PROGRAMMING ASSIGNMENT #3

CIS 436 – MOBILE APPLICATION DEVELOPMENT – WINTER 2019
UNIVERSITY OF MICHIGAN - DEARBORN
PROF. JOHN P. BAUGH

Due: March 29, 2019 at 11:59 p.m.

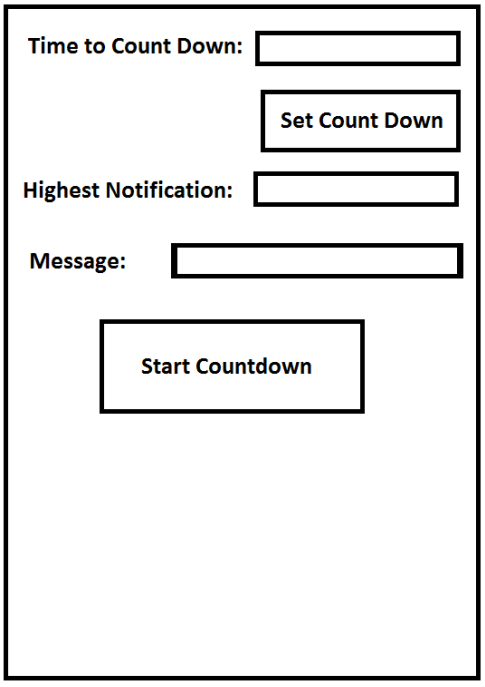
Points: _____ / 125

OBJECTIVES

- To utilize threads
- To utilize services
- To utilize notifications

INSTRUCTIONS

For this assignment, you're going to create an application that will assist users in celebrating New Years' Festivities and other events requiring countdowns. The user should be able to start an app, which displays an activity allowing the user to specify the amount of time (in seconds) to count down, and the highest value notification at which notifications should be displayed (the intervals are described later), thusly:



Firstly, the "Time to Count Down" should be typed by the user in a text box, but must be *at least* 5 seconds, and must be a multiple of 5 seconds. It can maximally be 120 seconds (2 minutes.) During this time (before the user hits the Set Count Down button), the Highest Notification **Spinner** will be disabled (grayed out.)

Secondly, after the user enters a valid value and hits the "Set Count Down" button, the Spinner next to "Highest Notification:" will be populated with all of the following values (see below), *up to* the count down time total, *exclusive*.

1, 5, 10, 20, 30, 60, 90

In other words, if the user had entered 20 seconds as the time to count down, it wouldn't make sense to allow the user to set the highest time for a notification to something greater than 20 seconds.

Finally, the user must also put a "Message" into the textbox next to Message. This is the "event message" that will be displayed with the notifications.

The user can then click "Start Countdown", at which time a Toast will appear saying, "Countdown has been started."

After each interval, a notification should appear from your app in the notification drawer. This should happen with or without your app open anymore.

By notification, I mean actual **notification**, not Logcat log, or Toast.

EXAMPLE

As an example, if the user enters 120 in the "time to count down", then that will set a countdown value of 120 seconds. If the highest notification value is set to 30, that means that only when the countdown reaches 30 seconds will the first notification appear. Then, one will appear at 20, then one at 10, 5, 1, and then finally the Message should be displayed as: "Time for: *<message>*".

If the user put "Happy New Year" for the above scenario, the notifications would be like the following:

Time reached at countdown	Message displayed in Notification
120	"Countdown has been started"
90	"90 seconds until Happy New Year"
60	"60 seconds until Happy New Year"
30	"30 seconds until Happy New Year"
20	"20 seconds until Happy New Year"
10	"10 seconds until Happy New Year"
5	"5 seconds until Happy New Year"
1	"1 second until Happy New Year"
0	"Time for: Happy New Year"

DELIVERABLES

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

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