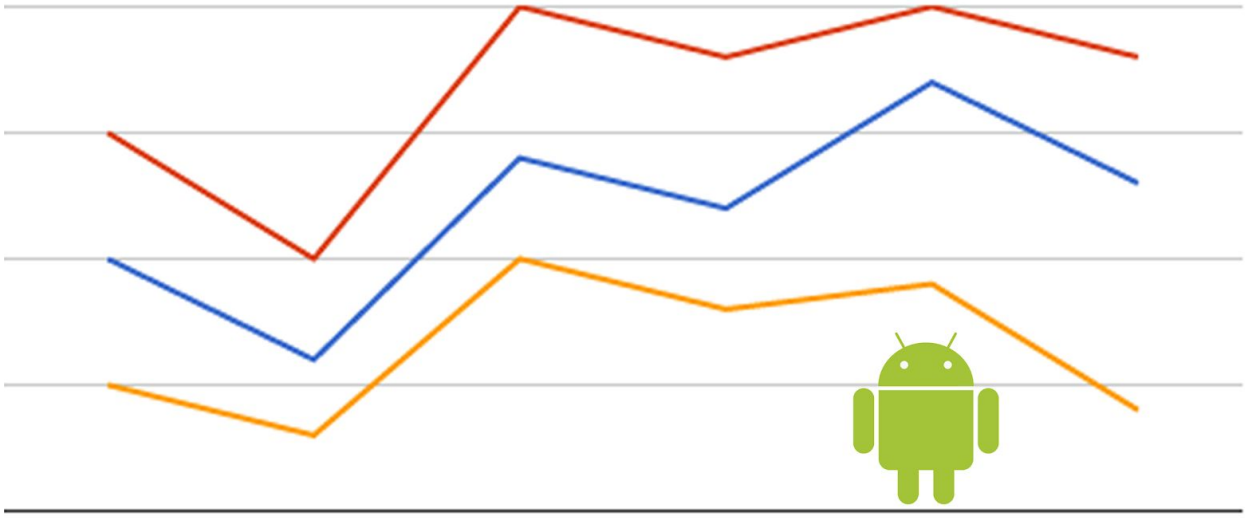
Mobile Health Lab-1 Report

VEGA - An App for Visualising and saving Accelerometer Data



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INTRODUCTION

VEGA (**vei**·guh) - is an android application which collect accelerometer data, saves the data in a CSV file and plots it on a graph. The interface is controlled by a User Interface with Buttons.

Out of the numerous accelerometer based applications on the android app store,"Sensor Accelerometer" was the one that caught our attention.It is a simple application that reads accelerometer data and plots them on a graph.The impressive part is that this process is done in real time.It has multiple options for the rates of data collection and graph types.

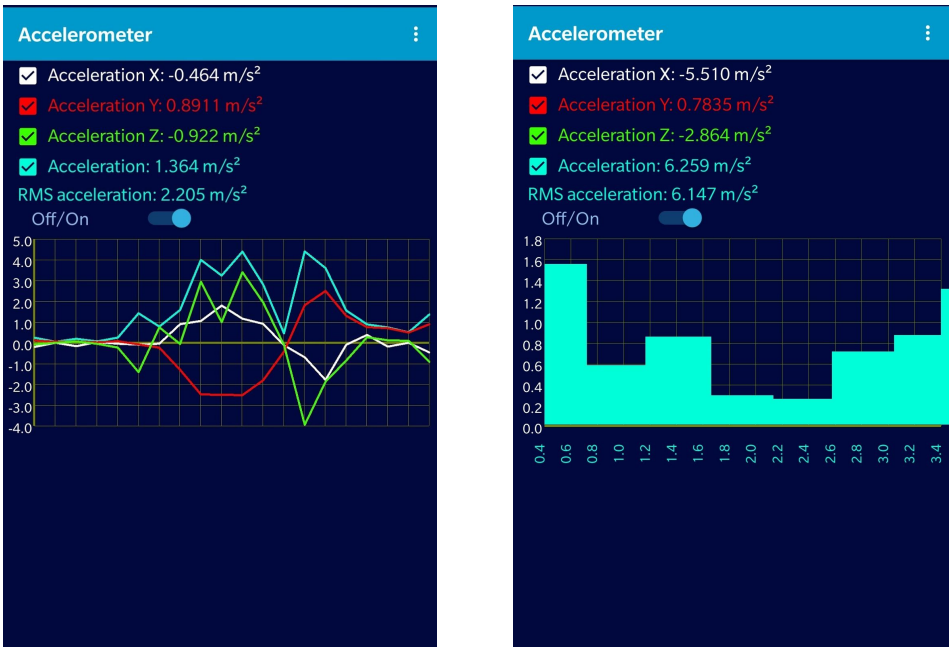

Figure 1 . "Sensor Accelerometer" App - Data on Line Graph and Bar Graph.

Though we did not replicate every part of the application, it helped us visualise and solidify our application VEGA's look and design.

SYSTEM DESIGN

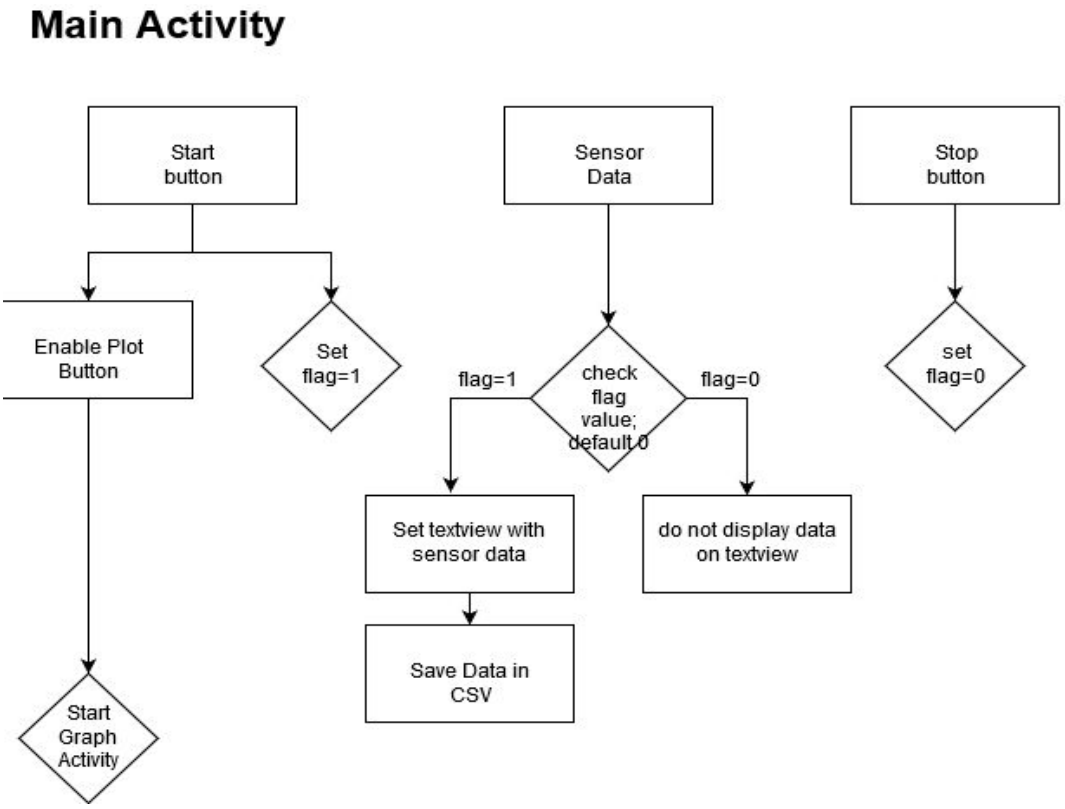

Figure 2.(a) - Flow Chart for Main Activity of VEGA

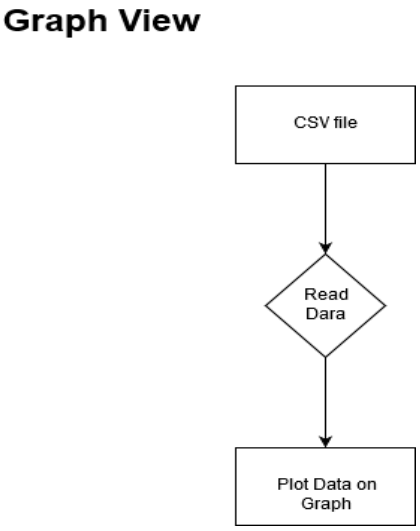

Figure 2.(b) - Flow Chart for GraphView Activity of VEGA

USER MANUAL

This application lets you record the rate of acceleration at which you move your phone.When you open the app,the user interface will have three buttons: Start, Stop and Plot.

Initially, you can only interact with two of the buttons on screen i.e, start and stop. Pressing start lets you see the acceleration values, displayed in three seperate acceleration values : horizontal(x), vertical(y) and rotational(z) on the screen. It also activates the plot button.

Pressing stop pauses the display.

Pressing the plot button takes you to a new screen which represents the values previously seen as a line graph. The trends in the lines will make it easier to visualise the difference in values.

This application can be useful as a base to build more advanced applications in the fields of healthcare and entertainment.

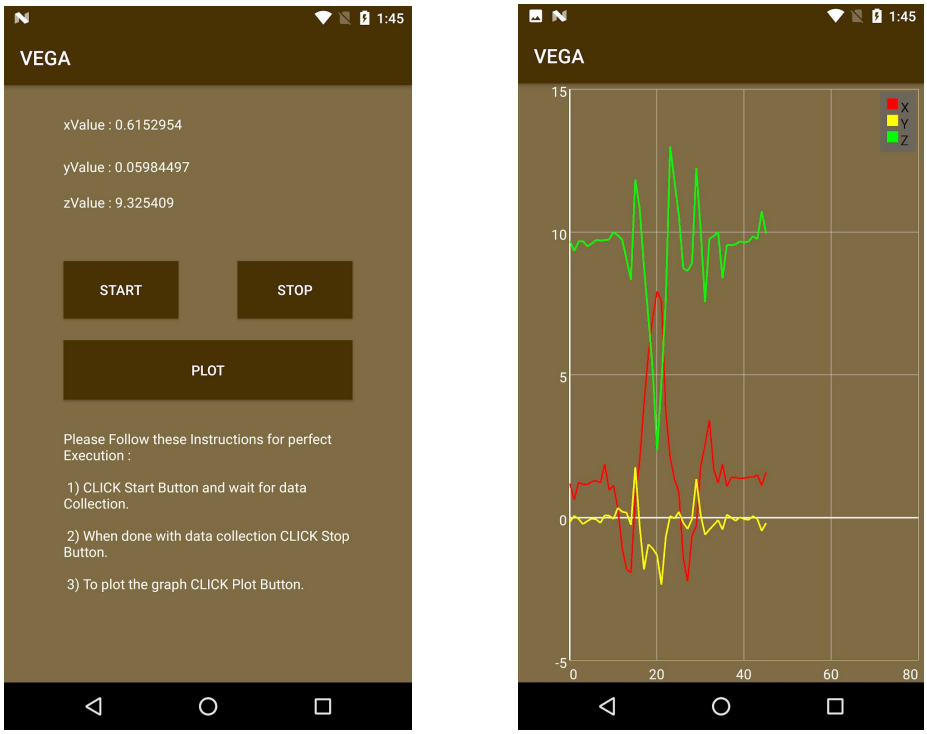

Figure 3 - VEGA App User Interface

CITATIONS

1. Android Accelerometer Tutorial 1: Getting Started with Accelerometer
2. Android Accelerometer Tutorial 2: Live Accelerometer Data in TextView
3. https://stackabuse.com/reading-and-writing-csvs-in-java/
4. https://www.geeksforgeeks.org/different-ways-reading-text-file-java/
5. How to Parse CSV or Microsoft Excel file in Android Studio with example
6. Android Read Write Internal Storage File Example
7. Android Beginner Tutorial #17 - Android Beginner Graphing
8. Legend in Graph : Android Graph View tutorial
9. https://stackoverflow.com/questions/32085210/changing-the-grid-colour-of-a-graphview-object-in-android