COMP6915 Mobile Applications

Class Demo (20% of Final)

# Description

The purpose of this exercise is to demonstrate the ability to implement and utilize the sensors that are available within the majority of devices today. This assessment does not require applications that have any context however the use of context is encouraged, but no additional marks are given for this.

While we encourage using the code supplied in the classes for inspiration, we believe that participants would truly benefit from the assessment if they implement the logic and the application on their own. Marks for originality and presentation will only be awarded to projects created independently of the code delivered in class.

Not all of the topics listed were covered in class, however the MSc student should be able to do a reasonable search and study of the developer documentation and implement the features specified.

Each student will present a demo of the application focusing primarily on his or her use of the databases and background/multiple task used within the application.

# Instructions

1. Add the ID Number and complete the File & Line numbers of the features implemented within the assessment.
2. Submit a final zip file with the code and this form completed with the relevant information.
3. Be careful not to upload folders such as build to keep the size of the zip file down.

ID Number: 04742482

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| --- | --- | --- | --- | --- |
| Item | Mark | Alloc | File & Line # | Description |
| Accelerometer | 4 |  | AccelerometerSensorService.java  AccelerometerBroadcastReceiver.java  MainActivity.java StartAccelerometerService() | 1 Marks for Reading sensor, 1 Marks for displaying information on the sensor.  2 Mark for setting controls for the sensors |
| Magnetic Field / Compass | 4 |  | MagneticFieldSensorService.java  MagneticFieldBroadcastReceiver.java  MainActivity StartMagneticFieldService() |
| Gravity | 4 |  | GravitySensorService.java  GravityFieldBroadcaster.java  MainActivity StartGravityService() |
| Proximity | 4 |  | ProximitySensorService.java ProximityBroadaster.java  MainActivity StartProximityService |
| Pressure | 4 |  | PressureSensorService.java  PressureBroadcastReceiver.java  Mainactivity StartPressureService() |
| Temperature | 4 |  | TemperatureSensorService.java  TemperatureBroadcastReceiver.java  Mainactivity StartTemperatureService() |
| Linear Acceleration | 4 |  | LinearAcceleratorSensorService.java  LinearAcceleratorBroadcastReceiver.java  Mainactivity StartLinearAcceleratorService() |
| Rotation Vector | 4 |  | RotationVectorSensorService.java  RotationVectorBroadcaster.java  MainActivity  StartRotationService() |
| Gyroscope | 4 |  | GyroscopeSensorService.java  GyroscopeBroadcastReceiver.java  Mainactivity StartGyroscopeService() |
| GPS Listener | 6 |  | GPSSSensorService.java  GPSBroadcastActivity.java  MainActivity StartGPSService | Using the GPS Listener that will be used to trace changes in the GPS locations |
| GPS Getting Last Known Location | 5 |  | GSPSenSorService.java  Gets last location if the GPS and Network are off. | [Link](https://developer.android.com/training/location/retrieve-current.html) Finds the last location of the users device. This is often can be interpreted as the current location of the device. |
| Database Access | 10 |  | DBHelper SensorModel  DB changes logged with db.addSensorRecord() in each service | Write the *significant changes* to the sensor data to the database.  Create a separate activity (activities) that will be use to display all of the records stored in the database for the individual sensors. |
| Running Multiple / Background Tasks | 10 |  | SensorServices in Service package  Broadcast Receiver in receivers package | Demonstrate the ability to run tasks in the [background](https://developer.android.com/training/best-background.html) or managing [multiple threads and/or processes](http://developer.android.com/guide/components/processes-and-threads.html) in the application code. |
| Presentation | 5 |  |  | Using a 5-point scale to rate the look and feel of the application. |
| Multiple Activities | 2 |  | MainActivity SensorLog | Marks simply for demonstrating knowledge through implementation |
| Multiple Fragments | 2 |  | MainActivityFragment |
| Lists ([RecyclerView](https://developer.android.com/training/material/lists-cards.html#RecyclerView)) | 2 |  |  |
| Material [Cards](https://developer.android.com/training/material/lists-cards.html#CardView) UI | 2 |  | fragment\_main.xml |
| Originality | 5 |  |  |  |
| Design of Code | 5 |  |  |  |
| Oral Delivery | 10 |  |  | The short 5-minute demonstration of the application developed. |

# Presentation Guidelines

Prepare a 3-slide presentation and a demo. The slide should address the following:

1. Database Use
2. Running Multiple / Background Tasks
3. Design Considerations
4. Demo

Presentations should be short and straight to the point, ensure that presentations including the demo do not exceed 5 minutes.