

E-Commerce Mobile Online Shopping (Android application)

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DECLARATION

We, hereby, declare that the work presented in this Thesis is the outcome of the investigation performed by us under the supervision of the Tamjid Rahman, Assistant Professor, Department of Computer Science, Stamford University Bangladesh. We also declare that no part of this Thesis and there of has been or is being submitted elsewhere for the award of any Degree or Diploma.

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ABSTRACT

Using a smart phone, which has a small screen, for browsing an online store is not an enjoyable experience. Using a device with a very small screen size is not appropriate since the web shop's functionalities are not optimized to be accessed from these devices. The solution was to develop both a server side plugin and a client side application. The application which was designed for a mobile device should have used a generic communication in order to connect to the plugin. The plugin was an online store's plugin letting the mobile application do the online shopping experience from a mobile device without using the web browser, which would obviously increase the device performance in browsing a web shop. The result was that the implemented plugin and the application worked for all of the E-commerce frameworks' instances, so instead of developing a server side plugin and a client side application for one single web shop, a variety of web shops have been supported with a single plugin and an application.

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Chapter 1

Introduction

1.1 Introduction:

This project is a mobile based shopping system for an existing shop. The project objective is to deliver the online shopping application into android platform. Online shopping is the process whereby consumers directly buy goods or services from a seller in real-time, without an intermediary service, over the Internet. It is a form of electronic commerce. This project is an attempt to provide the advantages of online shopping to customers of a real shop. It helps buying the products in the shop anywhere through internet by using an android device. Thus the customer will get the service of online shopping and home delivery from his favorite shop

1.2 PROJECT OBJECTIVE:

The objective of the project is to make an application in android platform to purchase items in an existing shop. In order to build such an application complete web support need to be provided. A complete and efficient web application which can provide the online shopping experience is the basic objective of the project. The web application can be implemented in the form of an android application with web view.

1.3 PROJECT OVERVIEW:

The central concept of the application is to allow the customer to shop virtually using the Internet and allow customers to buy the items and articles of their desire from the store. The information pertaining to the products are stores on an RDBMS at the server side (store). The Server process the customers and the items are shipped to the address submitted by them. The application was designed into two modules first is for the customers who wish to buy the articles. Second is for the storekeepers who maintains and updates the information pertaining to the articles and those of the customers. The end user of this product is a departmental store where the application is hosted on the web and the administrator maintains the database.

1.4 PROJECT SCOPE:

This system can be implemented to any shop in the locality or to multinational branded shops having retail outlet chains. The system recommends a facility to accept the orders 24*7 and a home delivery system which can make customers happy.

If shops are providing an online portal where their customers can enjoy easy shopping from anywhere, the shops won't customers to the trending online shops such as flipcart or ebay. Since the application is available in the Smartphone it is easily accessible and always available.

1.5 Goal and Criteria

The aim would be duplicating the abstract online store's functionality for the mobile device's client and providing a generic connection, so the application could be easily customized for each of the framework instances. For this to be achieved we need a similar connection to the one shown in Figure

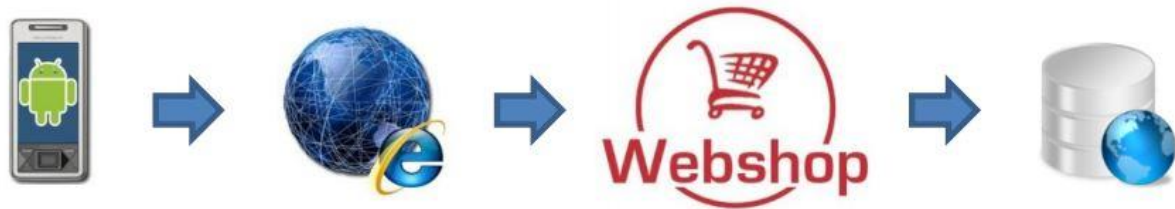


Figure1.1: Mobile connection to a web shop's database.

Depending on the framework's structure, they usually have some modules accessing the database, for handling all the functionalities required for an online store. The mobile device's client also needs the access to the database behind the framework to be able to reconstruct the normal functionalities of a web shop. This could be done by extending or writing some new modules on the server side and accessing them from the mobile device's client with the aid of Internet. The goal is reached if the client fulfills the functionalities required in the selected framework and fully duplicates what is happening during the online shopping.

1.6 Tools:

Tools allow developers to test and debug their code and used for testing the user facing interface of an application. Tools increase the abilities of developers and make easier, faster and efficient of his works.

The tools we are used in this project to attain our aim given below...

- Android Studio/Eclipse ADT
- Java
- XAMPP
- Apache
- MySQL
- phpMyAdmin

Chapter 2

Software Development Life Cycle

2.1 Software Development Life Cycle

The systems development life cycle (SDLC), also referred to as the application development life-cycle, is a term used in systems engineering, information systems and software engineering to describe a process for planning, creating, testing, and deploying an information system. The systems development life-cycle concept applies to a range of hardware and software configurations, as a system can be composed of hardware only, software only, or a combination of both.[4].

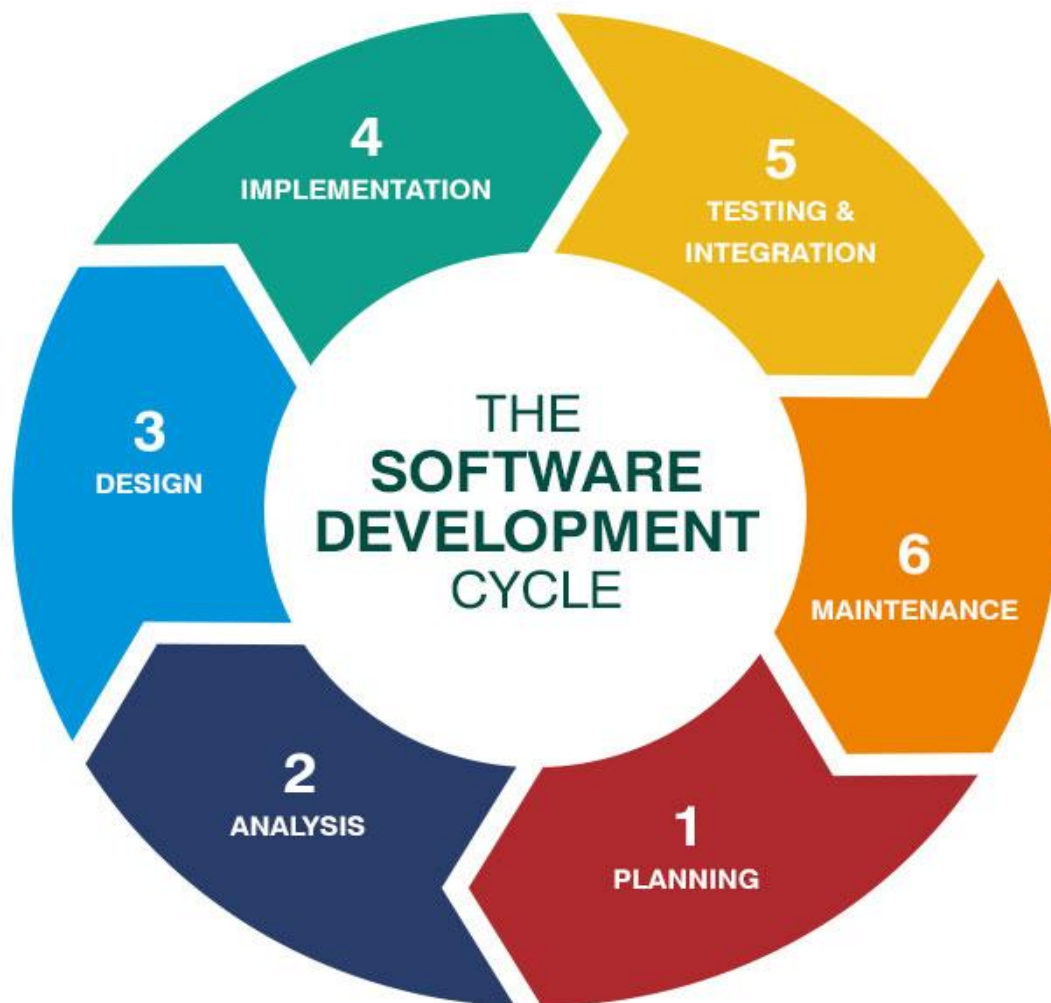


Figure 2.1 SDLC Cycle

2.2 SDLC Models

The software development models are the various processes or methodologies that are being selected for the development of the project depending on the project's aims and goals. There are many development life cycle models that have been developed in order to achieve different required objectives. The models specify the various stages of the process and the order in which they are carried out.[4]

The selection of model has very high impact on the testing that is carried out. It will define the what, where and when of our planned testing, influence regression testing and largely determines which test techniques to use.

There are various Software development models or methodologies. They are as follows:

1. Waterfall model
2. V model
3. Incremental model
4. RAD model
5. Agile model
6. Iterative model
7. Spiral model
8. Prototype model

Choosing right model for developing of the software product or application is very important. Based on the model the development and testing processes are carried out.

2.3 Scrutinizing the Project Model

Selecting accurate model for developing of the software invention or request is very significant. Founded on the model the expansion and testing processes are accepted out. As Waterfall Model is more traditional and easy to gather requirements and analyzing system, so we choose the model according to complete the project. This technique works well for big projects that may take numerous months to progress.

2.3.1 Waterfall Model

The waterfall model is a successive design procedure, used is software advance process, in which development is seen as graceful steadily upwards through the stages of beginning, opening, design, building, testing, implementation and maintenance [5]. It is also referred to as a linear-successive life cycle model, it is very humble to recognize and custom, In a waterfall model, each stage must be completed fully before the next stage can begin. This type of model is essential charity for the plan which is small and there are no inexact necessities, At the end of each stage, a review takes place to control if the plan is on the right path and whether or not it endure or abandon the project, In this model the testing starts only after the development is comprehensive. In waterfall model do not edge [6].

2.3.2 Waterfall Model Design

Waterfall method was major SDLC model to used usually in Software Engineering to confirm success of the project, In “The waterfall” methodology, the entire route of software development acts as the input for the next segment successively. Ensuing is an consequence of a phase acts as the input for the next segment successively [7]. Ensuing an illustrative representation of dissimilar periods of waterfall model:

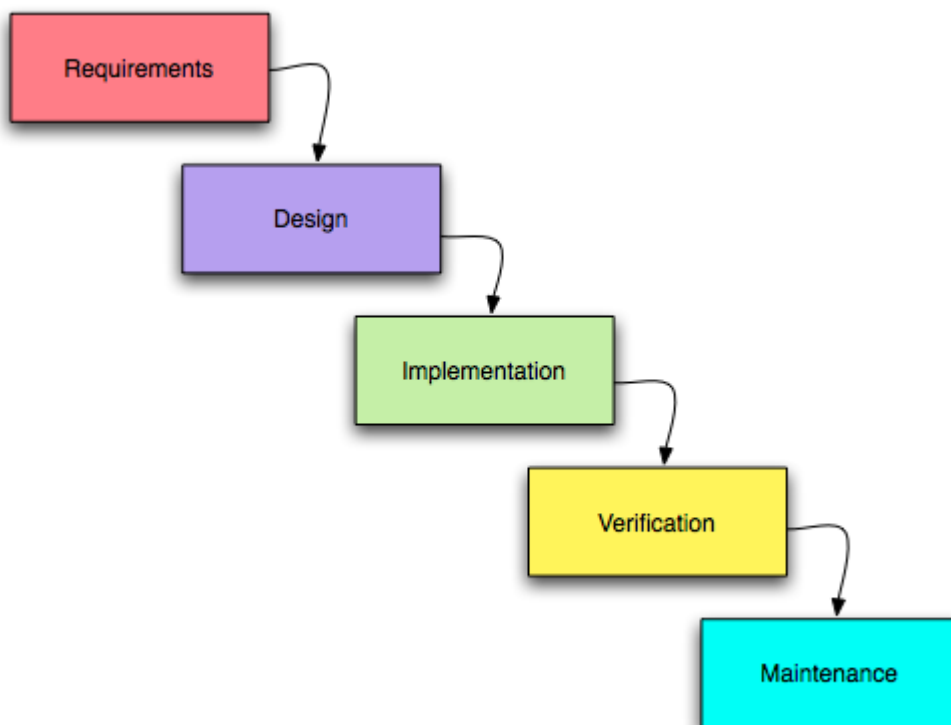


Figure 2.2 Waterfall model

2.3.3 Waterfall Model Phases

This segment is acute to the successfully complete project, hopes need to be fleshed out in inordinate part and familiar. This an iterative procedure with much statement taking place between investors, end customers and the project side. The following techniques can be used to gather supplies [8];

1. **Requirement gathering and analysis:** Business supplies are assembled in this stage. This segment is the main attention of the project manager and stake holders. Meetings

like; that is going to habit the scheme? How will they use the scheme? What statistics should be input into the scheme? What facts should be output by the organization? These general question can get answer through the requirement gathering time

2. **Design:** In this segment the scheme and software plan is prepared from the obligation stipulation which were deliberate in the major phase. System Design helps in stipulating hardware and system requirement and also helps in crucial overall system architecture. The system conditions serve as input for the following stage of the perfect. In this phase the tester comes up with the test strategy, where they reference what to trial, how to trial.
3. **Implementation:** On receiving system design documents, the work is alienated in units and actual coding is started. Since, in this stage the code is formed so it is the main attention for the developer. coding is the longest period of the software development life cycle.
4. **Testing:** After implementation developed it is tested through the necessities to make sure that the product is truly answering the request addressed and gathered during the necessities phase. Through this period all sorts of functional testing like unit testing integration testing , system testing ,acceptance testing are done as well as non-functional testing are complete
5. **Deployment:** After effective testing the product is organized to the customer for their use, as soon as the product is assumed to the patrons they will first di the beta testing, if any changes are required or if any bugs are caught then they will crash it to the engineering team, once those variations are made or the bugs are fixed then the final placement will happen
6. **Maintenance:** Once when the clients starts using the advanced system the actual glitches comes up and needs to be answered from time to time. This procedure where the care is taken for the advanced artefact is known as maintenance.

2.4 Waterfall Model Advantages and Disadvantages

2.4.1 Advantages of Waterfall Model:

- This model is simple and easy to understand and use.
- In this model periods are treated and finished one at time. The stages of this model never intersection
- It is easy to achieve owing to the inflexibility of the model- each phase has specific deliverables and an assessment procedure.
- Waterfall model works well for minor projects where necessities are very well understood [8].

2.4.2 Disadvantages of Waterfall Model:

- Once a request is in the testing stage, it is very difficult to go back and change something that was not well-thought out in the idea stage
- Working software cannot not be produced pending late through the life cycle.
- High quantities of risk and doubt.
- Poor model for long and ongoing projects.
- Not appropriate for the projects where necessities are at a reasonable to high risk altering [8]

Chapter 3

System Tools Definition

3.1 System Tools:

In this project we have used the following tools for our system requirement.

Hardware:

- Laptop
- Core i3
- Hard Disk 1TD
- RAM 4GB

Software:

1. Android studio 2.2/ Eclipse ADT Bundle
2. Xampp Server (Apache & MySql)
3. Java Development Kit

3.2. Android

Android is a mobile operating system developed by Google, based on the Linux kernel and designed primarily for mobile devices such as smartphones and tablets. Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input. In addition to touchscreen devices, Google has further developed Android TV for televisions, Android Auto for cars, and Android Wear for wrist watches, each with a specialized user interface. Variants of Android are also used on notebooks, game consoles, digital cameras, and other electronics.

This operating system is based on version 2.6 of Linux, so it has a monolithic system kernel, what means that all system functions and drivers are grouped into one block of code.

Android consists of five layers:

- The Linux kernel 2.6-which includes useful drivers that allows for example WiFi or Bluetooth.
- The library written in C and C++ that provide higher level functionality such as an HTML engine, or a database (SQLite).
- A runtime environment for applications based on a virtual machine, made for inefficient machines such as telephones. The aim is to translate JAVA in machine language understood by Android.
- A JAVA framework that allows applications running on the virtual machine to organize and cooperate [9].

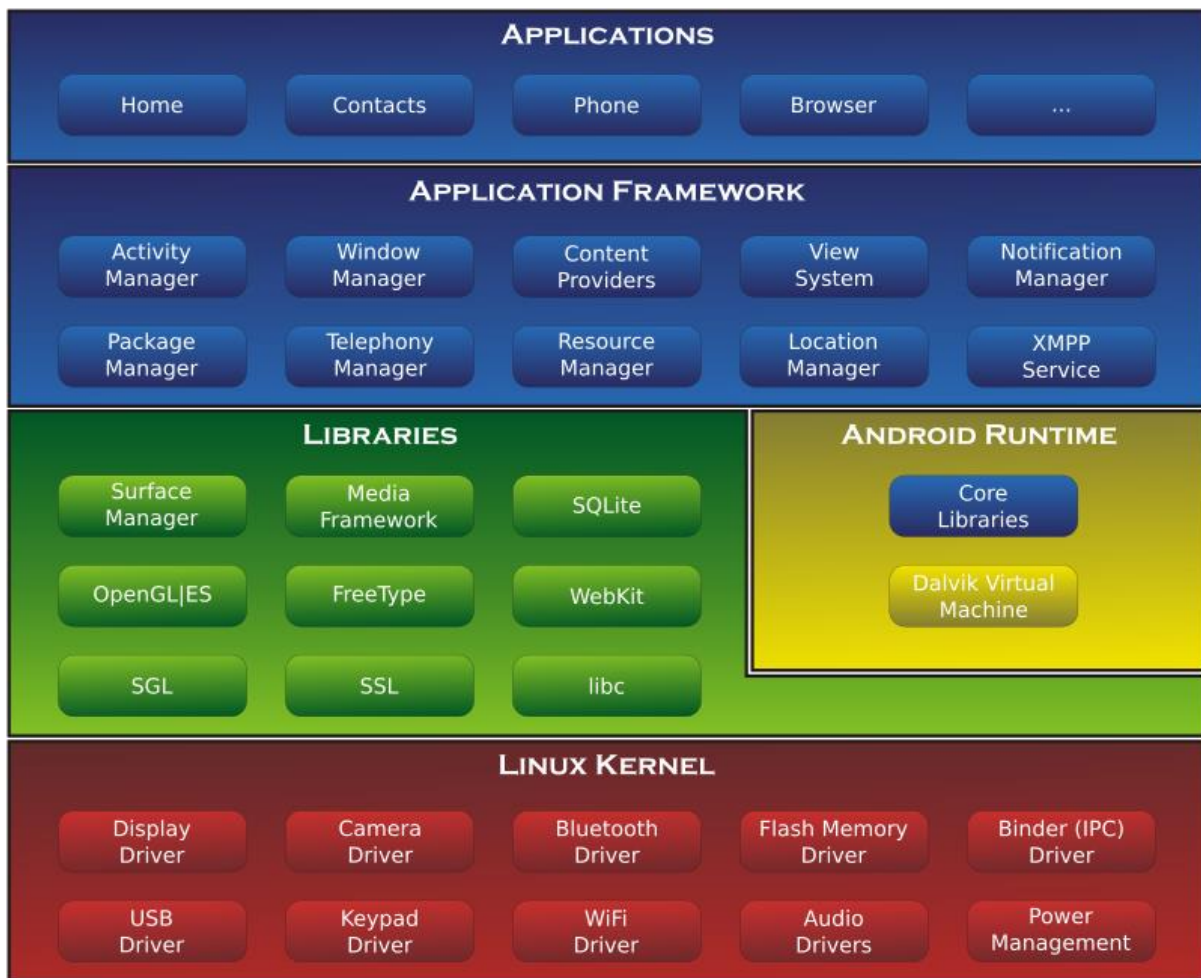


Figure 3.1 Android-System-Architecture

3.3 History of Android

Initially developed by Android, Inc., which Google bought in 2005,¹ Android was unveiled in 2007 along with the founding of the Open Handset Alliance – a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices. As of July 2013, the Google Play store has had over one million Android applications ("apps") published – including many "business-class apps" that rival competing mobile platforms – and over 50 billion applications downloaded. An April–May 2013 survey of mobile application developers found that 71% of developers create applications for Android, and a 2015 survey found that 40% of full-time professional developers see Android as their priority target platform, which is comparable to Apples iOS on 37% with both platforms far above others. In September 2015, Android had 1.4 billion monthly active devices.

Android's source code is released by Google under open source licenses, although most Android devices ultimately ship with a combination of open source and proprietary software,

including proprietary software required for accessing Google services. Android is popular with technology companies that require a ready-made, low-cost and customizable operating system for high-tech devices. Its open nature has encouraged a large community of developers and enthusiasts to use the open-source code as a foundation for community-driven projects, which deliver updates to older devices, add new features for advanced users or bring Android to devices originally shipped with other operating systems.

Android has seen numerous updates which have incrementally improved the operating system, adding new features and fixing bugs in previous releases. Each major release is named in alphabetical order after a dessert or sugary treat; for example, version 1.5 "Cupcake" was followed by 1.6 "Donut". In 2010, Google launched its Nexus series of devices – a line of smartphones and tablets running the Android operating system, and built by manufacturing partners. HTC collaborated with Google to release the first Nexus smartphone, the Nexus One. Google has since updated the series with newer devices, such as the Nexus 5 phone (made by LG) and the Nexus 7 tablet (made by Asus). Google releases the Nexus phones and tablets to act as their flagship Android devices, demonstrating Android's latest software and hardware features. From 2013 until 2015, Google offered several Google Play Edition devices over Google Play. While not carrying the Google Nexus branding, these were Google-customized Android phones and tablets that also ran the latest version of Android, free from manufacturer or carrier modifications.

From 2010 to 2013, Hugo Barra served as product spokesperson, representing Android at press conferences and Google I/O, Google's annual developer-focused conference. Barra's product involvement included the entire Android ecosystem of software and hardware, including Honeycomb, Ice Cream Sandwich, Jelly Bean and KitKat operating system launches, the Nexus 4 and Nexus 5 smartphones, the Nexus 7 and Nexus 10 tablets and other related products such as Google Now and Google Voice Search Google's speech recognition product comparable to Apple's Siri In 2013, Barra left the Android team for Chinese smartphone maker Xiaomi The same year, Larry Page announced in a blog post that Andy Rubin had moved from the Android division to take on new projects at Google. He was replaced by Sundar Pichai who became the new head of Android and Chrome OS and, later, by Hiroshi Lockheimer when Pichai became CEO of Google.

In 2014, Google launched Android One, a line of smartphones mainly targeting customers in the developing world. In May 2015, Google announced Project Brillo as a cut-down version of Android that uses its lower levels (excluding the user interface), intended for the "Internet of Things" embedded systems.

University of Cambridge research in 2015, concluded that almost 90% of Android phones in use had known but unpatched security vulnerabilities due to lack of updates and support. In a year since (mid-2015) that report, well over a billion Android smartphones have been sold (more than the just over billion sold in 2014); and Android 5.0 (with better security) and later, went from 5.4% market share to currently over half, which means that the 90% number must be very outdated; those phones now very likely represent less than half of all Android phones. Recent devices do get security updates Android 5.0 introduced an improved centralized update system.

3.4 Android Applications

Applications ("apps"), which extend the functionality of devices, are written using the Android software development kit (SDK) and, often, the Java programming language that has complete access to the Android APIs. Java may be combined with C /C++, together with a choice of non-default runtimes that allow better C++ support; the Go programming language is also supported since its version 1.4, which can also be used exclusively although with a restricted set of Android APIs. The SDK includes a comprehensive set of development tools, including a debugger, software libraries, a handset emulator based on QEMU, documentation, sample code, and tutorials. Initially, Google's supported integrated development environment (IDE) was Eclipse using the Android Development Tools (ADT) plugin; in December 2014, Google released Android Studio, based on IntelliJ IDEA, as its primary IDE for Android application development. Other development tools are available, including a native development kit (NDK) for applications or extensions in C or C++, Google App Inventor, a visual environment for novice programmers, and various cross platform mobile web applications frameworks. In January 2014, Google unveiled an framework based on Apache Cordova for porting Chrome HTML 5 web applications to Android, wrapped in a native application shell.

Android has a growing selection of third-party applications, which can be acquired by users by downloading and installing the application's APK (Android application package) file, or by downloading them using an application store program that allows users to install, update, and remove applications from their devices. Google Play Store is the primary application store installed on Android devices that comply with Google's compatibility requirements and license the Google Mobile Services software. Google Play Store allows users to browse, download and update applications published by Google and third-party developers; as of July 2013, there are more than one million applications available for Android in Play Store .As of July 2013, 50 billion applications have been installed. Some carriers offer direct carrier billing for Google Play application purchases, where the cost of the application is added to the user's monthly bill.

Due to the open nature of Android, a number of third-party application marketplaces also exist for Android, either to provide a substitute for devices that are not allowed to ship with Google Play Store, provide applications that cannot be offered on Google Play Store due to policy violations, or for other reasons.

3.5 Other platform Application

3.5.1 Windows mobile Application

This type of application based on windows mobile operating system and based on windows CE (WinCE). WinCE is compact OS specifically designed for pervasive devices .it is focused on providing a consistent interface for application on various hardware platforms which emphasizes portability by providing the user with win32 api. Software development for windows mobile application is done using visual C++ making use of Microsoft's NET

framework. The SDK is setup to work using visual studio as the integrated Development Environment

Windows application was designed for flexibility and the developer in mind. For that reason it was designed to support lots of pre-emptive multitasking. It supports a whopping 256 priority levels for threads and up to 32 processes. It is ideal for smart phone because the users typically demand multitasking and want to be productive as possible [9]

3.5.2 Symbian mobile Application

The Symbian application was specifically for mobile devices.it has very small memory footprint and low power consumption.it is an open operating system. Most of the code is in C++.very little code exists in C or assembly.it is optimized, heavily asynchronous, pre-emptive, multitasking.it has Symbian application engines (20%), Symbian system layer (55%),kernel (5%) and UL design (20%)[10]

3.5.3 Apple (ISO) mobile Application

This type of application based on Swift or Objective-C (with some elements optionally in C or C++). ISO application was designed for flexibility and the developer in mind. The application is utilized in apple only hardware products including the iPhone and iPad. ISO has been a rapid rise in popularity and garnered a large and dedicated user base. It has seamless utilization of the multi-touch. It not an open source and most of them are paid .it does come with some limitation.[11]

3.6 Difference Between Android Application and Other Application

Overtime, though we realised that perhaps an android that is modern with a lot more flexibility in terms of a structured coding pattern with scope for applications that we deliver to perform better is required. In a nutshell, this is the reason behind the switchover to android

- Applications

- Google applications

Android includes most of the time many Google applications like Gmail, YouTube or Maps. These applications are delivered with the machine most of the time, except in certain cases, such as some phones running android on which the provider has replaced Google applications by its own applications.

- widgets

With android, it is possible to use widgets which are small tools that can most often get information. These widgets are directly visible on the main window.

- Android Market

This is an online software store to buy applications. Developers who created applications can add them into the store, and these applications can be downloaded by users, they can be both free and paid.

- Multitasking

Android allows multitasking in the sense that multiple applications can run simultaneously. With Task Manager it is possible view all running tasks and to switch from one to another easily.

- SDK

A development kit has been put at disposal of everybody. Accordingly, any developer can create their own applications, or change the android platform. This kit contains a set of libraries, powerful tools for debugging and development, a phone emulator, thorough documentation, FAQs and tutorials.

- Modifiability:

This allows everyone to use, improve or transform the functions of Android for example transform the interface in function of uses, to transform the platform in a real system embedded Linux.

3.7 Android is user Friendly Application

Android is a free and Open Source. It is designed for the development of different application according to the client requirements. It represents a simple, speed so that you can express yourself in coding very well and become creative every time with more ideas. The unique thing about the android is that it is very expressive and beautiful coding platform and that's why i am very sure about that you will get the good experience when you will do coding with this platform.

As we all quite aware about the Android is a very demanding in the market today. In android you can get multiple options on it. And I just like to add that android is the platform where you must love to do coding as it is provide a better web environment to us. Now its new updated version is also released frequently so it gives the healthy competition to other technologies also. As per my knowledge conferences was already held in different location to make sense that people will aware about new technology and at least you stay with this industry for a longtime.

It is built by professional developers for the people like you who is very passionate about coding and want to grow with the technology with great sense of understanding on it.

Android is for those developers who is very much interested to do a powerful coding in their own way. The only reason to create this user friendly application by developers to provide you a better platform as they can. You can also compare the features of application with others so you can get more idea about why you have to use an android. I hope that you all will keep doing quality work on the user friendly like android application and give the best work as you can using advance technology for your precious client

3.8 XAMPP

XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P).

3.9 Apache

The Apache HTTP Server, colloquially called Apache, is the world's most used web server software. Apache played a key role in the initial growth of the World Wide Web. The Apache HTTP Server Project is a collaborative software development effort aimed at creating a robust, commercial-grade, feature-rich and freely available source code implementation of an HTTP (Web) server. The project is jointly managed by a group of volunteers located around the world, using the Internet and the Web to communicate, plan, and develop the server and its related documentation.

3.10 MySQL

MySQL is an open-source relational database management system (RDBMS). MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open-source web application software stack (and other "AMP" stacks). MySQL can be built and installed manually from source code, but it is more commonly installed from a binary package unless special customizations are required. On most Linux distributions, the package management system can download and install MySQL with minimal effort, though further configuration is often required to adjust security and optimization settings.

3.11 phpMyAdmin

phpMyAdmin is a free and open source tool written in PHP intended to handle the administration of MySQL or MariaDB with the use of a web browser. It can perform various tasks such as creating, modifying or deleting databases, tables, fields or rows; executing SQL statements; or managing users and permissions.

The phpMyAdmin program is handy for performing maintenance operations on tables, backing up information, and editing things directly in the event that WordPress is not working. Occasionally, in the Support Forums, someone will post a SQL query of some benefit or other that can be run using phpMyAdmin. Although many of the same tasks can be performed on the MySQL command line, doing so is not an option for many people.

Chapter 4

Features and Architectures

4.1 Use Cases

The selected frameworks have been analyzed to discover the required system features. Since the online shopping process is almost always the same in a generic way, it could be generalized.

According to the abstract web shop, the following features are necessary for the whole online shopping process from a mobile device.

- Login
- Browse category
- Search product
- View product description
- Add product to the cart
- Remove product
- Change quantity
- Checkout receipt
- Check item quantity
- Paying order
- Payment method

This chapter discusses about features and requirements of the system that can solve the problem. The first section considers how the mobile shopping process looks like in general. In this section, the use case diagram will show required features in detail. In the second section, the functional and non-functional requirements will be addressed for the mentioned features while making it easy in the upcoming sections to reference to different requirements.

As the choice of development, the waterfall method was chosen since the project's plan or project's requirements were unlikely to change and the testing results or customer's feedback were not supposed to effect the project. So each model's phase (project planning, analysis, design, implementation, etc.) was accomplished before moving on to the next phase.



Figure4.1: Online shopping use case diagram

Above figure shows the use case diagram for the abstract online store and contains different features of shopping process. In the following sections, a brief description, flow of events, actors, preconditions and post conditions for each feature of the use case diagram has been presented and that will help determining the requirements in the next step.

4.2 Architecture and Design

The first section of this chapter describes the overall architecture and design which is the overview of the solution implementing the requirements in the abstract level.

4.2.1 Overall Architecture and Design

Different instances of web shops have more or less same functionalities on the abstract level. Dedicated plugins inheriting from an abstract plugin could be used to implement a general communication protocol. Thus a client could communicate with these plugins and could also be easily instantiated in order to match a particular web shop.

The picked up frameworks have similar architectures, and to show the server side architecture and design, the general communication to an abstract web shop would be discussed.

Now Figure 1.1 could be presented more precise as shown in Figure

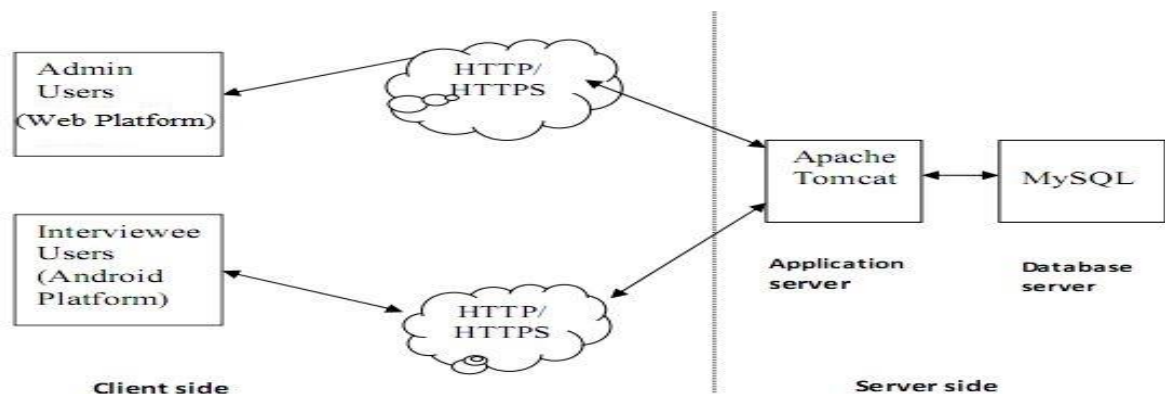


Figure4.2 : Mobile's client connection to a web shop's plugin and database.

Instead of the Android's web browser, the Android's dedicated client connects to the Internet as shown in Figure 4.1 (arrow A). Using the HTTP Client methods, the client connects itself to the plugin which is installed on the server side (arrow B). The plugin which is a PHP module in this case, has the required functions to communicate with the MySQL database (arrow C).

4.2.2 Server Side

On the server side, what matters the most is the communication between the plugin and the database. The plugin should have functions for running different queries on the database, so it could respond to the client's requests which have been fully explained in the features and requirements chapter

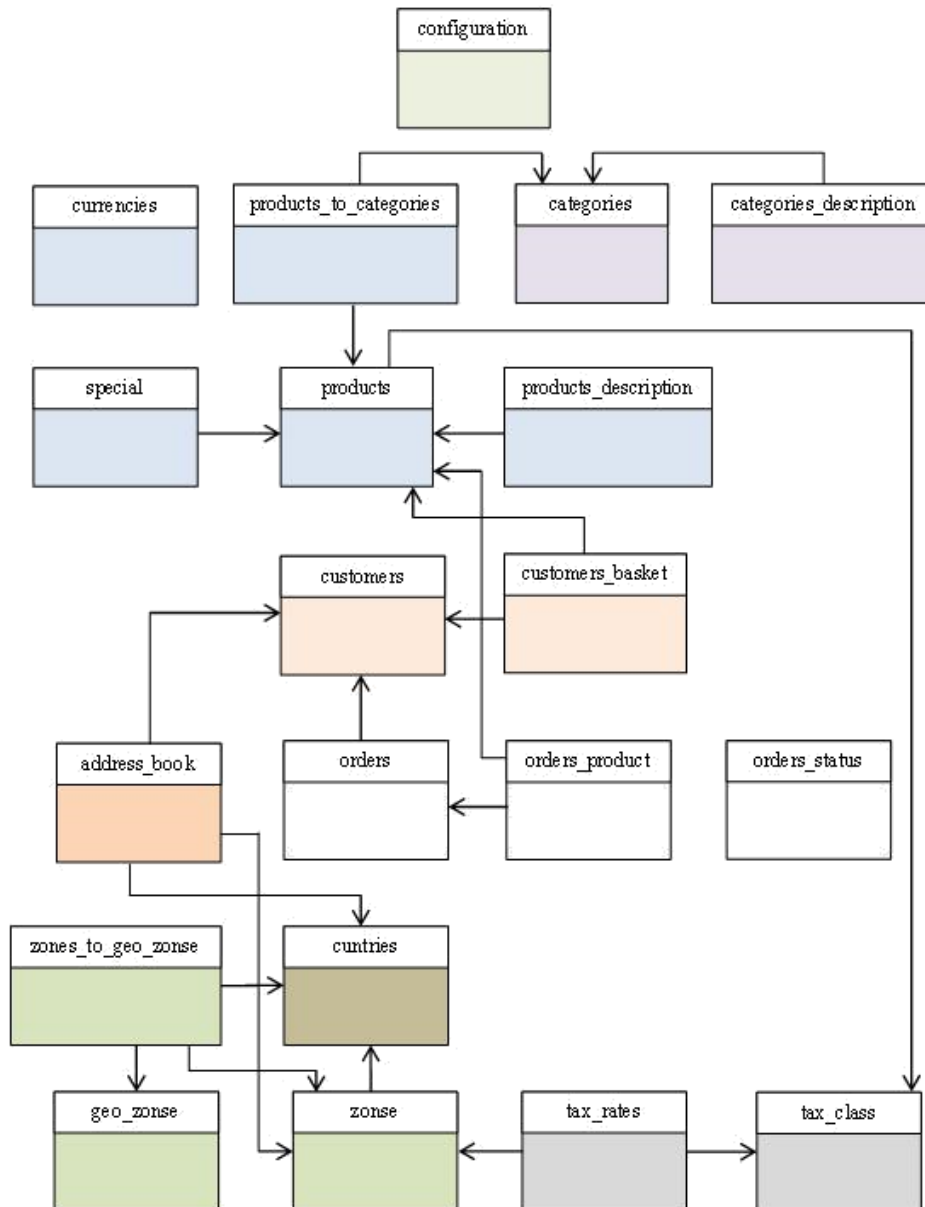


Figure 4.3: The framework's database structure.

4.2.3 Client Side

The client must connect to the server side for making the connection and sending and getting the required data. These data should be stored in appropriate data structures and be used in shaping the user interface in the next step. The client's class diagram has been shown in Figure 4.3.

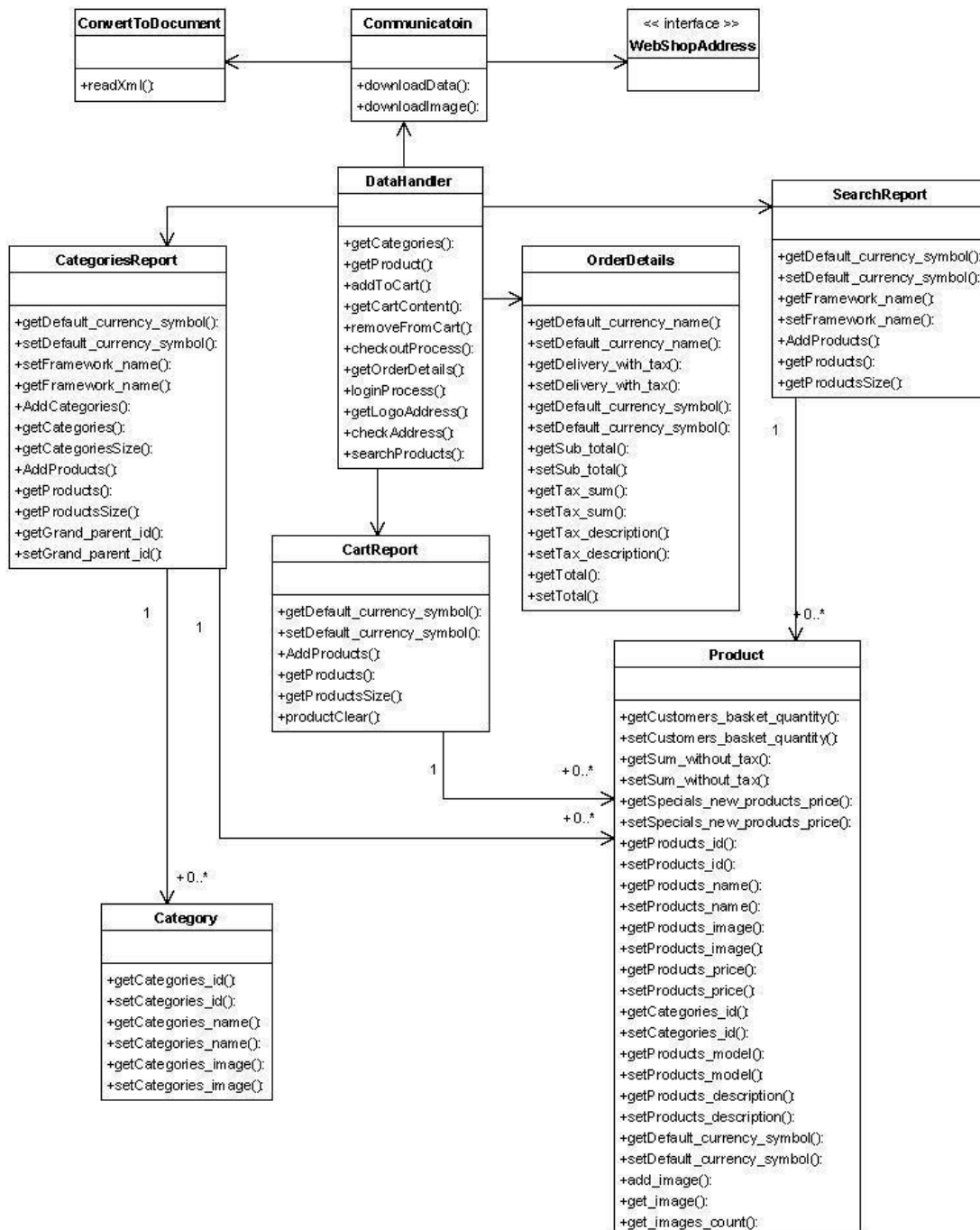


Figure 4.4: Client side class diagram.

Chapter 5

Software Overview

5.1 Android

5.1.1 Front-end

Front-end and back-end are terms used to characterize program interfaces and services relative to the initial user of these interfaces and services. (The "user" may be a human being or a program.) A "front-end" application is one that application users interact with directly. A native mobile app is developed for a particular mobile platform and is written in a language that is supported by the operating system of that platform. Since a native app can fully leverage a device's hardware and functionality, it offers the best user experience. This is the end design UI that customers would use in their mobile phones



Figure 5.1: Front End of our app

5.1.2 Back-end

A "back-end" application or program serves indirectly in support of the front-end services, usually by being closer to the required resource or having the capability to communicate with the required resource. The back-end application may interact directly with the front-end or, perhaps more typically, is a program called from an intermediate program that mediates front-end and back-end activities. Here are some glimpses of our back-end of Eclipse


```

strings.xml  AdapterInformation.java  SwipeTabFragment.java  Constant.java  ActivityAbout.java x
1 package com.rif.ecommerce;
2
3+ import android.app.ActionBar;
9
10 public class ActivityAbout extends Activity {
11     /** Called when the activity is first created. */
12+ public void onCreate(Bundle savedInstanceState) {
13         super.onCreate(savedInstanceState);
14         setContentView(R.layout.about);
15
16         ActionBar bar = getActionBar();
17         bar.setBackgroundDrawable(new ColorDrawable(getResources().getColor(R.color.header)));
18         bar.setTitle("About");
19         bar.setDisplayHomeAsUpEnabled(true);
20         bar.setHomeButtonEnabled(true);
21     }
22
23+ @Override
24     public boolean onOptionsItemSelected(MenuItem item) {
25         switch (item.getItemId()) {
26             case android.R.id.home:

```

Figures5.2: Android/JAVA IDE Sample Code

```

1 package com.rif.ecommerce;
2
3+ import java.io.IOException;
36
37 @SuppressWarnings("NewApi")
38 public class MainActivity extends FragmentActivity {
39     private DrawerLayout mDrawerLayout;
40     private ListView mDrawerList;
41     private ActionBarDrawerToggle mDrawerToggle;
42
43     // nav drawer title
44     private CharSequence mDrawerTitle;
45
46     // used to store app title
47     private CharSequence mTitle;
48
49     // slide menu items
50     private String[] navMenuTitles;
51     private TypedArray navMenuIcons;
52
53     private ArrayList<NavDrawerItem> navDrawerItems;

```

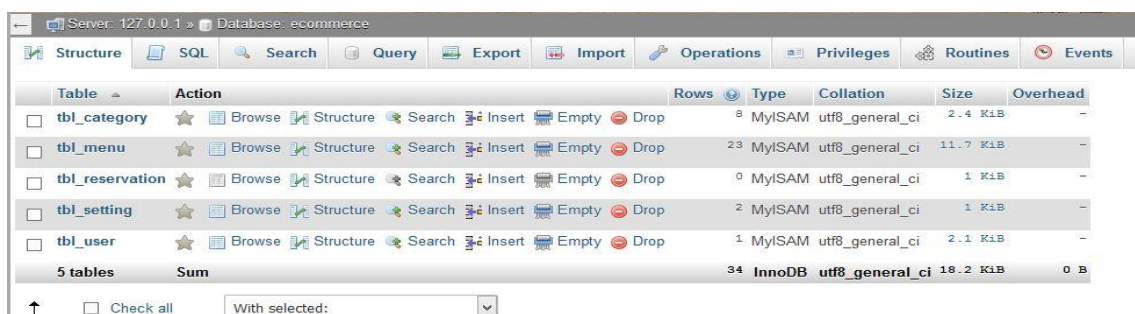
Figures5.3: Android/JAVA IDE Sample code 2

5.2 XAMPP

5.2.1 Database

Commonly used databases include MySQL, PostgreSQL, and MongoDB, though there are many more. Database development primarily consists of creating relational or non-relational table structures and utilizing a query language (like SQL) to query the database for the data you need. In order to properly facilitate communication between a server and the mobile app (or any other clients it may have), some sort of communication protocol is necessary. Examples include REST (Representational State Transfer) and SOAP (Simple Object Access Protocol):

Here is the sql database from phpMyAdmin



The screenshot shows the phpMyAdmin interface for a database named 'ecommerce'. The 'Structure' tab is active, displaying a table structure overview. The table 'tbl_menu' is selected. The interface includes a toolbar with options like Structure, SQL, Search, Query, Export, Import, Operations, Privileges, Routines, and Events. Below the table list, there are checkboxes for 'Check all' and a dropdown for 'With selected:'.

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> tbl_category	★ Browse Structure Search Insert Empty Drop	8	MyISAM	utf8_general_ci	2.4 KIB	-
<input checked="" type="checkbox"/> tbl_menu	★ Browse Structure Search Insert Empty Drop	23	MyISAM	utf8_general_ci	11.7 KIB	-
<input type="checkbox"/> tbl_reservation	★ Browse Structure Search Insert Empty Drop	0	MyISAM	utf8_general_ci	1 KIB	-
<input type="checkbox"/> tbl_setting	★ Browse Structure Search Insert Empty Drop	2	MyISAM	utf8_general_ci	1 KIB	-
<input type="checkbox"/> tbl_user	★ Browse Structure Search Insert Empty Drop	1	MyISAM	utf8_general_ci	2.1 KIB	-
5 tables	Sum	34	InnoDB	utf8_general_ci	18.2 KIB	0 B

Figure 5.4: Database

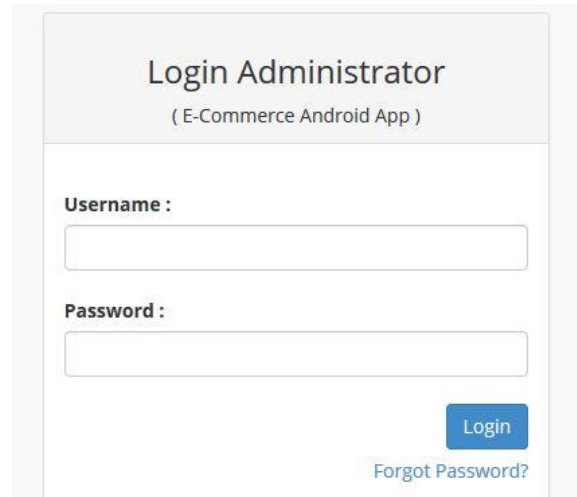
Often abbreviated *DB*, a database is basically a collection of information organized in such a way that a computer program can quickly select desired pieces of data. You can think of a database as an electronic filing system.

Traditional databases are organized by fields, records, and files. A field is a single piece of information; a record is one complete set of fields; and a file is a collection of records. For example, a telephone book is analogous to a file. It contains a list of records, each of which consists of three fields: name, address, and telephone number.

5.3 PHP

5.3.1 Admin Panel:

Here is the admin panel where authorized admin can login and make modifications

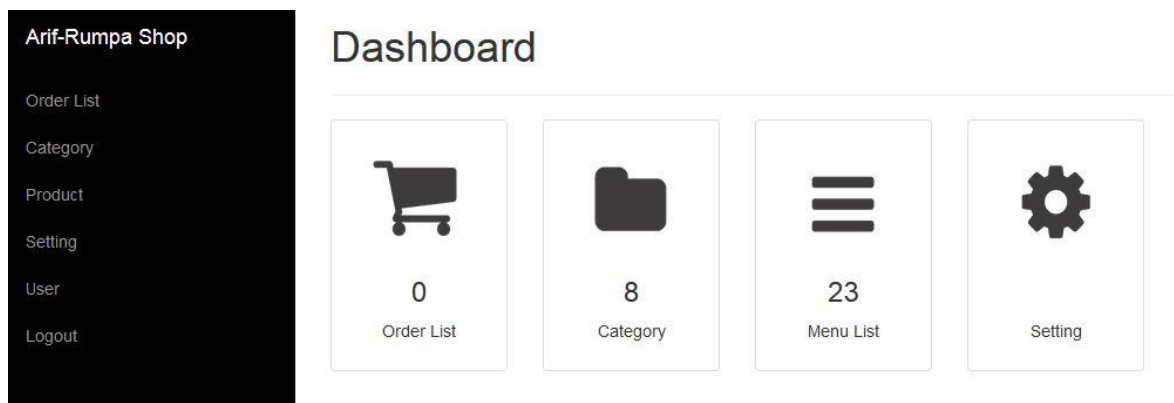


The screenshot shows a login form titled "Login Administrator" for an "E-Commerce Android App". It includes two input fields: "Username :" and "Password :". Below the password field is a blue "Login" button and a link for "Forgot Password?".

Figure 5.5: Admin Panel

5.3.2 Dashboard:

After a successful login this dashboard will appear



The dashboard for "Arif-Rumpa Shop" features a dark sidebar menu with options: Order List, Category, Product, Setting, User, and Logout. The main content area, titled "Dashboard", displays four summary cards: "Order List" with a shopping cart icon and a count of 0, "Category" with a folder icon and a count of 8, "Menu List" with a hamburger menu icon and a count of 23, and "Setting" with a gear icon.

Figure5.6: Dashboard

5.3.23 Functions of Admin

The details of the functions of the admin are given below:

Order list:

Admin can see the order list

Order List

Search by Name :

Name	Address	Email	Shipping by	Date & Time	Phone	Status	Action
Hgf	vgh	fgtd	Free Shipping	2016-09-08 19:22:00	33	NOT PROCESSED	Detail Delete
21412412421421	padadng	12412412@21312312.com	JNE	2016-09-07 01:41:00	213124214124214	PROCESSED	Detail Delete
Vdg Kaisan	CTS Humph fax	basic@FDIC.HDTV	Free Shipping	2016-09-06 12:38:00	5556858	PROCESSED	Detail Delete
Mojo	mojo@waeel.com	mojo@waeel.com	POS	2016-09-05 21:24:00	0936901487	PROCESSED	Detail Delete
Akhilesh	nagpur	tiwari.gis@rediffmail.com	Cash On	2016-09-05	9867616501	PROCESSED	Detail

Figure 5.7: Order List

Category List :

Admin can add and modify categories

Category List

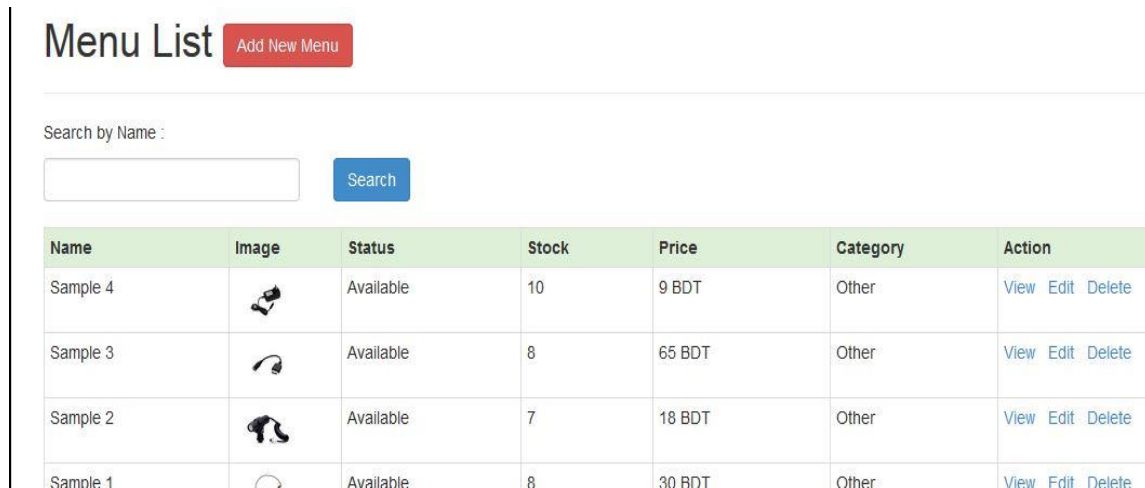
Search by Name :

Name	Image	Action
Cars		Edit Delete
Sports		Edit Delete
Music		Edit Delete
Other		Edit Delete
Clothes		Edit Delete

Figure 5.8: Category List

Menu List :

Admin can add and modify menu list







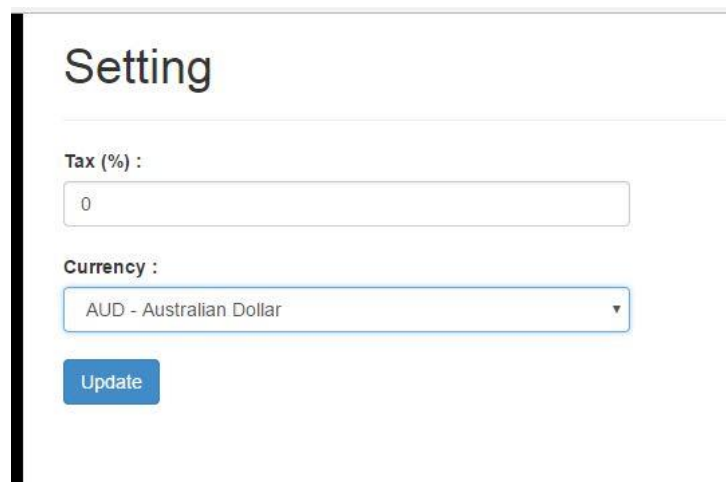
Name	Image	Status	Stock	Price	Category	Action
Sample 4		Available	10	9 BDT	Other	View Edit Delete
Sample 3		Available	8	65 BDT	Other	View Edit Delete
Sample 2		Available	7	18 BDT	Other	View Edit Delete
Sample 1		Available	8	30 BDT	Other	View Edit Delete

Figure 5.9: Menu List

Currency and TAX :

Admin can add and modify currency and VAT



Setting

Tax (%) :

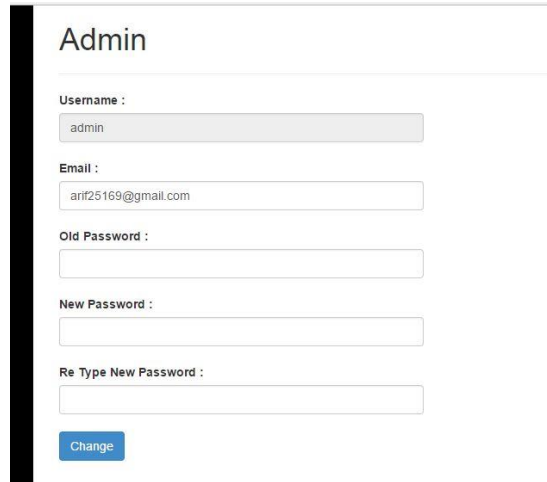
Currency :

[Update](#)

Figure 5.10: Currency and TAX

Password :

Admin can change his password



The image shows a web form titled "Admin" for changing a password. The form includes the following fields and a button:

- Username :** A text input field containing the value "admin".
- Email :** A text input field containing the value "arif25169@gmail.com".
- Old Password :** An empty text input field.
- New Password :** An empty text input field.
- Re Type New Password :** An empty text input field.
- Change**: A blue button located at the bottom left of the form.

Figure 5.11: Password Change

Chapter 6
MAINTENANCE

6.1 Software Maintenance

Software maintenance in software engineering is the modification of a software product after delivery to correct faults, to improve performance or other attributes. A public awareness of maintenance is that includes setting defects. However, a study specified that more than 80% of maintenance is used for non-corrective movements [18]. This insight is continued by user acquiescing problem reports that in certainty are functionality enrichment to the system [19].

The maintenance process model described in IEEE, the standard for software maintenance, starts the software maintenance effort during the post-delivery stage and discusses items such as planning for maintenance and measures outside the process model[20] . That process model with the IEEE maintenance phases in figure

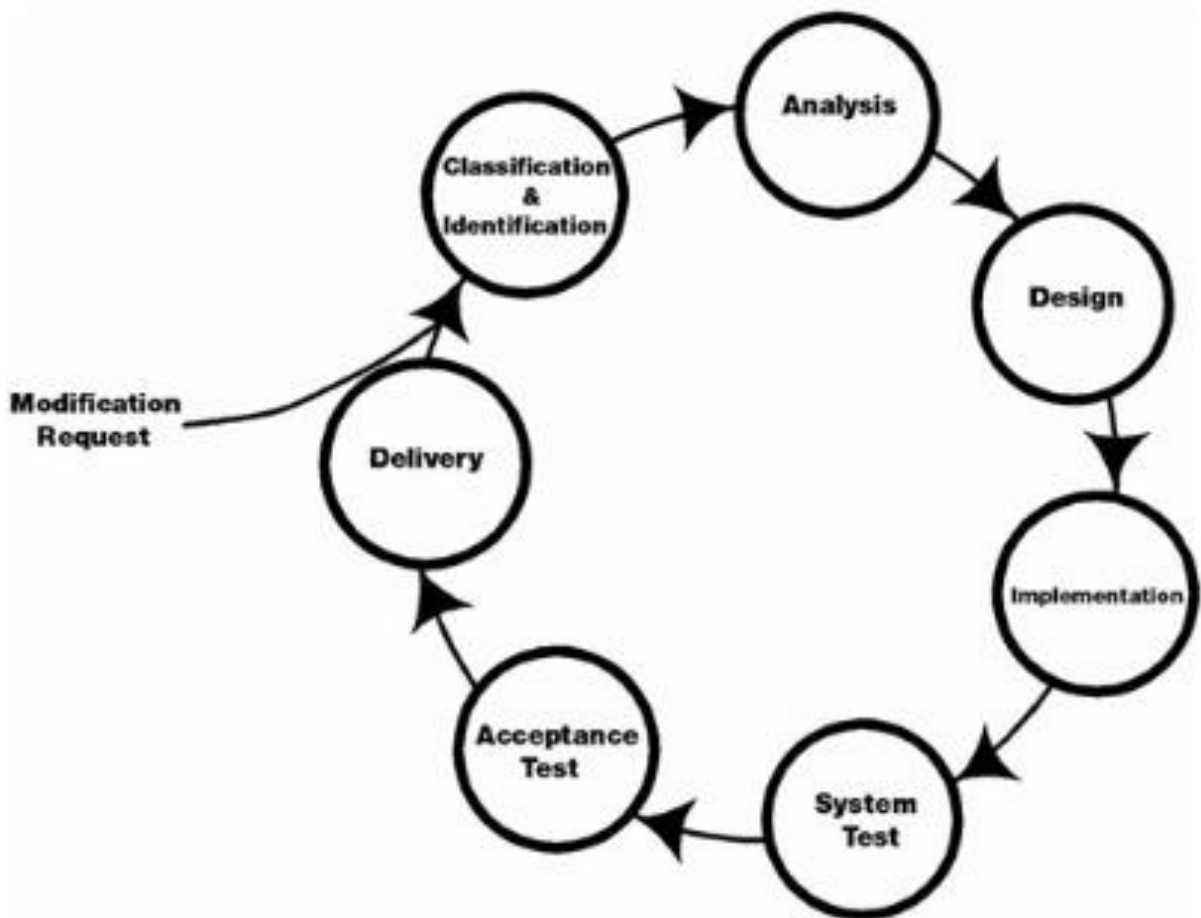


Figure 6.1: Maintenance process model

6.2 Maintenance Activities

In the late 1970s, a renowned and extensively cited review study by Litentz and Swanson showing the actual great portion of life-cycle cost that were being used on maintenance. They considered maintenance activities into four classes [18]

- Adaptive Maintenance
- Corrective Maintenance
- Perfective Maintenance
- Preventive Maintenance.

Adaptive Maintenance is practical when alteration in the outside situation precipitate changes to software. It contracts with adjusting the software to new surroundings.

Corrective Maintenance doings to precise mistakes that are exposed after the software is in practice. It contracts with fitting bugs in the code

Perfective maintenance includes enrichments that are wished by the use. It contracts with fitting bugs in the codes.

Preventive Maintenance advances upcoming maintainability and dependability and delivers a foundation for future enrichment. It contracts with informing certification and constructing the software more maintainable.

6.2 Difficulties of Maintenance

There are four difficulties that can sluggish down the maintenance process

- Formless code
- Maintenance programmers having inadequate knowledge
- Documentation being inattentive
- Out of date or inadequate.

The achievement of the maintenance stage trusts on these problem being earlier in the life sequence. In mu application I try to follow the maintenance phases to complete those activities. The code is structured and we have adequate knowledge programming

Chapter 7

Conclusion and Future Plan

7.1 Conclusion And Future Plan

Online Shop mobile app provides a complete description of all the function and specification of the online system. Mobile Shop which are legal, important for human life and available in Bangladesh that will keep in our database. So any one can buy their product from our website and can save their time. This is a complex project. So we need some time to complete full project

- Dose not upload notice timely
- No credit Cards
- There is no mobile text confirmation system

7.1.1 Future Plan

Here are the future plans of this project

- Will add more features to improve this application
- There will be email and mobile verification system
- Text alert for customers
- Will implement Credit Cards checkout

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Software maintenance

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