Lab 2

CSE 438

Spring 2020

1 Setup

Navigate to the repository for this assignment and make a copy for yourself. To submit your project, commit and push your code to the repository by the due date.

2 Introduction

Your friend has decided to drop out of college to pursue his dream of becoming a world champion craps player in Las Vegas as he thinks he has figured out how to cheat the system. You, a well educated computer science student understand probability and how bad the odds of winning at casinos really are. However, your friend does not believe you.

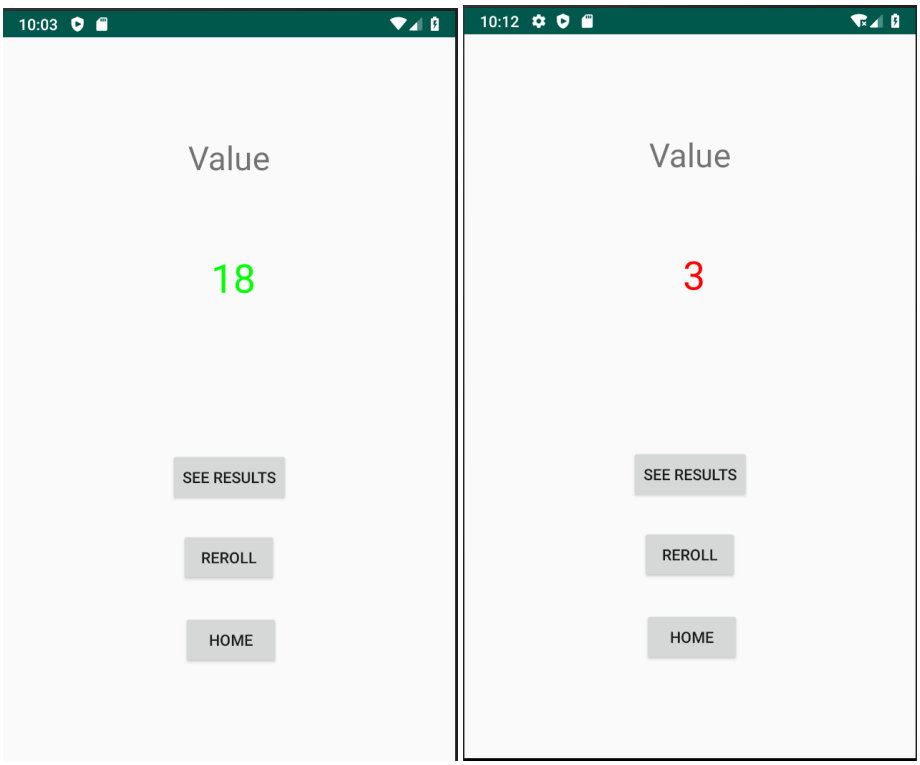
You decide to build a dice simulator for their phone to help them understand how probability works and (hopefully) convince them to stay in college.

3 Assignment

The app should begin by loading the main activity. This should display a text box to input the max value of the dice and the number of dice to be rolled. There should also be a button for clearing the previous rolls and for rolling the dice input. An example of the screen is shown below.

When clear is clicked, the user should be alerted that the previous rolls have been cleared and when roll is pressed, an intent should be started to a new RollsActivity.

When the RollsActivity loads, the dice should be immediately rolled and the result should be displayed. The color of the value should change based on the value of the roll with a low roll being red, an average roll being black, and a high roll being green. The distinction of high, average, and low should be based on the relative value of the roll relative to the maximum and minimum values of the roll. Use your best judgement when determining these cutoffs.

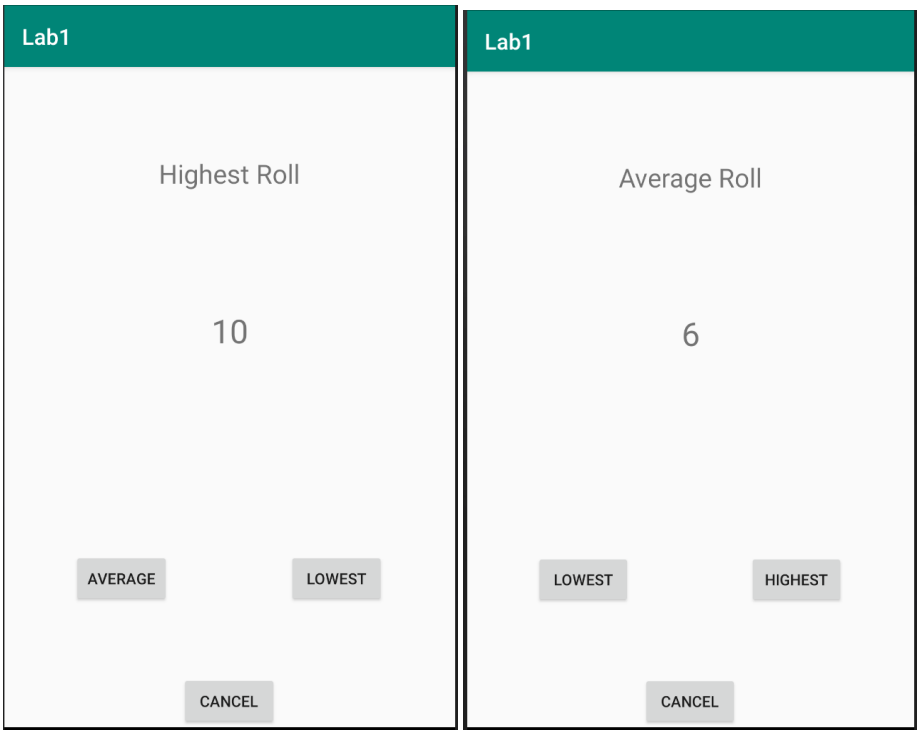


This activity should also feature a button to reroll the dice. Rerolling the dice should change the displayed value and update it as if the dice were rolled again. All previous rolls should be kept track of.

There should also be a Home button that takes the user back to the MainActivity and preserve all the previous rolls. The See Results button should take the user to a StatsActivity that will give statistics about the rolls the user has done.

The stats activity should use fragments to display different stats about the rolls without changing activities or reloading the activity. On navigating to the activity, the user should see the highest roll displayed with buttons that will change the display to either the average roll or the lowest roll. The Lowest button should display a fragment that shows the lowest value and has buttons to view the highest and average values of the dice and the Highest button should display the highest roll and buttons to view the average roll and the lowest roll. The Cancel button takes the user back to the MainActivity while preserving all previous rolls.

It is important that the StatsActivity use FRAGMENTS and be contained to one activity that updates values and listeners based on what is currently displayed. If you do not have fragments for each of the views, you will not received credit for this section of the assignment.



4 Tips

- Remember to sanitize and consider edge cases. No values should ever be null or blank.
- Make sure data is maintained throughout all activities until the data is cleared by the user.
- Use fragments in the stats activity.
- The Cancel button does not need to be in a fragment for the StatsActivity
- Create separate folders for activities and fragments.
- Avoid hard coding string values on the user interface whenever possible. Instead use String values from the Strings.xml
- Follow the Kotlin best coding practices.

5 Creative Portion

For every homework assignment, you will be asked to think of an additional feature to be added to the application that will improve the user experience

and provide you an opportunity to learn about concepts that you are personally interested in. Put yourself in the shoes of your users: what features would they like to see in an app like this? Try to make it something new and substantially different from what the app already does - do not just rehash existing requirements.

When you submit your assignment, please include a ReadMe.txt file that explains your creative portion. You should explain what the feature is, why you chose to implement that particular feature, and how you went about implementing it.

To receive full credit, your feature needs to be substantial as compared to the rest of the assignment. Examine the rubric below to get a feel for how much weight we are putting on the creative portion of the assignment.

6 Requirements

1. (15 Points) Creative portion
2. (15 Points) The StatsActivity uses fragments for each of the different stats values
3. (15 Points) The user can view the minimum, maximum, and average of all rolls in the stats activity
4. (10 Points) Data is preserved between all activities and fragments
5. (5 Points) Data is only cleared when the user clears the roll history. The user should be alerted of this.
6. (5 Points) The user can input the number of rolls and the value of the dice when the MainActivity is displayed
7. (5 Points) Each time the user loads the RollActivity the activity rolls the dice
8. (5 Points) The reroll button rerolls the dice on the RollActivity and displays a new value
9. (5 Points) The value on the RollActivity changes based on the value of the roll
10. (5 Points) The user had buttons to navigate between all activities and fragments
11. (5 Points) Data is sanitized and values are never null or invalid
12. (2 Points) Code is clean and well commented but NOT excessively commented
13. (3 Points) Code is organized in files with Activities in one file and Fragments in another file

14. (3 Points) App is visually appealing
15. (2 Points) All values and text boxes are labeled