderline(true).

Hide Answer

Section 16.3

▼16.3.1
How do you create a button with a text and a node? Can you apply all the methods for Labeled to Button?

Use the constructor new Button(text, graphic) to create a button with text and node. You can apply the methods for Labelled in Button, because Button is a subclass of Labelled.

Hide Answer

▼16.3.2
Why is the getPane() method protected in Listing 16.2? Why is the data field text protected?

They are declared protected for use in the subclasses of ButtonDemo later in the chapter.

Hide Answer

▼16.3.3
How do you set a handler for processing a button-clicked action?

Use button.setOnAction(handler).

Hide Answer

Section 16.4

▼ **16.4.1**

What is the output of the following code?

```java
public class Test {
  public static void main(String[] args) {
    Test test = new Test();
    test.new B().start();
  }

  class A {
    public void start() {
      System.out.println(getP());
    }

    public int getP() {
      return 1;
    }
  }

  class B extends A {
    public int getP() {
      return 2 + super.getP();
    }
  }
}
```

3
Reason: When the start method is invoked from new B(), the getP() method in the B class is invoked. When super.getP() is invoked, the getP() method in the A class is invoked.

Hide Answer

▼ **16.4.2**

How do you test if a check box is selected?

Use chk.isSelected().

Hide Answer

▼ **16.4.3**

Can you apply all the methods for Labeled to CheckBox?

You can apply all the methods in Labelled to CheckBox, because CheckBox is a subclass of Labelled.

Hide Answer

▼ **16.4.4**

Can you set a node for the graphic property in a check box?

Yes

Hide Answer

Section 16.5

▼**16.5.1**

How do you test if a radio button is selected?

Use rb.isSelected().

Hide Answer

▼**16.5.2**

Can you apply all the methods for Labeled to RadioButton?

You can apply all the methods in Labelled to RadioButton, because RadioButton is a subclass of Labelled.

Hide Answer

▼**16.5.3**

Can you set any node in the graphic property in a radio button?

Yes

Hide Answer

▼**16.5.4**

How do you group radio buttons?

Create a ToggleGroup tg and set radio button's toggleGroup property to tg.

Hide Answer

Section 16.6

▼**16.6.1**

Can you disable editing of a text field?

Yes. Use tf.setEditable(false).

Hide Answer

▼**16.6.2**

Can you apply all the methods for TextInputControl to TextField?

You can apply all the methods in TextInputControl to TextField, because TextField is a subclass of TextInputControl.

Hide Answer

▼**16.6.3**

Can you set a node as the graphic property in a text field?

No.

Hide Answer

▼**16.6.4**

How do you align the text in a text field to the right?

Use tf.setAlignment(Pos.BASELINE_RIGHT).

Hide Answer

Section 16.7

▼ **16.7.1**

How do you create a text area with 10 rows and 20 columns?

Create a TextArea using new TextArea and then set its prefColumnCount to 10 and prefRowCount to 20.

Hide Answer

▼ **16.7.2**

How do you obtain the text from a text area?

Use ta.getText().

Hide Answer

▼ **16.7.3**

Can you disable editing of a text area?

Yes. Use ta.setEditable(false).

Hide Answer

▼ **16.7.4**

What method do you use to wrap text to the next line in a text area?

Use ta.setWrapText(true).

Hide Answer

Section 16.8

▼ **16.8.1**

How do you create a combo box and add three items to it?

Use new ComboBox<>(). Use cbo.getItems().addAll(item1, item2, item3).

Hide Answer

▼ **16.8.2**

How do you retrieve an item from a combo box? How do you retrieve a selected item from a combo box?

Use cbo.getItems() to return a list of values in the combo box. Use cbo.getValue() to get selected value.

Hide Answer

▼ **16.8.3**

How do you get the number of items in a combo box? How do you retrieve an item at a specified index in a combo box?

Use cbo.getItems().size() to return the number of items in a combo box and use cbo.getItems().get(i) to get the item at the specified index in a combo box.

Hide Answer

▼**16.8.4**

What events would a ComboBox fire upon selecting a new item?

Upon selecting a new item, a combo box fires an ActionEvent.

Hide Answer

Section 16.9

▼**16.9.1**

How do you create an observable list with an array of strings?

To create an observable list with an array of strings, use

```
FXCollections.observableArrayList(arrayOfStrings);
```

Hide Answer

▼**16.9.2**

How do you set the orientation in a list view?

Use lv.setOrientation(Orientation.HORIZONTAL) or lv.setOrientation(Orientation.VERITCAL).

Hide Answer

▼**16.9.3**

What selection modes are available for a list view? What is the default selection mode? How do you set a selection mode?

Two selection modes can be used in a list view: SelectionMode.MULTIPLE and SelectionMode.SINGLE. To set a selection mode, use lv.getSelectionModel().setSelectionMode(SelectionMode.MULTIPLE).

Hide Answer

▼**16.9.4**

How do you obtain the selected items and selected indices?

Use lv.getSelectionModel().getSelectedItems() and lv.getSelectionModel().getSelectedIndices().

Hide Answer

Section 16.10

▼**16.10.1**

How do you create a horizontal scroll bar? How do you create a vertical scroll bar?

To create a horizontal scroll bar, create a ScrollBar using new ScrollBar() and then invoke its setOrientation(Orientation.HORIZONTAL) or setOrientation(Orientation.VERTICAL).

Hide Answer

▼**16.10.2**

How do you write the code to respond to the value property change of a scroll bar?

Use sb.valueProperty().addListener(ov -> statements) to respond to a change in the scroll bar value.

Hide Answer

▼ **16.10.3**

How do you get the value from a scroll bar? How do you get the maximum value from a scroll bar?

To get the value from a scroll bar, use sb.getValue(). To get the scroll bar's maximum value, use sb.getMax().

Hide Answer

Section 16.11

▼ **16.11.1**

How do you create a horizontal slider? How do you create a vertical slider?

To create a horizontal slider, create a Slider using new Slider() and then invoke its setOrientation(Orientation.HORIZONTAL) or setOrientation(Orientation.VERTICAL).

Hide Answer

▼ **16.11.2**

How do you add a listener to handle the property value change of a slider?

Use sl.valueProperty().addListener(ov -> statements) to respond to a change in the slider value.

Hide Answer

▼ **16.11.3**

How do you get the value from a slider? How do you get the maximum value from a slider?

To get the value from a slider, use sl.getValue(). To get the scroll bar's maximum value, use sl.getMax().

Hide Answer

Section 16.12

▼ **16.12.1**

When the game starts, what value is in whoseTurn? When the game is over, what value is in whoseTurn?

When the game starts, the value for whoseTurn is 'X'. When the game is over, the value is whoseTurn is the winner's token.

Hide Answer

▼ **16.12.2**

What happens when the user clicks on an empty cell if the game is not over? What happens when the user clicks on an empty cell if the game is over?

If the game is not over and the user clicks on an empty cell, the current value from whoseTurn will be displayed in the cell. If the game is over and the user clicks on an empty cell, nothing will happen and the cell will still be empty.

Hide Answer

▼**16.12.3**

How does the program check whether a player wins? How does the program check whether all cells are filled?

The program checks if all rows/columns/diagonals have the same token by invoking the isWon(token) method and checks if all cells are occupied by invoking the isFull() method.

Hide Answer

Section 16.13

▼**16.13.1**

How do you create a Media from a URL? How do you create a MediaPlayer? How do you create a MediaView?

To create a Media from a URL, use new Media(url). To create a MediaPlayer, use new MediaPlayer(media). To create a MediaView, use new MediaView(mediaPlayer).

Hide Answer

▼**16.13.2**

If the URL is typed as liveexample.pearsoncmg.com/common/sample.mp4 without https:// in front of it, will it work?

No.

Hide Answer

▼**16.13.3**

Can you place a Media in multiple MediaPlayers? Can you place a MediaPlayer in multiple MediaViews? Can you place a MediaView in multiple Panes?

You can place a Media in multiple MediaPlayer and a MediaPlayer in multiple MediaView, but cannot place a MediaView in multiple panes.

Hide Answer

Section 16.14

▼**16.14.1**

Can you place a Media in multiple MediaPlayers? Can you place a MediaPlayer in multiple MediaViews? Can you place a MediaView in multiple Panes?

In Listing 16.15, the following code sets the initial image.

```
ImageView imageView = new ImageView(images[currentIndex]);
```

The following code plays the audio:

```
mp[currentIndex].play();
```

Hide Answer

▼**16.14.2**

In Listing 16.15, what does the program do when a new nation is selected in the combo box?

In Listing 16.15, when a new nation is selected, the program stops the audio, sets a new image, and plays the new audio.

Hide Answer