

EECS4443 review

Jerry Wu

2023-12-11

Quiz answers

Quiz 1: UI design, intro to activities, etc

1. A design is efficient, if:
 - a) it accomplishes the user's task in a satisfying way.
 - b) it accomplishes the user's task.
 - c) **it accomplishes the user's task without creating additional problems.**
2. Using auto-complete may help you satisfy which UX (user experience) design principle?
 - a) **Minimize User Input**
 - b) KISS (keep it simple stupid!)
 - c) Make Navigation Intuitive
3. Android Applications usually follow this architectural style:
 - a) **MVVM (a variant of MVC)**
 - b) Layered
 - c) Plugin
4. A design is effective, if:
 - a) it accomplishes the user's task without creating additional problems.
 - b) it accomplishes the user's task in a satisfying way.
 - c) **it accomplishes the user's task.**

5. A design is exciting, if:
 - a) it accomplishes the user's task without creating additional problems.
 - b) **.it accomplishes the user's task in a satisfying way.**
 - c) it accomplishes the user's task.
6. When an interface puts an interactive element in a place where another element is most commonly found in other applications, what is this UX antipattern called?
 - a) Misdirection
 - b) **Bait and Switch**
 - c) Roach Motel
7. In Android, an **Activity** corresponds to:
 - a) a transition between screens.
 - b) **a screen**
 - c) a use case
8. If an **Activity** has been "Destroyed",
 - a) the `onSaveInstanceState()` method is invoked automatically, so that we can always recover the Activity.
 - b) it is impossible to be recovered and has to be created again from scratch.
 - c) **our code needs to explicitly call the `onSaveInstanceState()` in order to recreate the Activity for certain circumstances.**
9. When an **Activity** is Paused,
 - a) it is completely visible to the user, but inactive.
 - b) it is hidden from the user and can be destroyed by the system.
 - c) **it is not in the user's main focus and may be destroyed by the system.**
10. If an **Activity** is Started,
 - a) it is not fully created, but not yet visible to the user.
 - b) **it is visible, but not yet running.**
 - c) it has been created, but it is hidden from the user.

Quiz 2: Views, layouts, etc

1. If I flip the orientation of my device, when I have a `GridView`,
 - a) It will maintain the same number of rows and columns.
 - b) It will maintain the same number of rows and columns, but it will stretch or screen the dimensions of the items to better fit the screen.
 - c) **It will adapt the number of rows and columns to better fit the screen.**
2. A `Toast` is a popup dialog that
 - a) Requires a user's action to disappear
 - b) Provides important feedback, like a warning or an error to a user.
 - c) **Automatically disappears after some time.**
3. A layout is used **only** to
 - a) Define all the UI elements used in an application
 - b) **Define all the UI elements of an activity and how they are organized.**
 - c) Define the position of UI elements when the orientation of the screen changes.
 - d) All of the above
4. A `ListView` is used to create and present lists in an `Activity`. When the `ListView` is created and presented,
 - a) It loads all data and create the visualizations for all list items.
 - b) **It loads all data in the Adapter but creates visualizations only for the visible items.**
 - c) It loads only the data that will be visible, but creates placeholder items (UI elements) for all possible data items.
5. In this layout, the elements are organized "in rows and columns".
 - a) Linear layout
 - b) Relative Layout
 - c) **Grid Layout**

6. In this layout, I can assign elements a certain "weights" which defines the space they will take in the layout relative to other elements in the layout.
- a) **Linear layout**
 - b) Relative Layout
 - c) Grid Layout
7. In this layout, the elements are organized using anchors, like other elements, the parent elements, or specific positions.
- a) Linear layout
 - b) **Relative Layout**
 - c) Grid Layout
8. In the Manifest, we can declare that our application requires permission to access
- a) **any kind of resource external to the application, which includes Internet sources or the storage of the device.**
 - b) only the external storage of our device.
 - c) only data sources on the Internet.
9. What is the class that is used to as a link between the layout and the data source?
- a) Adapter
 - b) **AdapterView**
 - c) Intent
10. When I am using a ListView, which of the following statements is true? (only one is true)
- a) I can have only single line textual items.
 - b) I can have both single and multiple line items, but only textual items.
 - c) **I can have items that combine multiple data types, text, images, icons, action buttons, and span many lines.**

Quiz 3: Software testing methods

1. In software testing, these modules accept test data from high-level modules and pass computed data.
 - a) **Stubs**
 - b) Test cases
 - c) Drivers
2. In this type of software testing, the system is tested in parts usually following the order of development.
 - a) Big Bang
 - b) **Incremental**
 - c) Alpha testing
3. Which MotionEvent action is called when a second finger touches the screen?
 - a) ACTION_DOWN
 - b) **ACTION_POINTER_DOWN**
 - c) ACTION_MOVE
 - d) ACTION_POINTER_UP
4. In this type of testing, users provide feedback on an incomplete version of the system.
 - a) **Alpha testing**
 - b) Beta testing
 - c) Exploratory testing
5. Which of the following interactions is NOT a gesture?
 - a) Swipe
 - b) Flick
 - c) **Click**

6. How many test cases do we typically need to test a software functionality?
- a) A lot!
 - b) Exactly three (happy path, boundary path, exceptional path)
 - c) **We need one test case for each invalid and boundary value and enough test cases to cover all valid equivalence classes.**
7. What is considered a "gesture" in the context of Android development?
- a) A "digital" handshake used for electronic verifications
 - b) A hand motion, like a wave, capture by the camera of a mobile device.
 - c) **Any tactile, i.e., using touch, interaction with the screen of the mobile device.**
8. A Unistroke is
- a) A single straight line
 - b) **A continuous single line that represents a character or another symbol.**
 - c) A line to represent the number 1.
9. In the Espresso Testing Framework, what is an Idling Resource?
- a) A device resource, like CPU, memory, and disk, that does not perform any task at the moment.
 - b) An activity that is not visible at the moment.
 - c) **An object that represents an asynchronous task running in the background.**
10. A "pinching" movement on the screen requires this class to be captured.
- a) `GestureDetector`
 - b) Either `GestureDetector` or `ScaleGestureDetector`
 - c) **`ScaleGestureDetector`**

Quiz 4: Fragments, SPE, etc.

1. What is the difference between profiling and monitoring?
 - a) Profiling is static, while monitoring is dynamic.
 - b) Profiling is for software, while monitoring is for hardware.
 - c) **Profiling is measuring at development time, monitoring is measuring after deployment.**
 - d) They are the same concept.
2. What class do I use to pass data between two Activities?
 - a) Bundle
 - b) TouchListener
 - c) **Intent**
3. What can be detected by the gyroscope?
 - a) The acceleration force
 - b) **The rate of rotation.**
 - c) The geomagnetic field strength
4. One of the goals of Software Performance Engineering is to
 - a) Allocate more resources to the software to improve its performance.
 - b) Improve the efficiency of the developers.
 - c) **Reduce the maintenance costs necessary to resolve performance issues.**
5. How can I invoke a transition between two activities?
 - a) **By creating an Intent object to start the new activity and pass data between the activities.**
 - b) by calling `Bundle.startActivity()`
 - c) by calling `Intent.startActivity()`

6. How can I create transitions between fragments?
- a) With Intents like in the Activities.
 - b) By declaring the fragments as "containers" in the layout XML.
 - c) **By beginning a transaction through the Fragment manager and replacing the current Fragment with another one.**
7. When an operation is too short, which profiling method do we prefer?
- a) Sampling
 - b) **Instrumentation**
 - c) Both are equally acceptable.
 - d) None of the above
8. Which of the following are acceptable profiling methods? (multiple answers, wrong answers will receive -25)
- a) Basic profiling
 - b) **Sampling**
 - c) **Instrumentation**
 - d) Hybrid
9. What is a fragment?
- a) **a "sub-activity"**
 - b) a popup dialog
 - c) a simple UI element like a menu
10. Why do we say that the performance being perceived by the users is a limitation of Software Performance Engineering?
- a) **Because during development we cannot test the performance in the same conditions, same environment and under the exact same scenarios as the users.**
 - b) Because users cannot provide technical feedback about the performance of the software.
 - c) Because users are not involved in the development of the software when performance requirements are implemented.