SCROOGE

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1. Introduction:

In today's era the most common way any person would buy something is through e-commerce.

Now, what is e-commerce? This question should start bugging your mind till now. **E-commerce** (also written as **e-Commerce**, **eCommerce** or similar variants), short for electronic **commerce**, is trading in products or services using computer networks, such as the Internet. And in our concerned area we primarily focuses on the internet business of e-commerce. So with the advent of e-commerce there is huge increment in the user base and also with increasing business there is increase in e-commerce websites for examples Flipkart, Amazon etc. Till now you should be wondering what's the point in telling all this, the point is that with increasing number of websites there lot of confusion among users related to price of the product they want to buy and best site to buy product. We in this project propose a solution to resolve this most hated confusion issue.

1.1 OBJECTIVE:

So basically this project is aimed at developing an android(for now) application for smartphones that can solve the above mentioned problem.

Why android app? So the obvious answer to this question is that huge user base. Most of the companies have their android shopping app some as their primary(may be only) or secondary source of business. Most of the shopping nowadays is done on smartphones, so this way we can target most of the smartphone users.

What will be in the app? The answer is as simple as it can get, it crawl all the e-commerce website(if not all then most of the popular) on the basis of search string provided and will employ some other needy features in the app.

1.2 SCOPE:

As discussed above theSCROOGE is an android application so it will of use to any android user buying something and sellers can use this to set competitive price for their product as they will have the idea of the price of the product they are selling on the other platforms and other sellers on any platform. So this app can come in handy of both the common buyer and the sellers.

2. Software Requirements and Specifications:

This section will tell you about the actually discuss the actual functionalities and requirement of the app.

2.1 SPECIFICATION:

The application will provide following functionalities to any user who have this app installed on their android smartphone.

- **Search :** Search will be the main functionality of the application and this will work as follow
  - **User will provide an input string**
  - **Search functionality track the product on every(or most of the) e-commerce platforms**
  - **Results will be shown in orders way**
  - **And the search will be added into database for history purpose.**
- **History :** This feature will fetch the previous searches done by the user.
- **Favourites :** User can mark any of the search result as favourite for quick access and to get notified if the price of the product fall or not.

- **Notification :**
  - **Generation :** This will be handled by the system.
  - **View :** User can view notification any time he want.

2.2 REQUIREMENTS:

Any user can use the application provided he have an android device with SCROOGE installed in it. There will local database specific to the user it its device. Due to limited amount of memory available their will bounds to the data stored in the data base.

System requirements:

- **Background Process :** The app will have to run a module in background to generate notification.
- **System Clock :** System clock will trigger checking of the notification.
- **Data Service :** The app will require internet access for most of its functionalities.
- **Push Notification :** This will be required to let the user know when there is any notification.

3. Technical Details:

3.1 TECHNOLOGIES REQUIRED:

- **JAVA :**
  As the android platform understands java so the application will be built on it.
- **XML :**
  XML is very flexible and supported by android SDK. It can carry data and was designed specifically for the purpose.
- **ANDROID :**
  Android is a mobile operating system (OS) based on the Linux kernel and currently developed by Google. With a user interface based on direct manipulation, Android is designed primarily for touchscreen mobile devices such as smartphones and tablet computers. It is basically a stack. Google provide the same frameworks APIs to the user which are used in its core application. Android SDK support writing code in java and DALVIK virtual machine runs those codes. Proper template has been provided.This image explains the OS very deliberately.

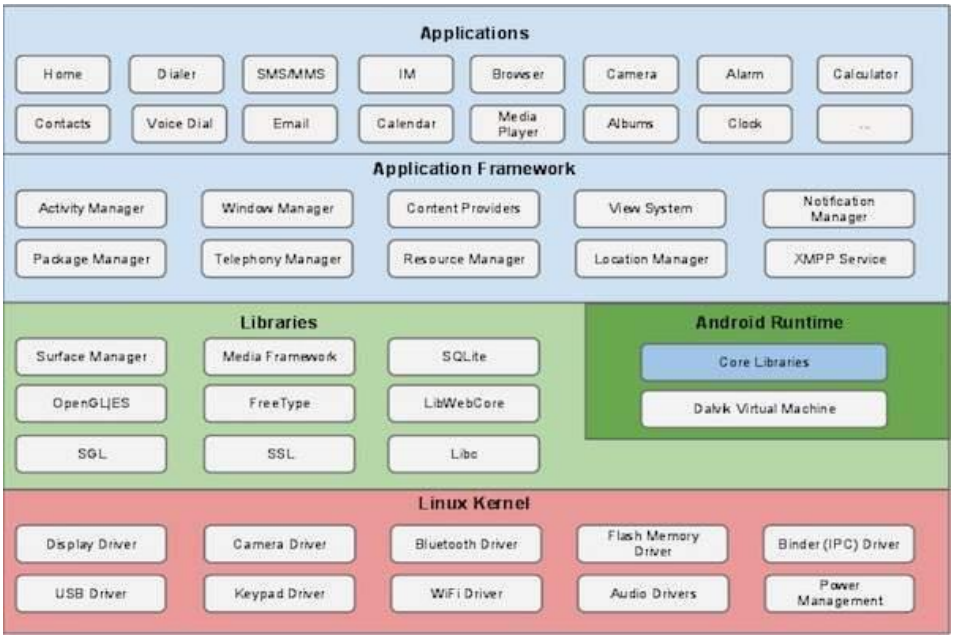


Fig 1- Android OS Overview

4. Design :

4.1 Structure of the system:

4.1.1 Class Diagram:

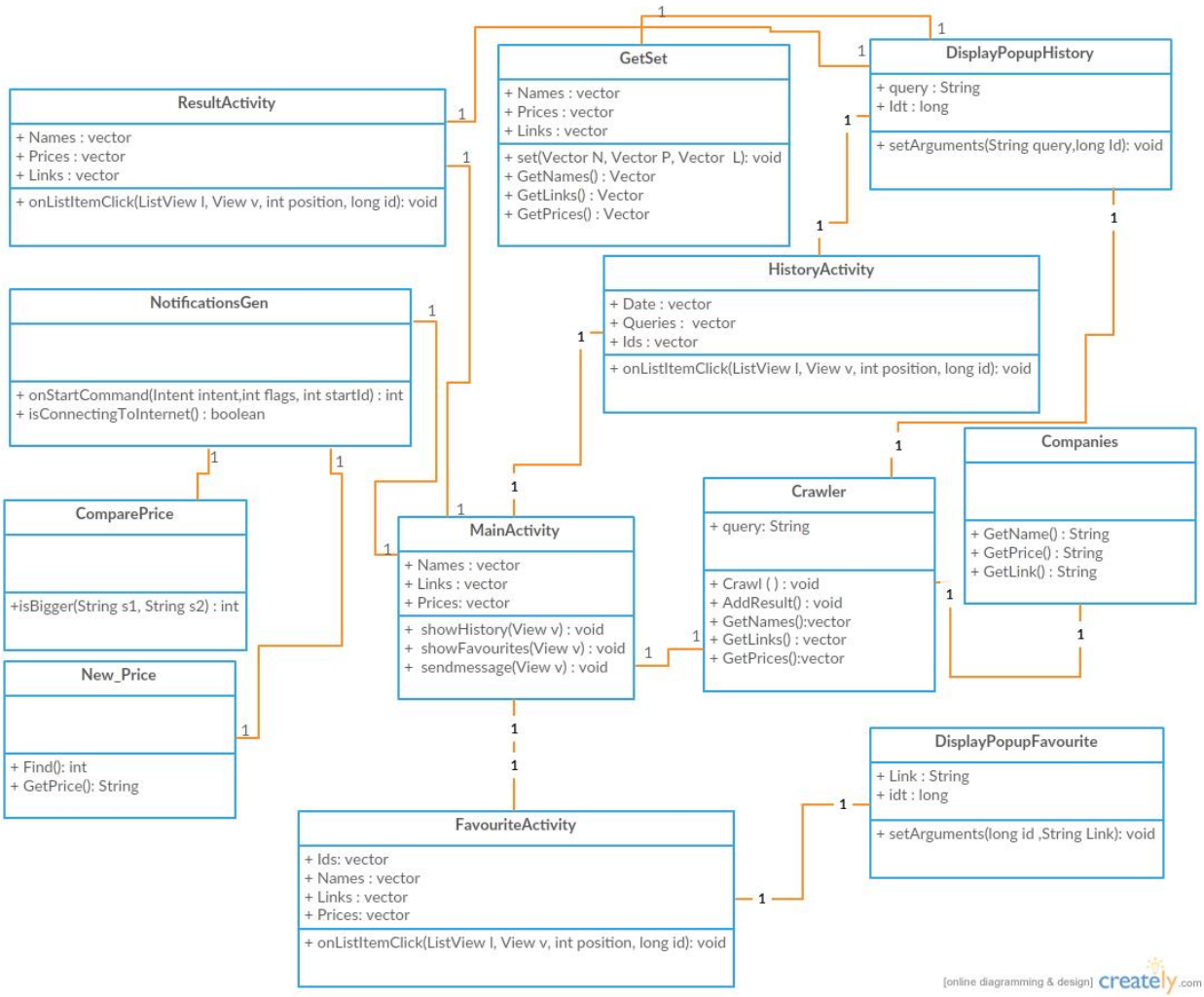


Fig 2 - Class Diagram of the system

Description of the Classes:

❖ MainActivity

Methods:

- ShowHistory:-
- ShowFavourites:-
- SendMessage:-

❖ FavouriteActivity

Methods:

- onListItemClick:-

❖ ResultActivity

Methods:

- onListItemClick :-

❖ HistoryActivity

Methods:

- onListItemClick :-

❖ DisplayPopupHistory

Methods:

- SetArguments :-

❖ DisplayPopupFavourite

Methods:

- SetArguments:

❖ Crawler:-

Methods:

- Crawl
- AddResult:
- GetNames:
- GetLinks:
- GetPrices:

❖ Companies:

Methods:

- GetName:
- GetPrice:
- GetLink:

❖ GetSet:

Methods:

- Set:
- GetNames:
- GetLinks:
- GetPrices:

❖ **NotificationsGen:**

Methods:

- onStartCommand:
- isConnectingToInternet:

❖ **ComparePrice:**

Methods:

- isBigger:

❖ **New_Price:**

Methods:

- Find:
- GetPrice:

4.2 Behavior Of The System:

4.2.1 Use Case Diagram:

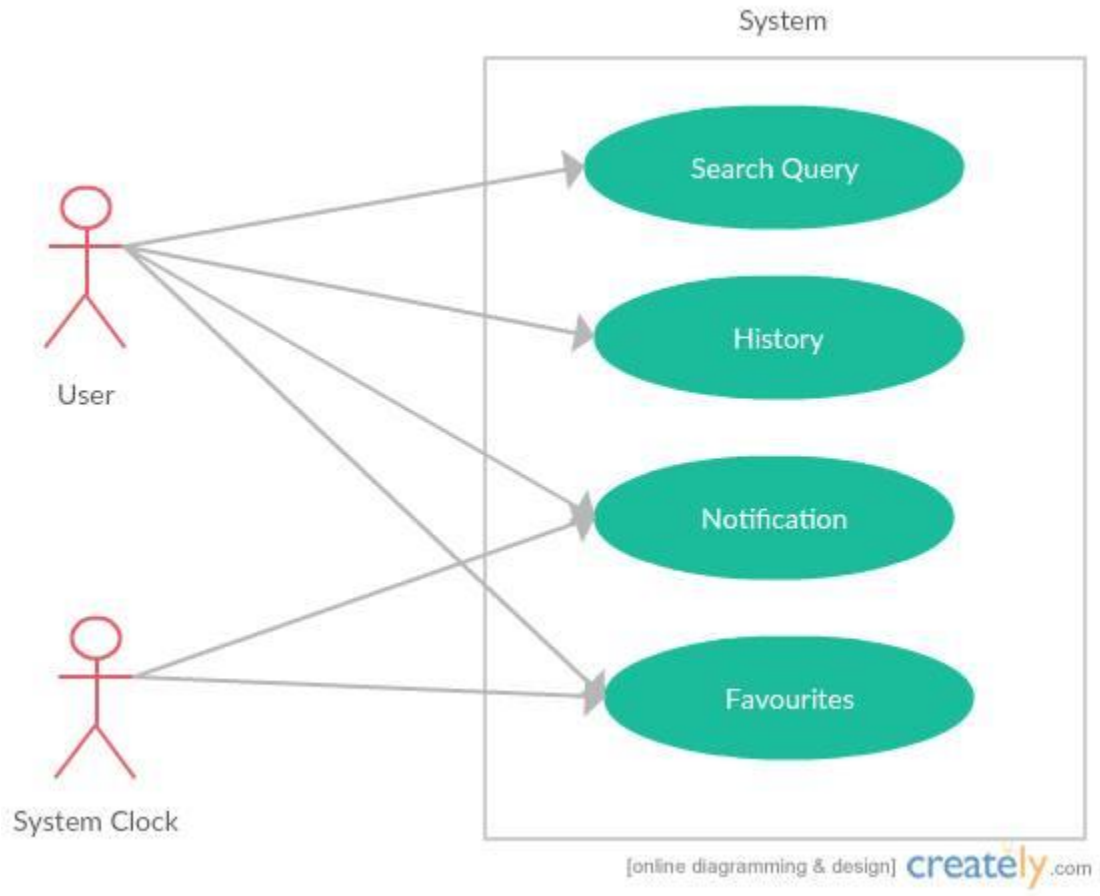


Fig 3 - Use Case Diagram of the System

4.2.2 Activity Diagram:

- **For "Searching" :-**

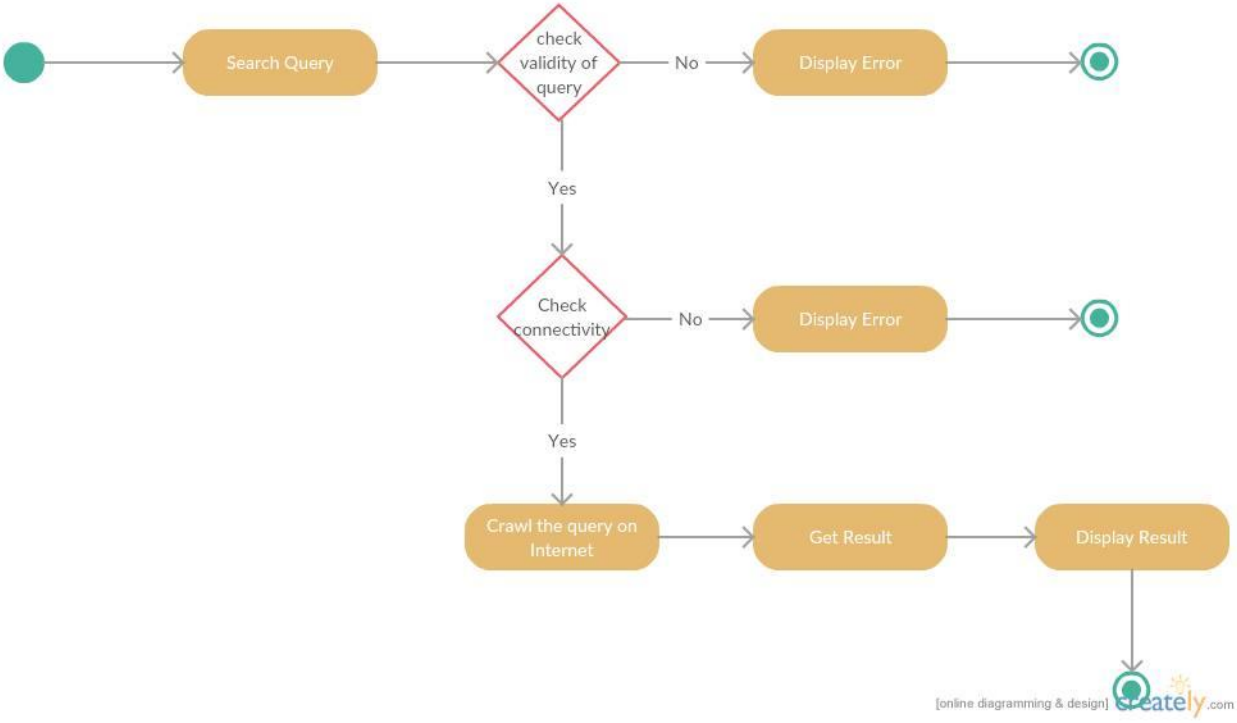


Fig 4 – Activity Diagram for search

- **For "Checking Price of Favourite Item" :-**

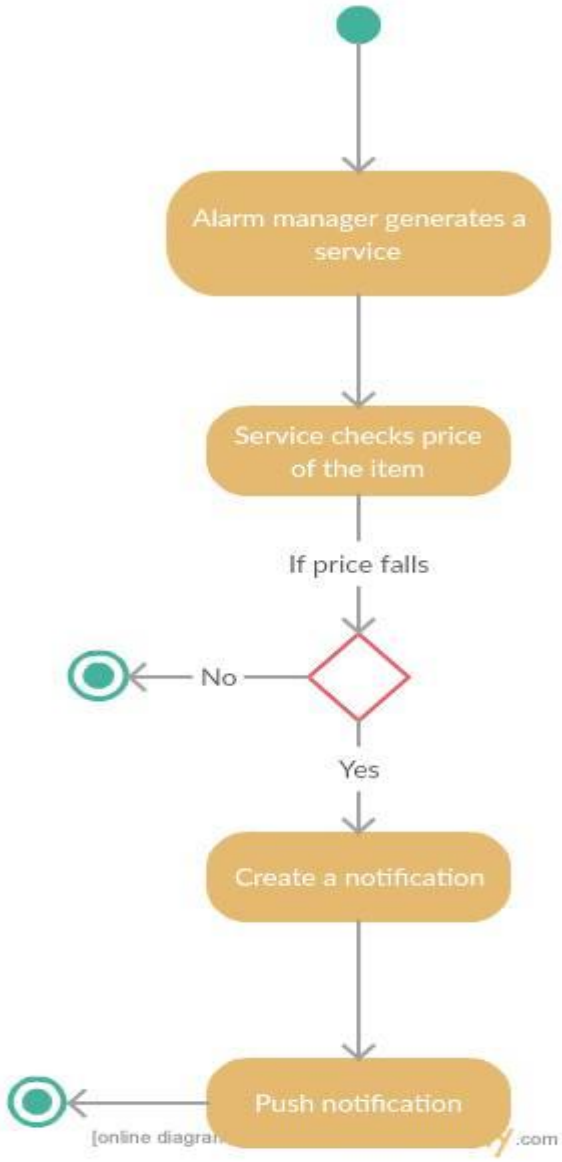


Fig 5 – Activity Diagram for Checking Price of Favourite Item

- **For "History":-**

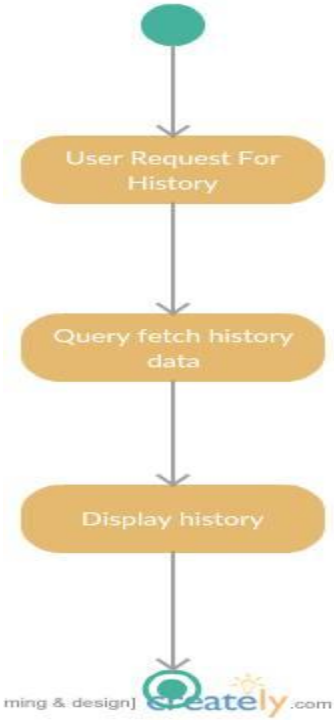
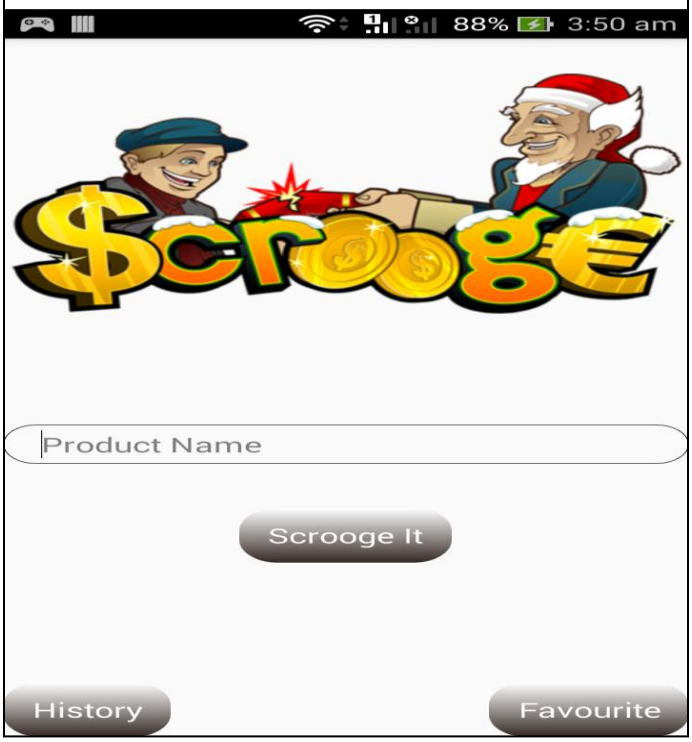


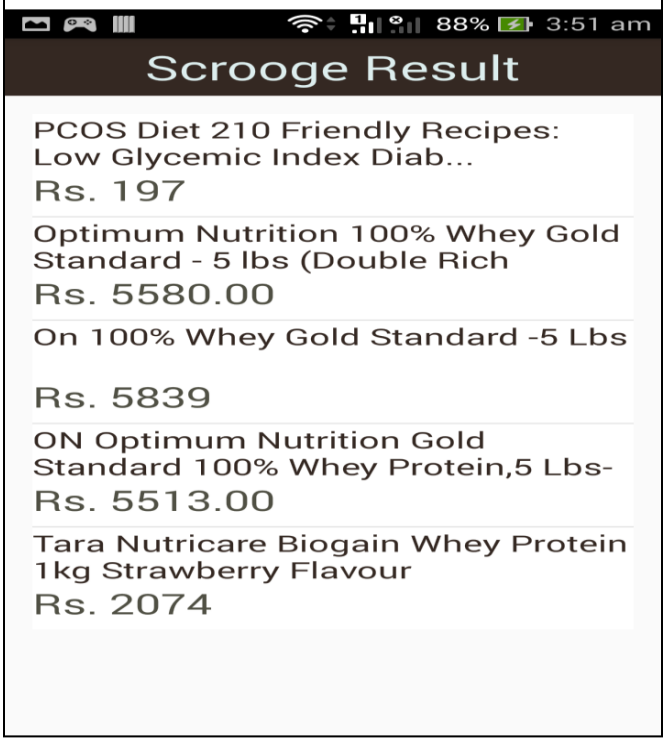
Fig 6 – Activity Diagram for History

5. Working Of Scrooge Android App :-

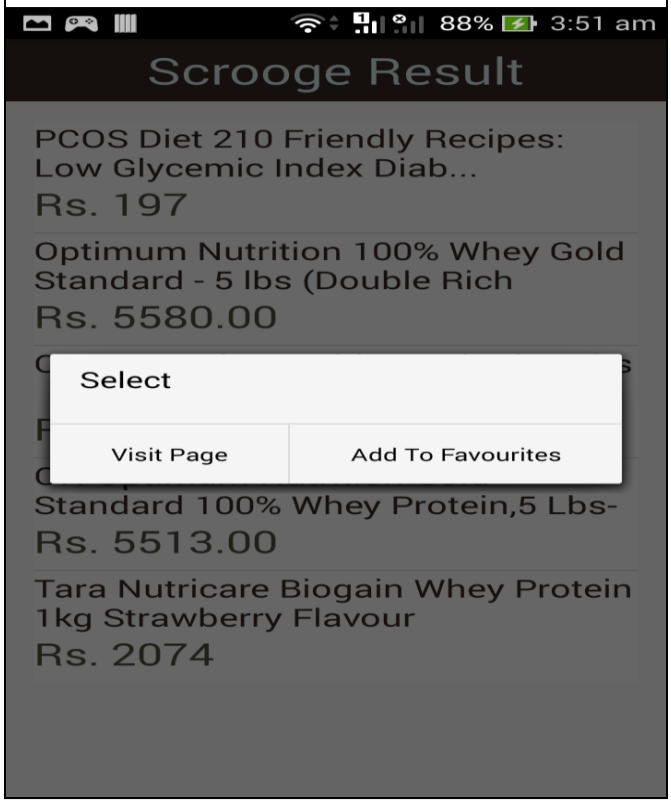
Main User Interface For Searching A Product



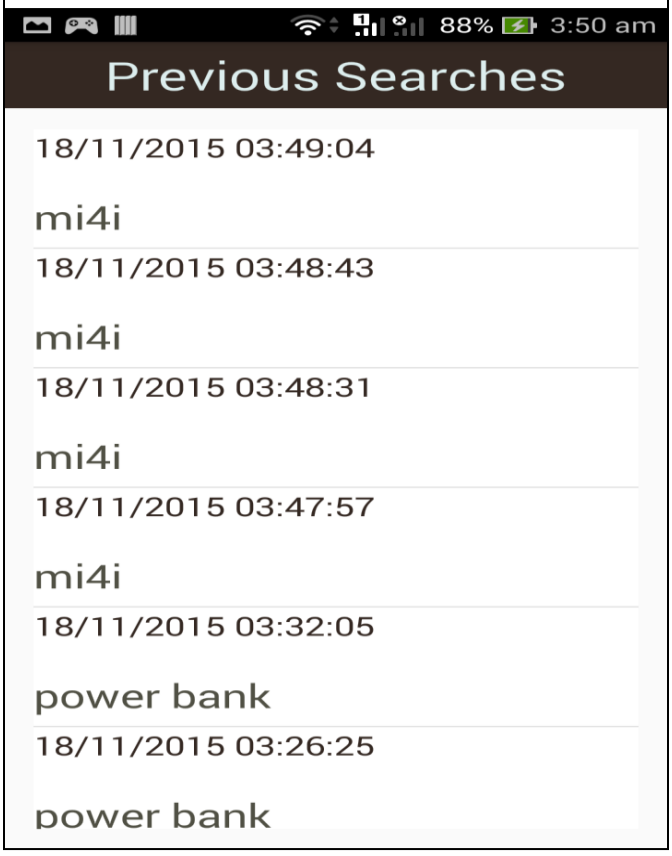
Product Search Result



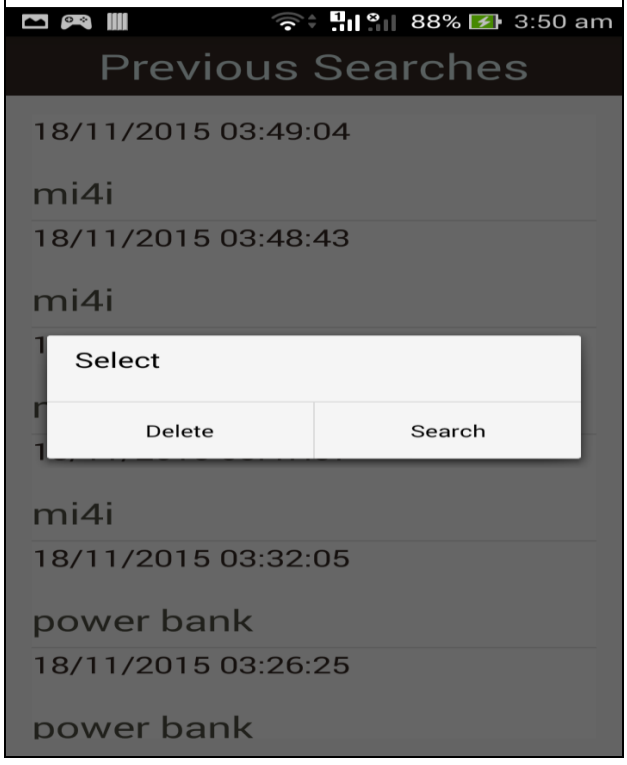
After Choosing a particular product on result Screen , User can VISIT PAGE or ADD TO FAVOURITES.



History Will be shown to the user as below.

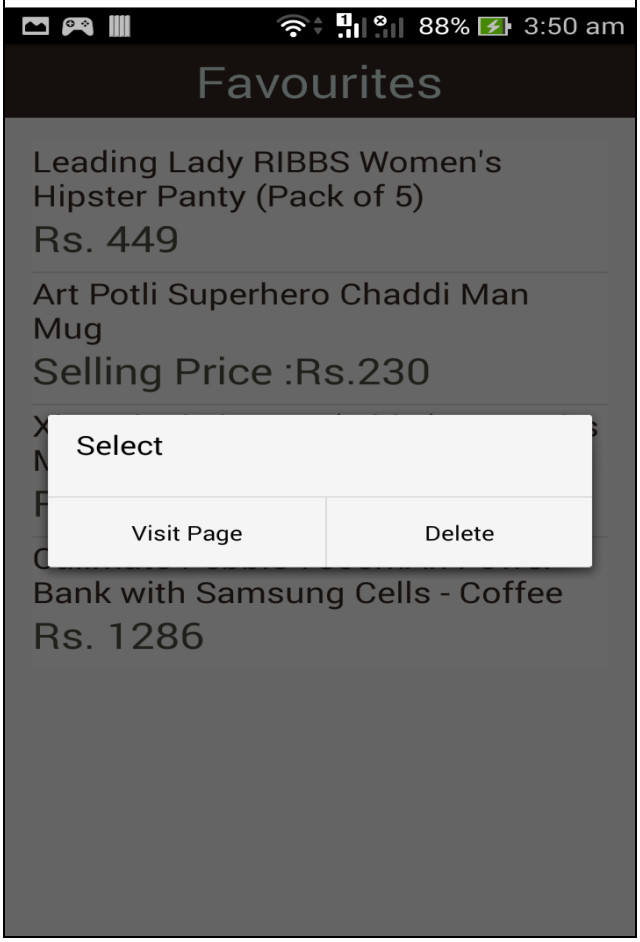


User Can DELETE OR SEARCH Again Any product From History Activity.



User Can also see the list Of Products Added to Favourites by him.

User Can Visit Page Or Delete From Favourites Activity.



6. Work For Future :

6.1 Improving Search result .

6.2 Adding More sites .

6.3 Improving UI of Application.

7. References:

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7.2 www.tutorialspoint.com/uml/

7.3 http://creately.com/

7.4 http://www.quora.com/Is-there-an-open-source-crawler-to-scrape-ecommerce-sites-product-catalog-key-elements-of-the-e-commerce-site