Lab Assignment #4

Due Date: *Week 9 (11.59 pm, Sunday)*   **Marks/Weightage: 30/10%**

Purpose: The purpose of this lab assignment is to:
- Develop an Android App that manipulates a Room database
- Use **Room persistence library**
- Use **MVVM** architecture

References: Textbook, ppt slides and Android tutorials
(https://developer.android.com/training/data-storage/room/index.html,
https://github.com/googlesamples/android-architecture-
components/tree/master/BasicSample,
https://developer.android.com/reference/android/content/SharedPreferences).
This material provides the necessary information that you need to complete the
exercises.

Be sure to read the following general instructions carefully:

- This assignment **MUST be completed in pairs** following **pair programming** rules:
http://www.extremeprogramming.org/rules/pair.html. You should **use the full names of
both team members**.

- You will have to upload the completed assignment on eCentennial through the **assignment
link under Assessments**.

Android Workspace/Project Naming rules:

You must name your Android Studio workspace and project according to the following rule:
yourfullname_COMP304SectionNumber_Labnumber_ExerciseNumber.

Example: **JohnSmith_COMP304Sec001_Lab4_Ex1 and each subsequent exercise should be added
as JohnSmith_COMP304Sec001_Lab4_Ex2 and so on.**

Submission rules:

Submit your projects as **zip files** that are named according to the following rule:
yourfullname_COMP304SectionNumber_Labnumber_ExerciseNumber.zip

Example: **JohnSmith_COMP304Sec001_Lab4_Ex1.zip**

Upload your zipped assignment using the assignment link in e-centennial.

Exercise #1

In this exercise you will write an Android application that allows the nurses to keep track of various tests performed daily on patients in a hospital. Your application could be used by nurses in hospitals or testing centers. Use **Room persistence library and MVVM pattern** (as shown in class examples) to create and manipulate the application's database. Create the following **entities**:

Patient	Test	Nurse
patientId firstname lastname department nurseId room	testId patientId nurseId BPL BPH temperature	nurseId firstname lastname department password

Add more fields to Test entity, to describe **other medical tests**. Your application should contain the following activities:

a) The **main activity** that handles the navigation.   **[4 marks]**
b) The **login activity** will allow the nurse to **login.** Use nurseId as user name for the nurse.
   [4 marks]
c) The **patient activity** will allow the nurse to **enter/view patient** information.   **[4 marks]**
d) The **test activity** will allow a nurse to **enter test** data for a patient.   **[4 marks]**
e) The **view test info** activity will allow the nurses to **view test information** for a given patient.
   [4 marks]
f) The **update info** activity will allow the nurse to **update/display patient information**. **[6 marks]**

g) Use **Shared Preferences** to store nurseId after successful login. Provide a friendly and easy to navigate UI. Use images and image buttons.   **[4 marks]**

Evaluation/Rubric:

Functionalities: • Correct implementation of the model (entity classes, Room database, Dao, and Repository classes)	30%
• Correct implementation of ViewModel class.	20%
• All activities working, proper naming of activities, variables, and methods. Provide comments. Provide explanation when asked during the demonstration of the app.	25%
UI friendliness (proper layout, controls, styles, themes, images)	15%
Declaring resources in proper resource files	5%
Innovative features/effective way of coding	5%
Total	**100%**