CS 591

Android Activities: Review, Resources, Multiple Activities, Intents

Date: _____

Team Members: _____

This worksheet is to be done in collaboration with your project team. Although we are working with Android, the concepts apply for any device.

Part I

Activity Lifecycle Revisited, Saving State.

1. **What is the difference between Early and Late Event Binding? Provide 2 examples of when you might prefer to use Early Binding.**

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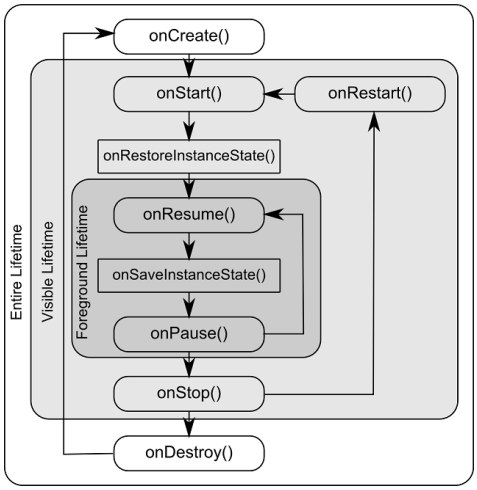
2. **True or False: A single event handler can be shared with multiple views. _____**

   If so, how? _____

For the next few questions, consider the Activity Lifecycle Diagram which shows some new lifecycle events.



3. **True or False: The Android Framework can kill your application if it's low on memory when it stops.**

   _____

4. **True or False: When an Activity is killed, your Application is killed. _____**

5. **Which Activity Lifecycle event(s) should you call upon, when storing and recovering application state, eg, when the phone is rotated.**

   _____

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   _____

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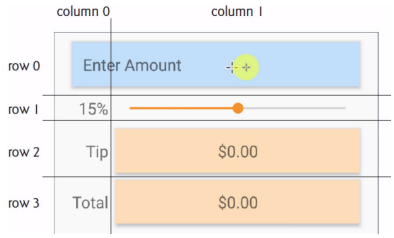
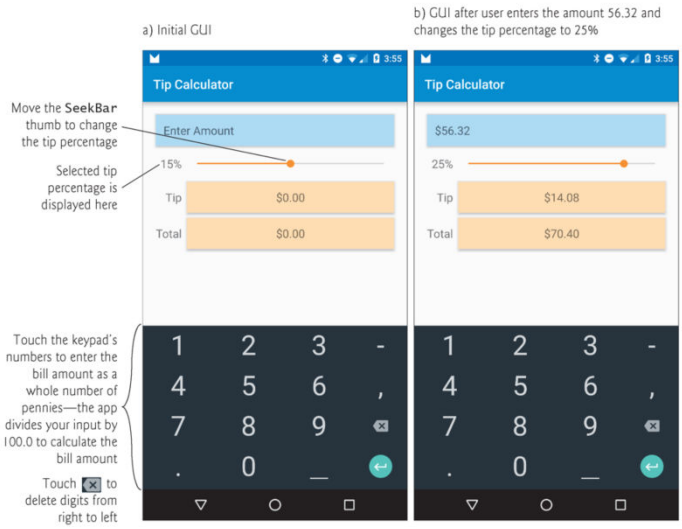
6. **Android utilizes the _____ class, sort of like a Hashmap of key/value pairs, to store and retrieve Activity State Information.**

Part II: Test driving Grid Layout.

Implement the tip calculator App, according to the Story board below, using Grid Layout. You can use whatever colors you like. You will need to experiment with the layout properties, including width, height, gravity and weight. Refer to the Android documentation on Grid Layout, this will take time to get right. You may also need to read the documentation for the Seekbar Component.



TIP Calculator, Labeled GridLayout View

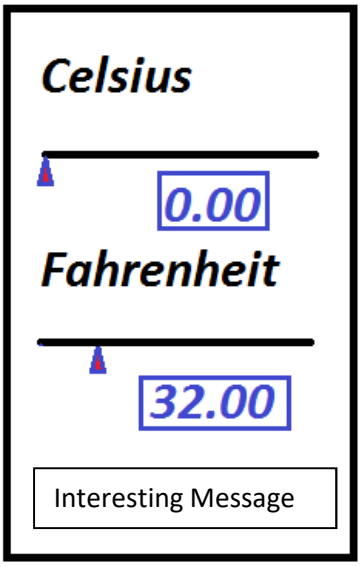


Sample TIP Calculator at Runtime

Part III: Temperature Converter, both ways.

For this next App, you will be required to read the documentation for the Seekbar Component.

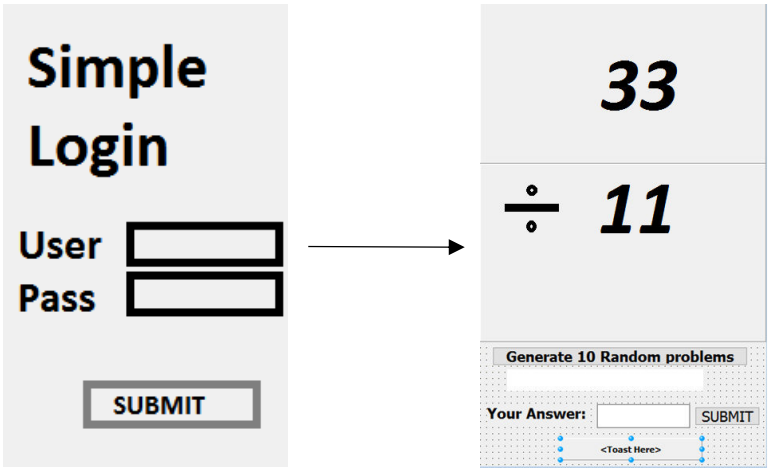
1. **Update Your Celsius to Fahrenheit converter to utilize two Seekbar Components, one to represent Celsius the other for Fahrenheit. Moving one Seekbar, will not only change its own value, but also update its counterpart. For Example dragging the Fahrenheit Seekbar to 32 should update the Celsius Seekbar to 0. You may use any layout you like. Use the sketch below as a guide, but feel free to arrange views anyway you like, provided you Linear Layout(s). Interesting Message should read `"it's cold"` when the Celsius temperature is below 12 degrees, otherwise it should read `"it's not cold"`.**



2. **Localize your App for two additional languages of your choosing. The only string you need to make into a string resources is the "Interesting Message". *Note: Be sure to choose languages that your phone can render.***

Part IV

1. **Multiple Activities, supporting both Landscape and Portrait Mode.**
   Create a flashcard App with two activities, a simple login, for which you may simulate logging in with a hardcoded username and password (please tell us what these are). After entering the correct user/pass combination, the user should be routed to a FlashCard Activity. The FlashCard Activity should generate 10 random division problems, with no remainder. When the user completes all 10 answers, just provide a Toast with their score, eg, "8 out of 10". Be sure the user can restart the game and play multiple times.



2. Modify the code above so that once the user successfully logs in, a Toast is displayed when the second Activity starts up. "Welcome <user>", where <user> is the username entered in the first Activity.

3. The user shouldn't have to start over just because the screen was rotated. Modify the code to store the users score and other important state information, such as the current problem on the screen, when the screen is rotated. This only applies to the second Activity (not the Login).

4. Modify the code once again, so that the App "Looks Good" in portrait and landscape mode. This only applies to the second Activity (not the Login). Feel free to use whatever layout you would like for this, including Relative Layout.