**Chapter 2 App Design Issues and Considerations**

2.1 True/False Questions

1. Porting an existing application directly to a mobile platform is a good idea.

Answer: False

2. The operating system on a mobile device is not a true multitasking operating system.

Answer: True

3. Only Android devices have an app life cycle.

Answer: False

4. All apps must be designed to handle changes in the apps life cycle.

Answer: True

5. Both Android and iOS have an app and a view life cycle.

Answer: False

6. In both Android and iOS, you should turn off system services being used by the app when the app moves out of the running state.

Answer: True

7. When the user changes the orientation of the device, the app that is running at the time remains in the running state.

Answer: False

8. Horizontal scrolling is a good way to expand limited screen real estate.

Answer: False.

9. Vertical scrolling is good for lists but should be used in a more limited fashion for other types of screen elements.

Answer: True

10. Uploading and downloading of data should be done outside the main thread of the app.

Answer: True

11. Uploading data outside the main thread of the app eliminates the need to check whether it has completed successfully.

Answer: False

12. Battery use is not a concern for all app developers.

Answer: False

13. Differences in hardware capabilities are limited between devices.

Answer: False

2.2 Multiple Choice Questions

1. Which of the following is NOT an important design consideration for the app developer?

A. The app life cycle

B. Screen size

C. Connectivity problems

D. Programming language limitations

Answer: D

2. Instead of multitasking, a mobile operating system places apps in different \_\_\_\_\_\_ when it changes between running apps.

A. Life cycles

B. States

C. Memory locations

D. Positions

Answer: B

3. What is the difference between the Paused and the Stopped states in the Android life cycle?

A. In the Stopped state, all hardware resources used by the app are automatically stopped. In the Paused state, they are stopped only if the developer codes them to stop.

B. In the Paused state, the activity is no longer visible. In the Stopped state, the activity’s resources are reclaimed by the operating system.

C. In the Paused state, the user can see but not interact with the activity. In the Stopped state, the activity is not visible.

D. There is no difference.

Answer: C

4. In iOS, the proper life cycle method to load data into a view is \_\_\_\_\_\_.

A. viewDidLoad:

B. viewWillAppear:

C. application:didFinishLaunchingwithOptions:

D. dataWillDisplay:

Answer: B

5. The proper life cycle method to save app status is \_\_\_\_\_ in Android and \_\_\_\_\_ in iOS.

A. onPause, viewWillDisappear:

B. onResume, viewWillAppear:

C. onStopped, viewDidUnload:

D. onDestroy, applicationDidEnterBackground:

Answer A.

6. Horizontal scrolling is an important part of user interface design that should be used when

A. The elements needed for a complete design will not fit on the screen.

B. Only when an element on the screen needs to extend horizontally.

C. Only when the device is in a horizontal orientation. It should not be used in the vertical orientation.

D. A horizontal layout makes more sense than a vertical layout.

Answer: B

7. When the user rotates the device

A. The app layout automatically reorganizes for that orientation.

B. The horizontal and vertical real estate remain the same because the device size does not change.

C. The app remains in the running state.

D. The user experience is enhanced by more accessible screen elements.

Answer: A

8. When an app needs to upload data

A. The app should immediately connect and transmit the data.

B. The app should halt user interaction until the upload is completed.

C. The app should cache the data until the user exits the app.

D. The app should send the data asynchronously.

Answer: D

9. When an app downloads data, that download should be performed asynchronously unless

A. The connection is immediately established.

B. A data signal of 3G or greater is available.

C. The user cannot perform work with the app without the data.

D. The data is less than 5K in size.

Answer: C

10. Which of the following is NOT a reason that connectivity can be lost?

A. The device moves.

B. The user has the device in airplane mode.

C. The app has both a 3G and Wi-Fi connection.

D. Machinery or other sources produce signal interference.

Answer C

11. The biggest battery drain on a mobile device is \_\_\_\_\_?

A. The display

B. The GPS

C. Wi-Fi

D. The operating system

Answer: A

12. To reduce an app's drain on the battery, the app should do which of the following?

A. Never use any sensors.

B. Monitor to determine whether a sensor reading needs an update before it uses the sensor.

C. Shut down all activity when an app is paused.

D. Use sensors only on start up.

Answer: B

13. When designing an app that uses hardware sensors, two important aspects to consider with the sensor readings are \_\_\_\_ and \_\_\_\_\_.

A. Hardware availability, distribution

B. Accuracy, speed of acquisition

C. Availability, start-up time

D. Accessibility, communication status

Answer: B

14. When designing an app that uses hardware sensors, what is it important to plan for if the device cannot provide a reading?

A. What the user can do with the app without the data provided by the sensor

B. How to enter the data manually

C. Where to direct the user to turn on the sensor

D. When to turn off the sensor

Answer: A

15. If desired sensor accuracy cannot be attained immediately, what should the app be designed to do?

A. Block the user until the desired accuracy level can be achieved.

B. Let the user continue working with the app, but inform the user of progress toward achieving the desired level of accuracy.

C. Let the user continue working with the app.

D. Inform the user that the accuracy level has not been achieved.

Answer: B

16. What happens to a running app if a hardware button is pressed on either platform?

A. The app is destroyed.

B. The app moves from the running state to another state.

C. The app is paused.

D. The app is resumed.

Answer: B

2.3 Matching Questions

1. Match the term with the best definition/explanation.

Life cycle \_\_\_\_\_\_

Home button \_\_\_\_\_\_

State \_\_\_\_\_\_

Asynchronous \_\_\_\_\_\_

Cached \_\_\_\_\_\_

Orientation \_\_\_\_\_\_

Sensor\_\_\_\_\_\_

onPause\_\_\_\_\_\_

Paused\_\_\_\_\_\_

Back button \_\_\_\_\_\_

A. Hardware on a device that can capture data about the device’s external environment.

B. Running code outside the main thread.

C. A button on an iOS device that causes an app to move through a portion of its life cycle.

D. A state on an iOS device where the app is no longer visible.

E. A type of existence for an app that determines what the user and the operating system can do with the app.

F. The movement of an app between different states.

G. Temporarily stored data.

H. Can move one app to the Paused state and another app to the Running state.

I. The position of a phone as it relates to the horizon.

J. A method executed on an Android device when the app is interrupted.

Answer: F, C, E, B, G, I, A, J, D, H