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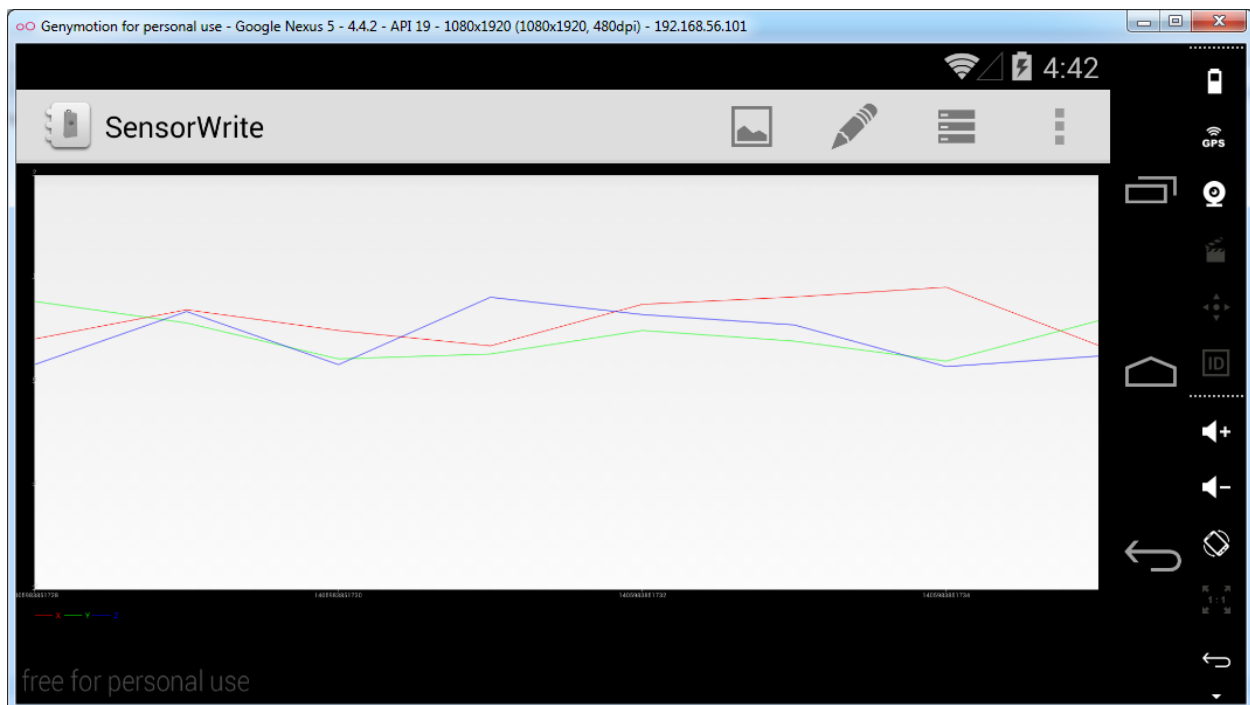
Lab 6

We may use **achartengine** from https://code.google.com/p/achartengine/

The data is all faked because there is no device to test with. It's all new Random().nextFloat() stored in an HBase cell. Given this dataset, we can write a hard-coded graph to look like the below:

The corresponding Android activity code is as follows:

```java
package group.seven.sensorwrite;

import org.achartengine.ChartFactory;
import org.achartengine.GraphicalView;
import org.achartengine.model.XYMultipleSeriesDataset;
import org.achartengine.model.XYSeries;
import org.achartengine.renderer.XYMultipleSeriesRenderer;
import org.achartengine.renderer.XYSeriesRenderer;

import android.app.Activity;
import android.content.Intent;
import android.graphics.Color;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.widget.LinearLayout;

public class GraphingActivity extends Activity {

        private GraphicalView chart;
        private XYSeriesRenderer renderX, renderY, renderZ;
        private XYMultipleSeriesRenderer renderMulti;
        private XYSeries seriesX, seriesY, seriesZ;
        private XYMultipleSeriesDataset dataset;

        @Override
        protected void onCreate(Bundle savedInstanceState) {
                super.onCreate(savedInstanceState);
                setContentView(R.layout.activity_graphing);
        }

        @Override
        protected void onResume() {
                super.onResume();
                LinearLayout layout = (LinearLayout) findViewById(R.id.chart);
                if (chart == null) {
                        initializeChart();
                        addData();
                        chart = ChartFactory.getLineChartView(this, dataset,
renderMulti);
                        layout.addView(chart);
                } else {
                        chart.repaint();
                }
        }

        private void initializeChart() {
                renderX = new XYSeriesRenderer();
                renderY = new XYSeriesRenderer();
                renderZ = new XYSeriesRenderer();
                renderX.setColor(Color.RED);
                renderY.setColor(Color.GREEN);
```

```java
            renderZ.setColor(Color.BLUE);
            renderMulti = new XYMultipleSeriesRenderer();
            renderMulti.addSeriesRenderer(renderX);
            renderMulti.addSeriesRenderer(renderY);
            renderMulti.addSeriesRenderer(renderZ);
            renderMulti.setPanEnabled(false);
            renderMulti.setYAxisMax(2);
            renderMulti.setYAxisMin(-2);
            seriesX = new XYSeries("X");
            seriesY = new XYSeries("Y");
            seriesZ = new XYSeries("Z");
            dataset = new XYMultipleSeriesDataset();
            dataset.addSeries(seriesX);
            dataset.addSeries(seriesY);
            dataset.addSeries(seriesZ);
    }

    private void addData() {
            seriesX.add(1405983851728d, 0.4192289);
            seriesX.add(1405983851729d, 0.7016753);
            seriesX.add(1405983851730d, 0.50137144);
            seriesX.add(1405983851731d, 0.35302472);
            seriesX.add(1405983851732d, 0.7544926);
            seriesX.add(1405983851733d, 0.82490706);
            seriesX.add(1405983851734d, 0.9199208);
            seriesX.add(1405983851735d, 0.35909843);

            seriesY.add(1405983851728d, 0.7823952);
            seriesY.add(1405983851729d, 0.57416534);
            seriesY.add(1405983851730d, 0.22668737);
            seriesY.add(1405983851731d, 0.27401525);
            seriesY.add(1405983851732d, 0.50155413);
            seriesY.add(1405983851733d, 0.398569);
            seriesY.add(1405983851734d, 0.20537454);
            seriesY.add(1405983851735d, 0.59514654);

            seriesZ.add(1405983851728d, 0.17223662);
            seriesZ.add(1405983851729d, 0.6850002);
            seriesZ.add(1405983851730d, 0.17167646);
            seriesZ.add(1405983851731d, 0.8227964);
            seriesZ.add(1405983851732d, 0.6553871);
            seriesZ.add(1405983851733d, 0.5550845);
            seriesZ.add(1405983851734d, 0.15228134);
            seriesZ.add(1405983851735d, 0.25429183);
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
            //inflate menu items for use in action bar
            MenuInflater inflater = getMenuInflater();
            inflater.inflate(R.menu.main_activity_actions, menu);
            return super.onCreateOptionsMenu(menu);
    }

    @Override
```

```java
    public boolean onOptionsItemSelected(MenuItem item) {
        //handle presses on action bar items
        switch(item.getItemId()) {
            case R.id.action_graph:
                //do nothing - already here
                return true;
            case R.id.action_edit:
                openWrite();
                return true;
            case R.id.action_storage:
                openStorage();
                return true;
            case R.id.action_settings:
                //settings not implemented
                return true;
            default:
                return super.onOptionsItemSelected(item);
        }
    }
    private void openWrite() {
        Intent intent = new Intent(GraphingActivity.this,
MainActivity.class);
        startActivity(intent);
    }
    private void openStorage() {
        Intent intent = new Intent(GraphingActivity.this,
DataTrainingActivity.class);
        startActivity(intent);
    }
}
```

Credit is owed to the tutorial at http://www.codeproject.com/Articles/797563/Creating-Charts-in-Android-using-the-AChartEngine