Related Work

In order to do our experimental work, we had to investigate to organize our process.

For that we have analysed [1] https://www.youtube.com/watch?v=AZUIcXcDpcM&t=980s which gave us the idea of variety of sensors that we have in our smartphones. This part helped us a lot when to choose the sensors that we wanted to read from in order to get our idea done. This reference also gave us the notion why do we need to record mobile sensors and in which way it can helps us. The Android OS itself records output of various sensors in mobile phone automatically or on our request to assist us while using many of our applications in our device.
Android sensors can also be recorder by the users to use the recorded output in the implementation of the application that we desire to develop. An example of this kind of applications is to control the robots and machines, to identify metallic or non-metallic objects, to study vibration of a machine part and, most importantly to our case, to control some activity based on mobile orientation.
The reference [1] gave us a notion on how to record sensors data and process it offline or online.

[2] https://machinelearningmastery.com/how-to-model-human-activity-from-smartphone-data/ which is supported by [3] https://archive.ics.uci.edu/ml/datasets/human+activity+recognition+using+smartphones# also helps us to understand better what is human activity recognition and how to approach this theme.
Like said before, human activity recognition is the problem of predicting what a person is doing based on a trace of their movements using sensors. Sensors are often located on the subject, such as a smartphone or vest, and is always recording accelerometer data in three dimensions (x,y,z).
The major idea is that once the subject's activity is recognized and known, an intelligent computer system can offer assistance.
This is a challenging problem because there is no clear way to relate the sensor data to specific actions in a general way. It is very challenging due to the large volume of sensor data collected and the use of hand-crafted features and heuristics from this data in developing predictive models.

[4] A Public Domain Dataset for Human Activity Recognition Using Smartphones gave us a even better understanding of what human activity recognition really is.