

**A**  
Report  
On  
**RETAIL-SHOP APP using**  
**Android Studio**

In the partial fulfillment of the term-work for  
Course: Mobile Communication System (Sem-VII)

In  
Final Year EXTC Engineering

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**MUMBAI- 400 016**  
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## **INTRODUCTION:**

Android is an open source and Linux-based Operating System for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance. Android offers a unified approach to application development for mobile devices.

Android powers hundreds of millions of mobile devices in more than 190 countries around the world. It's the largest installed base of any mobile platform and growing fast. Every day more than 1 million new Android devices are activated worldwide. This growth is due to the various features:

- Android OS basic screen provides a beautiful and intuitive user interface.
- It also provides various connectivity such as GSM/EDGE, CDMA, Bluetooth, Wi-Fi, LTE, NFC, WiMAX, etc.
- The storage in Android devices is managed by SQLite, a lightweight relational database.

Building a basic E-COMMERCE app which helps you to buy electronics & furniture online.

## **ABSTRACT:**

This work deals with development of android-based e-commerce app which basically helps users to be organized during their shopping. This app is developed keeping in mind the ease for people to order furniture and electronics from the comfort of their home. Just by clicking on the product and adding it to the cart the user is able to manage their shopping without keeping track of the price and totaling each product price in the end; this is because the app developed handles all these requirements thus making the experience Hassel free. The retail shop app also generates a graph corresponding to the product frequently bought.

## **SOFTWARE USED:**

### **Android Studio**

Android Studio is the official integrated development environment (IDE) for Android application development. It is based on the IntelliJ IDEA, a Java integrated development environment for software, and incorporates its code editing and developer tools. To support application development within the Android operating system, Android Studio uses a Gradle-based build system,

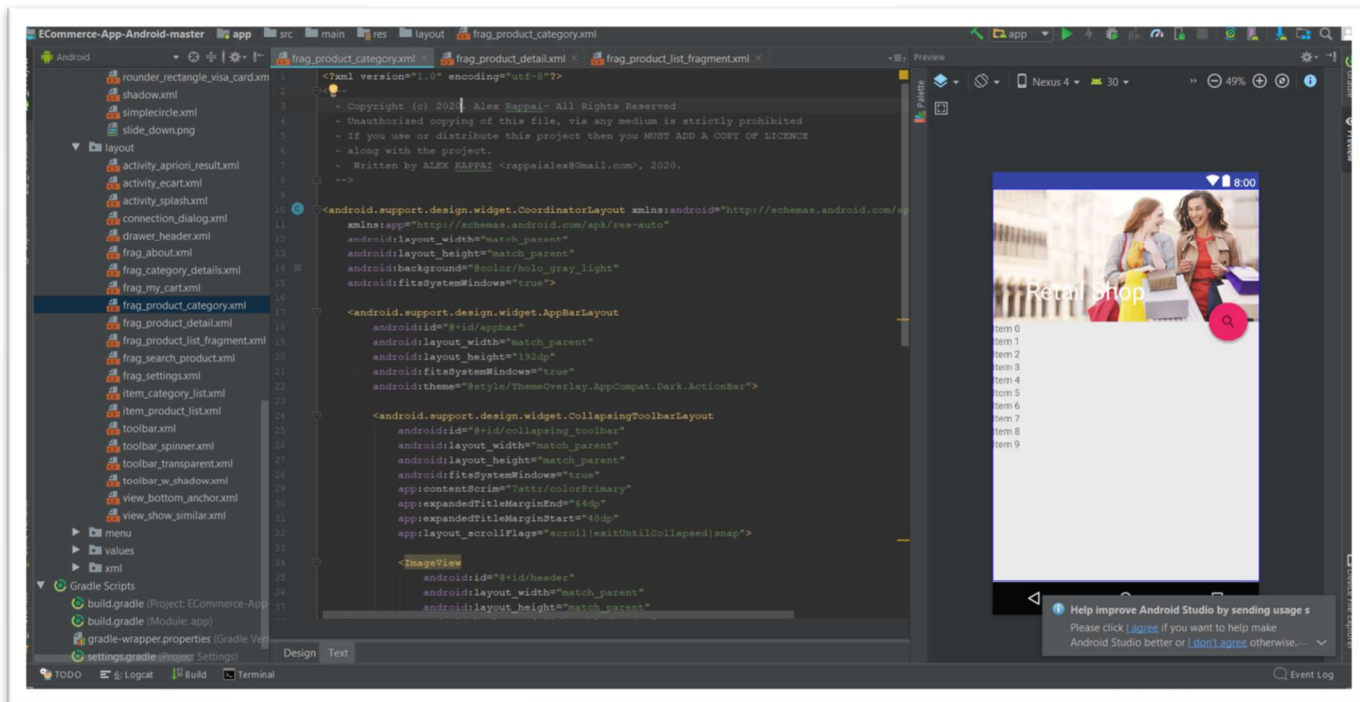
emulator, code templates, and Github integration. Every project in Android Studio has one or more modalities with source code and resource files. These modalities include Android app modules, Library modules, and Google App Engine modules.

## INTERFACE AND CODING:

In this app, we have 5 Menu options:

### 1. HOME:

This option will redirect the user to the homepage of the app where he/she will encounter the categories offered by the app. Currently the app offers two categories **ELECTRONICS & FURNITURES**.

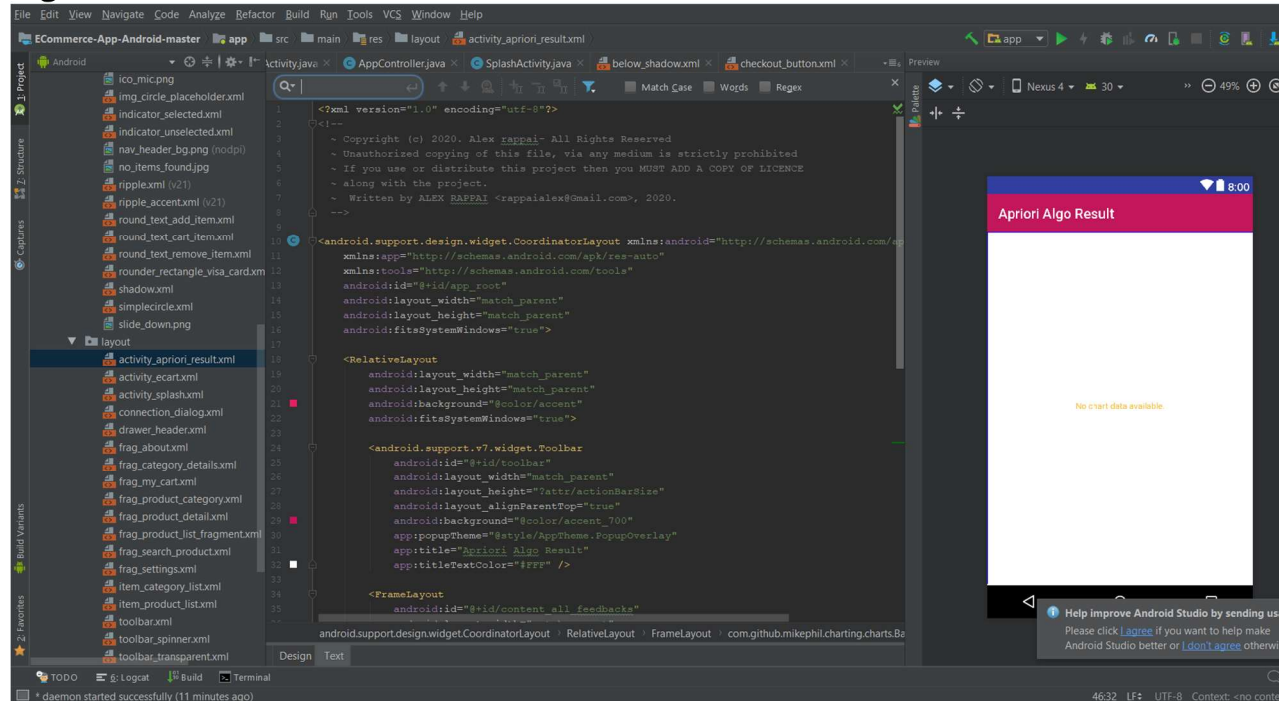


### 2. My Cart:

This section consists of products the user wishes to purchase at the end of the shopping spree. The My Cart section also calculates the overall price of the products that the user has purchased.

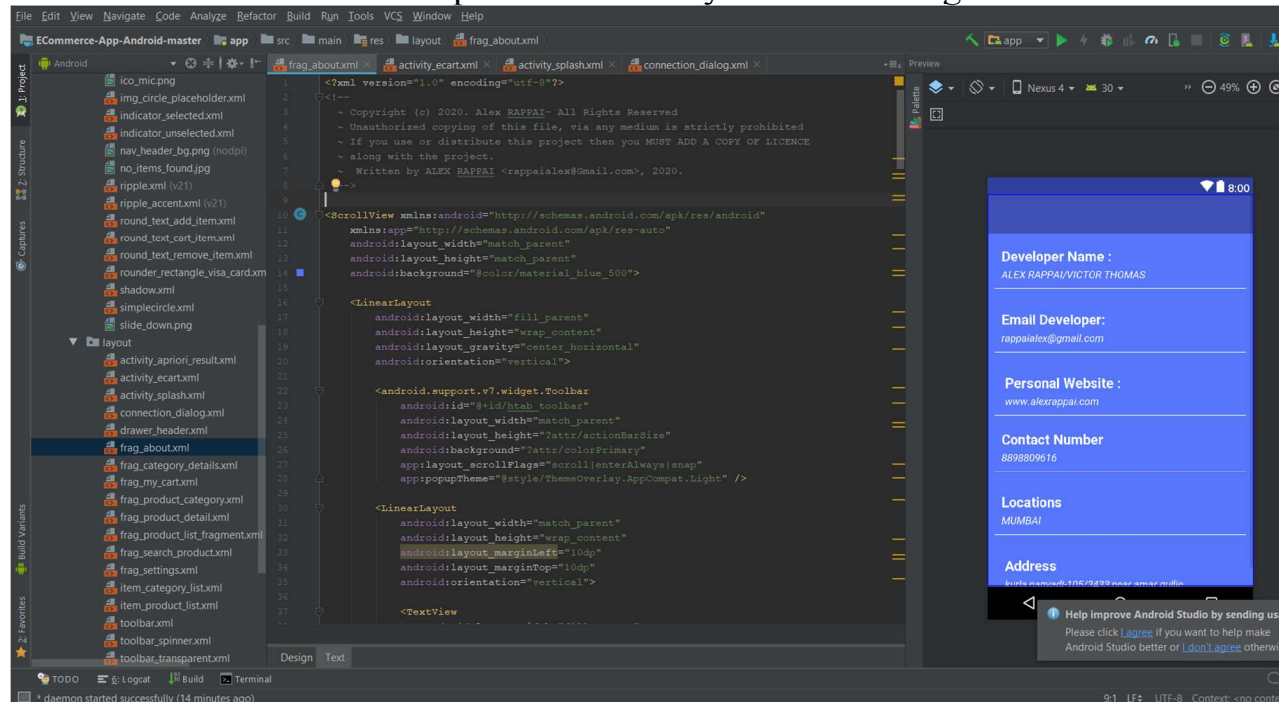
### 3. Apriori Mining Result:

This is a very unique section that we decided to include in our app. This module provides an analytical insight for the products. Basically what it does is it provides a graph of products that customers buy together. So it mines user data and provides a graph of products that are frequently bought together.



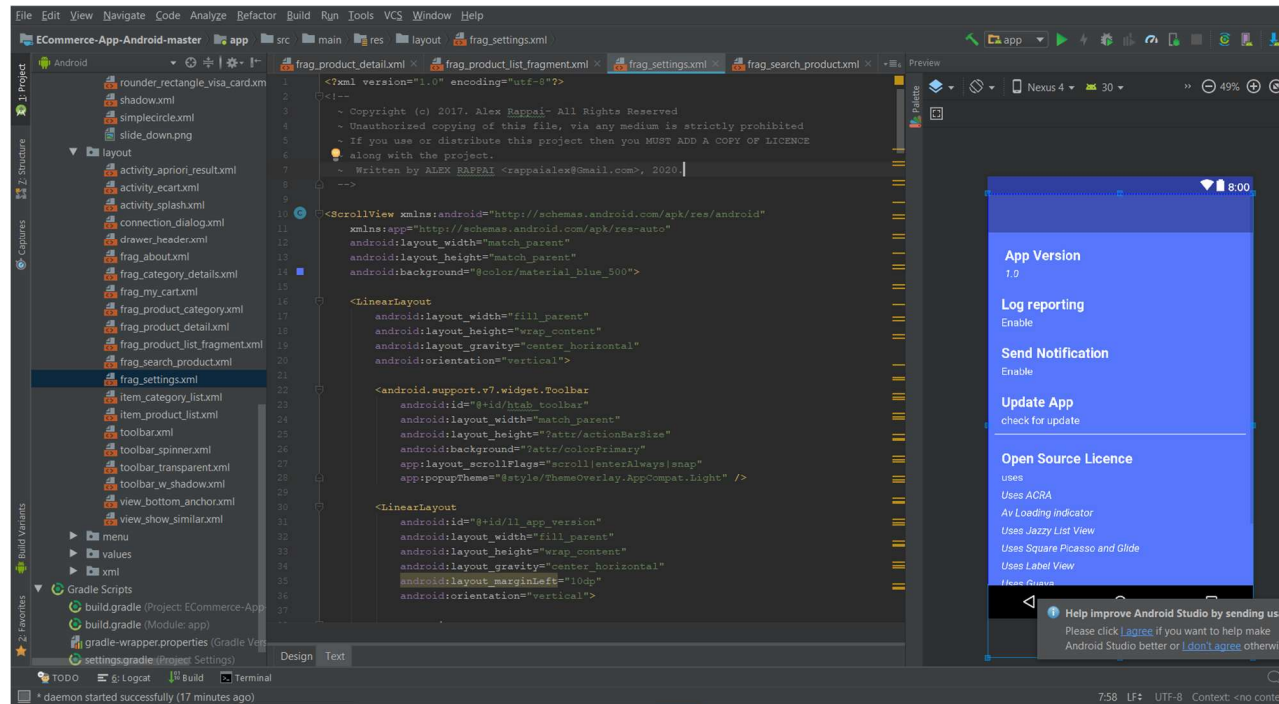
### 4. Contact Us:

This section is for customer service only. It provides the users with the contact information of developers incase of any difficulties or grievances.



## 5. Settings:

This option provides the version info and accessibility for the app. Here options like log reporting, notification, app update can be enabled and disabled.

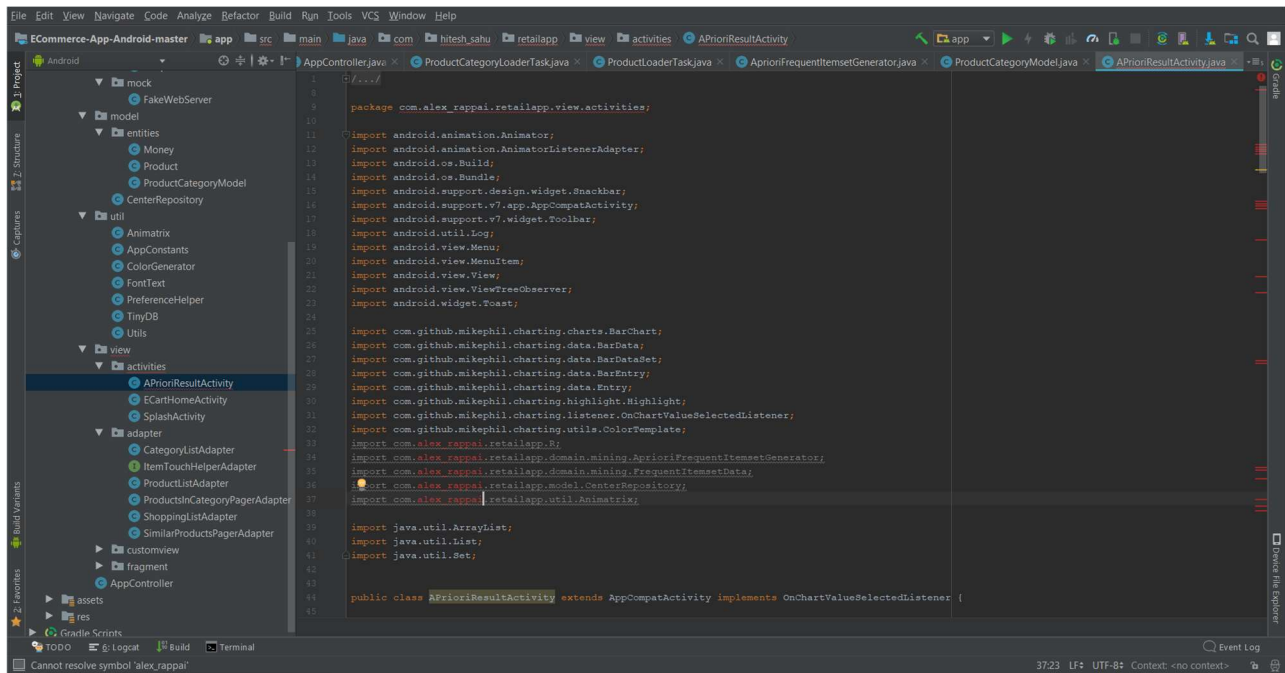


## BUTTONS:

Here, each of the above mentioned options have their own buttons; other than these buttons there is a checkout button, when clicked on it will give you a order confirmation popup.

# Adding Apriori function in our app

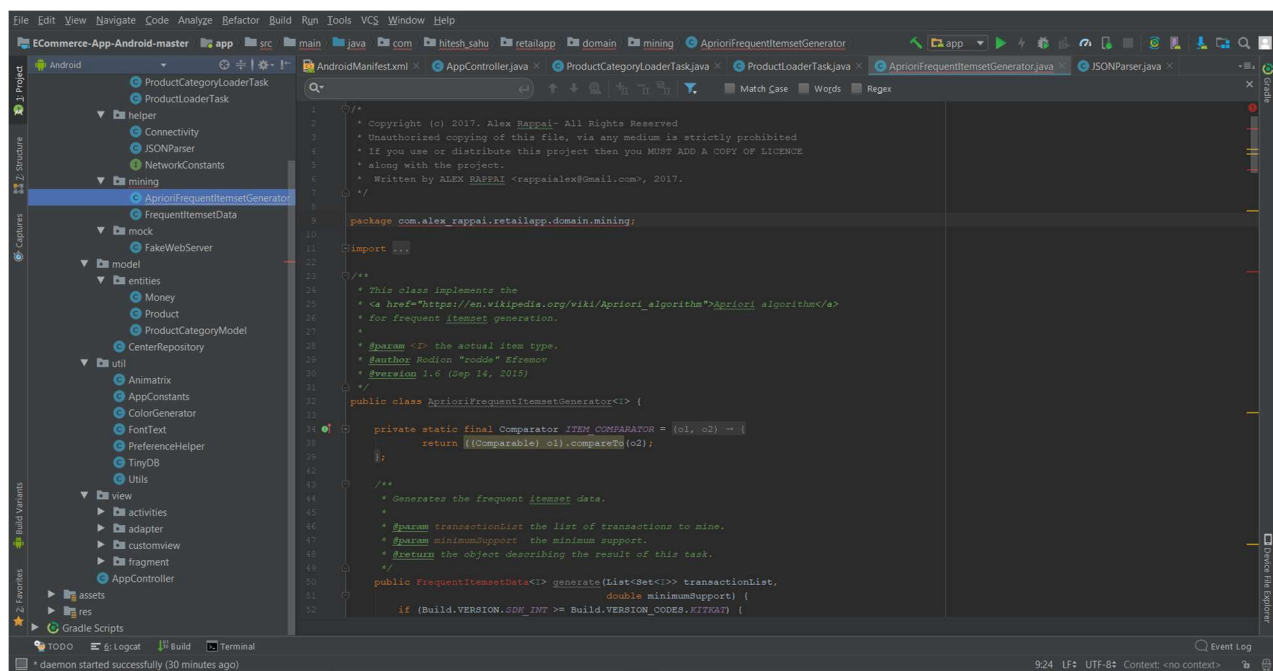
## AprioriResultActivity.java



```
1 // ...
2
3 package com.alex_rappai.retailapp.view.activities;
4
5 import android.animation.Animator;
6 import android.animation.AnimatorListenerAdapter;
7 import android.os.Build;
8 import android.os.Bundle;
9 import android.support.design.widget.Snackbar;
10 import android.support.v7.app.AppCompatActivity;
11 import android.support.v7.widget.Toolbar;
12 import android.util.Log;
13 import android.view.Menu;
14 import android.view.MenuItem;
15 import android.view.View;
16 import android.view.ViewTreeObserver;
17 import android.widget.Toast;
18
19 import com.github.mikephil.charting.charts.BarChart;
20 import com.github.mikephil.charting.data.BarData;
21 import com.github.mikephil.charting.data.BarDataSet;
22 import com.github.mikephil.charting.data.BarEntry;
23 import com.github.mikephil.charting.data.Entry;
24 import com.github.mikephil.charting.highlight.Highlight;
25 import com.github.mikephil.charting.listener.OnChartValueSelectedListener;
26 import com.github.mikephil.charting.utils.ColorTemplate;
27 import com.alex_rappai.retailapp.R;
28 import com.alex_rappai.retailapp.domain.mining.AprioriFrequentItemsetGenerator;
29 import com.alex_rappai.retailapp.domain.mining.FrequentItemsetData;
30 import com.alex_rappai.retailapp.model.CenterRepository;
31 import com.alex_rappai.retailapp.util.Animatrix;
32
33 import java.util.ArrayList;
34 import java.util.List;
35 import java.util.Set;
36
37 public class AprioriResultActivity extends AppCompatActivity implements OnChartValueSelectedListener {
38
39 }
```

## Writing a code for apriori function

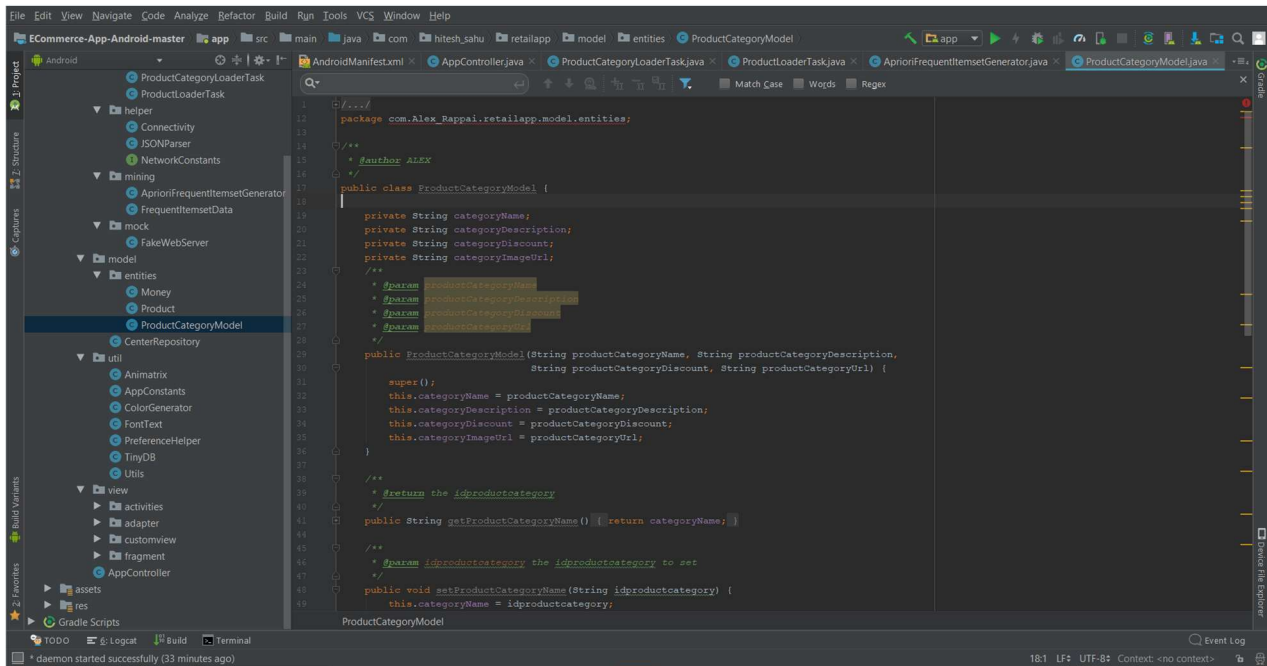
Apriori is an element used by vast number of big companies to improve their customer experience and increase sales by recommending products to customer that are frequently bought together by other users.



```
1 // ...
2
3 package com.alex_rappai.retailapp.domain.mining;
4
5 import ...
6
7 /**
8  * This class implements the
9  * https://en.wikipedia.org/wiki/Apriori\_algorithm
10  * for frequent itemset generation.
11  *
12  * @param <T> the actual item type.
13  * @author Rodion "rodde" Efremov
14  * @version 1.6 (Sep 14, 2015)
15  */
16 public class AprioriFrequentItemsetGenerator<T> {
17
18     private static final Comparator<ITEM> ITEM_COMPARATOR = (o1, o2) -> {
19         return ((Comparable) o1).compareTo(o2);
20     };
21
22     /**
23      * Generates the frequent itemset data.
24      *
25      * @param transactionList the list of transactions to mine.
26      * @param minimumSupport the minimum support.
27      * @return the object describing the result of this task.
28      */
29     public FrequentItemsetData<T> generate(List<Set<T>> transactionList,
30         double minimumSupport) {
31         if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.KITKAT) {
32
33 }
```



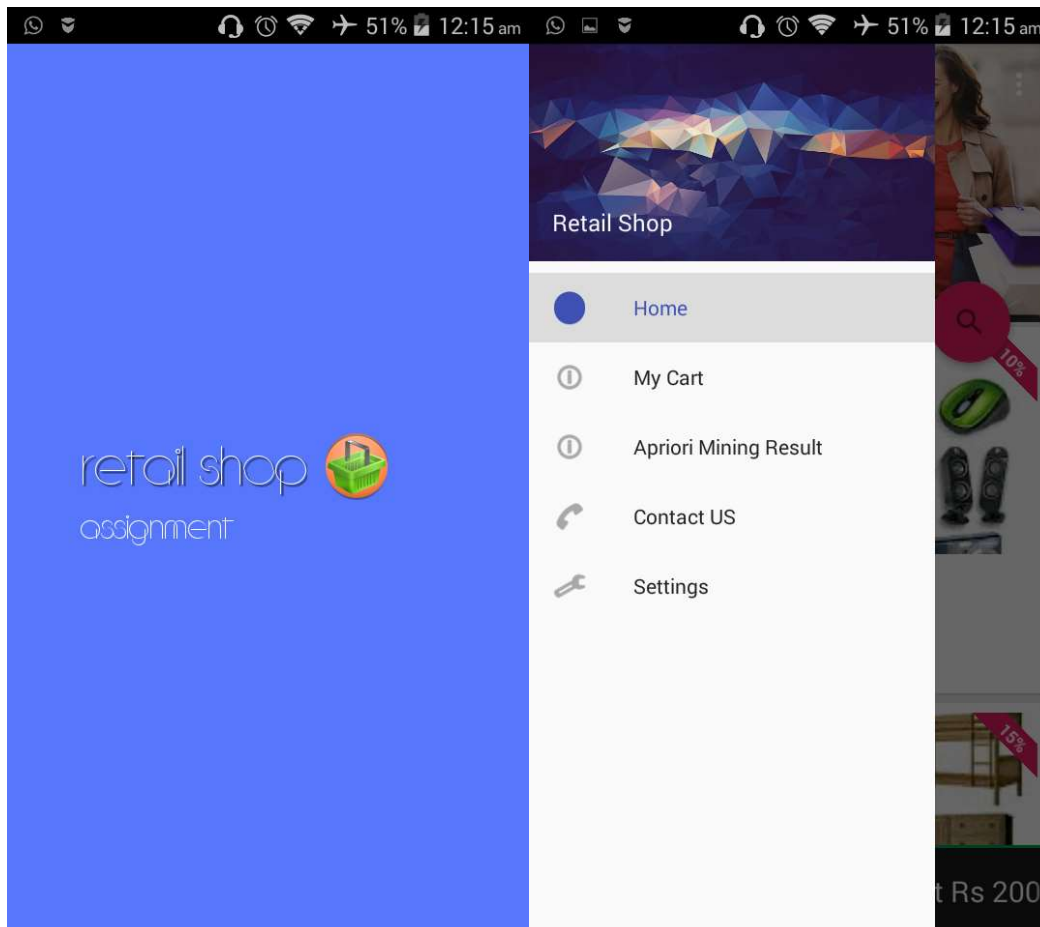
# Writing a code for product categories

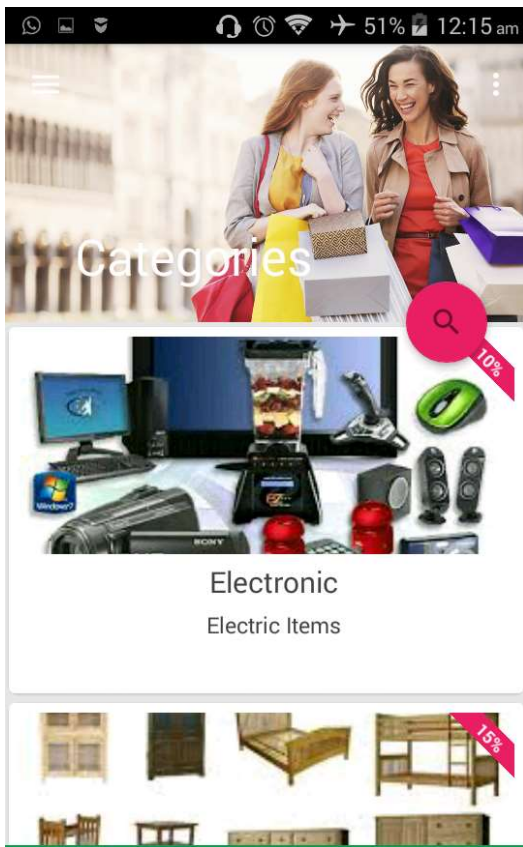


The screenshot shows an IDE with the following code in `ProductCategoryModel.java`:

```
1  //...
2  package com.Alex_Rappai.retailapp.model.entities;
3
4  /**
5   * Author: ALEX
6   */
7
8  public class ProductCategoryModel {
9
10     private String categoryName;
11     private String categoryDescription;
12     private String categoryDiscount;
13     private String categoryImageUrl;
14     /**
15      * @param productCategoryName
16      * @param productCategoryDescription
17      * @param productCategoryDiscount
18      * @param productCategoryUrl
19      */
20     public ProductCategoryModel(String productCategoryName, String productCategoryDescription,
21                               String productCategoryDiscount, String productCategoryUrl) {
22         super();
23         this.categoryName = productCategoryName;
24         this.categoryDescription = productCategoryDescription;
25         this.categoryDiscount = productCategoryDiscount;
26         this.categoryImageUrl = productCategoryUrl;
27     }
28
29     /**
30      * Return the idproductcategory
31      */
32     public String getProductCategoryName() { return categoryName; }
33
34     /**
35      * @param idproductcategory the idproductcategory to set
36      */
37     public void setProductCategoryName(String idproductcategory) {
38         this.categoryName = idproductcategory;
39     }
40 }
```

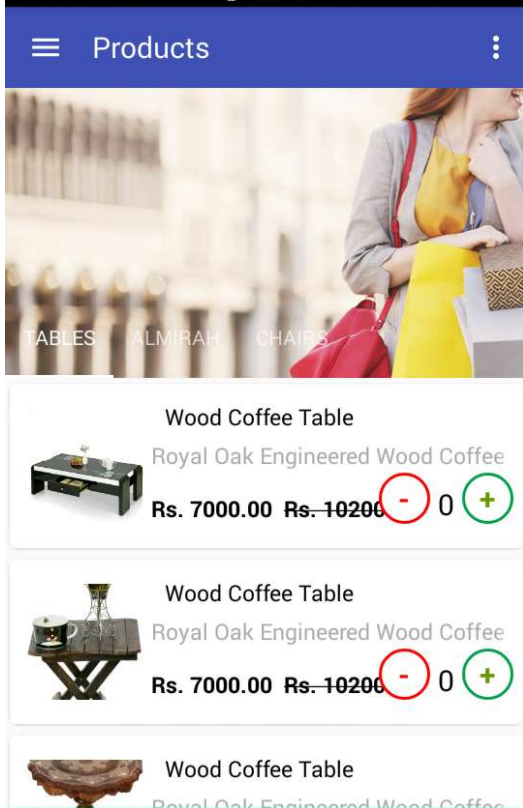
OUTPUT:





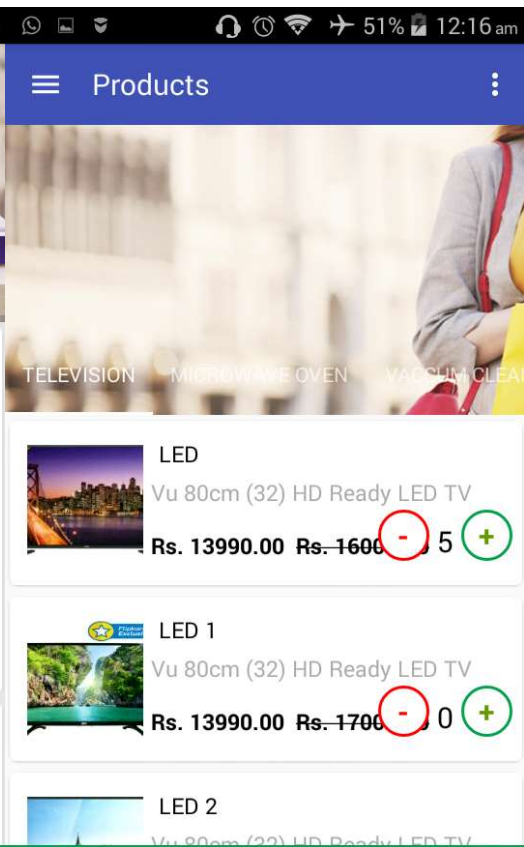
to get Rs 100 discount and shop for 3000

Saving screenshot...



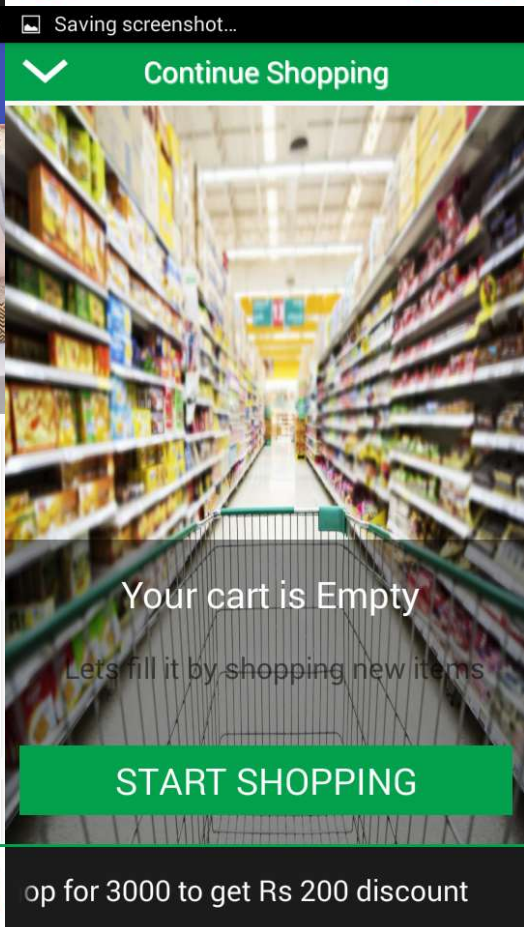
Rs. 138740.00

CheckOut

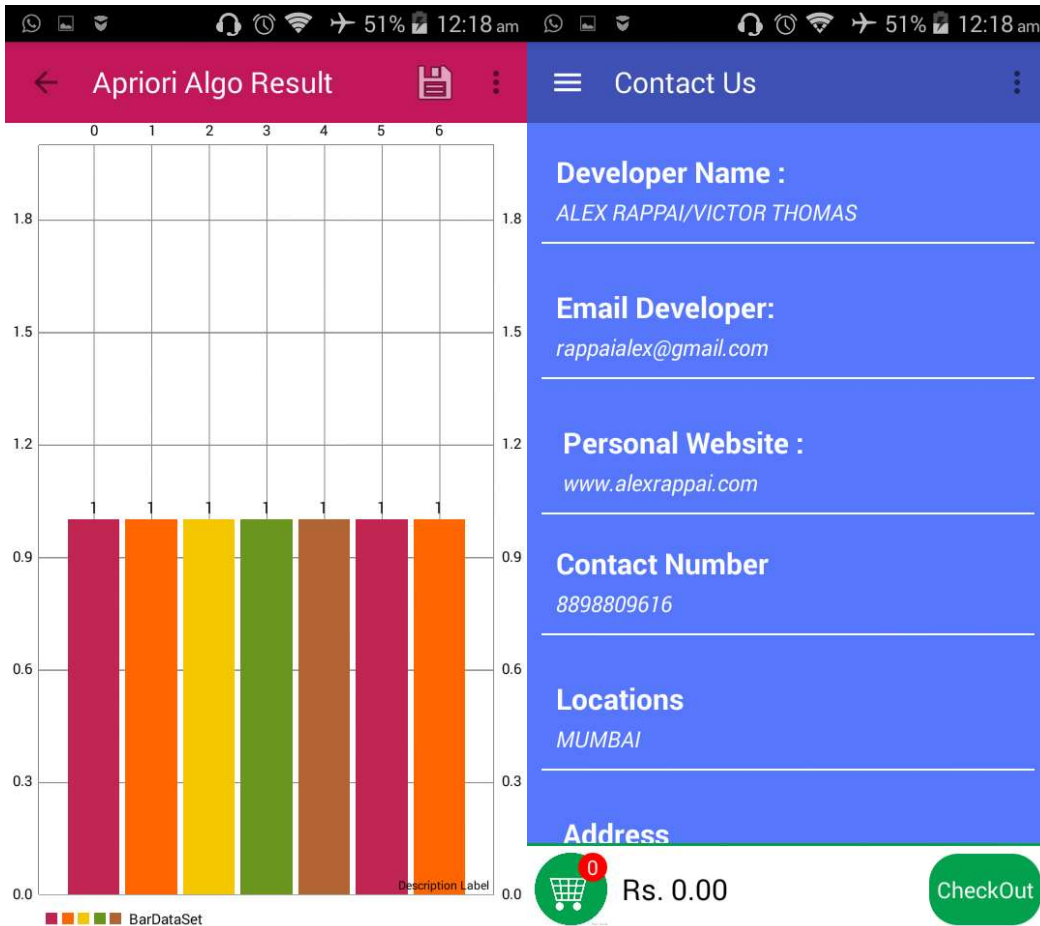


Rs. 69950.00

CheckOut







About App

**App Version**  
1.0

**Log reporting**  
Disable

**Send Notification**  
Enable

**Update App**  
check for update

**Open Source Licence**  
uses  
Uses ACRA  
Av Loading indicator  
Uses Jazzy List View  
Uses Square Picasso and Glide  
Uses Label View

Rs. 0.00

CheckOut

## **CONCLUSION:**

The application developed can be used for e-commerce purpose and also allows the user to look at the analytical graph and decide which other products are being bought by other users making it easier for the customer to make a one time purchase thus qualifying for discounts. We can add other categories in this app, and build a web api for the same.