Programming Assignment #1

CIS 436 – Mobile Application Development
University of Michigan - Dearborn
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Objectives

- To create a basic user interface
- To create event listeners and handlers for UI components
- To create a basic test plan
- To produce a fully functional simple game

Instructions

You are charged with the responsibility of creating a simple two player game to help children practice arithmetic. To add a little bit of uniqueness to this game, there will also be a die (singular of *dice*) image that will determine what type of problem the players have to solve.

- There will be two players, Player 1 and Player 2 who will use the same device, and switch back and forth until there is a winner
- The numbers involved for addition and subtraction are limited from 0 to 99
- The numbers involved for multiplication are limited to 0 to 20
- The first player to 20 points wins
- First and foremost, you must allow the player to push a button to **roll the die**, and the
    - 1 = addition
    - 2 = subtraction
    - 3 = multiplication
    - 4 = roll again, get double points if you answer correctly
    - 5 = lose a turn
    - 6 = try for jackpot
- Above the die it says whose turn it is
- You must use images for the die (not just text)
- Below the die it will place the problem the player has to solve
    - If they lose a turn, it should say "lose a turn" and then switch to the other player without allowing the user that rolled the 5 or 6 to earn any points
    - If they roll 1 – 4, they will be presented with a problem of the given type, and earn that many points if they get it correct
    - If they roll a 5, they lose their turn, and the player gets to play
    - If they roll a 6, the player tries for the jackpot amount
- The jackpot **always** starts at 5 points

- o If a player gets a problem wrong, the amount that they would have earned goes into the jackpot
- o The jackpot amount should be displayed somewhere on the UI
- o When a user gets a problem correct when they're trying for the jackpot, they get that many points and the jackpot resets
- o The jackpot always starts at 5 points, and resets to 5 points
- You should also display how many points are available

Sample UI
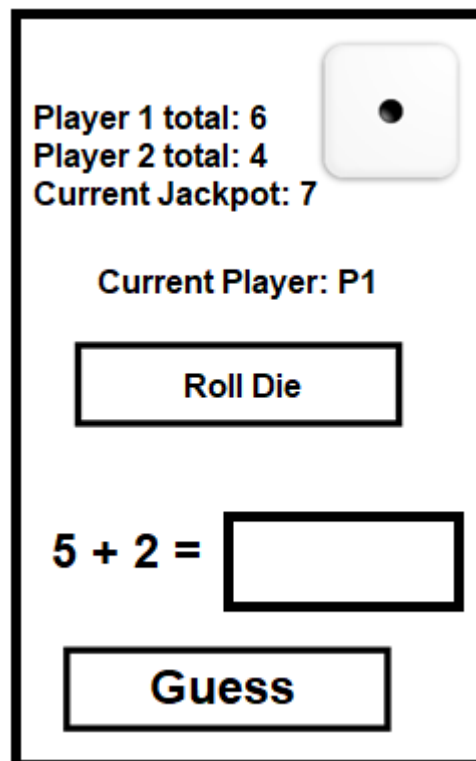
- You must use: **buttons, image views, text views, and edit texts** to complete the assignment
- You must provide a test plan with at least **three days** on separate worksheet tabs indicating the tests that were performed
- Note that dice rolls are a **random event** so they produce discrete random values – use the facilities that Kotlin has available (e.g., the Random class) to help you

Deliverables

Zip your entire Android Studio project, with the **test plan stored at the top level of the project.**

Upload the entire zip file to Canvas on or before the due date.