

## Lab 3 – Pig Game with a Menu and State Persistence

CIS399, Android Application Development

**Purpose:** This lab is designed to give you practice:

- Creating a menu to allow users to customize your app's settings.
- Using an *intent* to launch a new *Activity*.
- Persisting the state of your app so that it is restored after device rotation or resuming the activity.

### Part 1: Textbook Exercises

Do the exercises shown below:

- 5-1, Modify Tip Calculator layout
- 6-2, Improve the listener for the Key events
- 8-1, Experiment with menus and settings on the Tip Calculator
- 8-2, Work with menus on the Tip Calculator
- 8-3, Work with preferences on the Tip Calculator

Optional, do these if you have extra time:

- 5-2, Add radio buttons and a spinner
- 6-1, Use anonymous classes for event listeners
- 7-1, Use built-in themes with the Tip Calculator
- 7-2, Use styles on the Tip Calculator
- 7-3, Modify a theme used by the Tip Calculator

Upload a text file to Canvas in which you will report, for each exercise above, whether you:

- A. Followed all the steps shown in the book and successfully compiled and ran the program (where applicable).
- B. Loaded the completed solution, experimented with the code, and ran the program (where applicable).
- C. Read through the steps and inspected the relevant code listings without writing or running a program.
- D. Didn't do any of the above.

### Part 2: Pig Game v2.

Modify the Pig Game from the previous lab by adding the following features:

- Activity State persistence  
Use a *SharedPreferences* object or a *Bundle* object to save the state of your activity when the device is rotated, or when the activity has been stopped and then resumed. You can test this by going to the home screen, starting another app, then resuming your Pig game by selecting it from the recent app list (the square system button).
- Menu  
Add a menu to the Pig game. The menu should have at least two items:
  - *About*  
For now, you can just pop up a toast when the user selects "About". (In a future lab, you will add code to display information about the app.)
  - *Settings*  
Selecting the "Settings" item should launch a new *PreferenceActivity*.
- Settings  
For the settings activity, you can choose which preferences you will allow the user to set. Some possibilities are to allow users to select things like: Number of die, sides on a die, score to play to (other than 100), an AI mode (the user can play against the app), AI settings (max rolls, max score), etc. The only requirement is that you add at least 4 settings.