

CS5542 : Lab Assignment #3

Due on Wednesday, February 10, 2016

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1: R-Project

Question:

Prepare a dataset related to your own project and perform k-Means, k-Medians, Expectation Maximisation (EM), Hierarchical Clustering and report the results.

Description:

Synthesized a dataset related to our project. As part of data collection, we are collecting a huge number of images and comparison will be Performed on the features identified in the images. So I have performed the k-means, k-median, Expectation Maximisation(EM), Hierarchical clustering on the a generated sample data.

Screenshot:

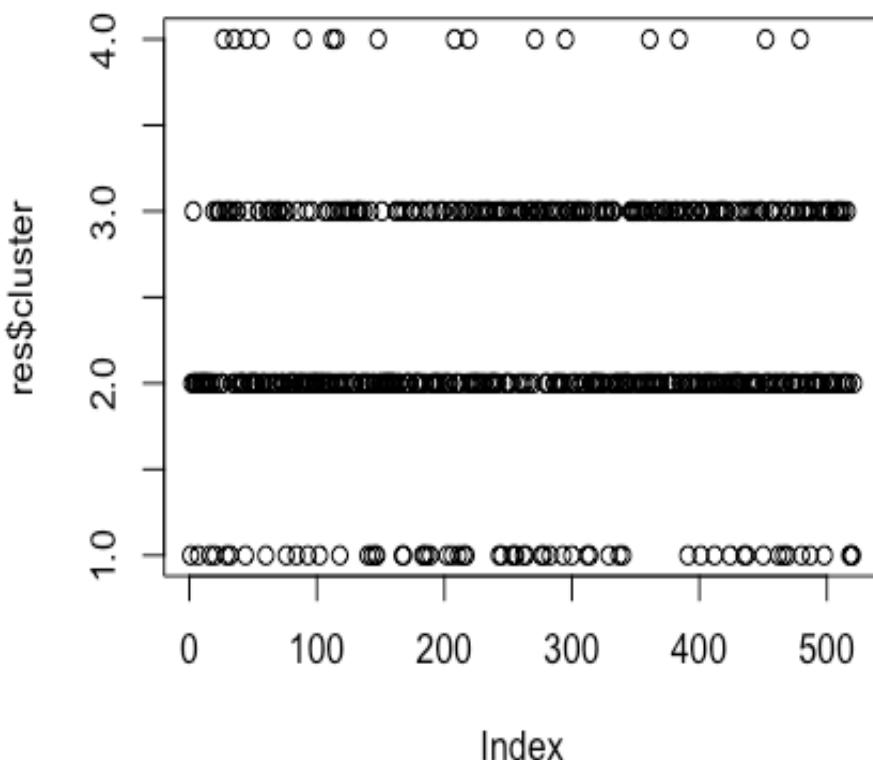


Figure 1: k-means

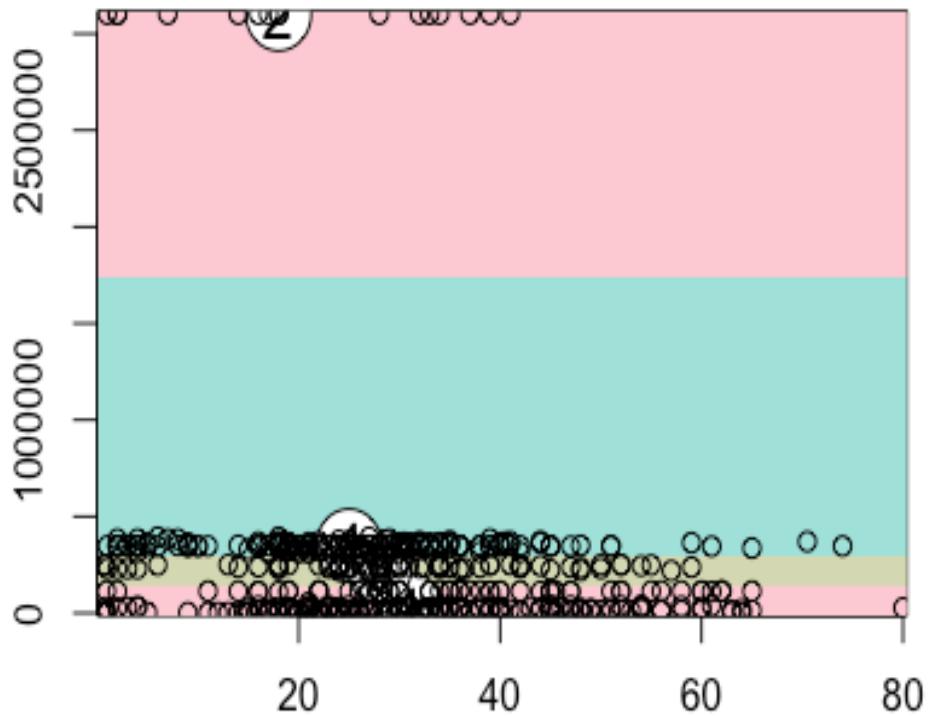


Figure 2: k-median

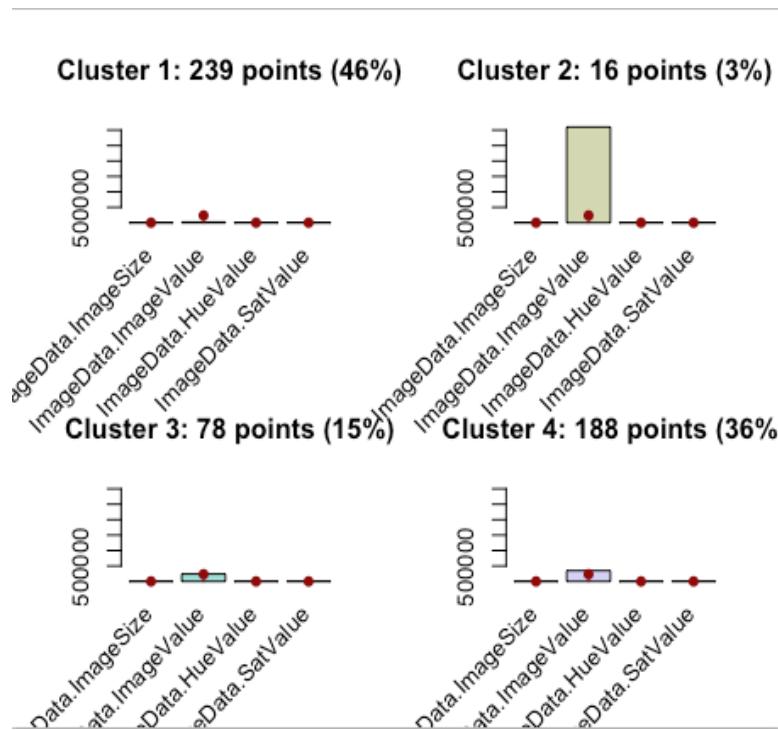


Figure 3: k-median Barchart

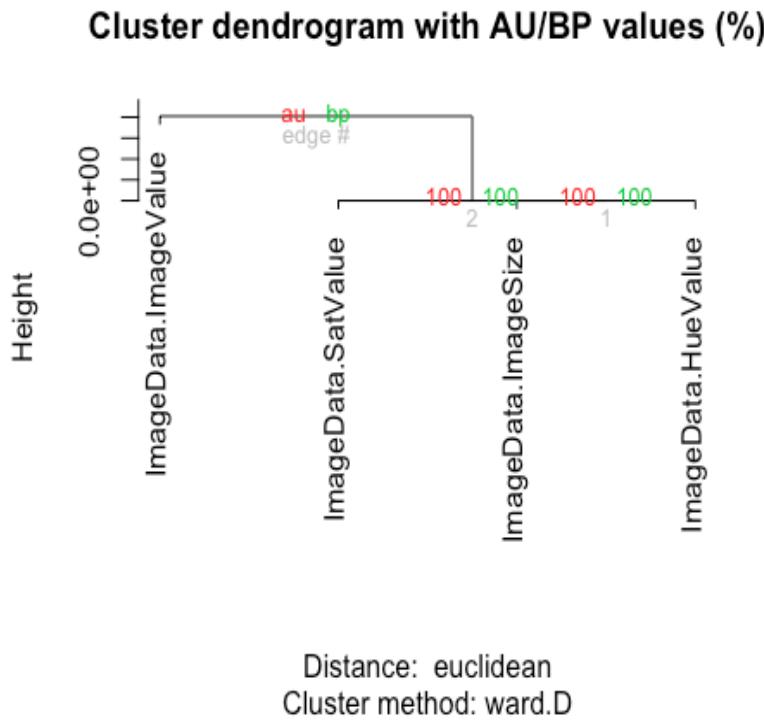


Figure 4: Hirarchical clustering

2: Watch App

Question:

Data collection related to your own project through Smart Phone and Watch, send notifications to watch using intuitive data analysis.

Description:

In our project - Tour guide, we will be requiring the robot to move autonomously around the interiors of a building. The robot should be capable of detecting a collision and turn around if it comes closer to a wall. For this, I have used the proximity sensor to detect closeness of a wall and if it comes in contact with the wall, the robo can turn in a different direction or can send a notification to the user about its intersection with the wall and it can await for the turning directions. For this, the proximity sensor readings are read and in case if there is a collision with the wall the values read are changed this would be the triggering point for the notification.

Screenshots:

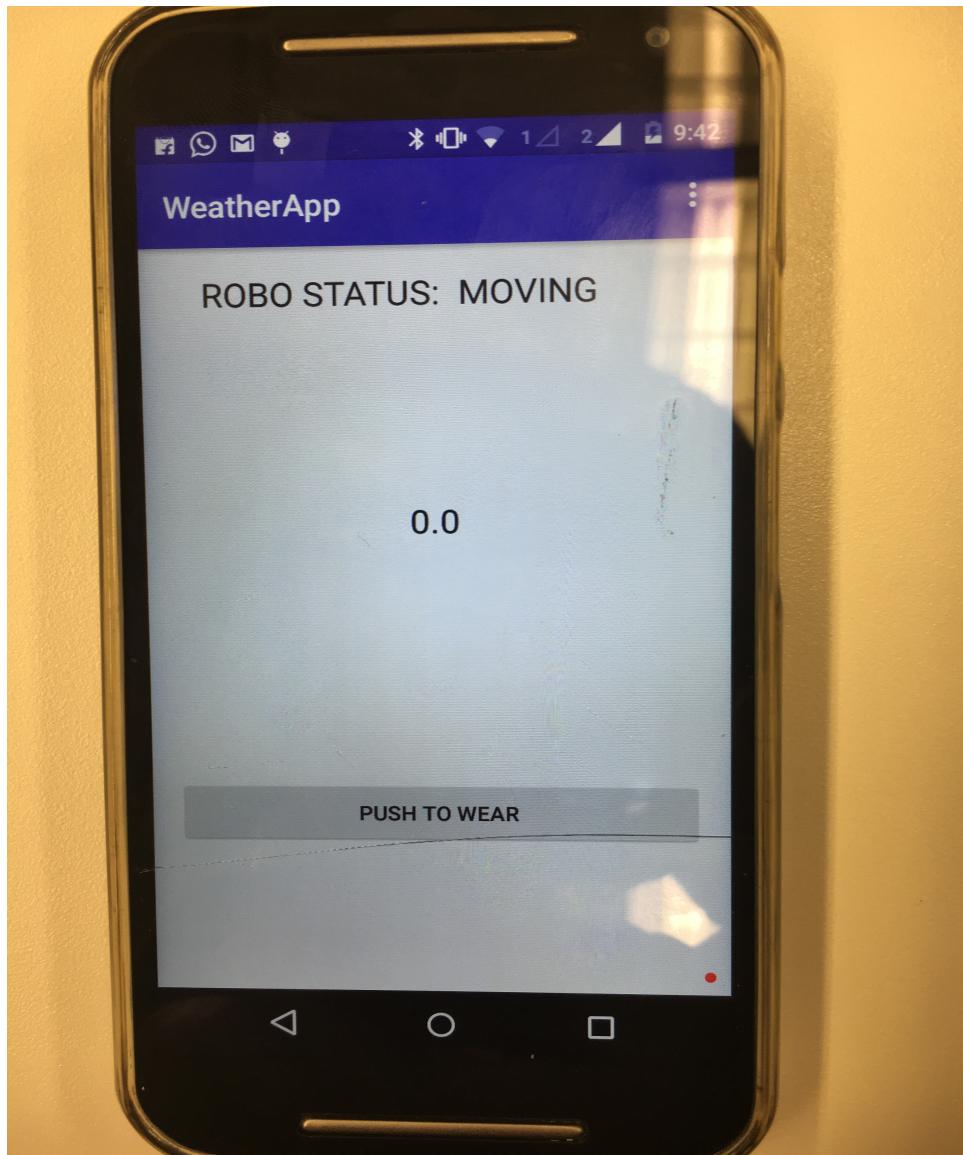


Figure 5: RoboMe app - Moving

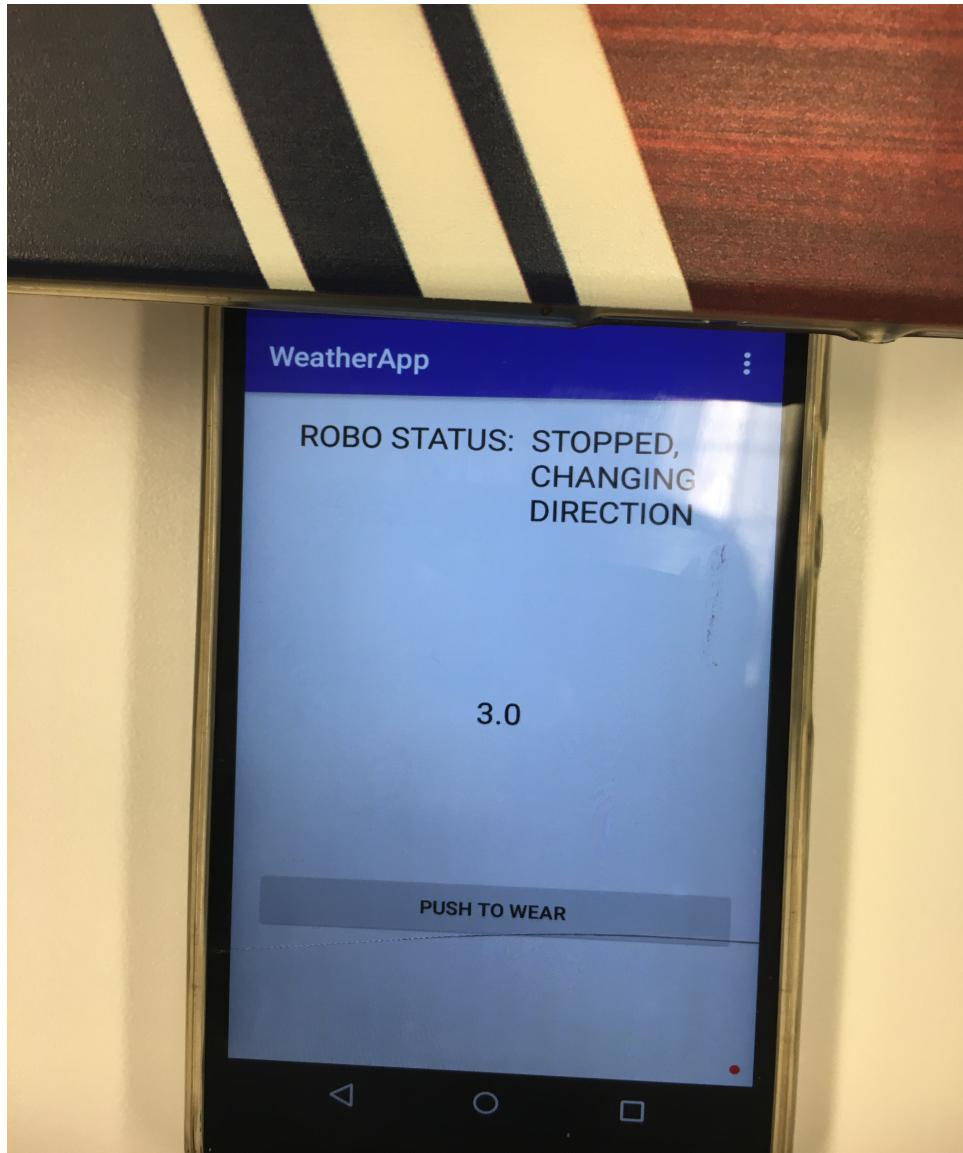


Figure 6: RoboMe app - Stopped

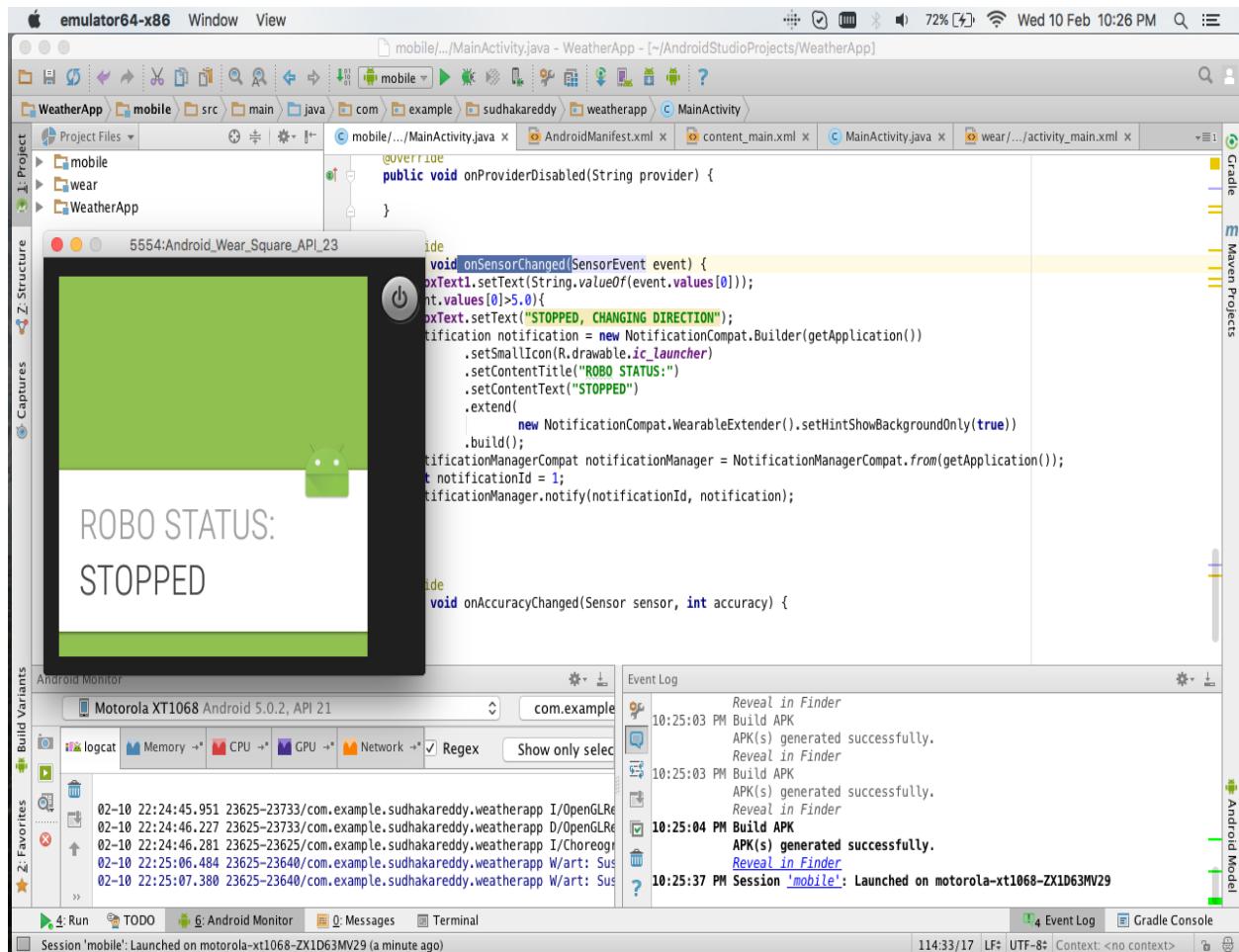


Figure 7: Wear Notification