GO GREEN CAMPUS ANDROID APPLICATION

A PROJECT REPORT

Submitted
in partial fulfillment for the award of the

DIPLOMA IN COMPUTER SCIENCE AND ENGINEERING

Submitted By

Nelson Lobo

Owais Shaikh

Aruna Kadalagi

Bharata Patil

Under the guidance of

Dr. Vijay H. Kalmani, Principal, Jain Polytechnic, Belagavi

JAIN POLYTECHNIC BELAGAVI

(Approved by AICTE, New Delhi and recognized by DTE, Begaluru)

Peeranwadi, Belagavi – 590014

April 2018

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Under the guidance of
Dr. Vijay H. Kalmani,
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Department of Computer Science and Engineering
JAIN POLYTECHNIC BELAGAVI
Peeranwadi, Belagavi

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JAIN POLYTECHNIC BELAGAVI

19/1, Peeranwadi, Belagavi – 590014

Department of Computer Science and Engineering

CERTIFICATE

Certified that this project report titled "**GoGreenCampus**" is the bonafide work carried out by **Nelson Lobo (573CS15024), Owais Shaikh (573CS15029), Aruna Kadalagi (573CS15010), Bharata Patil (573CS15013),** Sixth Semester, for the partial fullfilment of the Diploma in Computer Science and Engineering of the Board of Technical Examinations, Bengaluru, Government of Karnataka during the year 2015-2016. It is certified that all corrections and suggestions indicated for internal assessment have been incorporated in this report and one copy of it is being deposited in the library.

The project has been approved as it satisfies the academic requirements in respect of Project Work prescribed for the Diploma in Computer Science and Engineering.

It is further understood that by this certificate, the undersigned do not endorse or approve any statements made, opinions expressed or conclusions drawn therein, but approve the project only for the purpose for which it is submitted.

Dr. Vijay H. Kalmani	**Prof. Chetan Patil**	**Dr. Vijay H. Kalmani**
Guide	Head of Department	Principal

Name of Examiners   **Signature (with date)**

1. _____   _____

2. _____   _____

ACKNOWLEDGEMENT

"All experiences are an oppurtunity for us to learn and grow"

Gratitude takes three forms, "a feeling from the heart", "an expression in words" and "giving in return". It is our human bound duty to acknowledge the following personalities for their efforts in guiding us in the right direction. The sense of contentment and elation that accompanies the successful completion f our project and it's report would be incomplete without mentioning the names of the people who helped us in accomplishing this.

First and foremost, we would like to extend our cordial regards and thanks to our principal, **Dr. Vijay H. Kalmani**, for providing a healthy learning environment in the college, which helped us in developing our skills and concentrating on the task at hand. We express a deep sense of gratitude to our Head of Department, **Mr. Chetan Patil** for his valuable guidance, cooperation and timely help. We would also like to express our heartfelt thanks to all the staff at the Department of Computer Science and Engineering for their valuable support.

It has been a fortune to associate with our guide, **Dr. Vijay H. Kalmani**, as our guide during the course of this project undertaken. He has been kind enough to help us all in the fronts of development of this project when we required his help and has been continuous source of inspiration. Hence, it is our bountiful duty to offer our gratefulness to him.

Nelson Lobo
Owais Shaikh
Aruna Kadalagi
Bharata Patil

List of diagrams and activities

List of test cases and charts

ABSTRACT

The aim of our project is to make an Android Application that takes some input about the waste that has been generated in a university, college or school campus and the amount of waste that has been treated throughout the month and time, process the data to find the ratio of waste generated to waste treated and represent it with the help of graphical, visual and textual information and to assign ranking to the institute on based on the LEED index and green rating given. This application monitors and keeps track of the amount of waste generated and recycled and find out ways to improve the quality of our environment by finding out efficient ways of waste treatment and encourages environmentally-friendly practices by creating a competitive, community-based ambience.

Chapter 1.   Introduction

1.1   Background

Go Green Campus Waste Management (GGC) Android App is an easy to use Android application with interactive Graphical User Interface(GUI). This application can be used by Universities, Colleges and Schools to keep track record of the waste that is generated in the campus and the waste that is been treated. The information is represented in the form of text and graph.

More and more of us are realizing that our future depends on protecting the health and wellbeing of ourselves and our home planet, Earth. To do so, we must educate a new generations of citizens with the skills to solve the global environmental problems we face and to have a green future or a green economy with green universities, colleges, and schools and their campuses.

Mobile Applications have a unique model in order to provide top-quality customized solutions to such an issue and to big masses and price-ranges that are affordable. For example, according to available statistics, over 80% of startups today are actively looking into creating a mobile applications for such situations.

1.2   Motivation

Safeguarding the health of India's schoolchildren must be central to a high-quality education. Research shows that greener school environments can improve children's health and learning. Yet our institutes get dismal grades in environmental practices.

Schools use non-biodegradable and recyclable waste contain toxins, which are irreversible and dangerous to life forms on Earth. Poor indoor air quality, air pollution and low-visibility are linked to various health issues like soaring asthma and direct environmental impact. Most schools consume enormous quantities of paper and energy, produce tons of waste and carbon emissions, and rarely purchase environmentally-friendly products. Research shows that green schools save more money due to efficiency and affordability of materials, while improving employees and students' health. A 2006 LEED Green Building Council report showed that green schools cost ₹195 more per square meter, but generated ₹4800 per square meter in benefits from energy savings, increased attendance, and employee retention.

1.3 Problem Statement

The main objective of GoGreenCampus Android App is to provide users with an easy to use application with interactive GUI that can be used to monitor and keep track of waste generated and waste treated throughout the day in University/College/School Campus.

This information can be further used by the University/College/School Authority to enhance the waste treatment facility in the campus thus reducing the generation of waste and keeping the surrounding clean.

1.4 Objectives

- To develop an Android mobile application to simplify waste collection.
- To process and display precise data for evaluation and analysis and technical feasibility.
- To encourage institutes to reduce generation of waste and keep our surroundings clean.
- To instill a good attitude and a sense of pride and accomplishment for completing tasks related to recycling.

Chapter 2.   System Survey

2.1   Survey of Existing Systems

Although there are applications that are used by people to file complaints about waste generated around us there is no application that keeps track of the amount of waste generated and treated and most of the applications that keep track are not much developed and they keep track of only the solid waste[8]. This makes the development/enhancement of the waste treatment facility extremely difficult[7]

2.2   Scope for Improvement

The application improves on current systems such as RoHS[6] and LEED[5] etc. by offering a completely digital and wireless solution for keeping track of and recording waste disposal and management, which directly affects the environmental quality of a campus/organization[9].

2.3   Summary

Waste management is among the basic essential services needed to keep campuses green. Due to industrialization, rural to urban migration and high growth rate of population have induced rapid urbanization in developing countries and obviously in India as well[7]. The haphazard urbanization created acute problem for waste management. Waste generation rate in India has increased from 0.44 kg per day in 2001 to 0.5 kg per day in 2011[8]; such a steep increase in waste generation within a decade has severed the stress on all infrastructural, natural and budgetary resources[7]. So, there is a need for proper waste collection, segragation and processing. The proposed work emphasizes on the use of technology and mobile systems in making a sustainable urban environment.

2.4   Proposed System

The proposed system can keep record of the waste that is been generated and the amount of that waste that is actually been treated. This can be applied to both solid waste as well as liquid waste. The GoGreenCampus Application processes the data and represents the data in both text as well as graphical form. It makes use of easy to use user-friendly Graphical User Interface (GUI) for the user to interact with the application.

Chapter 3. Requirements Specifications

3.1 Project Requirements Specification

Following are the hardware and software requirements to be met in order to use the proposed system:

3.1.1 Hardware Requirements

- Any ARM-based 64-bit Android device @ 768MHz or more
- 512MB of RAM
- 10MB of Internal Storage
- Connectivity to the Internet via WiFi or Cellular Data
- Android devices with 64-bit ARMv7 architecture (32-bit and Intel x86 unsupported)

3.1.2 Software Requirements

- Android 6.0 Marshmallow and above
- A PHP server
- System versions supporting Kotlin compatibility. (Android 6.0+)
- A MySQL Database
- Android XML Schemas

3.2 Functional Requirements

Functional requirements are the requirements of tasks, processes etc. essential to the system.

3.2.1 User Domain

- The users add data on waste to the application.
- The users can log into and delete their accounts.
- The users can delete specific entries from the server/database
- All users collectively affect the institute's performance

3.2.2 Institute Domain

- The institutes can add themselves on the database.
- The institute heads all the users of the campus.
- The institutes compete with each other to perform better in environmental sustainability.

-

3.3   Non-Functional Requirements

Non-functional requirements are requirements that are not compulsory, but add a nice feature to the application, such as UI Design, notifications, animations etc.

- Easy-to-use user interface design.

- Use of discrete components like cards and dynamic padding.

- Adding animations to give appeal.

- Notifying users of errors.

Chapter 4.   Project Design

4.1   Data Flow Diagram
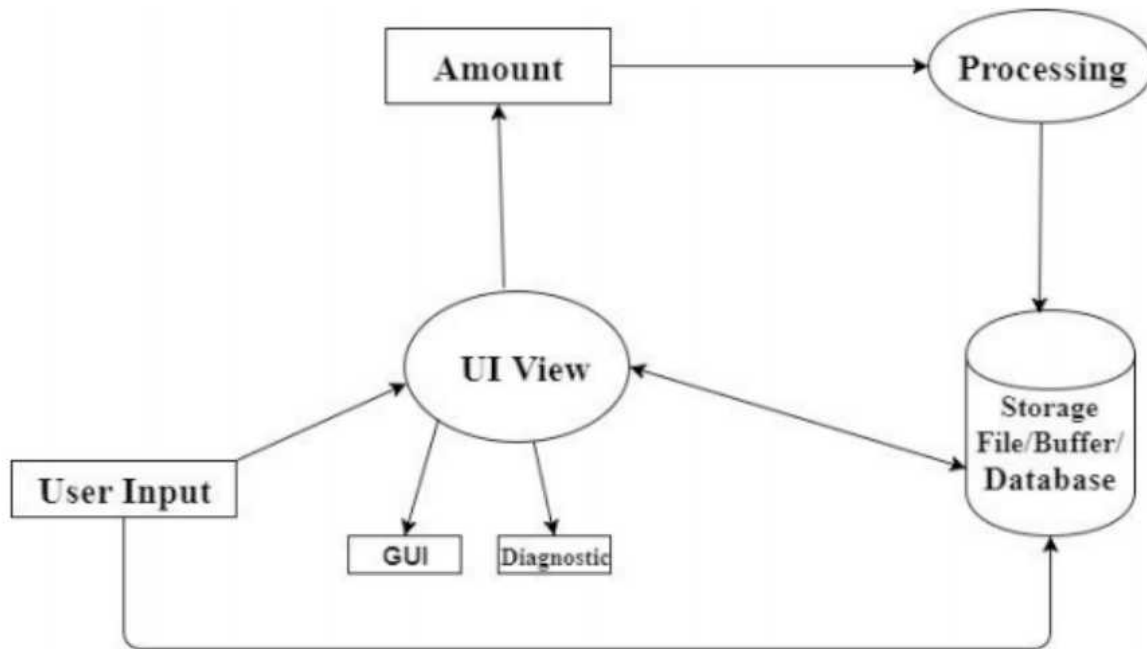
Fig. 4.1 Data Flow diagram

4.2 Entity Relationship (ER) Diagrams
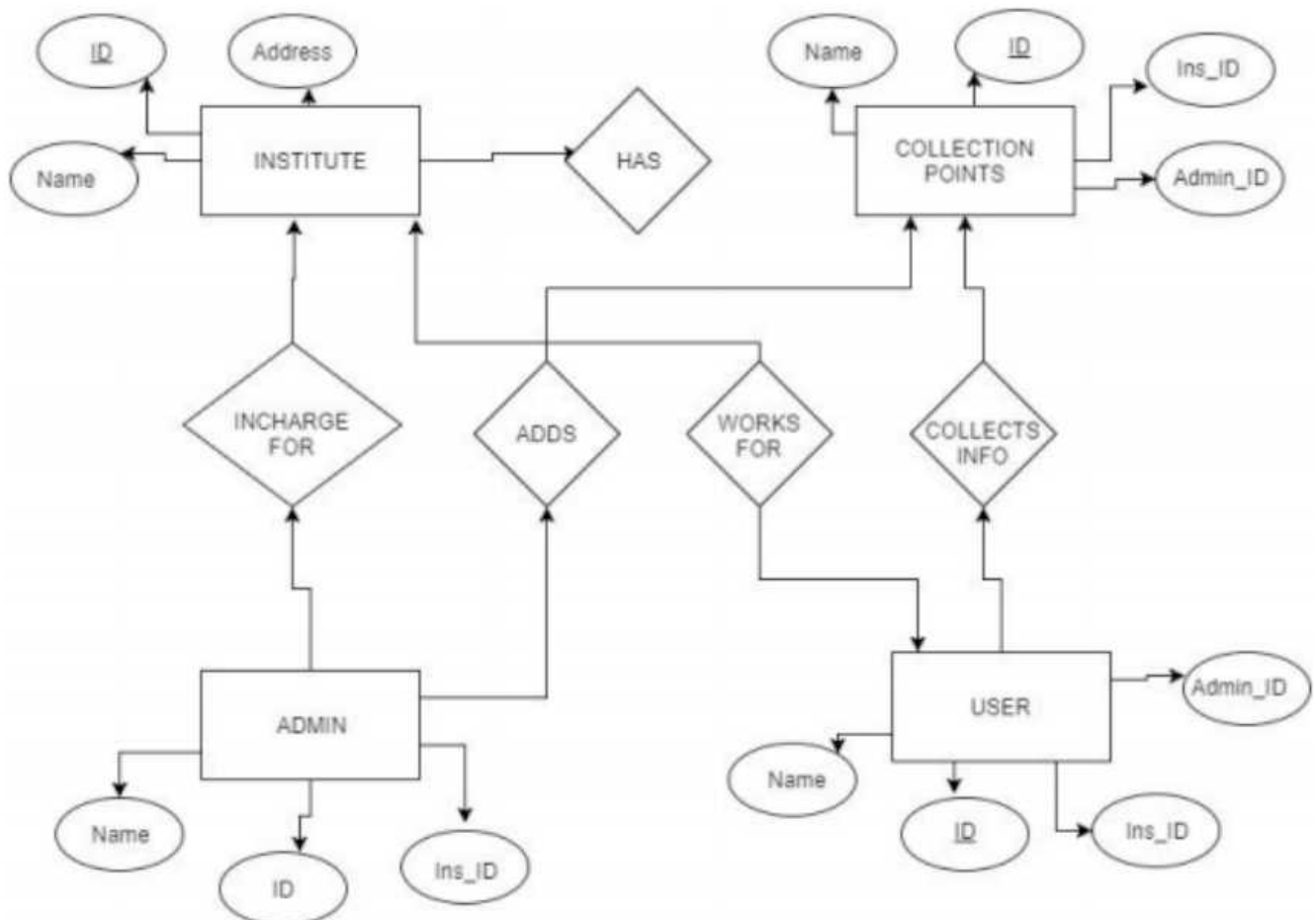
Fig. 4.2 Entity-Relationship (ER) diagram

4.3   Use Case Diagrams
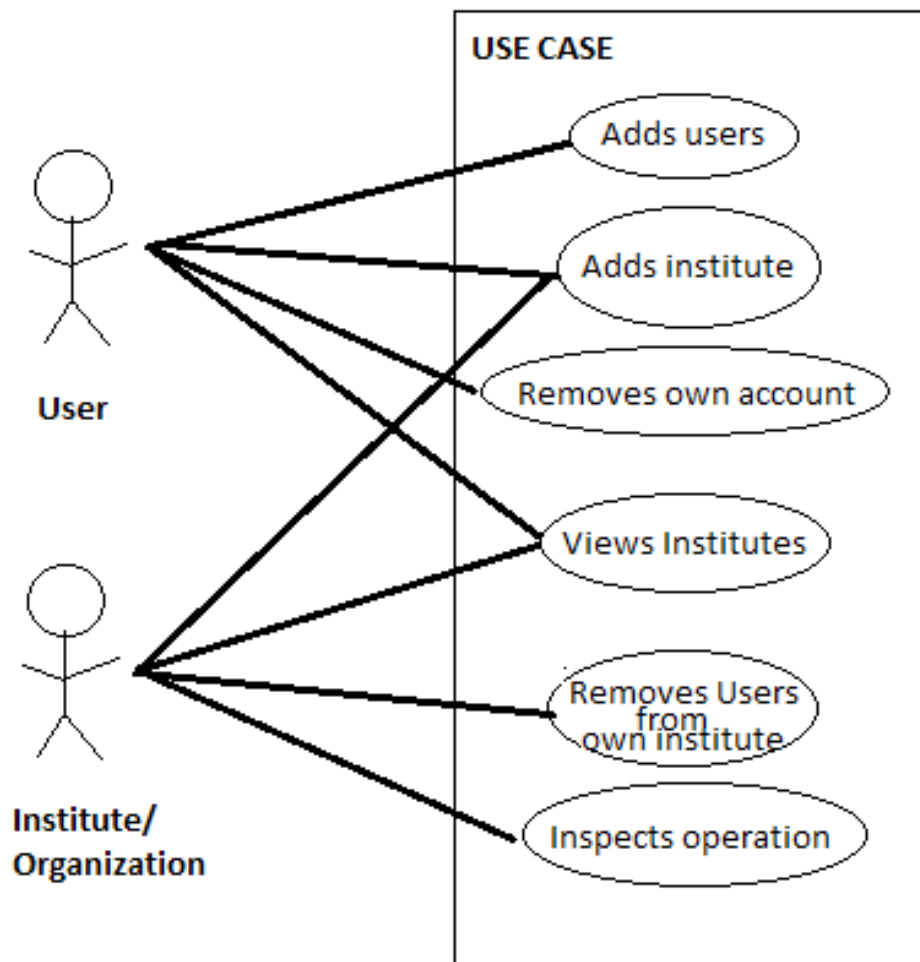
Fig. 4.3 Use Case diagram

Chapter 5.   Implementation and Testing

5.1   Implementation Details

The implementation phase is the most important phase as it gets the   final outcome of the project. It perfectly maps and materializes the project. The GoGreenCampus Application has two implemented parts:

5.1.1   Software Frontend

- The Software Frontend is a user-friendly Graphical User Interface(GUI).

- It supports native controls, has visible buttons and text boxes for the user to use the application easily.

- The Frontend of the is designed using Google's XML Framework for Android Applications.

5.1.2   Software Backend

- The Software Backend is the most important part of the application that consists of algorithms for processing of the data entered by the user.

- The Backend of the Application is designed using Kotlin which is a new, object-oriented programming language used to develop Android applications and a MySQL database for the storage and retrieval of data from a highly secure MySQL server.

- The server connections are established in the PHP programming language.

- The database is queried using Structured Query Language (SQL).

5.2   Modules

The implementation phase is the most important phase as it gets the   final outcome of the project. It perfectly maps and materializes the project. The GoGreenCampus Application has three implemented parts:

5.2.1   Waste Segregation

Waste segregation is the process by which waste is separated into different elements. Waste sorting occurs automatically in the application and sent to the server. Data is added via the Add page and is segregated and stored on the database using PHP.

5.2.2   Data Processing and Calculation

Data processing includes the collection and manipulation of items of data   to   produce some data. It can be considered a subset of the module and uses specialized algorithms and statistical calculations. Data is processed programmatically in PHP and is calculated in Kotlin.

5.2.3   Graphing and Display

Graphing is a mathematical method used to model the data obtained from   calculation of inputs. A graph in this context is made up of vertices and lines which are directly plotted   from the obtained results from the server. Data is graphed using a library and is displayed using Kotlin

5.3 Application Activities and Programs

5.3.1 **Login**

activity_login.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/bg"
    tools:context="finalproject.ggcfinal.MainActivity">
    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:srcCompat="@drawable/lbg"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="0dp" />
    <ImageView
        android:id="@+id/imageView4"
        android:layout_width="228dp"
        android:layout_height="103dp"
        android:layout_marginBottom="13dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="1dp"
        app:layout_constraintBottom_toTopOf="@+id/button"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.054"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText4"
        app:layout_constraintVertical_bias="0.0"
```

```xml
        app:srcCompat="@drawable/black" />
    <EditText
        android:id="@+id/Username"
        android:layout_width="311dp"
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        android:backgroundTint="@android:color/darker_gray"
        android:ems="10"
        android:hint="Username"
        android:maxLength="20"
        android:inputType="textPersonName"
        android:singleLine="true"
        android:textColor="@android:color/darker_gray"
        android:textColorHint="@android:color/darker_gray"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.508"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.498" />
    <EditText
        android:id="@+id/passwordedit"
        android:layout_width="308dp"
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        android:backgroundTint="@android:color/darker_gray"
        android:maxLength="50"
```

```xml
        android:ems="10"

        android:hint="Password"

        android:inputType="textPassword"

        android:textColor="@android:color/darker_gray"

        android:textColorHint="@android:color/darker_gray"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.61" />

    <Button

        android:id="@+id/button"

        android:hapticFeedbackEnab"0.508"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.718"

        tools:background="@color/colorPrimary" />

    <ImageView

        android:id="@+id/imageView2"

        android:layout_width="75dp"

        android:layout_height="75dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.501"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.134"

        app:srcCompat="@drawable/logo" />

    <TextView

        android:id="@+id/editText4"

        android:hapticFeedbackEnabled="true"

        android:layout_width="341dp"

        android:layout_height="30dp"
```

```xml
        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="8dp"

        android:ems="10"

        android:inputType="none"

        android:text="@string/loginprompt"

        android:textColor="@android:color/background_light"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.518"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.427" />

    <TextView

        android:id="@+id/textView3"

        android:layout_width="145dp"

        android:layout_height="25dp"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:hapticFeedbackEnabled="true"

        android:layout_marginTop="8dp"

        android:text="@string/signupprompt"

        android:textColor="@android:color/background_light"

        android:textSize="14sp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="1.0"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="1.0" />

    <TextView
```

```
android:id="@+id/textView6"
android:layout_width="145dp"
android:layout_height="25dp"
android:layout_marginBottom="8dp"
android:layout_marginEnd="8dp"
android:layout_marginStart="8dp"
android:layout_marginTop="8dp"
android:gravity="center"
android:text="@string/iforgot"
android:textColor="@android:color/background_light"
android:textSize="14sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.502"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.788" />
</android.support.constraint.ConstraintLayout>led="true"
android:layout_width="307dp"
android:layout_height="36dp"
android:layout_marginBottom="8dp"
android:layout_marginEnd="8dp"
android:layout_marginStart="8dp"
android:layout_marginTop="8dp"
android:background="@color/colorPrimary"
android:text="LOG IN"
android:textColor="@android:color/background_light"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias=
```

LoginActivity.kt

```kotlin
package finalproject.ggcfinal

import android.app.AlertDialog

import android.app.SearchManager

import android.content.Context

import android.content.DialogInterface

import android.content.Intent

import android.support.v7.app.AppCompatActivity

import android.os.Bundle

import android.os.Vibrator

import android.support.design.widget.Snackbar

import android.support.v4.view.MenuItemCompat

import android.support.v7.widget.SearchView

import android.widget.EditText

import android.widget.SeekBar

import android.widget.TextView

import android.widget.SeekBar.OnSeekBarChangeListener

import android.text.Editable

import android.text.TextWatcher

import android.view.Menu

import android.view.MenuInflater

import android.view.MenuItem

import android.view.View

import com.android.volley.Request

import com.android.volley.Response

import com.android.volley.toolbox.StringRequest

import com.android.volley.toolbox.Volley

import kotlinx.android.synthetic.main.activity_add.*

import kotlinx.android.synthetic.main.activity_main.*

import org.jetbrains.anko.toast

import org.json.JSONException

import org.json.JSONObject
```

```kotlin
@Suppress("DEPRECATION")
class AddActivity : AppCompatActivity() {
    var liter: Long = 0
    var vol: Long = 0
    var vis: Long = 0
    var wType: String = ""
    var wconvention: String = ""
    var uid: Int = 0
    var insid: Int = 0
    var note: String = ""
    var fname: String = ""
    var uname: String = ""
    var lname: String = ""
    var inscode: Int = 0
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_add)
        fname = intent.extras.getString("FNAME")
        uname = intent.extras.getString("UNAME")
        lname = intent.extras.getString("LNAME")
        uid = intent.extras.getInt("ID")
        insid = intent.extras.getInt("INSID")
        inscode = intent.extras.getInt("CODE")
        val seekBar = findViewById<SeekBar>(R.id.seekBar) as SeekBar
        val seekBarValue = findViewById<EditText>(R.id.seekvalue) as EditText
        vis = 0
        seekBar.setOnSeekBarChangeListener(object : SeekBar.OnSeekBarChangeListener {
            override fun onProgressChanged(seekBar: SeekBar, progress: Int,
                             fromUser: Boolean) {
                seekBarValue.setText(progress.toString())
                liter = progress.toLong()
                vol = liter * 1000
```
17

```kotlin
        textView13.text = vol.toString()}
      override fun onStartTrackingTouch(seekBar: SeekBar) {

      }
      override fun onStopTrackingTouch(seekBar: SeekBar) {

      }})
    seekv.setOnSeekBarChangeListener(object : SeekBar.OnSeekBarChangeListener {
      override fun onProgressChanged(seekBar: SeekBar, progress: Int, fromUser: Boolean) {
        vis = progress.toLong()
        visText.text = progress.toString()
      }
      override fun onStartTrackingTouch(seekBar: SeekBar) {

      }
      override fun onStopTrackingTouch(seekBar: SeekBar) {
      }})
    seekBarValue.addTextChangedListener(object : TextWatcher {
      override fun beforeTextChanged(s: CharSequence, start: Int, count: Int, after: Int) {

      }
      override fun onTextChanged(s: CharSequence, start: Int, before: Int, count: Int) {

      }
      override fun afterTextChanged(s: Editable) {
        try {
          seekBar.setProgress(Integer.parseInt(s.toString()))
        } catch (ex: Exception) {}
      }})
  }
  override fun onCreateOptionsMenu(menu: Menu): Boolean {
    menuInflater.inflate(R.menu.done, menu)
    return true
  }
  override fun onOptionsItemSelected(item: MenuItem): Boolean {
    val v: Vibrator = getSystemService(Context.VIBRATOR_SERVICE) as Vibrator
    when (item.itemId) {
      R.id.action_done -> {
```

```kotlin
            addData()
            v.vibrate(25)
            toast("Data added successfully")
            val intent = Intent(this@AddActivity,DrawerActivity::class.java)
            intent.putExtra("UNAME",uname)
            intent.putExtra("FNAME",fname)
            intent.putExtra("LNAME",lname)
            intent.putExtra("ID",uid)
            intent.putExtra("INSID",insid)
            intent.putExtra("CODE",inscode)
            startActivity(intent)
            finish()
            return true
        }
        else -> return super.onOptionsItemSelected(item)
    }
}
override fun onBackPressed() {
    AlertDialog.Builder(this, R.style.DialogDark)
        .setMessage("Discard data?")
        .setCancelable(true)
        .setPositiveButton("DISCARD") { dialog, id -> this@AddActivity.finish() }
        .setNegativeButton("CANCEL", null)
        .show()
    val intent = Intent(this@AddActivity,DrawerActivity::class.java)
    intent.putExtra("UNAME",uname)
    intent.putExtra("FNAME",fname)
    intent.putExtra("LNAME",lname)
    intent.putExtra("ID",uid)
    intent.putExtra("INSID",insid)
    startActivity(intent)
}
fun addData() {
```

```kotlin
val pref = SharedPrefManager.getInstance(this@AddActivity)
if(raddsolid.isChecked){
    wType = "solid waste"
}else if (raddliquid.isChecked){
    wType = "liquid waste"}
if(raddbiod.isChecked){
    wconvention = "biodegradable"
}else if (radnonbio.isChecked){
    wconvention = "non-biodegradable"}
if(rec.isChecked){
    wconvention = "$wconvention"+" and"+" recyclable"
}
note = Note.text.toString()
val url = "http://192.168.43.147/add.php"
val q = Volley.newRequestQueue(this@AddActivity)
val stringRequest = object : StringRequest(Request.Method.POST, url,
        Response.Listener { response ->
        }, Response.ErrorListener { error -> toast("$error") }) {
    public override fun getParams(): HashMap<String, String> {
        val params = HashMap<String, String>()
        params.put("uid", uid.toString())
        params.put("insid", insid.toString())
        params.put("wtype", wType)
        params.put("wconvention", wconvention)
        params.put("quantity", liter.toString())
        params.put("plevel", vis.toString())
        params.put("note", note)
        return params
    }
}
q.add(stringRequest)
    }
}
```

5.3.2 Forgot Password

activity_iforgot.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="finalproject.ggcfinal.IforgotActivity"
    android:background="@color/bg">
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="75dp"
        android:layout_height="75dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.117"
        app:srcCompat="@drawable/logo" />
    <EditText
        android:id="@+id/email"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        android:backgroundTint="@android:color/darker_gray"
        android:ems="10"
        android:hint="Email"
```

```
android:inputType="textEmailAddress"

android:singleLine="true"

android:textColor="@android:color/darker_gray"

android:textColorHint="@android:color/darker_gray"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.515"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.405" />

<EditText

android:id="@+id/phone"

android:layout_width="53dp"

android:layout_height="40dp"

android:backgroundTint="@android:color/darker_gray"

android:gravity="left"

android:hint="+XX"

android:inputType="phone"

android:maxLength="4"

android:textAlignment="textEnd"

android:textColor="@android:color/darker_gray"

android:textColorHint="@android:color/darker_gray"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.086"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.499" />

<EditText

android:id="@+id/phone2"

android:layout_width="280dp"

android:layout_height="40dp"

android:layout_marginBottom="8dp"
```

```
    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:backgroundTint="@android:color/darker_gray"

    android:ems="10"

    android:hint="Phone Number"

    android:inputType="phone"

    android:maxLength="10"

    android:textColor="@android:color/darker_gray"

    android:textColorHint="@android:color/darker_gray"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.808"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.499" />
<TextView

    android:id="@+id/textView11"

    android:layout_width="wrap_content"

    android:layout_height="20dp"

    android:layout_marginBottom="8dp"

    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:text="A link will be sent to your email to reset your password."

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.49"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.563" />
<Button

    android:id="@+id/button"
```

```
    android:layout_width="350dp"

    android:layout_height="36dp"

    android:layout_marginBottom="8dp"

    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:background="@color/colorPrimary"

    android:text="CONFIRM"

    android:textColor="@android:color/background_light"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.488"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.655"

    tools:background="@color/colorPrimary" />

<TextView

    android:id="@+id/textView16"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginBottom="8dp"

    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:text="?"

    android:textColor="@android:color/background_light"

    android:textSize="40sp"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.122" />

</android.support.constraint.ConstraintLayout>
```

<u>iforgotActivity.kt</u>

```kotlin
package finalproject.ggcfinal

import android.support.v7.app.AppCompatActivity
import android.os.Bundle

class IforgotActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_iforgot)
    }
}
```

5.3.3   **User Sign Up**

<u>activity_signup.xml</u>

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="finalproject.ggcfinal.SignUpActivity"
    android:background="@color/bg">
    <ScrollView
        android:layout_width="409dp"
        android:layout_height="match_parent"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="2dp"
        android:layout_marginTop="8dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```
            app:layout_constraintTop_toTopOf="parent">
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    android:gravity="center"
    android:orientation="vertical">
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="80dp"
        android:layout_height="80dp"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="10dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.501"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.057"
        app:srcCompat="@drawable/personadd" />
    <EditText
        android:id="@+id/FirstName"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="30dp"
        android:backgroundTint="@android:color/darker_gray"
        android:ems="10"
        android:hint="First Name"
```

```xml
    android:inputType="textPersonName"

    android:maxLength="20"

    android:singleLine="false"

    android:textAlignment="viewStart"

    android:textColor="@color/colorAccent"

    android:textColorHint="@android:color/darker_gray"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.508"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.293" />

<EditText

    android:id="@+id/LastName"

    android:layout_width="350dp"

    android:layout_height="wrap_content"

    android:layout_marginBottom="8dp"

    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:backgroundTint="@android:color/darker_gray"

    android:ems="10"

    android:hint="Last Name"

    android:inputType="textPersonName"

    android:maxLength="20"

    android:singleLine="false"

    android:textColor="@color/colorAccent"

    android:textColorHint="@android:color/darker_gray"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.508"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"
```

```xml
        app:layout_constraintVertical_bias="0.396" />
<EditText
    android:id="@+id/mail"
    android:layout_width="350dp"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Email"
    android:inputType="textEmailAddress"
    android:textColor="@color/colorAccent"
    android:textColorHint="@android:color/darker_gray" />
<EditText
    android:id="@+id/user"
    android:layout_width="350dp"
    android:layout_height="wrap_content"
    android:layout_marginBottom="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="8dp"
    android:backgroundTint="@android:color/darker_gray"
    android:ems="10"
    android:hint="Username"
    android:inputType="textPersonName"
    android:maxLength="20"
    android:singleLine="true"
    android:textColor="@color/colorAccent"
    android:textColorHint="@android:color/darker_gray"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.508"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.498" />
<EditText
```

```
        android:id="@+id/pass"

        android:layout_width="350dp"

        android:layout_height="wrap_content"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="8dp"

        android:backgroundTint="@android:color/darker_gray"

        android:ems="10"

        android:hint="Password"

        android:inputType="textPersonName"

        android:maxLength="50"

        android:textColor="@color/colorAccent"

        android:textColorHint="@android:color/darker_gray"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.61" />

    <EditText

        android:id="@+id/institutecode"

        android:layout_width="350dp"

        android:layout_height="wrap_content"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="8dp"

        android:backgroundTint="@android:color/darker_gray"

        android:ems="10"

        android:hint="Institute Code"

        android:inputType="text"

        android:maxLength="50"

        android:textColor="@color/colorAccent"
```

```xml
        android:textColorHint="@android:color/darker_gray"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.61" />
    <Spinner
        android:id="@+id/spinnercities"
        style="@android:style/Widget.Material.Spinner"
        android:layout_width="350dp"
        android:layout_height="35dp"
        android:layout_marginTop="10dp"
        android:background="@color/colorPrimaryDark"
        android:drawSelectorOnTop="true"
        android:entries="@array/cities"
        android:minWidth="290dp"
        android:popupBackground="@color/colorPrimaryDark"
        android:spinnerMode="dropdown"
        android:textColor="#FFFFFF" />
    <Spinner
        android:id="@+id/spinnerstates"
        style="@android:style/Widget.Material.Spinner"
        android:layout_width="350dp"
        android:layout_height="35dp"
        android:layout_marginTop="10dp"
        android:background="@color/colorPrimaryDark"
        android:drawSelectorOnTop="true"
        android:entries="@array/states"
        android:minWidth="290dp"
        android:popupBackground="@color/colorPrimaryDark"
        android:spinnerMode="dropdown"
        android:textColor="#FFFFFF" />
    <Spinner
```

```xml
        android:id="@+id/spinnercountries"
        style="@android:style/Widget.Material.Spinner"
        android:layout_width="350dp"
        android:layout_height="35dp"
        android:layout_marginTop="10dp"
        android:background="@color/colorPrimaryDark"
        android:drawSelectorOnTop="true"
        android:entries="@array/countries"
        android:minWidth="290dp"
        android:popupBackground="@color/colorPrimaryDark"
        android:spinnerMode="dropdown"
        android:textColor="#FFFFFF" />
    <Button
        android:id="@+id/signupbutton"
        android:layout_width="350dp"
        android:layout_height="36dp"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="10dp"
        android:background="@color/colorPrimary"
        android:text="SIGN UP"
        android:textColor="@android:color/background_light"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.508"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.718"
        tools:background="@color/colorPrimary" />
    <TextView
        android:id="@+id/regins"
        android:layout_width="match_parent"
```

```xml
                    android:layout_height="30dp"

                    android:layout_marginBottom="8dp"

                    android:layout_marginEnd="8dp"

                    android:layout_marginStart="128dp"

                    android:layout_marginTop="8dp"

                    android:text="@string/instituteprompt"

                    android:textAlignment="textEnd"

                    android:textColor="@android:color/background_light"

                    android:textSize="14sp"

                    app:layout_constraintBottom_toBottomOf="parent"

                    app:layout_constraintEnd_toEndOf="parent"

                    app:layout_constraintHorizontal_bias="1.0"

                    app:layout_constraintStart_toStartOf="parent"

                    app:layout_constraintTop_toTopOf="parent"

                    app:layout_constraintVertical_bias="1.0" />

        </LinearLayout>

    </ScrollView>

</android.support.constraint.ConstraintLayout>
```

SignupActivity.kt

```kotlin
package finalproject.ggcfinal

import android.content.Context

import android.content.Intent

import android.support.v7.app.AppCompatActivity

import android.os.Bundle

import android.os.Vibrator

import kotlinx.android.synthetic.main.activity_sign_up.*

import com.android.volley.Request

import com.android.volley.Response

import com.android.volley.toolbox.StringRequest

import com.android.volley.toolbox.Volley

import kotlinx.android.synthetic.main.activity_main.*
```

```kotlin
import org.jetbrains.anko.toast
import org.json.JSONException
import org.json.JSONObject
import android.widget.Toast
import android.widget.Spinner
import org.jetbrains.anko.sdk25.coroutines.onClick
@Suppress("DEPRECATION")
class SignUpActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_sign_up)
        //val adapter = ArrayAdapter(this,R.layout.spinner_item,spinnercountry)
        val v: Vibrator = getSystemService(Context.VIBRATOR_SERVICE) as Vibrator
        regins.onClick {
            val intent = Intent(this@SignUpActivity,RegInstituteActivity::class.java)
            startActivity(intent)
            v.vibrate(25)
        }
        signupbutton.onClick {
            v.vibrate(25)
            putData()
        }
    }
    fun putData() {
        val fname = FirstName.text
        val lname = LastName.text
        val uname = user.text
        val password = pass.text
        val mail = mail.text
        val country: String
        val state: String
        val city: String
        val inscode = institutecode.text
```

```kotlin
val spin = findViewById<Spinner>(R.id.spinnercountries) as Spinner
val st = spin.selectedItem.toString()
val pos = spin.selectedItemPosition
if (pos != 0) {
    country = spin.selectedItem.toString()
} else {
    Toast.makeText(this@SignUpActivity,
        "Please select a country", Toast.LENGTH_LONG)
        .show()
    return
}
val spinstate = findViewById<Spinner>(R.id.spinnerstates) as Spinner
val sst = spinstate.selectedItem.toString()
val spos = spinstate.selectedItemPosition
if (spos != 0) {
    state = spinstate.selectedItem.toString()
} else {
    Toast.makeText(this@SignUpActivity,
        "Please select a state", Toast.LENGTH_LONG)
        .show()
    return
}
val spincity = findViewById<Spinner>(R.id.spinnercities) as Spinner
val cst = spincity.selectedItem.toString()
val cpos = spincity.selectedItemPosition
if (cpos != 0) {
    city = spincity.selectedItem.toString()
} else {
    Toast.makeText(this@SignUpActivity,
        "Please select your city", Toast.LENGTH_LONG)
        .show()
    return
}
```

```kotlin
val v: Vibrator = getSystemService(Context.VIBRATOR_SERVICE) as Vibrator
val url = "http://192.168.43.147/signup.php"
val q = Volley.newRequestQueue(this@SignUpActivity)
val stringRequest = object : StringRequest(Request.Method.POST, url,
    Response.Listener { response ->
        toast("Account created successfully!")
        finish()
    }, Response.ErrorListener { error -> toast("$error") }) {
    public override fun getParams(): HashMap<String, String> {
        val params = HashMap<String, String>()
        params.put("username", uname.toString())
        params.put("password", password.toString())
        params.put("fname", fname.toString())
        params.put("lname", lname.toString())
        params.put("country", country.toString())
        params.put("state", state.toString())
        params.put("city", city.toString())
        params.put("inscode",inscode.toString())
        params.put("mail", mail.toString())
        return params
    }
}
q.add(stringRequest)
}
}
```

5.3.4 Institute Registration

activity_reg_institute.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/bg"
    tools:context="finalproject.ggcfinal.RegInstituteActivity">
    <EditText
        android:id="@+id/camparea"
        android:layout_width="215dp"
        android:layout_height="50dp"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        android:backgroundTint="@android:color/darker_gray"
        android:ems="10"
        android:gravity="left"
        android:hint="Campus Area (in km²)"
        android:paddingRight="8dp"
        android:singleLine="false"
        android:textAlignment="textStart"
        android:textColor="@android:color/darker_gray"
        android:textColorHint="@android:color/darker_gray"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.059"
        app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.795" />

    <EditText

        android:id="@+id/code"

        android:layout_width="130dp"

        android:layout_height="50dp"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="8dp"

        android:backgroundTint="@android:color/darker_gray"

        android:ems="10"

        android:hint="Institute Code"

        android:inputType="textPersonName"

        android:maxLength="4"

        android:paddingRight="4dp"

        android:singleLine="false"

        android:textColor="@android:color/darker_gray"

        android:textColorHint="@android:color/darker_gray"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.962"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.795" />

    <EditText

        android:id="@+id/instituteAddress"

        android:layout_width="350dp"

        android:layout_height="49dp"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="8dp"
```

```xml
        android:backgroundTint="@android:color/darker_gray"
        android:ems="10"
        android:hint="Address (Street, Area etc.)"
        android:inputType="textPersonName"
        android:singleLine="false"
        android:textColor="@android:color/darker_gray"
        android:textColorHint="@android:color/darker_gray"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.405" />
    <EditText
        android:id="@+id/instituteName2"
        android:layout_width="350dp"
        android:layout_height="49dp"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        android:backgroundTint="@android:color/darker_gray"
        android:ems="10"
        android:hint="Institute Name"
        android:inputType="textPersonName"
        android:singleLine="false"
        android:textColor="@android:color/darker_gray"
        android:textColorHint="@android:color/darker_gray"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.488"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.306" />
```

```xml
<Spinner
    android:id="@+id/spinnercity"
    style="@android:style/Widget.Material.Light.Spinner.Underlined"
    android:layout_width="350dp"
    android:layout_height="35dp"
    android:layout_marginBottom="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="4dp"
    android:background="@color/colorPrimaryDark"
    android:drawSelectorOnTop="true"
    android:entries="@array/cities"
    android:gravity="center_vertical"
    android:minWidth="290dp"
    android:popupBackground="@color/colorPrimaryDark"
    android:spinnerMode="dropdown"
    android:textColor="#FFFFFF"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.696" />
<Spinner
    android:id="@+id/spinnerstates"
    style="@android:style/Widget.Material.Light.Spinner.Underlined"
    android:layout_width="350dp"
    android:layout_height="35dp"
    android:layout_marginBottom="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="8dp"
    android:background="@color/colorPrimaryDark"
    android:drawSelectorOnTop="true"
```

```xml
        android:entries="@array/states"

        android:gravity="center_vertical"

        android:minWidth="290dp"

        android:popupBackground="@color/colorPrimaryDark"

        android:spinnerMode="dropdown"

        android:textColor="#FFFFFF"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.595" />

    <Spinner

        android:id="@+id/spinnercountry"

        style="@android:style/Widget.Material.Light.Spinner.Underlined"

        android:layout_width="350dp"

        android:layout_height="35dp"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="8dp"

        android:background="@color/colorPrimaryDark"

        android:drawSelectorOnTop="true"

        android:entries="@array/countries"

        android:gravity="center_vertical"

        android:minWidth="290dp"

        android:popupBackground="@color/colorPrimaryDark"

        android:spinnerMode="dropdown"

        android:textColor="#FFFFFF"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />

    <ImageView
```

```xml
android:id="@+id/imageView8"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="8dp"
android:layout_marginEnd="8dp"
android:layout_marginStart="8dp"
android:layout_marginTop="8dp"
android:paddingRight="16dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.948"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.498"
app:srcCompat="@android:drawable/arrow_down_float" />
<ImageView
    android:id="@+id/imageView9"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="8dp"
    android:paddingRight="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.948"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.592"
    app:srcCompat="@android:drawable/arrow_down_float" />
<ImageView
    android:id="@+id/imageView10"
```

```
    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginBottom="8dp"

    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:paddingRight="16dp"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.948"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.683"

    app:srcCompat="@android:drawable/arrow_down_float" />

<Button

    android:id="@+id/regbutton"

    android:layout_width="350dp"

    android:layout_height="36dp"

    android:layout_marginBottom="8dp"

    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:background="@color/colorPrimary"

    android:text="REGISTER YOUR INSITUTE"

    android:textColor="@android:color/background_light"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.908"

    tools:background="@color/colorPrimary" />

<ImageView

    android:id="@+id/imageView5"
```

```
        android:layout_width="80dp"

        android:layout_height="80dp"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="8dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.06"

        app:srcCompat="@drawable/building" />

    <ImageView

        android:id="@+id/imageView7"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.59"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.083"

        app:srcCompat="@drawable/ic_add_white" />

</android.support.constraint.ConstraintLayout>
```

RegInstituteActivity.kt

```kotlin
package finalproject.ggcfinal

import android.content.Context
import android.support.v7.app.AppCompatActivity
import android.os.Bundle
import android.os.Vibrator
import android.widget.Spinner
import android.widget.Toast
import com.android.volley.Request
import com.android.volley.Response
import com.android.volley.toolbox.StringRequest
import com.android.volley.toolbox.Volley
import kotlinx.android.synthetic.main.activity_add.*
import kotlinx.android.synthetic.main.activity_reg_institute.*
import kotlinx.android.synthetic.main.activity_sign_up.*
import org.jetbrains.anko.sdk25.coroutines.onClick
import org.jetbrains.anko.toast

@Suppress("DEPRECATION")
class RegInstituteActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_reg_institute)
        regbutton.onClick {putData()}
    }
    fun putData() {
        val iname = instituteName2.text
        val inscode = code.text
        val address = instituteAddress.text
        var country: String = "India"
        var state: String = "Karnataka"
        var city: String = "Belgaum"
        val area = camparea.text
```

```kotlin
val spin = findViewById<Spinner>(R.id.spinnercountry) as Spinner
val st = spin.selectedItem.toString()
val pos = spin.selectedItemPosition
if (pos != 0) {
   country = spin.selectedItem.toString()
} else {
   Toast.makeText(this@RegInstituteActivity,
       "Please select a country", Toast.LENGTH_LONG)
       .show()
   return
}
val spinstate = findViewById<Spinner>(R.id.spinnerstates) as Spinner
val sst = spinstate.selectedItem.toString()
val spos = spinstate.selectedItemPosition
if (spos != 0) {
   state = spinstate.selectedItem.toString()
} else {
   Toast.makeText(this@RegInstituteActivity,
       "Please select a state", Toast.LENGTH_LONG)
       .show()
   return
}
val spincity = findViewById<Spinner>(R.id.spinnercity) as Spinner
val cst = spincity.selectedItem.toString()
val cpos = spincity.selectedItemPosition
if (cpos != 0) {
   city = spincity.selectedItem.toString()
} else {
   Toast.makeText(this@RegInstituteActivity,
       "Please select your city", Toast.LENGTH_LONG)
       .show()
   return
}
```

```kotlin
val v: Vibrator = getSystemService(Context.VIBRATOR_SERVICE) as Vibrator
val url = "http://192.168.43.147/regins.php"
val q = Volley.newRequestQueue(this@RegInstituteActivity)
val stringRequest = object : StringRequest(Request.Method.POST, url,
    Response.Listener { response ->
        toast("Instittute registered successfully!")
        v.vibrate(25)
        finish()
    }, Response.ErrorListener { error -> toast("$error") }) {
  public override fun getParams(): HashMap<String, String> {
    val params = HashMap<String, String>()
    params.put("iname", iname.toString())
    params.put("code", inscode.toString())
    params.put("area", area.toString())
    params.put("address",address.toString())
    params.put("country", country.toString())
    params.put("state", state.toString())
    params.put("city", city.toString())
    return params
  }
}
q.add(stringRequest)
}
}
```

5.3.5 Dashboard

activity_dashboard.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.v4.widget.DrawerLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/drawer_layout"
    app:itemTextColor="@color/colorAccent"
    app:itemIconTint="@color/colorAccent"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:fitsSystemWindows="true"
    tools:openDrawer="start"
    android:background="@color/bg">
    <include
        layout="@layout/app_bar_drawer"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
    <android.support.design.widget.NavigationView
        android:id="@+id/nav_view"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_gravity="start"
        android:background="@color/colorPrimaryDark"
        android:fitsSystemWindows="true"
        app:headerLayout="@layout/nav_header_drawer"
        app:itemIconTint="#FAFAFA"
        app:itemTextColor="#FAFAFA"
        app:menu="@menu/activity_drawer_drawer" />
</android.support.v4.widget.DrawerLayout>
```

Dashcard.kt

package finalproject.ggcfinal

data class DashCard(var waste: String, var cardnote: String,var type: String,var date: String,var vol: String,var vis: String)

DashboardActivity.kt

package finalproject.ggcfina

import android.support.v4.app.Fragment

import android.content.Intent

import android.os.Bundle

import android.support.design.widget.Snackbar

import android.support.design.widget.NavigationView

import android.support.v4.view.GravityCompat

import android.support.v7.app.ActionBarDrawerToggle

import android.support.v7.app.AppCompatActivity

import android.view.Menu

import android.view.MenuItem

import kotlinx.android.synthetic.main.activity_drawer.*

import kotlinx.android.synthetic.main.app_bar_drawer.*

import android.R.attr.fragment

import android.R.attr.stateListAnimator

import android.app.SearchManager

import android.support.v4.widget.DrawerLayout

import android.support.v7.widget.SearchView

import android.view.View

import android.support.v7.widget.Toolbar

import android.support.v4.view.MenuItemCompat

import android.R.menu

import android.app.Activity

import android.app.AlertDialog

import android.content.Context

import android.graphics.Color

```kotlin
import android.os.Vibrator
import android.support.v7.widget.LinearLayoutManager
import android.support.v7.widget.RecyclerView
import android.widget.LinearLayout
import android.widget.TextView
import com.android.volley.Request
import com.android.volley.Response
import com.android.volley.toolbox.StringRequest
import com.android.volley.toolbox.Volley
import com.jjoe64.graphview.GraphView
import com.jjoe64.graphview.GridLabelRenderer
import com.jjoe64.graphview.series.DataPoint
import com.jjoe64.graphview.series.LineGraphSeries
import kotlinx.android.synthetic.main.activity_main.*
import kotlinx.android.synthetic.main.activity_reg_institute.*
import kotlinx.android.synthetic.main.content_drawer.*
import kotlinx.android.synthetic.main.nav_header_drawer.*
import org.jetbrains.anko.sdk25.coroutines.onClick
import org.jetbrains.anko.toast
import org.json.JSONException
import org.json.JSONObject
import java.util.*
@Suppress("DEPRECATION")
class DrawerActivity : AppCompatActivity(),
NavigationView.OnNavigationItemSelectedListener {
    var fname: String = ""
    var uname: String = ""
    var lname: String = ""
    var id: Int = 0
    var insid: Int = 0
    var inscode: Int = 0
    var per: Float = 0F
    var ei: Float = 0F
```

```kotlin
var upper: Float = 0F
var day = 0
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    val v: Vibrator = getSystemService(Context.VIBRATOR_SERVICE) as Vibrator
    setContentView(R.layout.activity_drawer)
    setSupportActionBar(toolbar)
    val toolbar = findViewById<View>(R.id.toolbar) as Toolbar
    setSupportActionBar(toolbar)
    fname = intent.extras.getString("FNAME")
    uname = intent.extras.getString("UNAME")
    lname = intent.extras.getString("LNAME")
    id = intent.extras.getInt("ID")
    insid = intent.extras.getInt("INSID")
    inscode = intent.extras.getInt("CODE")
    //toast("$id")
    val header = nav_view.getHeaderView(0)
    val userfullname = header.findViewById<TextView>(R.id.fullname)
    val username = header.findViewById<TextView>(R.id.username)
    loadData()
    loadGraphData()
    userfullname.text=fname+" "+lname
    username.text = uname
    fab.setOnClickListener { view ->
        val intent = Intent(this@DrawerActivity,AddActivity::class.java)
        intent.putExtra("UID",id)
        intent.putExtra("INSID",insid)
        v.vibrate(25)
        intent.putExtra("UNAME",uname)
        intent.putExtra("FNAME",fname)
        intent.putExtra("LNAME",lname)
        intent.putExtra("ID",id)
        intent.putExtra("INSID",insid)
```

```kotlin
            intent.putExtra("CODE",inscode)
            startActivity(intent)
            finish()
        }
        ins1.onClick { view ->
            AlertDialog.Builder(this@DrawerActivity, R.style.DialogDark)
                .setMessage("Waste collected this month: \nWaste recycled this month: \n\n\nTotal
waste collected: \nTotal waste recycled:\n")
                .setCancelable(false)
                .setNegativeButton("BACK", null)
                .show()
        }
        val toggle = ActionBarDrawerToggle(
            this, drawer_layout, toolbar, R.string.navigation_drawer_open,
R.string.navigation_drawer_close)
        drawer_layout.addDrawerListener(toggle)
        toggle.syncState()
        nav_view.setNavigationItemSelectedListener(this)
    }
        override fun onBackPressed() {
            if (drawer_layout.isDrawerOpen(GravityCompat.START)) {
                drawer_layout.closeDrawer(GravityCompat.START)
            } else {
                moveTaskToBack(true)
            }
        }
    override fun onCreateOptionsMenu(menu: Menu): Boolean {
        menuInflater.inflate(R.menu.drawer, menu)
        val v: Vibrator = getSystemService(Context.VIBRATOR_SERVICE) as Vibrator
        val searchView = MenuItemCompat.getActionView(menu.findItem(R.id.action_search))
as SearchView
        val searchManager = getSystemService(Context.SEARCH_SERVICE) as SearchManager
        searchView.setSearchableInfo(searchManager.getSearchableInfo(componentName))
```

```kotlin
        return true
        menuInflater.inflate(R.menu.drawer, menu)
        return true
    }
    override fun onOptionsItemSelected(item: MenuItem): Boolean {
        val v: Vibrator = getSystemService(Context.VIBRATOR_SERVICE) as Vibrator
        when (item.itemId) {
            R.id.action_help -> return true
            R.id.action_search ->  {
                v.vibrate(25)
                return true
            }
            R.id.action_quit -> {
                moveTaskToBack(true)
                return true
            }
            R.id.action_logout ->{
                val pref = SharedPrefManager.getInstance(this@DrawerActivity)
                pref.logout()
                finish()
                toast("Goodbye, cruel world...")
                v.vibrate(25)
                v.vibrate(25)
                v.vibrate(25)
                return true
            }
            else -> return super.onOptionsItemSelected(item)
        }
    }
    override fun onNavigationItemSelected(item: MenuItem): Boolean {
        val fragment: Fragment? = null
        when (item.itemId) {
            R.id.nav_dashboard -> {
```

```kotlin
                }
                R.id.nav_spectate -> {
                    val spIntent = Intent(this@DrawerActivity,SpectateActivity::class.java)
                    spIntent.putExtra("UNAME",uname)
                    spIntent.putExtra("FNAME",fname)
                    spIntent.putExtra("LNAME",lname)
                    spIntent.putExtra("ID",id)
                    spIntent.putExtra("INSID",insid)
                    spIntent.putExtra("UP",upper)
                    startActivity(spIntent)
                    overridePendingTransition(0, 0);
                    finish()
                }
                R.id.nav_settings -> {
                    val sIntent = Intent(this@DrawerActivity,SettingsActivity::class.java)
                    startActivity(sIntent)
                }
            }
            if (fragment != null) {
                val ft = supportFragmentManager.beginTransaction()
                ft.replace(R.id.content_frame, fragment)
                ft.commit()
            }
            drawer_layout.closeDrawer(GravityCompat.START)
            return true
        }
        fun loadData() {
            val recyclerView = findViewById<RecyclerView>(R.id.recyclerview) as RecyclerView
            recyclerView.layoutManager = LinearLayoutManager(this, LinearLayout.VERTICAL,
false)
            val url = "http://192.168.43.147/trash.php"
            val q = Volley.newRequestQueue(this@DrawerActivity)
            val stringRequest = object : StringRequest(Request.Method.POST, url,
```

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```kotlin
Response.Listener { response ->
    val dashCard = ArrayList<DashCard>()
    try{
        val obj = JSONObject(response)
        val jsnobj = obj.getJSONArray("response")
        for (i in 0 until jsnobj.length()) {
            val jsonObject = jsnobj.getJSONObject(i)
            val qty = jsonObject.getInt("Quantity")
            val wtype = jsonObject.getString("Wtype")
            val note = jsonObject.getString("Note")
            val convention = jsonObject.getString("Wconvention")
            val day = jsonObject.getString("TimeDay")
            val month = jsonObject.getString("TimeMonth")
            val year = jsonObject.getString("TimeYear")
            val vis = jsonObject.getInt("Plevel")
            val  vol = qty*1000
            dashCard.add(DashCard("Collected "+"$qty"+" liters of
"+"$wtype","$note","Item is "+"$convention","$day"+"/"+"$month"+"/"+"$year","$vol"+"
cm³","$vis"+"KM"))
            val adapter = CustomAdapter (dashCard)
            recyclerView.adapter = adapter
        }
    }catch(e: JSONException){
        toast("Please check your credentials and try again")
    }
}, Response.ErrorListener { error -> toast("The server could not process your
request")}) {
    public override fun getParams(): HashMap<String, String> {
        val params = HashMap<String, String>()
        params.put("uid", id.toString())
        return params
    }
}
```

```kotlin
        q.add(stringRequest)
    }
    fun loadGraphData() {
        val url = "http://192.168.43.147/gdata.php"
        val q = Volley.newRequestQueue(this@DrawerActivity)
        val stringRequest = object : StringRequest(Request.Method.POST, url,
            Response.Listener { response ->
                try{
                    val obj = JSONObject(response)
                    val num = obj.getInt("num")
                    val rec = obj.getInt("rec")
                    val total = obj.getInt("total")
                    toast("$total")
                    ei = (rec.toFloat()/num.toFloat())*5
                    ei = (Math.floor((ei*10).toDouble())/10
                        ).toFloat()
                    per = ((num*0.83).toFloat())
                    graph()
                    var rper = (num.toFloat()/total.toFloat())*100
                    upper = rper
                    updateGi()
                    goal.text = "Goal: "+per.toString()+"%"+" | Environmental Index: "+"$ei"+"/5.0
(↑"+"$rper"+"%)"
                }catch(e: JSONException){
                    toast("$e")
                }
            }, Response.ErrorListener { error -> toast("The server could not process your
request") }) {
            public override fun getParams(): HashMap<String, String> {
                val params = HashMap<String, String>()
                params.put("uid", id.toString())
                return params
            }
```

55

```kotlin
        }
        q.add(stringRequest)
    }
    fun updateGi() {
        val url = "http://192.168.43.147/giupdate.php"
        val q = Volley.newRequestQueue(this@DrawerActivity)
        val stringRequest = object : StringRequest(Request.Method.POST, url,
            Response.Listener { response ->
            }, Response.ErrorListener { error -> toast("The server could not process your
request") }) {
            public override fun getParams(): HashMap<String, String> {
                val params = HashMap<String, String>()
                params.put("code", inscode.toString())
                params.put("gi",ei.toString())
                return params
            }
        }
        q.add(stringRequest)
    }
    fun graph(){
        var graphview : GraphView = findViewById<GraphView>(R.id.graph)
        val cal = Calendar.getInstance()
        val day = cal.get(Calendar.DAY_OF_MONTH)
        val series = LineGraphSeries<DataPoint>()
        series.setColor(Color.rgb(38,166,154))
        series.setThickness(11)
        graphview.viewport.setMaxX(30.0)
        graphview.viewport.setMinX(0.0)
        graphview.viewport.setMinY(0.0)
        graphview.viewport.setMaxY(100.0)
        val gridlabel = graphview.gridLabelRenderer
        graphview.gridLabelRenderer.gridStyle = GridLabelRenderer.GridStyle.HORIZONTAL
        graphview.viewport.isScalable = true
```

```
    graphview.viewport.setScalableY(true)
    graphview.viewport.setYAxisBoundsManual(true)
    graphview.viewport.setXAxisBoundsManual(true)
   var x = 0.0
   var i: Int = 0
   var j: Int = 0
   while(i.compareTo(Math.abs(per).toInt()) < 0 || j<day){
      x = i.toDouble()
     val y = j.toDouble()
     series.appendData(DataPoint(x,y), true, 500)
     if(i.compareTo(Math.abs(per).toInt()) < 0 )
        i=i+1
     j=j+1
   }
   graphview.addSeries(series)
  }
 }
```

5.3.6 Add Data

activity_add.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="@color/bg"
  android:paddingBottom="8dp"
  tools:context="finalproject.ggcfinal.AddActivity">
  <TextView
    android:id="@+id/textView7"
```

```
            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            android:layout_marginBottom="8dp"

            android:layout_marginEnd="8dp"

            android:layout_marginStart="8dp"

            android:layout_marginTop="8dp"

            android:text="Select waste convention"

            android:textColor="@color/cardview_light_background"

            app:layout_constraintBottom_toBottomOf="parent"

            app:layout_constraintEnd_toEndOf="parent"

            app:layout_constraintHorizontal_bias="0.108"

            app:layout_constraintStart_toStartOf="parent"

            app:layout_constraintTop_toTopOf="parent"

            app:layout_constraintVertical_bias="0.22" />

    <TextView

            android:id="@+id/textView2"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            android:layout_marginBottom="8dp"

            android:layout_marginEnd="8dp"

            android:layout_marginStart="8dp"

            android:layout_marginTop="8dp"

            android:text="Select waste type"

            android:textColor="@color/cardview_light_background"

            app:layout_constraintBottom_toBottomOf="parent"

            app:layout_constraintEnd_toEndOf="parent"

            app:layout_constraintHorizontal_bias="0.089"

            app:layout_constraintStart_toStartOf="parent"

            app:layout_constraintTop_toTopOf="parent"

            app:layout_constraintVertical_bias="0.016" />

    <RadioGroup

            android:id="@+id/radioGroup"

            android:layout_width="wrap_content"
```

```xml
android:layout_height="wrap_content"
android:layout_marginBottom="8dp"
android:layout_marginEnd="8dp"
android:layout_marginStart="8dp"
android:layout_marginTop="8dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.116"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.064">
<RadioButton
    android:id="@+id/raddsolid"
    android:layout_width="107dp"
    android:layout_height="38dp"
    android:layout_marginBottom="0dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="0dp"
    android:buttonTint="#26A69A"
    android:checked="true"
    android:text="Solid Waste"
    android:textColor="@color/cardview_light_background"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.198"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.072" />
<RadioButton
    android:id="@+id/raddliquid"
    android:layout_width="148dp"
    android:layout_height="32dp"
```

```
        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="0dp"

        android:buttonTint="#26A69A"

        android:text="Liquid Waste"

        android:textColor="@color/cardview_light_background"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.203"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.153" />

</RadioGroup>

<TextView

    android:id="@+id/textView4"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginBottom="8dp"

    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:text="Select waste convention"

    android:textColor="@color/cardview_light_background"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.108"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.22" />

<RadioGroup

    android:id="@+id/radioGroup"

    android:layout_width="wrap_content"
```

```xml
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.127"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.315">
<RadioButton
    android:id="@+id/raddbiod"
    android:layout_width="148dp"
    android:layout_height="32dp"
    android:layout_marginBottom="0dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="0dp"
    android:buttonTint="#26A69A"
    android:checked="true"
    android:text="Biodegradable"
    android:textColor="@color/cardview_light_background"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.203"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.153" />
<RadioButton
    android:id="@+id/radnonbio"
    android:layout_width="163dp"
    android:layout_height="32dp"
```

```
        android:layout_marginBottom="0dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="0dp"

        android:buttonTint="#26A69A"

        android:text="Non-Biodegradable"

        android:textColor="@color/cardview_light_background"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.203"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.153" />

    <CheckBox

        android:id="@+id/rec"

        android:layout_width="148dp"

        android:layout_height="32dp"

        android:layout_marginEnd="4dp"

        android:layout_marginStart="8dp"

        android:layout_weight="1"

        android:buttonTint="@color/teal"

        android:text="Recyclable" />

</RadioGroup>

<TextView

    android:id="@+id/textView8"

    android:layout_width="wrap_content"

    android:layout_height="28dp"

    android:layout_marginBottom="8dp"

    android:layout_marginEnd="8dp"

    android:layout_marginStart="8dp"

    android:layout_marginTop="8dp"

    android:text="Quantity"

    android:textColor="@color/cardview_light_background"
```

```
    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.089"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.498" />

<SeekBar

    android:id="@+id/seekBar"

    android:layout_width="270dp"

    android:layout_height="29dp"

    android:progressBackgroundTint="#80CBC4"

    android:progressTint="#26A69A"

    android:thumbTint="#26A69A"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.377"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.549" />

<EditText

    android:id="@+id/seekvalue"

    android:layout_width="45dp"

    android:layout_height="40dp"

    android:backgroundTint="@android:color/darker_gray"

    android:ems="10"

    android:gravity="right"

    android:hint="0.0"

    android:inputType="numberDecimal"

    android:maxLength="3"

    android:textColor="@android:color/darker_gray"

    android:textColorHint="@android:color/darker_gray"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"
```

```xml
        app:layout_constraintHorizontal_bias="0.947"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />
<TextView
        android:id="@+id/textView15"
        android:layout_width="15dp"
        android:layout_height="41dp"
        android:text="L"
        android:textColor="@android:color/darker_gray"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.997"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.563" />
<TextView
        android:id="@+id/textView9"
        android:layout_width="57dp"
        android:layout_height="29dp"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        android:paddingLeft="2dp"
        android:text="Volume"
        android:textColor="@color/cardview_light_background"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.09"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
```

```
      app:layout_constraintVertical_bias="0.626" />
<TextView
    android:id="@+id/textView13"
    android:layout_width="66dp"
    android:layout_height="37dp"
    android:layout_marginBottom="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="8dp"
    android:gravity="top|right"
    android:paddingBottom="10dp"
    android:text=" 0"
    android:textColor="@android:color/darker_gray"
    android:textSize="18sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.264"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.63" />
<TextView
    android:id="@+id/textView17"
    android:layout_width="75dp"
    android:layout_height="38dp"
    android:layout_marginBottom="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="8dp"
    android:gravity="top|right"
    android:paddingBottom="10dp"
    android:text="cm³"
    android:textAlignment="textEnd"
    android:textColor="@android:color/darker_gray"
```

```
            android:textSize="18sp"

            app:layout_constraintBottom_toBottomOf="parent"

            app:layout_constraintEnd_toEndOf="parent"

            app:layout_constraintHorizontal_bias="0.362"

            app:layout_constraintStart_toStartOf="parent"

            app:layout_constraintTop_toTopOf="parent"

            app:layout_constraintVertical_bias="0.63" />

    <TextView

            android:id="@+id/textView12"

            android:layout_width="204dp"

            android:layout_height="19dp"

            android:layout_marginBottom="8dp"

            android:layout_marginEnd="8dp"

            android:layout_marginStart="8dp"

            android:layout_marginTop="8dp"

            android:text="Ambient Pollution Levels"

            android:textAlignment="center"

            android:textColor="@color/cardview_light_background"

            app:layout_constraintBottom_toBottomOf="parent"

            app:layout_constraintEnd_toEndOf="parent"

            app:layout_constraintHorizontal_bias="0.043"

            app:layout_constraintStart_toStartOf="parent"

            app:layout_constraintTop_toTopOf="parent"

            app:layout_constraintVertical_bias="0.688" />

    <TextView

            android:id="@+id/textView14"

            android:layout_width="wrap_content"

            android:layout_height="28dp"

            android:layout_marginEnd="8dp"

            android:layout_marginStart="8dp"

            android:layout_marginTop="10dp"

            android:paddingLeft="5dp"

            android:text="Visibility"
```

```
        android:textColor="@color/cardview_light_background"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.151"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.761" />
    <SeekBar
        android:id="@+id/seekv"
        android:layout_width="188dp"
        android:layout_height="33dp"
        android:layout_marginBottom="4dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:max="15"
        android:progressBackgroundTint="#80CBC4"
        android:progressTint="#26A69A"
        android:thumbTint="#26A69A"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.615"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.767" />
    <TextView
        android:id="@+id/textView10"
        android:layout_width="62dp"
        android:layout_height="33dp"
        android:gravity="right"
        android:paddingTop="1dp"
        android:text=" KM"
        android:textColor="@android:color/darker_gray"
        android:textSize="18sp"
```

```xml
        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.996"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.761" />

    <TextView

        android:id="@+id/visText"

        android:layout_width="38dp"

        android:layout_height="32dp"

        android:gravity="right"

        android:paddingTop="1dp"

        android:text=" 0"

        android:textColor="@android:color/darker_gray"

        android:textSize="18sp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.897"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.759" />

    <EditText

        android:id="@+id/Note"

        android:layout_width="211dp"

        android:layout_height="77dp"

        android:layout_marginBottom="8dp"

        android:layout_marginEnd="8dp"

        android:layout_marginStart="8dp"

        android:layout_marginTop="8dp"

        android:backgroundTint="@android:color/darker_gray"

        android:ems="10"

        android:hint="Additional Notes\n"

        android:inputType="textMultiLine"
```

android:maxLength="30"

android:textColor="@android:color/darker_gray"

android:textColorHint="@android:color/darker_gray"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.195"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.98" />

</android.support.constraint.ConstraintLayout>

AddActivity.kt

package finalproject.ggcfinal

import android.app.AlertDialog

import android.app.SearchManager

import android.content.Context

import android.content.DialogInterface

import android.content.Intent

import android.support.v7.app.AppCompatActivity

import android.os.Bundle

import android.os.Vibrator

import android.support.design.widget.Snackbar

import android.support.v4.view.MenuItemCompat

import android.support.v7.widget.SearchView

import android.widget.EditText

import android.widget.SeekBar

import android.widget.TextView

import android.widget.SeekBar.OnSeekBarChangeListener

import android.text.Editable

import android.text.TextWatcher

import android.view.Menu

import android.view.MenuInflater

```kotlin
import android.view.MenuItem
import android.view.View
import com.android.volley.Request
import com.android.volley.Response
import com.android.volley.toolbox.StringRequest
import com.android.volley.toolbox.Volley
import kotlinx.android.synthetic.main.activity_add.*
import kotlinx.android.synthetic.main.activity_main.*
import org.jetbrains.anko.toast
import org.json.JSONException
import org.json.JSONObject
@Suppress("DEPRECATION")
class AddActivity : AppCompatActivity() {
    var liter: Long = 0
    var vol: Long = 0
    var vis: Long = 0
    var wType: String = ""
    var wconvention: String = ""
    var uid: Int = 0
    var insid: Int = 0
    var note: String = ""
    var fname: String = ""
    var uname: String = ""
    var lname: String = ""
    var inscode: Int = 0
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_add)
        fname = intent.extras.getString("FNAME")
        uname = intent.extras.getString("UNAME")
        lname = intent.extras.getString("LNAME")
        uid = intent.extras.getInt("ID")
        insid = intent.extras.getInt("INSID")
```

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```kotlin
inscode = intent.extras.getInt("CODE")
val seekBar = findViewById<SeekBar>(R.id.seekBar) as SeekBar
val seekBarValue = findViewById<EditText>(R.id.seekvalue) as EditText
vis = 0
seekBar.setOnSeekBarChangeListener(object : SeekBar.OnSeekBarChangeListener {
    override fun onProgressChanged(seekBar: SeekBar, progress: Int,
                    fromUser: Boolean) {
        seekBarValue.setText(progress.toString())
        liter = progress.toLong()
        vol = liter * 1000
        textView13.text = vol.toString()
    }
    override fun onStartTrackingTouch(seekBar: SeekBar) {
    }
    override fun onStopTrackingTouch(seekBar: SeekBar) {
    }})
seekv.setOnSeekBarChangeListener(object : SeekBar.OnSeekBarChangeListener {
    override fun onProgressChanged(seekBar: SeekBar, progress: Int, fromUser: Boolean) {
        vis = progress.toLong()
        visText.text = progress.toString()
    }
    override fun onStartTrackingTouch(seekBar: SeekBar) {}
    override fun onStopTrackingTouch(seekBar: SeekBar) {
    } })
seekBarValue.addTextChangedListener(object : TextWatcher {
    override fun beforeTextChanged(s: CharSequence, start: Int, count: Int, after: Int) {
    override fun onTextChanged(s: CharSequence, start: Int, before: Int, count: Int) {}
    override fun afterTextChanged(s: Editable) {
        try {
            seekBar.setProgress(Integer.parseInt(s.toString()))
        } catch (ex: Exception) { }} })}
override fun onCreateOptionsMenu(menu: Menu): Boolean {
    menuInflater.inflate(R.menu.done, menu)
```

```kotlin
            return true
        }
        override fun onOptionsItemSelected(item: MenuItem): Boolean {
            val v: Vibrator = getSystemService(Context.VIBRATOR_SERVICE) as Vibrator
            when (item.itemId) {
                R.id.action_done -> {
                    addData()
                    v.vibrate(25)
                    toast("Data added successfully")
                    val intent = Intent(this@AddActivity,DrawerActivity::class.java)
                    intent.putExtra("UNAME",uname)
                    intent.putExtra("FNAME",fname)
                    intent.putExtra("LNAME",lname)
                    intent.putExtra("ID",uid)
                    intent.putExtra("INSID",insid)
                    intent.putExtra("CODE",inscode)
                    startActivity(intent)
                    finish()
                    return true
                }
                else -> return super.onOptionsItemSelected(item)
            }
        }
        override fun onBackPressed() {
            AlertDialog.Builder(this, R.style.DialogDark)
                    .setMessage("Discard data?")
                    .setCancelable(true)
                    .setPositiveButton("DISCARD") { dialog, id -> this@AddActivity.finish() }
                    .setNegativeButton("CANCEL", null)
                    .show()
            val intent = Intent(this@AddActivity,DrawerActivity::class.java)
            intent.putExtra("UNAME",uname)
            intent.putExtra("FNAME",fname)
```

```kotlin
        intent.putExtra("LNAME",lname)
        intent.putExtra("ID",uid)
        intent.putExtra("INSID",insid)
        startActivity(intent)
    }
    fun addData() {
        val pref = SharedPrefManager.getInstance(this@AddActivity)
if(raddsolid.isChecked){
            wType = "solid waste"
        }else if (raddliquid.isChecked){
            wType = "liquid waste"
        }
        if(raddbiod.isChecked){
            wconvention = "biodegradable"
        } else if (radnonbio.isChecked){
            wconvention = "non-biodegradable"
        }
        if(rec.isChecked){
            wconvention = "$wconvention"+" and"+" recyclable"
        }
        note = Note.text.toString()
        val url = "http://192.168.43.147/add.php"
        val q = Volley.newRequestQueue(this@AddActivity)
        val stringRequest = object : StringRequest(Request.Method.POST, url,
            Response.Listener { response ->
            }, Response.ErrorListener { error -> toast("$error") }) {
          public override fun getParams(): HashMap<String, String> {
            val params = HashMap<String, String>()
            params.put("uid", uid.toString())
            params.put("insid", insid.toString())
            params.put("wtype", wType)
            params.put("wconvention", wconvention)
            params.put("quantity", liter.toString())
```
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```
            params.put("plevel", vis.toString())

            params.put("note", note)

            return params

        }

    }

    q.add(stringRequest)

    }

}
```

5.3.7   **Spectator View**

<u>activity_spectate.xml</u>

```xml
<?xml version="1.0" encoding="utf-8"?>

<android.support.v4.widget.DrawerLayout

xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:app="http://schemas.android.com/apk/res-auto"

    xmlns:tools="http://schemas.android.com/tools"

    android:id="@+id/drawer_layout"

    android:fitsSystemWindows="true"

    tools:openDrawer="start"

    app:itemTextColor="@color/colorAccent"

    app:itemIconTint="@color/colorAccent"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:background="@color/bg" >

    <include

        layout="@layout/app_bar_spectate"

        android:layout_width="match_parent"

        android:layout_height="match_parent" />

    <android.support.design.widget.NavigationView

        android:id="@+id/nav_view"

        android:layout_width="wrap_content"

        android:layout_height="match_parent"
```

```
        android:layout_gravity="start"

        android:fitsSystemWindows="true"

        app:headerLayout="@layout/nav_header_spectate"

        app:menu="@menu/activity_spectate_drawer"

        android:background="@color/colorPrimaryDark"

        app:itemIconTint="#FAFAFA"

        app:itemTextColor="#FAFAFA"  />
</android.support.v4.widget.DrawerLayout>
```

SpecCard.kt

```
package finalproject.ggcfinal

data class SpectateCard(var indx: String, var name: String,var gi: String,var rating: String)
```

SpectateActivity.kt

```
package finalproject.ggcfinal

import android.content.Intent

import android.os.Bundle

import android.support.design.widget.Snackbar

import android.support.design.widget.NavigationView

import android.support.v4.view.GravityCompat

import android.support.v7.app.ActionBarDrawerToggle

import android.support.v7.app.AppCompatActivity

import android.support.v7.widget.LinearLayoutManager

import android.support.v7.widget.RecyclerView

import android.text.SpannableString

import android.text.style.UnderlineSpan

import android.view.Menu

import android.view.MenuItem

import android.widget.LinearLayout

import com.android.volley.Request

import com.android.volley.Response

import com.android.volley.toolbox.StringRequest
```

```kotlin
import com.android.volley.toolbox.Volley
import kotlinx.android.synthetic.main.activity_spectate.*
import kotlinx.android.synthetic.main.app_bar_spectate.*
import kotlinx.android.synthetic.main.content_drawer.*
import org.jetbrains.anko.toast
import org.json.JSONException
import org.json.JSONObject
import java.util.ArrayList
class SpectateActivity : AppCompatActivity(),
NavigationView.OnNavigationItemSelectedListener {
    var fname: String = ""
    var uname: String = ""
    var lname: String = ""
    var id: Int = 0
    var insid: Int = 0
    var inscode: Int = 0
    var up: Float = 0F
    var ei: Float = 0F
    var per: Float = 0F
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_spectate)
        setSupportActionBar(toolbar)

        fname = intent.extras.getString("FNAME")
        uname = intent.extras.getString("UNAME")
        lname = intent.extras.getString("LNAME")
        id = intent.extras.getInt("ID")
        insid = intent.extras.getInt("INSID")
        inscode = intent.extras.getInt("CODE")
       val xup = intent.extras.getFloat("UP")
        loadGData()
        val toggle = ActionBarDrawerToggle(
```

```kotlin
            this, drawer_layout, toolbar, R.string.navigation_drawer_open,
R.string.navigation_drawer_close)
        drawer_layout.addDrawerListener(toggle)
        toggle.syncState()
        nav_view.setNavigationItemSelectedListener(this)
    }
    override fun onBackPressed() {
        if (drawer_layout.isDrawerOpen(GravityCompat.START)) {
            drawer_layout.closeDrawer(GravityCompat.START)
        } else {
            moveTaskToBack(true)
        }
    }
    override fun onCreateOptionsMenu(menu: Menu): Boolean {
        menuInflater.inflate(R.menu.spectate, menu)
        return true
    }
    override fun onOptionsItemSelected(item: MenuItem): Boolean {
        when (item.itemId) {
            R.id.action_help -> return true
            R.id.action_quit -> {
                moveTaskToBack(true)
                return true
            }
            R.id.action_logout ->{
                val pref = SharedPrefManager.getInstance(this@SpectateActivity)
                pref.logout()
                finish()
                return true
            }
            else -> return super.onOptionsItemSelected(item)
        }
    }
```

```kotlin
override fun onNavigationItemSelected(item: MenuItem): Boolean {
    when (item.itemId) {
        R.id.nav_dash -> {
            val spIntent = Intent(this@SpectateActivity,DrawerActivity::class.java)
            spIntent.putExtra("UNAME",uname)
            spIntent.putExtra("FNAME",fname)
            spIntent.putExtra("LNAME",lname)
            spIntent.putExtra("ID",id)
            spIntent.putExtra("INSID",insid)
            spIntent.putExtra("CODE",inscode)
            startActivity(spIntent)
            overridePendingTransition(0, 0)
            finish()
        }
        R.id.nav_spec -> {}
        R.id.nav_set -> {
            val sIntent = Intent(this@SpectateActivity,SettingsActivity::class.java)
            startActivity(sIntent)
        }
    }
    drawer_layout.closeDrawer(GravityCompat.START)
    return true
}
fun loadData() {
    val recyclerView = findViewById<RecyclerView>(R.id.recyclerspectate) as RecyclerView
    recyclerView.layoutManager = LinearLayoutManager(this, LinearLayout.VERTICAL,
false)
    val url = "http://192.168.43.147/spectate.php"
    val q = Volley.newRequestQueue(this@SpectateActivity)
    val stringRequest = object : StringRequest(Request.Method.POST, url,
        Response.Listener { response ->
            val specCard = ArrayList<SpectateCard>()
            try{
```

```kotlin
            val obj = JSONObject(response)
            val jsnobj = obj.getJSONArray("response")
            for (i in 0 until jsnobj.length()) {
                val jsonObject = jsnobj.getJSONObject(i)
                val gindex = jsonObject.getString("GreenIndex")
                val insname = jsonObject.getString("InsName")
                var rating: String = ""
                val a=i+1
                val leedindex=gindex.toFloat()*20
                if(leedindex<=50){
                    rating = "Certified"
                }else if(leedindex<60 && leedindex>=50){
                    rating = "Silver"
                }else if(leedindex<80 && leedindex>=60){
                    rating="Gold"
                }else if(leedindex>=80 && leedindex<100){
                    rating="Platinum"
                }
                specCard.add(SpectateCard("#"+"$a","$insname"," "+"$leedindex"+"/100"+"
(↑"+"$up"+"%)"," "+"$rating"))
                val adapter = SpectateAdapter (specCard)
                recyclerView.adapter = adapter
            }
        }catch(e: JSONException){
            toast("Please check your credentials and try again")
        }
    }, Response.ErrorListener { error -> toast("The server could not process your
request")}) {
    public override fun getParams(): HashMap<String, String> {
        val params = HashMap<String, String>()
        params.put("uid", id.toString())
        return params
    }
```

```kotlin
        }
        q.add(stringRequest)
    }
    fun loadGData() {
        val url = "http://192.168.43.147/gdata.php"
        val q = Volley.newRequestQueue(this@SpectateActivity)
        val stringRequest = object : StringRequest(Request.Method.POST, url,
            Response.Listener { response ->
                try{
                    val obj = JSONObject(response)
                    val num = obj.getInt("num")
                    val rec = obj.getInt("rec")
                    val total = obj.getInt("total")
                    ei = (rec.toFloat()/num.toFloat())*5
                    ei = (Math.floor((ei*10).toDouble())/10).toFloat()
                    per = ((num*0.83).toFloat())
                    var rper = (num.toFloat()/total.toFloat())
                    up = rper
                    loadData()
                }catch(e: JSONException){ toast("$e") }
            }, Response.ErrorListener { error -> toast("The server could not process your
request") }) {
            public override fun getParams(): java.util.HashMap<String, String> {
                val params = java.util.HashMap<String, String>()
                params.put("uid", id.toString())
                return params
            }
        }
        q.add(stringRequest)
    }
}
```

5.3.8 **Drawer**

activity_drawer.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.v4.widget.DrawerLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/drawer_layout"
    app:itemTextColor="@color/colorAccent"
    app:itemIconTint="@color/colorAccent"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:fitsSystemWindows="true"
    tools:openDrawer="start"
    android:background="@color/bg">
    <include
        layout="@layout/app_bar_drawer"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
    <android.support.design.widget.NavigationView
        android:id="@+id/nav_view"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_gravity="start"
        android:background="@color/colorPrimaryDark"
        android:fitsSystemWindows="true"
        app:headerLayout="@layout/nav_header_drawer"
        app:itemIconTint="#FAFAFA"
        app:itemTextColor="#FAFAFA"
        app:menu="@menu/activity_drawer_drawer" />
```

5.4   Test Cases

5.4.1   User Login Attempt

TEST CASE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	STATUS
Checking login with valid credentials	Valid Username Valid Password Tap LOGIN	Toast notification saying "Welcome, ---"	Toast notification saying "Welcome, ---"	Pass
Checking login with invalid credentials	Invalid Username Invalid Password Tap LOGIN	Toast notification saying "Please check your info and try again"	Toast notification saying "Please check your info and try again"	Fail

5.4.2   Password Recovery Attempt

TEST CASE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	STATUS
Attempting account recovery with valid credentials	Valid Email Valid Country code Valid Phone Tap LOGIN	Snackbar notification saying "Please check your email for recovery options"	Snackbar notification saying "Please check your email for recovery options"	Pass
Attempting account recovery with invalid credentials	Invalid Email Invalid Country code Invalid Phone Tap LOGIN	Toast notification saying "Please check your input and try again"	Toast notification saying "Please check your input and try again"	Fail

5.4.3   New User Registration

TEST CASE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	STATUS
Registering for an account with valid information	Valid First Name Valid Last Name Valid Email Valid Username Valid Password Valid Institute Select Country Select State Select City	Toast notification saying "Account created successfully"	Toast notification saying "Account created successfully"	Pass
Registering for an account with a few invalid information	Valid First Name Valid Last Name Invalid Email Valid Username Valid Password Invalid Institute No Country Select State Select City	Toast notification saying "Please check the form and try again"	Toast notification saying "Please check the form and try again"	Fail

5.4.4 New Institute Registration

TEST CASE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	STATUS
Registering an institute with valid information	Valid Institute Name Select Address Select Country Select State Select City Valid Area Valid Institute Code	Toast notification saying "Institute registered succefully"	Toast notification saying "Institute registered succefully"	Pass
Registering an institute with valid information	Invalid Institute Name Select Address No Country Select State Select City Invalid Area Valid Institute Code	Toast notification saying "Please check the form and try again"	Toast notification saying "Please check the form and try again"	Fail

5.4.5 Addition of Data

TEST CASE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	STATUS
Addition of valid data	Any Waste Type Any Waste Convention Slider quantity Slider visibility Any Notes	Toast notification saying "Data added successfully"	Toast notification saying "Data added successfully"	Pass
Addition of random data	Any Waste Type Any Waste Convention Slider quantity Slider visibility Any Notes	Toast notification saying "Data added successfully"	Toast notification saying "Data added successfully"	Pass

5.4.6 Searching for Existing Data Entries

TEST CASE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	STATUS
Enter data into search bar	Search string	Cards of data correlating with string	Cards of data correlating with string	Pass
Do not enter data into search bar	–	Blank fragment	Blank fragment	Pass

5.4.7 Checking connectivity to server and database during specific scenarios.

TEST CASE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	STATUS
Disabling WiFi, Bluetooth, Cellular Data, Tethering	Invalid connection method	Toast notification saying "Could not establish a connection to the server"	Toast notification saying "Could not establish a connection to the server"	Fail
Powering off the all servers (Apache, MySQL)	Invalid server configuration	Toast notification saying "The server could not process your request"	Toast notification saying "The server could not process your request"	Fail

5.4.8 Application performance profile
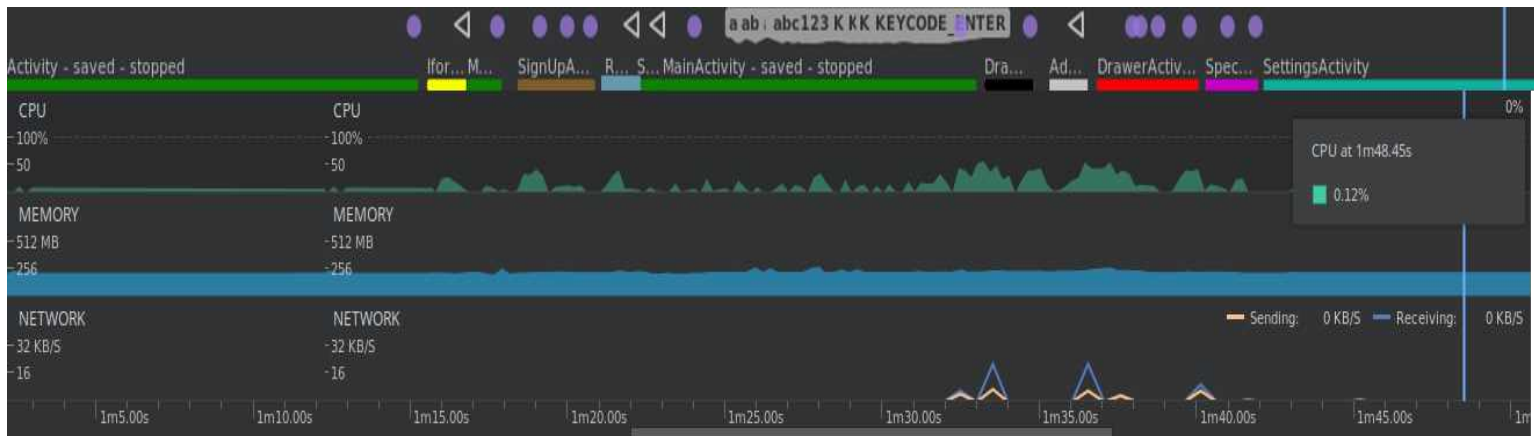
Gantt Chart Legend:

- ■ LoginActivity
- ■ iForgotActivity
- ■ SignUpActivity
- ■ RegInstituteActivity
- ■ Dashboard
- ■ AddActivity
- ■ DrawerActivity
- ■ SpectateActivity
- ■ SettingsActivity

Chapter 6.   Screenshots
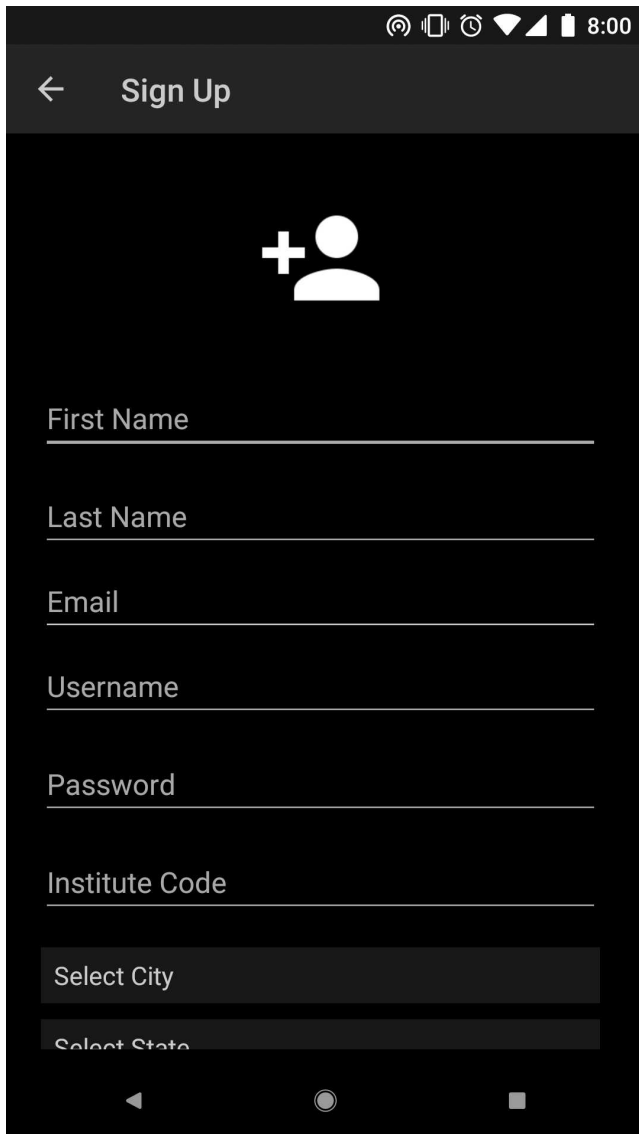
a) Login Activity
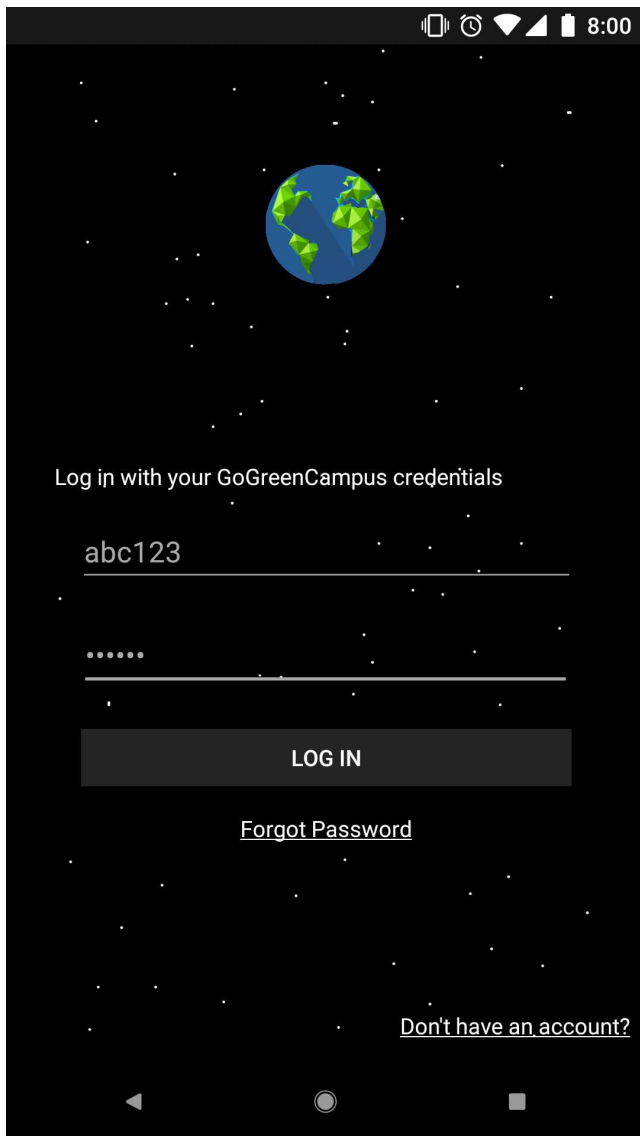
b) Forgot Password Activity

c) Sign Up Activity
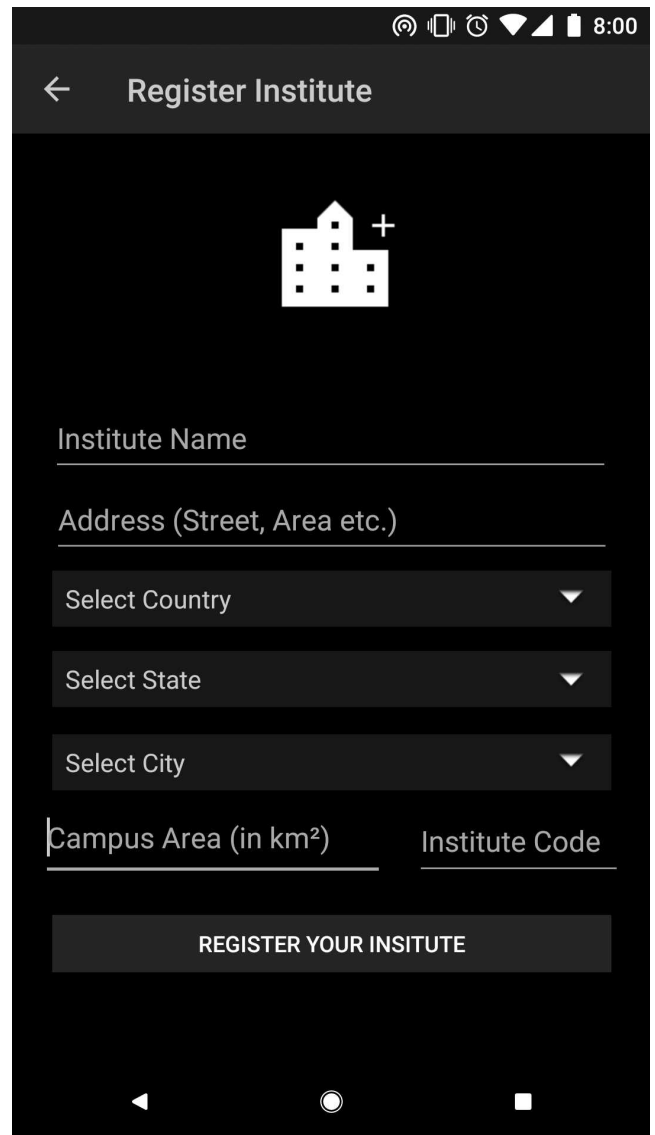
d) Register Institute Activity

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e) Dashboard Activity

f) Dashboard Data Search
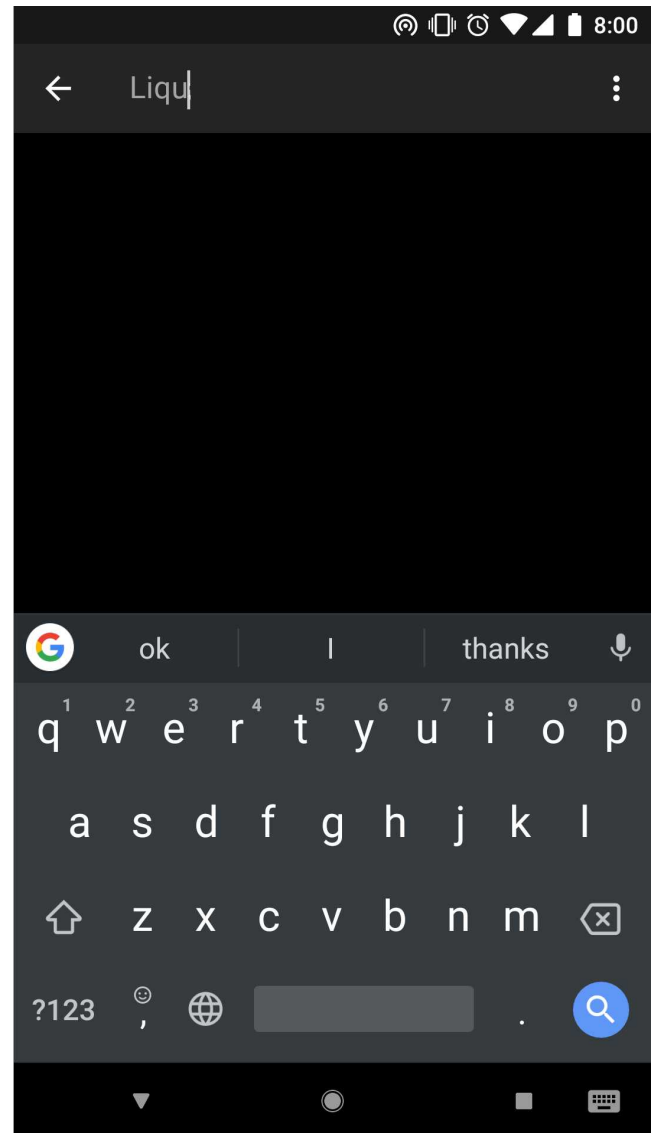
⌖ ⌕ 8:00

☰ Dashboard 🔍 ⋮

100
80
60
40
20
0

Goal: 4.98% | Environmental Index: 1.6/5.0 (↑100.0%)

Collected 3 liters of liquid waste   2/4/2018
Paper
Item is biodegradable and recyclable   ⊞ 3000 cm³   👁 0KM

Collected 10 liters of solid waste   2/4/2018
Paper
Item is biodegradable and recyclable   ⊞ 10000 cm³   👁 15KM

Collected 2 liters of solid waste   1/4/2018
Plastic from Block A
Item is non-biodegradable   ⊞ 2000 cm³   👁 15KM

Collected 5 liters of solid waste   1/4/...
Aluminum cans from cafeteria
Item is non-biodegradable and recyclable   ⊞ 5000 cm³   👁 15KM

←   Liqu   ⋮

G   ok   I   thanks 🎤

q w e r t y u i o p

a s d f g h j k l

⇧ z x c v b n m ⌫

?123 , 🌐   . 🔍

g) Add Activity
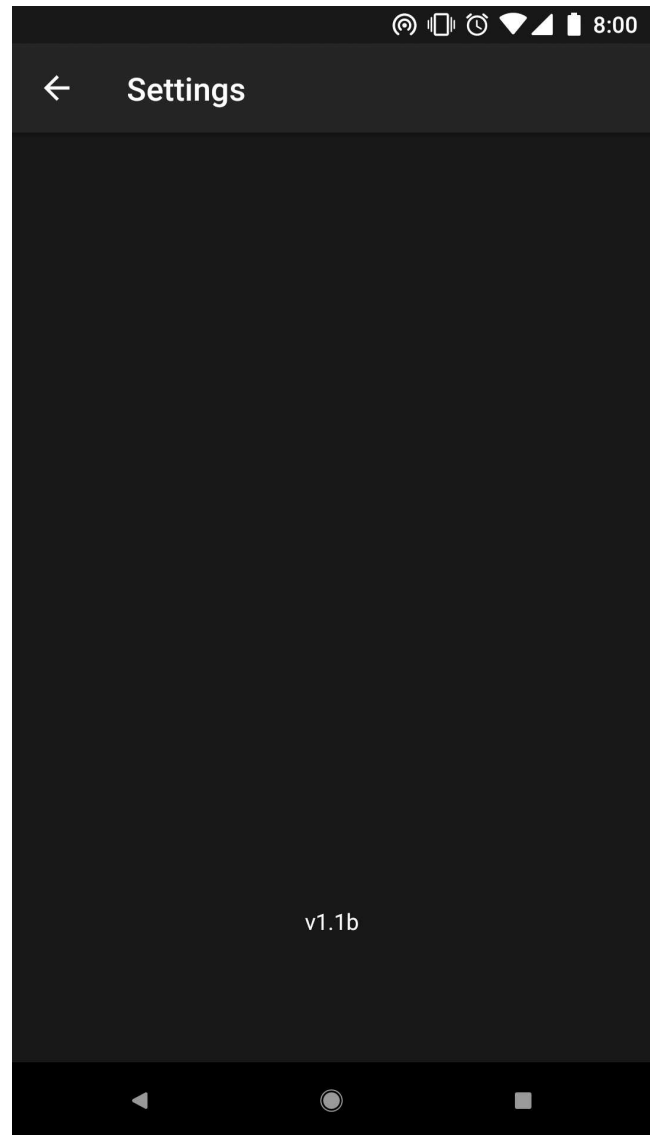

h) Application Drawer
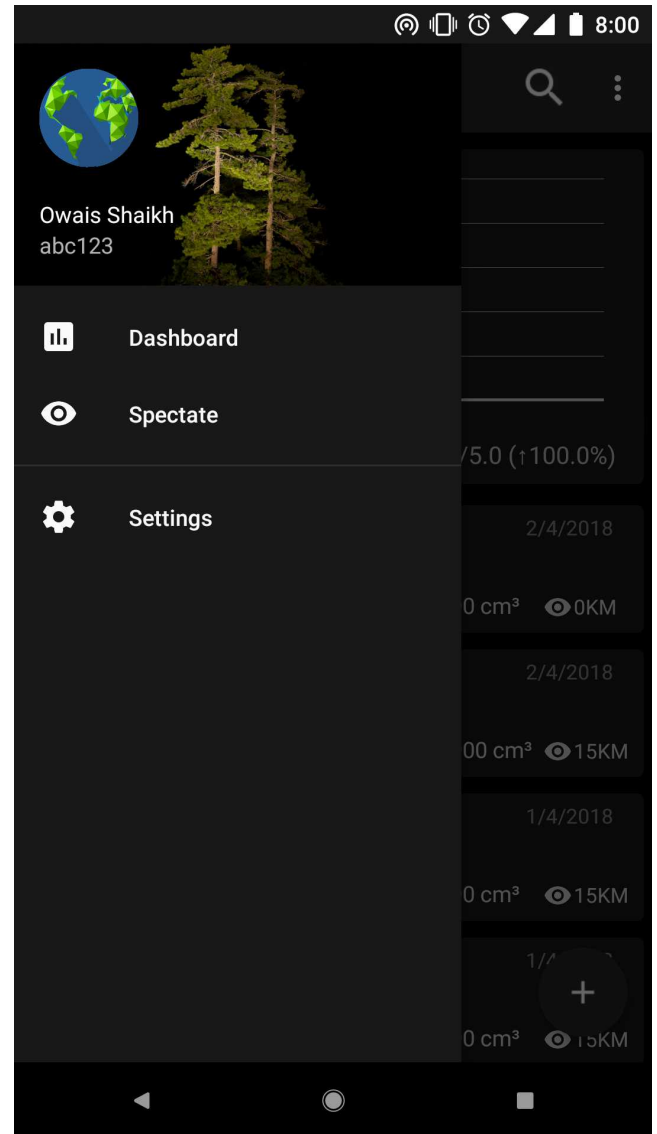
i) Spectate Activity
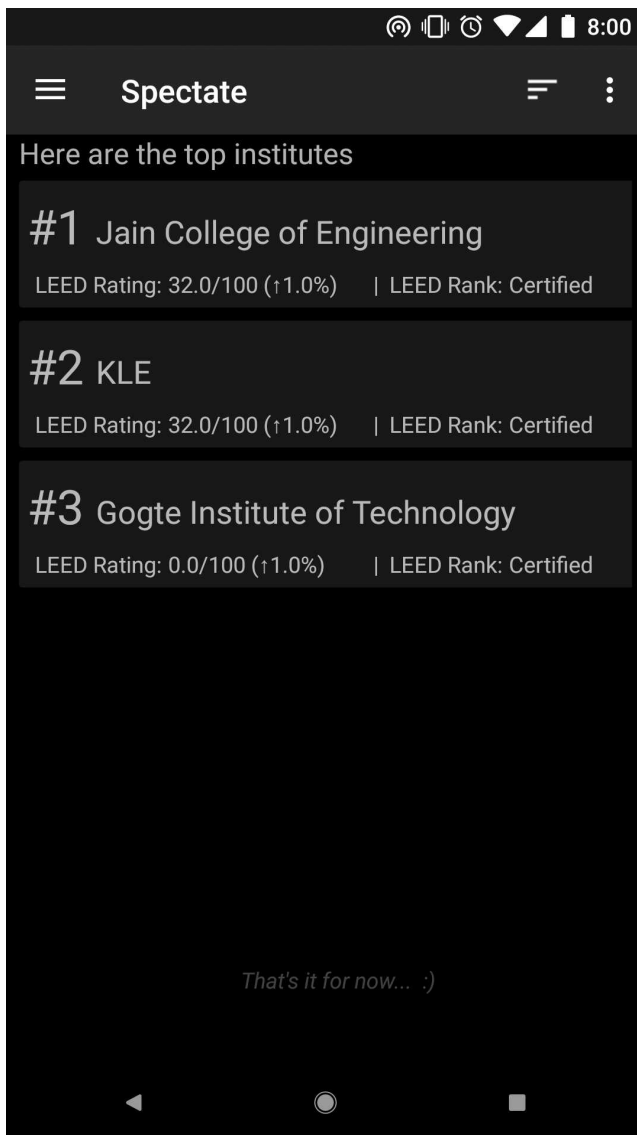
j) Settings

Chapter 7.   Advantages

- **Free and Open Source**: This application is free to use, copy, modify and distribute under the GNU Public License (GPL). It is made using completely free and open source (FOSS) software, including Android frameworks, Apache, PHP, MySQL and open-source libraries such as Volley and GraphView.

- **Easy to use**: This application provides a familiar and easy-to-use Graphical User Interface (GUI) and visual representation of data in the form of a graph.

- **Portable**: This application can run on most Android devices available on the market and can be wirelessly accessed.

- **Sustainable**: Reduces waste by not needing pen and paper

- **Precise Data Logging**: We use internationally accepted rating systems, such as the Leadership for Environmental and Economic Development (LEED).

- **Community-oriented:** The intent is to provide users with a sense of pride and accomplishment for completing different goals and creating a competitive atmosphere.

Chapter 8.   Applications

The applications for this project include:

- Integrating app usage data by educational institutions, organizations and campuses to raise awareness and for research purposes.

- Implementation by businesses, to manage waste in their work place and promote hygiene and sustainability in the workplace.

- Usage by the maintenance and janitorial services of housing societies, colonies, condominiums etc., for sanity measures and upkeep.

- Surveying and data collection by government and non-government organizations, for census, studies and survey.

- Usage by restaurants, hotels, diners, eateries for sanitation checks, resourcefulness and waste management.

Chapter 9.   Further Scope and Enhancements

- Uploading application to the Google Play Store, F-Droid or other application repositories for ease-of-access.

- Integrating more metrics into the application for higher precision data, such as community ratings, engineering standards etc.

- High performance servers for low data-processing latency

- Adding external hardware support for devices such as mini wind vanes, dosimeters etc. or Internet of Things (IoT) support.

Chapter 10.   Conclusion

Through use of technology and methods like mobile computing, continued efforts to reduce the use of hazardous materials, we have created a simple solution for the conservation of our environment via technology. This project raises awareness of our potential impact on our shared resources and, therefore, we need to claim responsibility to be a good environmental steward. As we continue to accelerate to the future, we need to minimize our impact on the environment.

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