E-COMMERCE WEBSITE FOR ASFAQ RETAIL STORE

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INDEX NO: MIT/0861

REG NO: SEU/IS/16/MIT/063

DEPARTMENT OF MANAGEMANT AND INFORMATION

TECHNALOGY

FACULTY OF MANAGEMENT AND COMMERCE

SOUTH EASTERN UNIVERSITY OF SRI-LANKA

OLUVIL

2021

DECLARATION

I do hereby declare that the work has been originally carried out by me under the guidance and supervision of Mrs.SM.Murshitha Senior lecturer, Department of Management and Information Technology Faculty of Management and Commerce of South Eastern University of Sri Lanka and this work has not been submitted elsewhere for any other Degree.

I certify that this Project, to the best of my knowledge, does not contain any materials previously published or written by another author except where due acknowledgement and reference is made in text.

……..

Candidate Signature

MBA.Ahmed

SEU/IS/16/MIT/063

Date: .....

CERTIFICATION

This is to certify that the project entitled " E-COMMERCE WEBSITE FOR ASFAQ RETAIL STORE" submitted by Mr. MBA.Ahmed (SEU/IS/16/MIT/063) to the Department of Management and Information Technology, Faculty of Management and Commerce, South Eastern University of Sri Lanka, in Partial Fulfillment of the Requirements of the Bachelor of Science in Management and Information Technology Degree (BSc In MIT) is her original work based on the study carried out independently by her during the period of study under my guidance, supervision to the best of my knowledge.

…….. .....

Signature of Supervisor Date

Mrs.SM.Murshitha

Senior Lecturer

Department of Management and Information Technology

Faculty of Management and Commerce

South Eastern University of Sri Lanka

ACKNOWLEDGEMENT

I take this opportunity to express my heartfelt gratitude and profound feeling to everyone who lend me their helping hand in order to make my project a success. A warm thank to our supervisor, Mrs.SM.Murshitha, Senior lecturer, Department of Management and Information Technology for the constant support rendered to me at all the stages of the project at all the times, right from the very beginning till the submission of the final document. I thank to my beloved parents and friends for providing all the supports at all times when I needed help to complete the project.

Once again I would like to take this opportunity to express my deep sense of gratitude and profound feeling of admiration to my supervisor, Mrs.SM.Murshitha Senior lecturer. Who constantly advised and guided throughout the course. Last but not least a very big thank you for all my colleagues who helped me to overcome so many problems that I faced in implementing the project.

ABSTRACT

As an IT student my main responsibility is to introduce new technologies or modify an existing System. I develop this online rental System E-COMMERCE WEBSITE FOR ASFAQ RETAIL STORE to enhance efficiency, Effectiveness, and responsiveness of the online purchasing process and reduce the problems of the business process of ASFAQ RETAIL STORE.

I introduced ASFAQ RETAIL STORE System it is a web based system for a private company to do their online business; it gathers at a single database all exporting details, customer and supplier details to organize their works.

Contents

CHAPTER ONE

1.1 INTRODUCTION

Technology has not only affected our mode of communication, transportation and education. It has also given businesses (buying and selling) a touch of the magic wand. Technology has made it easy for people to conduct businesses from the comfort of their mobile devices. Some buy whiles others also sell online to a vast number of customers worldwide.

This system is a web base portal which will be developed with the exploration of retail store. The main focus of the software project is to develop an online application which can be used to manage day to day Activities of online customers who bought our store products, manage orders, and make payments .

This web application is known as the **ASFAQ RETAIL STORE**.
It is designed to reach out to more users who access the internet; either on their phones, desktops or laptops. It is designed to very efficient, productive, and informative and saves time in rendering assistance to users of this application.

I have collected related data from many source such as e-books, web articles, documentations and tutorial was completed for the development. The thesis will describe how the the ASFAQ RETAIL STORE works with the help of different diagrams and illustrations.

A number of software and programs will be used in order to develop this system. The types of programs and software used were programming languages such as Python with Django, development platform such as visual studio code, py charm , script language such as JavaScript and it's framework such as React.js, markup language such as HTML, styling it using CSS, database program such as SQLLite, among others. Proper installation of all the programs used were required and basic understanding of the programs were utilized in the completion of the project. Sources such as tutorial videos from YouTube, udemy, linda.com and official documentations were referred to in the case of insufficient knowledge during the development process.

1.2 MOTIVATION TOWARDS THE PROPOSED SYSTEM

Few weeks ago, I was trying to buy a watch in online and all the websites I visited Amazon, Aliexpress, and e-bay. They also sell products like me but in online they get profit even I cannot imagine. So I decided to make an E-commerce store to sell our products in online. Online shops was available in many countries why we cannot create one for our local customers. If I had given

this opportunity to local customers they can buy and sell products within their home without any disturbance. Upon thorough research I realized almost all online shops are take time to ship their products to customers within time many of them take months to ship like watches to customers. If we had a shop like this users will benefit from this a lot.

I am trying to solve this problem by developing a e-commerce website for my final year project which will make it easier for everyone to shop online without social barriers and also provide shop management with an effective and efficient system to handle client's data, request, and maximize income through the expansion of the shops to different customers.

According to the functionality of project I have several modules to implement. This project have modules such as home module, order taking module, Customer module, and Search module. For giving amazing user experience to the customer. I like to add packages according to our customer desires and I am giving opportunity to buy products with 24 Hours for their own by using recommendation module.

Motivation for designing this application came because with this system we can earn more customers by expanding into new market spaces rather than fighting for a place. During special offer packages customers can surprise their loved ones and family members because of this kind of online web application. This Online system has following features and services.

1.1 DESCRIPTION OF THE EXISTING PROCESS

There are plenty of web applications exists in online to demonstrate this project like Aliexpress, Amazon, and E-bay. Those contains not only retail products but also many multi business products to all clients around the world. This project is more like Amazon website. Amazon is a vast Internet-based enterprise that sells books, music, movies, housewares, electronics, toys, and many other goods, either directly or as the middleman between other retailers and Amazon.com's millions of customers.

Its Web services business includes renting data storage and computing resources, so-called "cloud computing," over the Internet. Its considerable online presence is such that, in 2012, 1 percent of all Internet traffic in North America traveled in and out of Amazon.com data centers.

Asfaq retail store will only include retail products. And some e-book, housewares, toys, kitchen equipment, milk products, and many more. It will include more features like live chat, payment system, and user dashboard and so on.

1.2 PROBLEM IDENTIFICATION AND ITS DRAWBACKS

- **Lack of immediate retrievals: -**

The information is very difficult to retrieve and to find particular information like- E.g. - To find out about the Customer's history, the user has to go through various registers. These results are in-convenience and wastage of time.

- **Lack of immediate information storage: -**

The information generated by various transactions takes time and efforts to be stored at right place.

- **Lack of prompt updating: -**

Various changes to information like users details of name are difficult to make as sign-up work is involved.

- **Error prone manual calculation: -**

Manual calculations are error prone and take a lot of time this may result in incorrect information.

- **Preparation of accurate and prompt reports: -**

This becomes a difficult task as information is difficult to collect from various register.

- **Inappropriate admin system:-**

Admin panel is used for registering customers. If we found errors or bugs related to adding Items, deleting user history, adding coupon that will cause problems in payment gateways. So business will lose their confidentiality among customers.

- Language Barriers.
- Inappropriate payments.
- Interruption of investigation.
- Lack of privacy.

1.5 OBJECTIVES OF THE PROPOSED SYSTEM WITH MEASURABLE OUTCOMES

The integrated Retail store system planned to be develop to fulfil some of the problem that occurred in the manual system.

- To transform the store system into computerized online management system.
- To develop a prototype on selling department system using web-based application.
- users are easily allocated to the products
- Trending products lists help users to fulfil their new needs.
- Design a system for better store care.
- Provide top management a single point of control.
- Modern techniques for investigation and Chats.
- Provide quality of services.
- Facilities for Payoneer services.
- Elegant search is possible.
- Save the time.
- It can just reduce manual work.
- User friendly

All this work is done manually by the Store assistant and other operational staff and lot of papers are needed to be handled and taken care of. So, asfaq retail store system planned to be develop to fulfil some of the problem that occurred in the manual system.

1.6 KEY PROCESSES / FUNCTION OF THE PROPOSED SYSTEM

- **Login :**
  All the users using the system should have login id and password respectively.
- **Register New User:**

  The system should be able to register new User coming for buy products.
- **User details:**
  The system shall have the following mandatory information's for User: First name, Last name, phone Number, Address.

- **User search:**
  The user should be able to search in the system easily using the UID, User name, mobile number etc.

- **Administrator User Management**

  The system should allow administration to do any changes / updating the scheduler.

- **Product Management**

  The system should allow administration to upload a product in a specific format so that the product will be shown in website.

- **Site Member (Customer) Management**

  The order shall contain the following (date and time of the customer entering details, Customer name, id, delete, and update abilities to Administrator.

Visitor Features

- View Home Banners or Slide Show Gallery
- Browse Products
- View Product Details
- View FAQs
- Become a Member through Registration process
- View Static Pages (Contact Us, About Us, Privacy Policy, Disclaimer, Terms & Conditions)
- Debit and Credit Card Payments with Payoneer
- Product Recommendations

Registered Member Panel

- Login to site
- Manage Account
  My Profile
  My Orders
- Buy Product (Checkout)
- Logout

Online Shop Owners

- Login
- Dashboard
- Administrator User Management
- Site Member (Customer) Management
- Product Management
- Banner Manager
- Order Manager
- Shipping Management
- Email Templates
- Static Page Content Management
- Location Management (Country/State/City)
- System Settings
- Logo
-

1.7 SYSTEM DEVELOPMENT METHODS AND METHODOLOGY

It is a conceptual model used in project management that describes the stages involved in an information system development project from an initial feasibility study through maintenance of the completed application. There are many perspective models are available to develop a system such as waterfall model, increment model, and prototype. I prefer to develop the proposed system using the waterfall development model.

Waterfall model

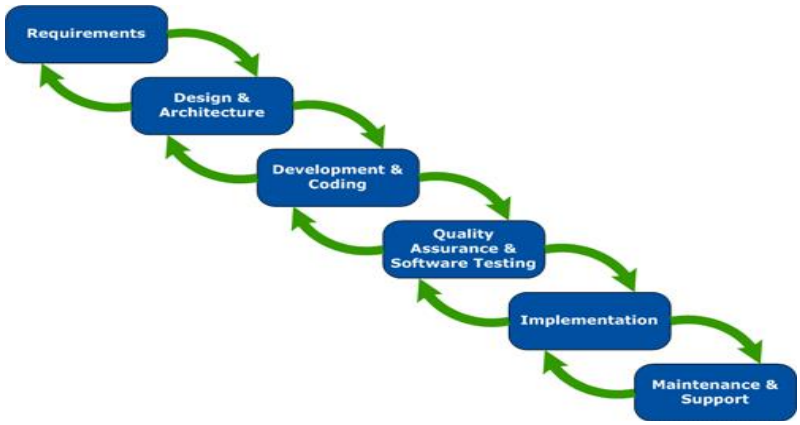

Figure 1.1WATERFALL MODEL

The waterfall model is a classic approach in software development that describes a linear and sequential development method. The waterfall model consists of five to seven phases, which structures the development of software, application. Once a phase is complete, the next development step follows and the results of the previous phase flow into the next phase. Each phase is defined by different tasks and objectives, whereby the entirety of the phases describes the life cycle of the software up to its delivery.

- **Requirement Analysis**
  All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification document.
- **System design**
  The requirement specifications from first phase are studied in this phase and system design is prepared. System design helps in specifying hardware and system requirements and also helps in defining overall system architecture.
- **Implementation**
  With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as unit testing.
- **Integration and testing**
  All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.
- **Deployment of system**
  Once the functional and non-functional testing is done, the product is deployed in the customer environment or released into the market.
- **Maintenance**

There are some issues which come up in the client environment. To fix those issues patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

1.8 SOFTWARE & HARDWARE SPECIFICATION

In order to develop a good system, it is very important to choose the correct hardware and software technology. Software and Hardware specification defines how an application will interact with system hardware, other programs and human users in a wide variety of real-world situation. Explanations of the hardware, software and technology chosen as development tools for the Asfaq retail store is given below.

Software Specification

Software Requirements deal with defining software resource requirements and pre-requisites that need to be installed on a computer to provide optimal functioning of an application. These requirements are generally not included in the software installation package and need to be installed separately before the software is installed.

Operating system	Windows 10
Development tools	Adobe Dreamweaver cc, bootstrap
Developing Language	Django and python
Database	MySQL Server
Browser	Internet Explorer, Mozilla Firefox, Google Chrome
Web Server	IIS
Other software	Photoshop cc, Sniping tool, MS Office.

Table1.0.1SOFTWARE SPECIFICATION

Hardware Specification

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL lists tested, compatibility and sometimes incompatible hardware devices for a particular operating system or application. The following sections discuss the various aspects of hardware requirements.

- I3 Processer
- 4GB RAM
- 500GB Hard disk
- 15.6” display with keyboard and mouse

1.9 PROPOSED BUDGET

DESCRIPTION	AMOUNT
Information Searching	2000
Hardware Purchase	100000
Printing and Binding report	2000
Miscellaneous	10000

Table 1.0.1Hardware Specification

1.10 BREAKDOWN OF TASK AND DURATION

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		Asfaq Retail Store	90 days	Thu 12/24/2	Wed 4/28/2	
2		Requirment Analys	13 days	Thu 12/24/2	Mon 1/11/2	
3		Identify problem	5 days	Thu 12/24/2	Wed 12/30/2	
4		taking points from old	5 days	Thu 12/31/20	Wed 1/6/21	3
5		collecting and finalizing data	3 days	Thu 1/7/21	Mon 1/11/21	4
6		Planning	10 days	Tue 1/12/21	Mon 1/25/2	2
7		Define functional	5 days	Tue 1/12/21	Mon 1/18/21	
8		Define none functional	5 days	Tue 1/19/21	Mon 1/25/21	7
9		Desining	18 days	Tue 1/26/21	Thu 2/18/21	6
10		Software Design Analysis	7 days	Tue 1/26/21	Wed 2/3/21	
11		Design UML Diag	5 days	Thu 2/4/21	Wed 2/10/21	10
12		Design ER Diagra	6 days	Thu 2/11/21	Thu 2/18/21	11
13		Development	14 days	Fri 2/19/21	Wed 3/10/2	9
14		Assemble Hardware and	8 days	Fri 2/19/21	Tue 3/2/21	
15		User Interface D	6 days	Wed 3/3/21	Wed 3/10/21	14
16		Testing	19 days	Thu 3/11/21	Tue 4/6/21	13
17		Unit testing	4 days	Thu 3/11/21	Tue 3/16/21	
18		Integration Tstir	3 days	Wed 3/17/21	Fri 3/19/21	17
19		System Testing	3 days	Mon 3/22/21	Wed 3/24/21	18
20		White Testing	3 days	Thu 3/25/21	Mon 3/29/21	19
21		Blackbox Testing	3 days	Tue 3/30/21	Thu 4/1/21	20
22		Evaluate Results	3 days	Fri 4/2/21	Tue 4/6/21	21
23		Deploymet	9 days	Wed 4/7/21	Mon 4/19/2	16
24		Final Documenta	5 days	Wed 4/7/21	Tue 4/13/21	
25		Project Submissi	4 days	Wed 4/14/21	Mon 4/19/21	24

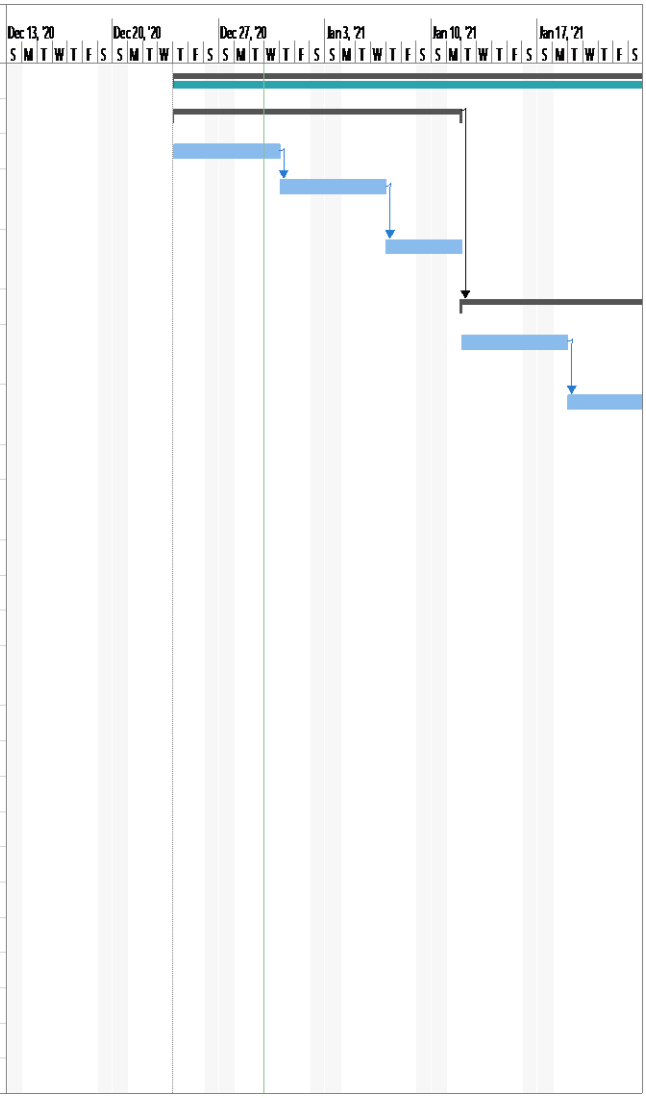

Figure 1.2WORK BREAKDOWN

1.11 GANT CHART WITH WORK SCHEDULE

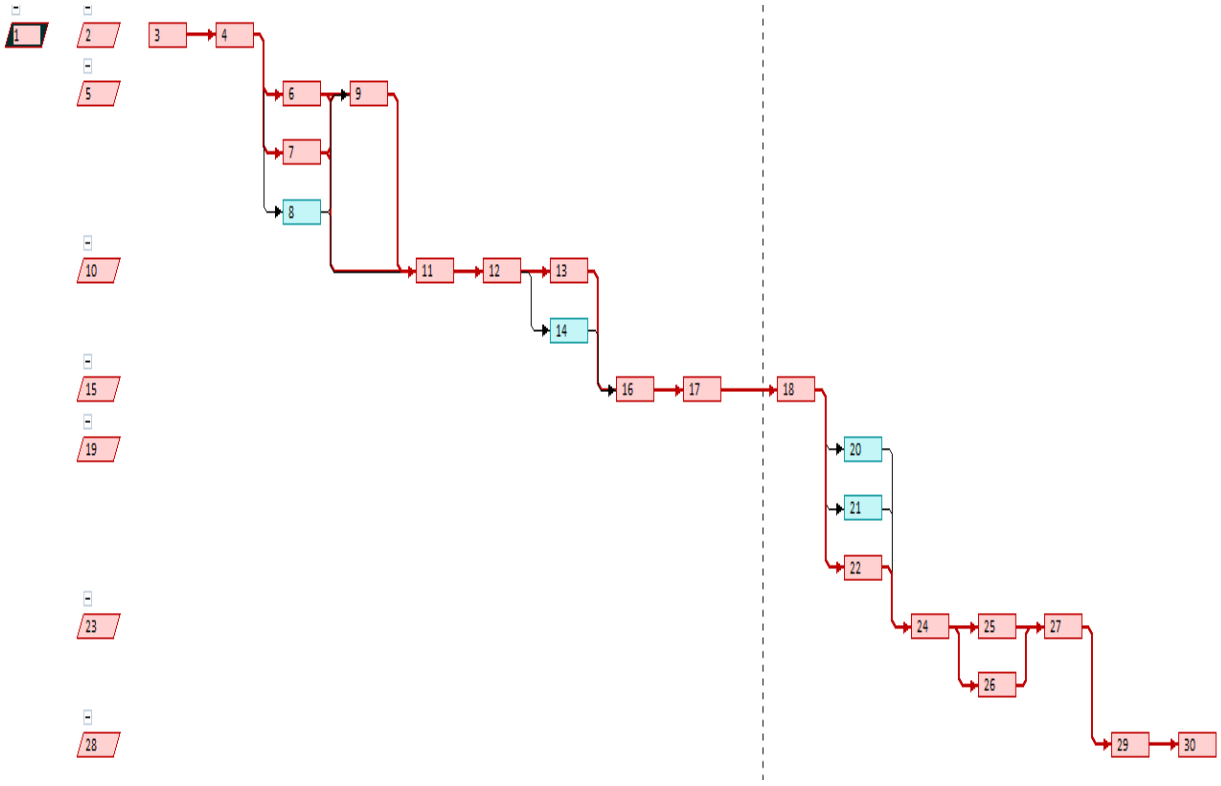

Figure 1.3GANT CHART WITH WORK SCHEDULE

1.12 WORK CALENDER

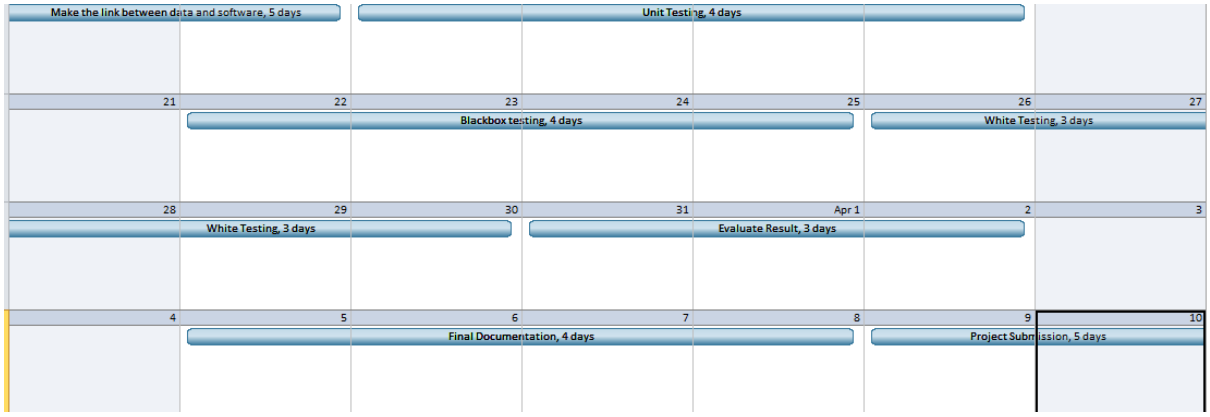

Figure 1.4WORK CALENDER

1.13 CONCLUSION

This chapter primarily described introduction part of the system. In this chapter various areas were analyzed very clearly and stated in a unique way such as background, Objectives, it outlines some solution to overcome the drawbacks by defining the objectives of the proposed system and its functionalities. Hardware, Software and Technology specification of proposed system are described briefly and it provides time schedule of the system development and new system description.

CHAPTER TWO

2.1 INTRODUCTION

This chapter describes the details and review of previously developed system, and describe what the same system developed by others and background analysis of the proposed system. Also it comprised the functions of the proposed system under the background analysis and provides the solution to overcome the problems in the manual system. The new system will enhance the effectiveness of the manual work system. It broadly will consider about technology environment of new system and what are the advantages of proposed system. And finally the proposed system provides a better solution for the retail product selling process.

When we consider it we can recognize number of disadvantages and few advantages. This chapter not only focuses about current system, it also focuses about importance of this new system. Without any computer system it is difficult to achieve their common target. These consider about actual performance. When we are considering retail store need a web based system to the activities. Because of to reduce the problems and to reduce more work costs arising from manual work.
Current world, peoples expects quick and quality service from websites. But using manual work any sellers cannot achieve their main target. By changing current system retail store can get more advantage. If we use new system for retail activities will increase overall performance by using this system will reduce the maintain cost of information. Current system use paper based bill entry but it will change to a web based Database management system.
Number of customers comes into the asfaq retail store in batticaloa to purchase products per day. If we use new web based system, it will more efficiency and better way to get solution for all activities in the organization and peoples. New system is very suitable and very importance for the asfaq retail store (pvt). This chapter will explain about proposed system, overall performance, how it support to asfaq retail store (pvt) batticaloa.

2.2 REVIEW OF RELATED LITERATURE

(Details and Review of relevant theory/previously Developed system.)

This chapter presents the related literatures and studies that provided the proponents valuable insights to enrich the study.

Foreign Literature

Ecommerce was introduced 40 years ago and, to this day, continues to grow with new technologies, innovations, and thousands of businesses entering the online market each year. The convenience, safety, and user experience of ecommerce has improved exponentially since its inception in the 1960's.

TOP E-COMMERCE WEBSITE IN THE SRILANKA

The online retail system was very rare in srilanka during earlier days. But now a days it is spread all over the parts. After this some online systems were introduced.
Such as Kapruka.com, ikman.lk.

Now let's learn about **Kapruka.com** …

Kapruka.com is Sri Lanka's first and largest e-commerce enterprise. Its core business is retail e-commerce in Sri Lanka. In addition to e-commerce, Kapruka has ventured into "Last-mile delivery", "Cross border e-com exports", "SME marketplace", "Classifieds", "Payment Solutions". Additionally, Kapruka features "Amazon/eBay simulated imports", "Fresh Fruits/Vegetable/Flower Farming", "B2B Baking Services" and "Highend Coffee Houses."

Kapruka.com was found in 2005 by Dulith Herath with a small capital of less than 1000$ in hand. Since then it has grown into a multi-billion rupee enterprise without any external investors. The organic growth of Kapruka to date is a unique attribute of the strong business model.

Dulith Herath is an entrepreneur, web-technologies specialist, Founder and the Chairman of Kapruka.com, Sri Lanka's largest e-commerce organization. He is widely credited for setting the bar for Sri Lanka's online business strategies and web-based benchmarks. Dulith possesses strong technical skills that fuse innovation and new technology-based business models in Sri Lanka. He is also an advocate for improving government policies on tech start-ups and intellectual properties. Incidentally, Dulith Herath is a recipient of the prestigious Eisenhower Fellowship.

Before forming Kapruka, Dulith Herath served as a Development Specialist at Dell Perot Systems where he designed robust software/web applications for DELL client's use with the aim of optimizing operational efficiency. Additionally, he also worked as an Application Architect at Microsoft. There he directed and designed new applications from conception to completion while overseeing the technical staff involved with development projects. Dulith is a graduate of the University of Kentucky, USA with a Bachelor of Science Degree in Computer Science.

Business Verticles of Kapruka

Kapruka was formed in 2003 primarily to provide world-class service to Sri Lankan's who shop online. Since then, the growth of Kapruka has been exponential with a global presence and workforce over 300 skilled employees in Sri Lanka. Moreover, Kapruka has established solid partnerships with over 300 sought after brands offering quintessentially Sri Lankan and global products of the highest quality to its ever-growing customer base.

Today, Kapruka.com is Sri Lanka's largest e-commerce organisation offering thousands of products with over 30 types of services. Likewise, their extensive range of gift ideas combined

with impeccable professional standards has created a satisfied and loyal clientele. Uniquely, since its inception, innovations inspired by the spirit of creativity and passion has resulted in the unprecedented success of Kapruka.com

Cross border e-commerce is a phenomenon that has quietly gained huge momentum as customers purchase products from outside their borders. Although this seems an exciting prospect for Sri Lankan brands, the key here is to manage the entire operation seamlessly. Correspondingly, this is where Kapruka brings its expertise in Cross Boarder marketplace to the greater benefit of authentic Sri Lankan brands and products.

At Kapruka, Cross Border e-commerce focuses on selling local products in international e-commerce platforms. Here, the platform is set to promote 100% Sri Lankan products to the international market. By the same token, this means any handicraft maker, tea trader or even a shoe designer can sell their creations on Amazon.com for the very first time. By all means, this gives the opportunity for local producers to partner Kapruka who will facilitate to showcase their unique products that are highly unique to Sri Lanka in the international market.

However, on the flip side, border payments are difficult and should be managed to ensure that customers at the receiving end are not surprised by additional government levies when items arrive at their final destination. Notably, understanding local taxation and ensuring that the customer pays accordingly is crucial. Otherwise, the purchase will be returned and will fuel an aggravated customer that will harm your business and brand. In particular, at Kapruka the entire process is explained to prospective Sri Lankan companies before onboarding their products to the Cross Border markets.

Ecommerce fulfilment refers to the process of getting the stock Kapruka sells online to the customers who have ordered it. Kapruka primarily sorts, select, pack, and deliver items to customer addresses in Sri Lanka. What is important here is most often Kapruka owns the inventory and does not involve a third-party logistics (3PL) provider to take care of storage and management.

Kapruka Global Shop gives customers based in Sri Lanka access to over 50 million global products. For instance, the Global Shop houses a wide range of products from clothing, computers, toys, electronics, CDs to even books listed on popular online shopping portals. Here customers can order from Amazon, eBay, Flipkart, Bestbuy and Walmart respectively. Uniquely, Kapruka Global Shop will facilitate in allowing Sri Lankans to order items from these popular online portals and get them shipped for a very nominal shipping fee. Accordingly, customers who order products through the Kapruka Global Shop will benefit with a massive saving as they, will only be paying a fraction of the shipping cost instead of the usually high shipping costs from America to Sri Lanka.

As an ultimatum customers will pay what is shown in the on the Auto Price Checker / Email quotation. This price is inclusive of Cost of the item plus Freight charge plus Customs duties, taxes

plus customs clearance fees plus Kapruka Global Shop fee. As you will see, it is a very transparent and foolproof method when arriving at the final price of the ordered product.

The Kapruka Global Shop is located at 302 Galle Road, Colombo 4 and can be easily accessed from any location. Significantly, it is designed in a manner where customers can use the computers provided in-house, allowing them to browse products from leading US online shopping portals. Subsequently, customers can purchase with the guidance and assistance of the friendly Kapruka Global Shop personnel.

Superbox.lk is Sri Lanka's leading "end to end" online grocery delivery platform. This venture is co-founded by Kapruka founder – Dulith Herath and Sidath Kodikara former President of Retailers' Association. SUPERBOX provides a wide-range of items from fresh, chilled, frozen and dry categories home delivered.

Java lounge is Sri Lanka's largest coffee house chain. The first Java coffee house was found by Kapruka in 2012 on Jawtta Road. Since then it has grown rapidly to become a primier coffee house brand in Sri Lanka. It is catering to the true authentic coffee shop experience, by emphasizing on the high-quality coffee, which we have not compromised whatever the situation we faced. The true reason for the success of Java Lounge is its work force, some employees being a part of the Java team since its inception.

Kapruka has been recognized for it's impact in Sri Lanka's e-commerce sphere by many Global, regional and state bodys. They include United Nations (UN), ITC (International Trade Center), Eisenhower Foundation (EF), Fredric Newman Foundation (FNF), Ceylong Camber of Commerce, National Cember of Exports (NCE), National Business Excellence and Asia Pacific Entrepenures. You may find more details on recent awards of Kapruka listed here

Kapruka is often featured in business news articles, publications and press of Sri Lanka. Recent press updates are listed here

This is a non-profit arm of Kapruka, set up in order to give back to the poverty groups and privilege families in Sri Lanka. Find more information here if you'd like to participate or apply for funding to your welfare projects via Kapruka goodwill foundation

The asfaq retail store is currently doing everything in a manual way. The retail products currently has not any software system to maintain the selling Services. Although if they have a number of computers even they don't have any computerized system. Customer and staff are facing lots of problem in their day today activities. So the asfaq retail store wants a computerized system to do their activities. This system going to be a solution for this problem. This system is developed through the Python coding and SQLLite database. Functions of the current system are listed below.

- Customer registration
- Order products
- Maintain product Details
- Online Payment
- Admin

Current system runs manually they maintain the Product details, user's details, customer details, and payment details in the files. These files details are writing manually every day. Store checks the available Products and facilities every end of the day and providing detail report to the owner. All invoices and booking details are kept in counter in the Retail sotre such as workers, cashier, and accountant.

Within one day they can cancel. Otherwise they want refund the advance payment. At least half of the charge they should pay when they order. In the ordering process there are types of ordering such as booking for the bundle. This process is done by the accountant. There have a counter for paying money. All charges should pay to that counter. After finished the order the customer will be sent to that counter for paying money with the copy of bill. At the end of the day customer must settlement his all payments to this counter.

As manual system work requires lot of paper work to handle all the records it will take lot of time and need large space to store entire documents. All the details are entered and maintained in separate files. So, to search a small detail asfaq store has to go through every file. It will increase the work load of the employee. It occupies lot of space to locate the file and difficult to search due to the different location. Also the calculating process is very difficult such as Customer charge calculation, balance checking. So to solve above problems they need a sensitive software or computerized online system to the asfaq retail store.

2.3 BACKGROUND ANALYSIS FOR THE PROPOSED SYSTEM

The proposed system enable to asfaq retail store to easily maintain all of the activities of asfaq retail store by online as soon as possible .This system help and reduces the difficulties of current system and gives many more features to administration following features are recommended by new system. New system manage and maintain main function of administrator such as selling Services, for customer, Preparing bill for During ordering days and Customer can purchase for every day in their own place by online.

- System enable customer to check and find details about all Kinds of Information. Provide a platform for the e-commerce businesses in Srilanka to go global so that they can increase

their patronage by consumers. This has an added advantage of increasing the revenues of the e-commerce business in Srilanka that use my system.

- New online system helps to reduces all human errors and giving effectiveness and efficiency.
- Payment process will happen in short time.
- Provide platform for online shop owners to get their monies before successful order is placed. In this part of our world, if people do not pay before the order is placed, some might end up not showing up for their orders and the shop owners may incur debt. I hope to employ Payoneer payment gateway platform to enable customers pay before their orders are placed successfully.
- More work can be finished in than the existing system.
- This system will be user friendly. This system will be user friendly.
- This system is easy to back up the data after some days.
- System automatically calculates the balance amount and net amount of payment and how much he/she has to pay.
- All the data will be store in the data base permanently.
- Customer can add, delete, edit and search the data etc.

2.4 DETAILS OF THE PROPOSED SYSTEM

2.4.1 Technology used in proposed system

Software requirements

1. Operating system: windows 7
2. Database: SQLLite
3. Development tool: Pycharm
4. Language: HTML, Python, Bootstrap

Hardware requirements

1. RAM: 4GB
2. Hard Disk: 500GB
3. Processor: 3.000 MHz
4. Mouse

PYCHARM

Pycharm is an Integrated Development Environment (IDE) used in computer programming, specifically for the Python language. It is the integrated development environment that would be used to write executable Python and HTML files. Pycharm is used for this project because it allows developers to locate files very quickly and easily with a few key strokes. Multiple selections allow developers to interactively make changes to several lines of codes all at once, it allows developers to switch between several projects in the workspace, it has an integrated debugger and it is also cross-platform and as such can be used on any operating system. Finally, it allows key bindings, menus, snippets and macros. With Pycharm you need to spend little time to tune up your programming environment or hunt plugins for your basic development needs i.e. Python, JavaScript, HTML, and CSS. Pycharm does background spellchecking of written text and Python docstrings. It is very handy for writing high quality software with meaningful comments and API descriptions. Pycharm has more robust integrated version control support (Git, SVN).

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HTML

HTML (Hypertext Markup Language) is the code that is used to structure a web page and its content. HTML is used to specify whether a web content should be recognized as a paragraph, list, heading, link, image, multimedia player, form, or one of many other available elements or even a new element that you define. It is the globally accepted programming language for formatting web pages. It is mostly used by small and medium scale businesses that do not really need advanced functionality on their websites. HTML is free, supports all browsers on the client's machine, easy to use and understand hence, the choice in building the structure of my web pages.

CSS

Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML (including XML dialects such as SVG or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media. CSS is one of the core languages of the open web and is standardized across browsers according to the W3C (World Wide Web Consortium) specification.

JAVASCRIPT

JavaScript is a high-level, dynamic, weakly typed, prototype-based, multi-paradigm, and interpreted programming language. JavaScript is a full-fledged dynamic programming language that, when applied to an HTML document, can provide dynamic interactivity on websites. It would be used in conjunction with Django to ensure validation rules on the front-end of the websites.

BOOTSTRAP

Bootstrap is a free and open-source front-end web framework for designing websites and web applications. It contains HTML and CSS based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions. Unlike many web frameworks, it concerns itself with front-end development only. Bootstrap would be used to design the styling of the application alongside CSS. Bootstrap is important in the application for the following reasons:

- Easy to use: Anybody with just basic knowledge of HTML and CSS can start using Bootstrap.
- Responsive features: Bootstrap's responsive CSS adjusts to phones, tablets, and desktops.
- Mobile-first approach: Mobile-first styles are part of the core bootstrap framework.
- Browser compatibility: Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Safari, and Opera).

PHOTOSHOP

Adobe Photoshop is the predominant photo editing and manipulation software on the market. Its uses ranges from full featured editing of large batches of photos to creating intricate digital paintings and drawings that mimic those done by hand. It is a graphic designing tool that enables picture manipulation and editing. Photoshop would be used to design user interfaces and the various images that would be required in developing the system.

POSTGRESQL

It is an object-relational database management system (ORDBMS) with an emphasis on extensibility and standards compliance. A fundamental characteristic of an object-relational database is support for user-defined objects and their behaviors including data types, functions, operators, domains and indexes. This makes PostgreSQL extremely flexible and robust. Among other things, complex data structures can be created, stored and retrieved. All the tables and records

that would be required in the project would be designed and created with POSTGRESQL. My choice for POSTGRESQL is that it is easy to use, support is easily available on the internet, it is open source and hence inexpensive to get it, supports complex structures, it provides extensive data capacity and is trusted for its data integrity and finally it remains one of the most accepted industry standard database for developing web applications.

The aim of the proposed system is to enhance the performance of the asfaq retail store activities and effective services of the online retail store for E- commerce website in batticaloa.

2.4.2 MODULE DESCRIPTION

Modules of the Projects:

- Admin module
- Customer Module

The online retail store is software consists of two main modules, Administrator module and the customer's module. The customer's module consists of some sub modules. Such as customer details, products details and users details. The administrator has a sub module to change the password and user name. The login part is implemented initially. The system users will have to login to the system by providing their username and password.

2.4.2.1 Admin:

Admin can add a product, manage reviews, orders and refund and also view feedback and enquiry.

2.4.2.2 User:

User can view information of available reviews, order product and request refund, easily get the products through courier delivery and also give feedback and can enquiry

2.5 FEATURES OF THE PROPOSED SYSTEM

Availability

Just like traditional shops products order is managed if stocks are empty you cannot order. packaging as far in advance as possible will not only allow you to get fast delivery from a wide range of available products but because there's more chance to get offers, the price will likely be much cheaper too.

Accessibility

The asfaq retail store website can be accessed 24/7 from anywhere on globe. The asfaq retail store website feeds through up to the second, accurate fleet availability and pricing based on what's

going on at the ideal location at any giving time, allowing you to book with a seconds notice and your products will be waiting for you when you arrive at the asfaq retail store counter.

Not only that the asfaq retail store mobile compatible website is designed for those wishing to order a product via their smart phone making it even more easier to reserve your hire while you on the move.

Prepay and save

Booking online and prepaying your product before you collect your hire product will save you considerable amount of time and money.

Research before you order

The asfaq retail store website is full of helpful information that will assist you in making the right decisions when booking your next order product. From finding more information about a specific product boot space or Bluetooth compatibility, to contact information for asfaq retail store locations around globe and even the answers to the most frequently asked questions asked by our customers. Almost anything you need to know about renting a product with E- asfaq retail store can be found online on the asfaq retail store website.

Special Offers – Web Only

asfaq retail store Deals can be viewed on the asfaq retail store website and can be used for your online product bookings. You can compare the various deals side by side, which is something that is not available if you book via the phone or at the actual airport, and can save you considerable money.

Flexibility

Most businesses will have busier periods when up scaling a fleet could be of benefit. Whether you need corporate vehicle hire to transport extra staff or products or the addition of interim vans to help deliver orders in a busy trading period, rental in these vehicles can supplement your existing fleet on a temporary basis.

As the term “daily rental” suggests you can play things by ear on a daily basis – as and when the need for the extra vehicles comes to an end you can just send them back, you’re not tied into any lengthy contracts.

Likewise most ecommerce can be easily extended so if the new contract you have just won from global companies lasts longer than anticipated, you can extend the rental vehicle period to match. There may also be a time when you need to hire a commercial vehicle in an emergency – for example if one of your company vehicles has broken down or has been involved in an accident.

More shoppers are buying online because sometimes it's simply easier. Schedules are packed and stores can be crowded, so shopping from a computer or smartphone skips those challenges--though it can introduce new ones.
That's because those same busy consumers are frequently away from home and miss package delivery attempts. And that frustration can keep people with money to spend from buying online. But when you offer alternate delivery locations, conveniently accessible to customers, you solve those problems and encourage more purchases more frequently.

The growing popularity and availability of drone delivery is expected to be one of the most innovative technologies in the retail industry over the next decade. Though regulations (primarily concerning airspace governance) have yet to be established in some parts of the world and are therefore delaying the widespread use of drones, the new delivery system has already played a big role in delivering products to aid disaster relief efforts. The existing delivery technology for these efforts easily translates to the online retail industry, with major retail and delivery companies exploring how they can incorporate drone technology and future e-commerce solutions

To sum up we would always recommend that you choose a drone delivery or vehicle hire provider. To make a flexible environment and Leasing Association to ensure the highest standards of service.

Keeping Costs Down

Planning to keep your cost from transport you could save on the obvious costs such as fuel and the not so obvious ones such as parking and toll charges.
An ecommerce business is able to reduce labor and other costs in many areas, including: document preparation, reconciliation, mail preparation, telephone calling, data entry, overtime and supervision expenses. EBusiness can help manage operating costs in many areas, thereby reducing the cost of individual transactions. The use of email and electronic invoicing are a tremendous savings over the traditional methods.

Some companies do not realize that carriers not only charge for the weight of the package but also the dimensional weight. The dimensional weight is the length, width, and height in relation to its weight. There are multiple ways a company can minimize their packaging to reduce their dimensional weight:

- Use the smallest package possible. Carriers charge for dimensional weight; this includes the width, length, height.
- Use lightweight materials for the packaging to cut down on the extra package weight fees.
- Use different shapes to reduce the dimensional weight for packaging.
- Remove excess materials that fill space in the packaging. Any extra material in the package will increase the weight.

2.6 BRIEF INTRODUCTION OF THE PROPOSED SYSTEM

The asfaq retail store is an automated system which handles online business details about the customers and staff. It is a web based information system and it would be developed for automating the information handling process of E-business in Batticaloa. This system will provide the facilities for the employees of the asfaq retail store and also for the administrator. This system provides solutions to overcome the problems in the manual system. Solutions of the proposed system are listed below.

- **Staff satisfaction:** The new system provides faster access to the system and new features to make work easier. So the work load of the staff is reduced.

- **Customer satisfaction**: In manual system people have to wait buying activity is take a long time but the proposed system do this registration very quickly. So they no need to waste either time by waiting.
- **Faster services:** The proposed system provides the fast and user friendly environment to perform the data handling processes will help faster services to the community.

- **Facilities of update and delete data**: In the manual it is difficult to change data, as it is not nice to cut or correcting with fluid and writing over it. The proposed system provides functionalities to perform this task at one click.

- **Calculate the payment**: also the calculating process is very difficult such as customer charge calculation. The users balance checking. In the manual system for every process there should be needed more workers. Not only can't they work accurately and in the correct time. After that computerizing make easy to work.

- **Checking process:** when more than one customer arrives in to the asfaq retail store employees can't manage with the sort time. The checking process is very difficult in the customer departure time because, they can't easily find the needed records in this manual system check ordered products availability. After that computerizing easily identifies the products and its availability.

- **It is time consuming:** when the data is in a document, which is inside a file, it is very hard to get the necessary details in that particular time. To search the file it will take some time because they have to see the file page by page. After computerizing the manual system it will be much easier to retrieve the data quickly, this will increase the productivity of asfaq retail store system.

- **The proposed system requires only a computer:** therefore there is no need of large room space. There is no need of large storage cupboards because all data is store in one single database of the computer.

- **The manual system did not have any backup files:** but with the computerized if any files have been messed up there is a backup procedure to fix the problem.

- In the Previous System's Details are Stored Manually in papers to share the details between employees was a Financial drawback. Updating in the details are a tedious task.
- But a new system was proposed to overcome the above drawbacks.
- Functionalities and advantages of proposed system are:
- Data is centralized which has overcome the Sharing problem in previous system.
- As data is maintained electronically, it's easy for a person to update the details, which has overcome the tedious updating in previous system.
- Maintenance is easy and performance is good.
- Mainly the system has automated the Transportation Process.

2.7 CONCLUSION

In this chapter details and review of the previously developed system (manual system) are briefly discussed including its functions and drawbacks. And also it involves background analysis for the proposed system by describing it features and structure. Further this chapter outlines the solution of the proposed system in detail to overcome the drawbacks of the manual system.

CHAPTER THREE

3.1 INTRODUCTION

This chapter will provide the details on feasibility study and requirement analysis for the proposed system. It will cover technical feasibility, operational feasibility, economic feasibility and behavioral feasibility in briefly under the feasibility study. Further user requirements, functional requirements, technical requirements and common functionality requirements are discussed in requirements specification and also this chapter outlines the non-functional requirements of the proposed system and software and hardware requirements for implementation.

3.2 FEASIBILITY STUDY FOR PROPOSED SYSTEM

The feasibility study investigates the problem and the information needs of the stakeholders. It seeks to determine the resources required to provide the information systems solution, the cost and benefits of such a solution, and the feasibility of such a solution. It is important that we concern about the practicability of the implementation of the above proposed "asfaq retail store system'.

The purpose of feasibility study is not to solve the problem, but to determine whether the problem is worth solving. This helps to decide whether to proceed with the project or not. The feasibility study concentrates on the following area. Operational feasibility, Technical Feasibility and Economic Feasibility (Software Engineering Feasibility Study,2016).

A feasibility study occupies a place of importance in contemporary project management. Decisions on whether to go ahead with a project and whether the intended beneficiaries will benefit from a project are informed by findings that emanate from a feasibility study. A feasibility study also helps project managers to determine whether a project is viable and select the best alternative from an array of alternatives that can address the identified problem (A. M. Davis, 1993).

The importance of feasibility study in project management can only be understood within the context of the types of feasibility studies and their main focus. There are four types of feasibility studies. These four types are the technical, economic, schedule and operational feasibility (Harrington, R, 2011)

The feasibility study is one of the critical activities that are done at the first stage, the conceptualization phase of the project cycle. Therefore the feasibility study must be done meticulously so it generates appropriate and relevant information that will help project managers and stakeholders to make informed decisions on a given project (Harrington, R, 2011). It must also be borne in mind that failure by the feasibility study to generate appropriate and relevant information may result in project managers making costly decisions that may impair the original

intention or purpose of a project. This paper thus examines the importance of a feasibility study in project management. (US. Army Corps of Engineering, 2003)

In the context of project management a feasibility study is a study that is done to determine options and whether the preferred or optimum option for a particular project is can achieve the desired objectives and sustainable given the likely resources available. Feasibility study can also be defined as an analysis of the viability of an idea.
The feasibility study focuses on helping answer the essential question of "should we proceed with the proposed project idea. (Harrington, R, 2011)

3.2.1 TECHNICAL FEASIBILITY

The key considerations of technical feasibility are whether the technology is obtained locally, the costs of the technology if it is to be imported and how relevant is it to the achievement of project objectives. In a broad sense technical feasibility seeks to determine the availability, costs and technological risks associated with technology that is needed to achieve project objectives. For example technologically intense projects such as mining require a detailed technical feasibility study that will determine technological availability, costs and associated risks particularly to the environment. (R. H. Thayer, 2000)

The assessment is based on an outline design of system requirements in terms of Input, Output, Processes, Fields, Program and procedure. Technical feasibility is carried out to determine whether the asfaq retail store system. The client has the capability in terms of software, hardware, personal and resources to handle the completion of the system.
asfaq retail store is average feasible in technical side. Still technical aspects of the resource are needs to be updated. Because they are educated, but less updated because of non-practice.
The technical issue usually raised during the feasibility stage of the investigation includes the following:

- Does the necessary technology exist to do what is suggested?
- Do the proposed equipment have the technical capacity to hold the data required to use the new system?
- Will the proposed system provide adequate response to inquiries, regardless of the number or location of users?
- Can the system be upgraded if developed?
- Are there technical guarantees of accuracy, reliability, ease of access and data security?

3.2.2 OPERATIONAL FEASIBILITY

Under which we conduct a study to analyze and determine whether need of the client's, will be fulfilled by using a proposed solution. It also measures how well a proposed system solves the

problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development. ('Feasibility study ,important of project managemet' , 2016) To ensure success, desired operational outcomes must be imparted during design and development. These include such design-dependent parameters such as reliability, maintainability, supportability, usability, disposability, sustainability, affordability and others.

Assessing operational feasibility is to gain an understanding of whether the proposed system will likely to solve the business problems, or take advantage of the opportunities or not. It is important to understand how the new systems will fit into the current day to-day operations of the system.

The proposed "asfaq retail store" has facilities to satisfy the requirements of the user and resolve the problems in the current system and also the administration of the home. Once we provide the induction training for the system then they will understand the new proposed system within the short-time period. So, the system is operationally feasible.

Proposed projects are beneficial only if they can be turned out into information system.

That will meet the organization's operating requirements. Operational feasibility aspects of the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following: -

- Is there sufficient support for the management from the users?
- Will the system be used and work properly if it is being developed and implemented?
- Will there be any resistance from the user that will undermine the possible application benefits?

This system is targeted to be in accordance with the above-mentioned issues. Beforehand, the management issues and user requirements have been taken into consideration. So there is no question of resistance from the users that can undermine the possible application benefits.

3.2.3 ECONOMIC FEASIBILITY

Economic feasibility studies focus on the costs associated with a project and how they can be kept at a minimum level (S. Fickas, and A. van Lamsweerde, 1993). The major factor under an economic feasibility study is whether the project is possible given the resource constraints. Economic feasibility seeks to determine the monetary benefits that accrue from a given project as well as the financial costs associated with a project. Usually a project alternative that yields more benefits than costs is adopted and implemented. For instance in a dam construction project, if an alternative promises to give more benefits in terms of the number of irrigation schemes that will

benefit the local people, returns from possible tourism ventures and envisaged drinking water security there is a high possibility that it will be adopted(S. Fickas, and A. van Lamsweerde,1993)

Economic analysis is the most frequently used method for evaluating the effectiveness of a new system. More commonly known as cost/benefits analysis, the procedure is to determine the benefits and savings that are expected from a current system and compare with them cost. If benefits outweigh costs, then the decision is made to design and implement the system. Management System has no proper system, they are using manual procedure. I have analyzed accurately weigh the cost versus benefits of developing "asfaq retail store system" before taking an action.

Time-based study: The future value of the proposed Players selection System is higher since the system is computerized once and also the system will going to be developed by using the modern technologies within the certain period of time

Cost-based study: It is important to identify cost and benefit factors of developing the Players selection System, which can be categorized as follows. This is an analysis of the costs to be incurred in the system and the benefits derivable out of the system. The cost is moderate level.

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Description	**Amount**
Software development cost	**70,000**
Computers	**65,000**
Laser Printer	**10,000**
Training for Operator	**10,000**
Miscellaneous	**10,000**
KTotal	**165,000**

A system can be developed technically and that will be used if installed must still be a good investment for the organization. In the economic feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits must equal or exceed the costs.

3.2.4 BEHAVIORAL FEASIBILITY

Behavioral feasibility involves a measure of how well that the users react with new system. All users are satisfied with this new system as the proposed "asfaq retail store" The proposed system has included capability to make all the process easier than the manual existing system. So, this system is behaviorally feasible. ('Feasibility study,important of project management', 2016)It

addresses the human issues of the systems development project. After feasibility analysis is complete, a "go/No-Go" decision is reached by the IT steering committee management (feasibility study - Feasibility study in a simple terms, a feasibility study, and 2016).So users shown up positive attitude while proposing the idea.

3.3 REQUIREMENTS SPECIFICATION

The Software Requirements Specification (SRS) describes the system requirements and system actions. Once “asfaq retail store” development progresses to the design activities, it focuses our attention primarily on the question, and how does the system do what it is supposed to do? A SRS is a complete description of the behavior of the system to be developed. This includes a set of use cases that describe all of the interactions that the users will have with the software.

A software requirements specification is a complete description of the behavior of the system to be developed. This includes a set of use cases that describe all of the interactions that the users will have with the software. Using this system asfaq store product order can perform all activities easily. Alan Davis defines “A software requirement specification is a document containing a complete description of what the software will do without describing how it will do it.” Another formal definition of R. H. Thayer and M. Dorfman, states “A software requirements specification is the document that clearly and precisely describes each of the essential requirements (functions, performance, design constraints, and quality attributes) of the software and the external interfaces.”

According to that this system will add, deleting and updating information without any disturbance. It is user-friendly and understandable. The four key points under Requirement Specifications include user requirement, functional requirement, technical requirement and common functional requirement

In Webster’s Dictionary 1989, requirement is defined as “something required; something wanted or needed.” In IEEE terminology requirement is defined as, “A condition or capability needed by a user to solve a problem or achieve an objective. A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed documents. Another definition states “a documented representation of a condition or capability as Alan Davis describes the concept of requirement to be “A user need or a necessary feature, function, or attribute of a system that can be sensed from a position external to that system. Accordingly requirement is the statement of a system service or constraint”. The above definitions do not distinguish the differences between the systems. (M. Jackson, 2000).

Requirements analysis process begins when a customer expresses the need for software or system development to the software engineer. This need is usually expressed in a business concept or scope document the software engineer’s task then becomes taking the conceptual idea and identifying necessary requirements to realize those ideas. Upon completion of identification and definition of requirements a transformation of oftenunstructured lists of requirements into a

software requirements specification (SRS) document is the next step. The approaches taken to transform requirements into the SRS document range from informal to very formal. The informal approach takes the list of requirements, defines a relationship between the different requirements to determine a proper grouping, and produces a document written in natural language.(A. I. Anton, 1996).

3.3.1 USER REQUIREMENTS

User requirements also called Stakeholder requirements describe the tasks the users must be able to accomplish with the product (K. E. Wiegers, 1999). Somerville and Sawyer define the user requirements as "abstract requirements describing the system services which peoples need to use the system and to integrate it with their business processes." User requirements are usually captured in use cases or scenario descriptions. Apparently the user requirements represent the system's behavior from the user's point of view. As a result, in any pure software case, especially for standalone software systems which will be installed in a general-purpose computer, they could be regarded as system requirements.

3.3.2 FUNCTIONAL REQUIREMENTS

They describe all the inputs and outputs to and from the system as well as information concerning how the inputs and outputs interrelate (A. M. Davis, 1993). The proposed System includes solution and functionalities to overcome the bottlenecks of the existing system. System shall Store and retrieving the children details according to categories and adding, delete, Modifying and updating information. Shall generate reports for the need of inspection, handle the children details in computerize manner. Directing to a legal advisory and The Government Information Center, 'Registration General Department for the consultation and formalities is another function of the system.

Giving user privileges is another mission critical functionality of the system. People those who need to login the site need to have a user name and password in order to access the child related information. Customer's visitors will eligible to view the home's website with limitation.

3.3.3 TECHNICAL REQUIREMENT

Technical requirements are the technical issues that must be considered to successfully complete a project. These are aspects such as performance, reliability, and availability that your project must meet on in order to proceed with a project. In software projects, technical requirements typically refer to how the software is built for example: which language it's programmed in, which operating system it's created for, and which standards it must meet (Stackoverflow.com). Technical requirement can be identified as two sides, developer side and user side.

3.3.4 COMMON FUNCTIONALITY REQUIREMENTS

The system should specify the errors made by the user in such a way that the end- user is able to correct them. The system should work as user requirements. Also the system should be able to handle combinations of errors to some extent. The system should provide all functions explain by previous chapters.

3.4 NON-FUNCTIONAL REQUIREMENTS

Although this equipment is not directly related with the system to be developed, they are very important factors to take in to consideration for the development and successful implementation of the system. A Non-Functional Requirement is usually some form of constraint or restriction that must be considered when designing the solution. Under this section it identify non-functional requirement within the project's scope.

Accessibility: The system should be available to user as possible. Any time user can have ability to access and benefit from the system. The system is not to be confused with usability which is used to describe the extent to which a system can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

Availability: Simply put, availability is the proportion of time a system is in a functioning condition. This is often described as a mission capable rate.

Maintainability: Maintainability involves a system of continuous improvement - learning from the past in order to improve the ability to maintain systems, or improve reliability of systems based on maintenance experience. Maintainability is the ease with which a system can be maintained in order to: isolate defects or their cause, correct defects or their cause, meet new requirements, make future maintenance easier, or cope with a changed environment.

Operability: Operability is the ability to keep a system or a whole company installation in a safe and reliable functioning condition, according to pre-defined operational requirements. In a computing systems environment with multiple systems this includes the ability of systems and processes to work together to accomplish a common task such as finding and returning availability of information.

Interoperability: Interoperability is a property referring to the ability of diverse systems and organizations to work together (inter-operate). Interoperability is a property of a system, whose interfaces are completely understood, to work with other systems, present or future, without any restricted access or implementation.

PRODUCT REQUIREMENTS

Product requirements are the requirements for one or more new features for an existing system. This computerized system used to perform all activities. This system should have following new features. “asfaq retail store” manages all day to day activities of the home. The system generates variety of reports. User can add new details, add new password details and change user details and password details so on. User can store all valuable data by using different database tables. The user interface has to be more interactive and informative. The system should be available when it is needed to process, the system should be available only for legitimate users and for legitimate purpose and the system should be secure enough to maintain it as a trustworthy system. The system should be flexible enough to maintain it and to update it as well

3.4.1 OPERATIONAL REQUIREMENTS

Operational requirements are qualities which influence new system's entire development cycle. The operational requirements focus on how the system will be operated by the users. It also outlines the functions and capability that the system should perform to accomplish system objective. Under the operational requirements developers should identify who are the stakeholders will have interest towards the system throughout its lifecycle. The system should be implemented to perform the existing process of safe rentals company. Should be allocating user account for different users and allow performing the specific task by authorized users, for example administrator can change the username and password and the system should include the functionality to move between different interfaces. The system should provide different functionalities to perform the tasks, for example add, delete, exit and update functions.

3.5 SOFTWARE HARDWARE REQUIREMENTS FOR IMPLEMENTATION

In order to develop a good system, it is very important to choose the correct hardware, software and technology. Below are some explanations of the hardware, software and technology chose as development tools for the “asfaq retail store”.

In order to develop my system I prefer Window 8 operating system as platform and Django Server 64 Bits, PYTHON and PYTHON(3.9) and for back end PSOTGRESQL and . MS Office Visio 2007 will be required for drawing diagrams and to explain the logical design of the system. To develop the system PYCHARM COMMUNITY VERSION, notepad++ are the front end designing software and to implement the database PGADMIN will be required. Adobe Photoshop CS will be useable for label and logo designing. All the documentation will use done by MS Word.

For report development Crystal Reports for PYTHON will be required. Google chrome is the preferred web browser.

The user needs a computer with 4 GB RAMS complete with Windows 8 operating system. It should be at least an Intel i3 processor. Fast USB port, US system of keyboard and a hard disk of 500 GB with a LED monitor. A printer preferably an HP LaserJet, network card, and double-click scroll- mouse.

3.6 CONCLUSION

This chapter has included the details on feasibility study and requirements analysis of new proposed online child adoption system. It also discussed the technical, operational, economical and behavioral feasibility under the feasibility study. Requirements specification was discussed briefly including user requirements, functional requirements, technical requirements and common functionality requirements. This chapter also provide software and hardware requirements for system implementation in briefly.

CHAPTER FOUR

SYSTEM ANALYSIS & LOGICAL DESIGN

4.1 INTRODUCTION

Drawing Tool and forms and interfaces are created by using dream viewer this chapter will describe all the designing part which are undertaken to carry on this project successfully. Before designing the database we have to draw some most important diagrams. . It shows the diagrams which show interaction between external entities and the system and also the database design which shows the attributes and the relations and also the interface design which show the actual form design and how the system behave with the organizational inputs Such as ER diagram, decomposition diagram, use case diagram, data flow diagram, structured diagram, class diagram, sequence diagram, activity diagram, component diagram and deployment diagram. All the designing part of the database will be created by using the mysql server, all the diagram created by using Edraw.

4.2 SYSTEM ANALYSIS

System analysis is the dissection of a system into its component pieces to study how those component pieces interact and work. It is the re-assembly of a system's component pieces back into a whole system. Each and every component or entity of the system must be analyzed individually in a system and there must be some standard or benchmark to follow in analysis phase. In this way, customer record, users records, order records and payment records have to be analyzed in this system and after all these experiments the consequence will be treated as the functional and non-functional requirements of the system.

Structured system analysis and design is going to be implemented in this project and the waterfall life cycle mode is going to be followed in the entire development. The first main entity in the system is no one than the user of the system. Users will interact with the system on behalf of the member and administrator of the Online retail store

System. The process of studying a procedure or business in order to identify its goals and purposes and create systems and procedures that will achieve them in an efficient way (Merriam-Webster, 2016)

4.3 TIER/LAYERED ARCHITECTURE OF WEB COMPONENTS

Technical architecture is concerned about how large software applications can be or should be organized for better performance and ease of development. The commonly used option is a 3 or n tier architecture.

4.3.1 PRESENTATION TIER

It implements the look and feel of an application. It is responsible for the presentation of data, receiving user events and controlling the user interface. Most e-commerce applications are web-based. The programming languages used are the combination of HTML, CSS and JavaScript, PYTHON are used for dynamic content.

- **HTML** is a Web authoring markup language for defining content structures and rendering a web page.
- **JavaScript** is commonly used for client-side validation. JavaScript does have some control over the look-and-feel of a page in dynamic HTML.

4.3.2. APPLICATION TIER

This layer implements the business logic of the applications. It is usually powered by a Python Application Server (Web Logic or Web Sphere). There're several sub-layers within the application layer.

- **Control Layer** is the interface layer between presentation tier and application tier. The implementation of this layer is dependent on the languages used for implementing the presentation tier.

- **Transaction Layer** usually implements business processes that may involve many business objects. In python architecture, session beans are commonly used for implementing the transaction layer. Transaction Layer and Business Object Layer are not constrained by the programming languages for the presentation and the database used for persistence.

- **Business Object Layer** consists of objects that represent business entities which always should be 100% independent of database used for data persistence.

- **Data Access Object (DAO) Layer** is the interface between the application tier and persistence tier. Besides the methods for "creating", "retrieving", "updating" and "removing" a business object from database, DAO objects implement other business-specific methods as well. Even with JDBC, DAO objects may not be 100% database independent.

4.4 WEB APPLICATION PROCESSING

1. Analysis:-

Once a customer is started discussing his requirements the team gets into it, towards the preliminary requirement analysis. As the web site is going to be a part of a system, it needs a complete analysis as, how the web site or the web based application is going to help the present system and how the site is going to help the business. Moreover the analysis should cover all the aspects especially on how the web site is going to join the existing system.

The first important thing is finding the targeted audience. Then, all the present hardware, software, people and data should be considered during the time of analysis. The analysis should be done in the way, that it may not be too time consuming or with very less informative. The team should be able to come up with the complete cost- benefit analysis and as the plan for the project will be an output of analysis, it should be realistic. To achieve this analyst should consult the designers, developers and testers to come up with a realistic plan.

Input: Interviews with the clients, mails and supporting docs by the client, discussions notes, online chat, recorded telephone conversations, model sites/applications **Output:** Work plan, cost involved, team requirement, hardware-software requirements, supporting documents and, the approval.

2. SPECIFICATION BUILDING:-

Preliminary specifications are drawn up by covering up each and every element of the requirement. For example if the product is a web site then the modules of the site including general layout, site navigation and dynamic parts of the site should be included in the spec. Larger projects will require further levels of consultation to assess additional business and technical requirements. After reviewing and approving the preliminary document, a written proposal is prepared, outlining the scope of the project including responsibilities, timelines and costs.

Input: Reports from the analysis team.

Output: Complete requirement specifications to the individuals and the customer/customer's representative.

3. DESIGN AND DEVELOPMENT:-

After building the specification, work on the online is scheduled upon receipt of the signed proposal, a deposit, and any written content materials and graphics you wish to include. Here normally the layouts and navigation will be designed as a prototype.

Some customers may be interested only in a full functional prototype. In this case we may need to show them the interactivity of the application or site. But in most of the cases customer may be

interested in viewing two or three design with all images and navigation. There can be a lot of suggestions and changes from the customer side, and all the changes should be freeze before moving into the next phase. The revisions could be redisplayed via the web for the customer to view. Throughout the design phase the team should develop test plans and procedures for quality assurance. It is necessary to obtain client approval on design and project plans. In parallel the Database team will sit and understand the requirements and develop the database with all the data structures and sample data will also be prepared

Input: Requirement specification.

Output: Site design with templates, Images and prototype.

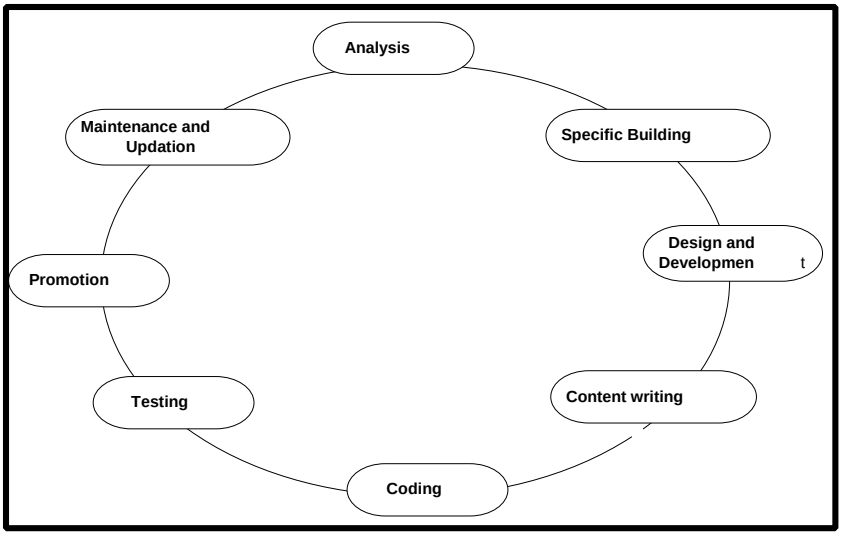


Figure 4.5DESIGN AND DEVELOPMENT

4. Content writing: - This phase is necessary mainly for the web sites. There are professional content developers who can write industry specific and relevant content for the site. Content writers to add their text can utilize the design templates. The grammatical and spelling check should be over in this phase.

Input: Designed

Output: Site with formatted content.

5. Coding: - Now its programmers turn to add his code without disturbing the design. Unlike traditional design the developer must know the interface and the code should not disturb the look and feel of the site or application. So the developer should understand the design and navigation. If the site is dynamic then the code should utilize the template. The developer may need to interact with the designer, in order to understand the design. The designer may need to develop some graphic buttons whenever the developer is in need, especially while using some form buttons. If a team of developers is working they should use a CVS to control their sources.

Coding team should generate necessary testing plans as well as technical documentation. For example python web developers users can use Django Doc to develop their documents to understand their code flow. The end-user documentation can also be prepared by the coding team, which can be used by a technical writer who can understand them, writes helps and manuals later.

Input: The site with forms and the requirement specification.

Output: Database driven functions with the site, coding documents.

6. Testing: - Unlike software, web based applications need intensive testing, as the applications will always function as a multi-user system with bandwidth limitations. Some of the testing which should be done are, integration testing, stress testing, scalability testing, load testing, resolution testing and cross-browser compatibility testing.

Both automated testing and manual testing should be done without fail. For example it's needed to test fast loading graphics and to calculate their loading time, as they are very important for any web site. There are certain testing tools as well as some online testing tools which can help the testers to test their applications. For example ASP developers can use Microsoft's Web Application Test Tool to test the ASP applications, which is a free tool available from the Microsoft site to download. After doing all the testing a live testing is necessary for web sites and web based applications. After uploading the site there should be a complete testing.

Input: The site, Requirement specifications, supporting documents, technical documents. And technical specifications.
Output: Completed application/site, testing reports, error logs, frequent interaction with the developers and designers.

7. Promotion:-

This phase is applicable only for web sites. Promotion needs preparation of Meta tags, constant analysis and submitting the URL to the search engines and directories. There is a details article in this site on site promotion.

Input: Site with content, Client mails mentioning the competitors.

Output: Site submission with necessary Meta tag preparation.

8. Maintenance and Updating:- Web sites will need quite frequent updating to keep them very fresh. In that case we need to do analysis again, and all the other life cycle steps will repeat. Bug fixes can be done during the time of maintenance. Once your web site is operational, ongoing promotion, technical maintenance, content management & updating, site visit activity reports, staff training and mentoring is needed on a regular basis depend on the complexity of your web site and the needs within your organization.

Input: Site/Application, content/functions to be updated, re-Analysis reports for input. **Output**: Updated application, supporting documents to other life cycle steps and teams. The above-

mentioned steps alone are not strict to web application or web site development. Some steps may not applicable for certain tasks. It's depending on the cost and time involved and the necessity. Sometimes if it is an intranet site, then there will be no site promotion. But even if you are a small Development firm, if you adopt certain planning along with this web engineering steps in mind, it will definitely reflect in the Quality of the outcome.

4.5 LOGICAL DESIGN

A logical design is a conceptual, abstract design. You do not deal with the physical implementation details yet, you deal only with defining the types of information that you need. The process of logical design involves arranging data into a series of logical relationships called entities and attributes. The logical design of a system is an abstract representation of the data flows inputs and outputs of the system.

This is often conducted via modeling. Logical design is a graphical representation of a system showing the system processes and the flows of the data into and out of the processes. A logical design is a more detailed design which includes all major components and entities plus their relationships.

An attribute is a component of an entity and helps define the uniqueness of the entity. In relational databases, an attribute maps to a column. (Overview of Logical Design, 2016) We use logical design to document information system because we can represent the logical nature of a system. To represent the logical design we can use different diagrams. (Object-Oriented Requirements Analysis and Logical Design: A Software Engineering Approach, 1993)

4.5.1 ER DIAGRAM AND ENTITIES WITH ITS ATTRIBUTES

Entity relationship diagramming is a technique that is widely used in the world of business and information technology to show how information is, or should be stored used within a business system. The success of any organization relies on the efficient flow and processing of information. This is a technique aimed at optimizing the way that information is stored and used within an organization. It beings with the identification of the main data groups and continues by defining for all of the information that is stored and used within a given system

ER diagram

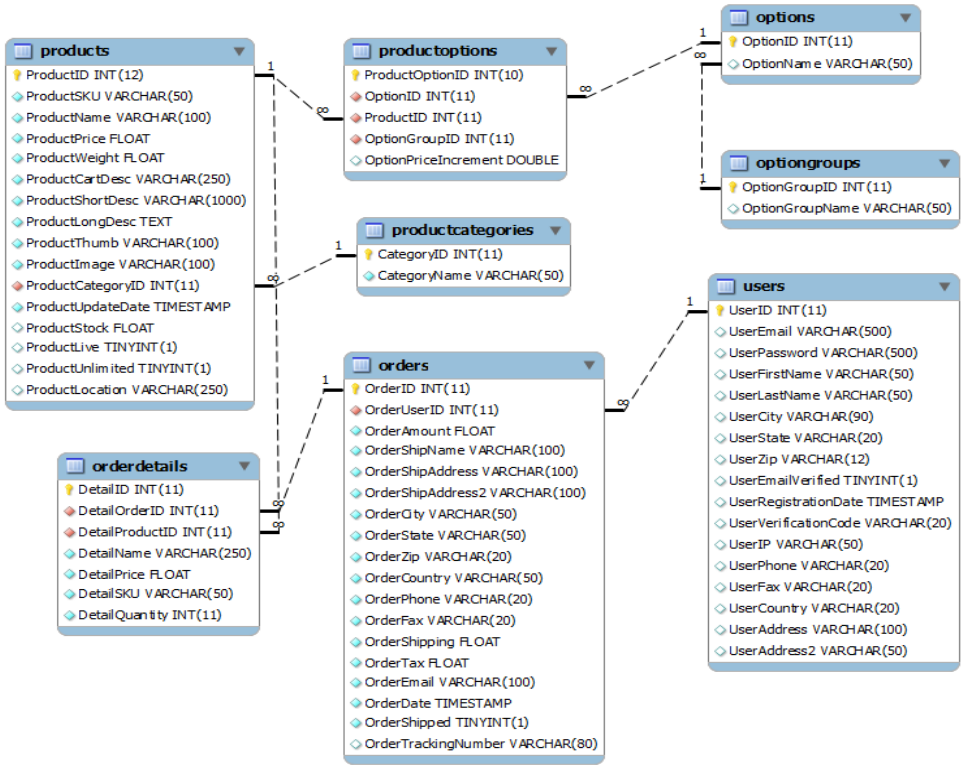


Figure 4.6ER diagram

4.5.2 DECOMPOSITION DIAGRAM

A decomposition diagram shows a high-level function, process, organization, data subject area, or other type of object broken down into lower level, more detailed components. For example, decomposition diagrams may represent organizational structure or functional decomposition into processes. Decomposition diagrams provide a logical hierarchical decomposition of a system.

Note that decomposition doesn't drill into the how but it merely outlines the what. The process of decomposition diagram actually functions very similarly to an org chart in that the processes in this diagram relate to one another like the people on an organization chart relate to each other: Just as all the workers reporting to one manager make up all the work under that manager, all the

processes under a higher process make up all the work of that process. (How to Use Process Decomposition Diagrams in Your Business Analysis Report - For Dummies, 2016)

Decomposition Diagram

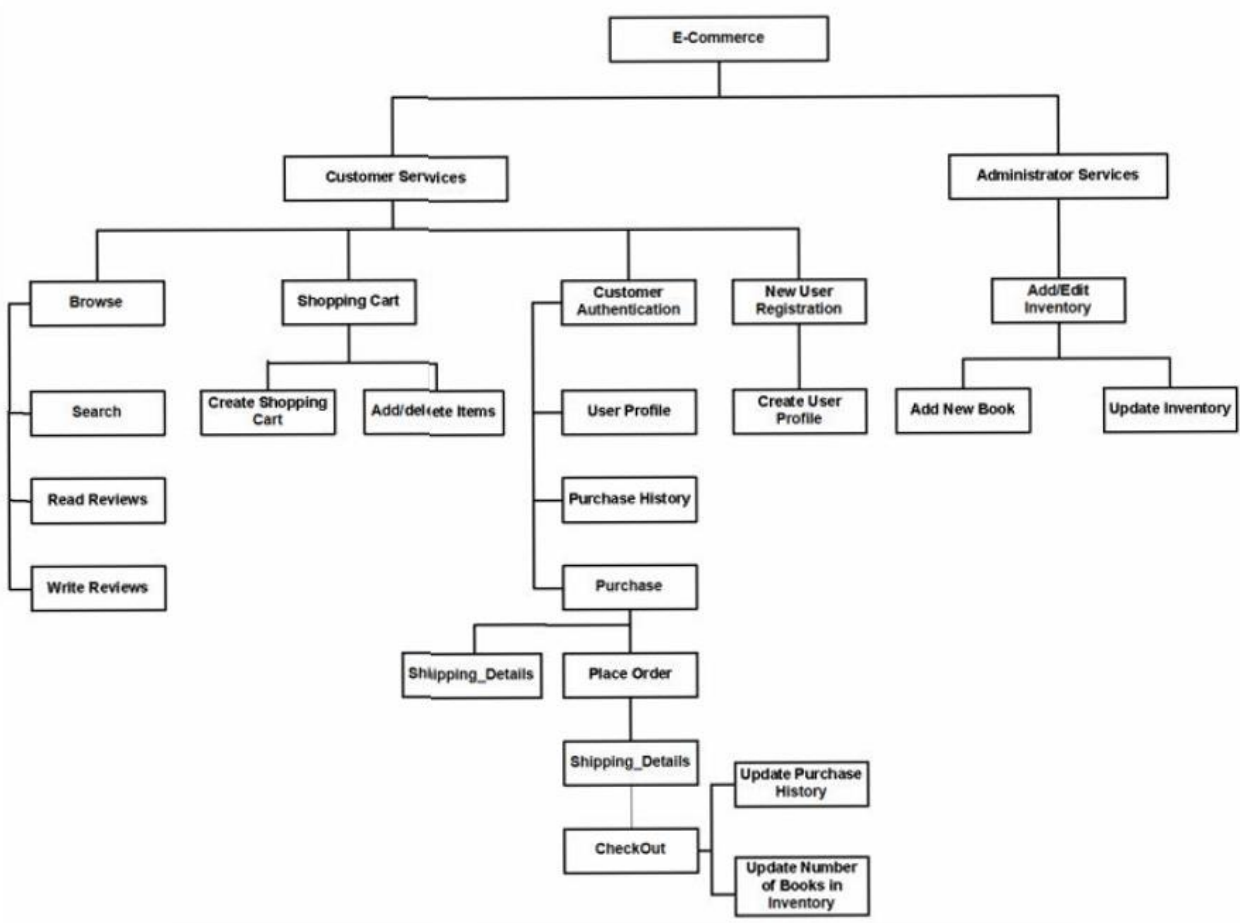


Figure 4.7Decomposition Diagram

4.5.3 USE CASE DIAGRAM

An important part of the Unified Modeling Language (UML) is the facilities for drawing use case diagrams. Use cases are used during the analysis phase of a project to identify and partition system functionality. They separate the system into actors and use cases.

Actors represent roles that are played by users of the system. Those users can be humans, other computers, pieces of hardware, or even other software systems. The only criterion is that they must be external to the part of the system being partitioned into use cases. They must supply stimuli to that part of the system, and the must receive outputs from it. (Bernd Bruegge & Allen H.Dutoit, 2014)

Use cases describe the behavior of the system when one of these actors sends one particular stimulus. This behavior is described textually. It describes the nature of the stimulus that triggers the use case; the inputs from and outputs to other actors, and the behaviors that convert the inputs to the outputs.

The text of the use case also usually describes everything that can go wrong during the course of the specified behavior, and what remedial action the system will take. (UML - Use Case Diagrams, 2016)Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. So when a system is analyzed to gather its functionalities use cases are prepared and actors are identified.

The Use case diagram is used to define the core elements and processes that make up a system. The key elements are termed as "actors" and the processes are called "use cases." The Use case diagram shows which actors interact with each use case. This definition defines what a use case diagram is primarily made up of actors and use cases. A use case diagram should capture the functional system components. It embosses the business processes within the system. While you traverse your system, you will learn significant system attributes that you model in the use case diagram. Because use case diagrams are simple in nature, they are free of technical jargon, use case diagrams are a great way to storyboard flows with users.

Use Case Diagram for User

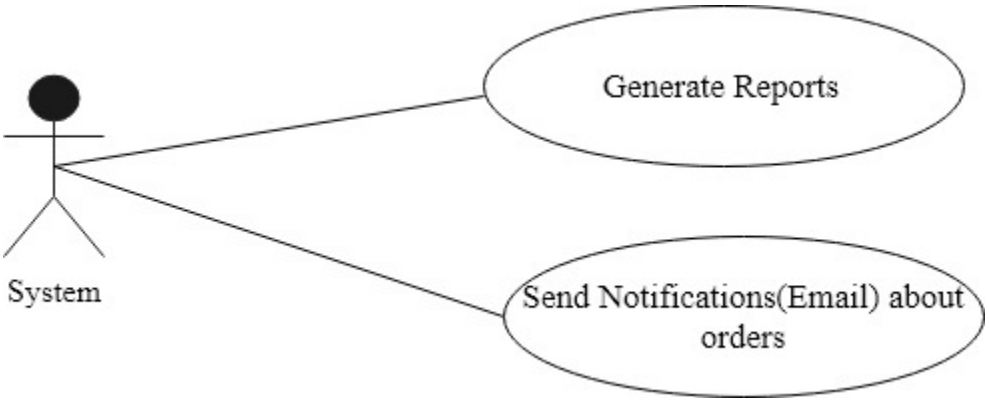


Figure 4.8Use Case Diagram

Use Case Diagram for Admin

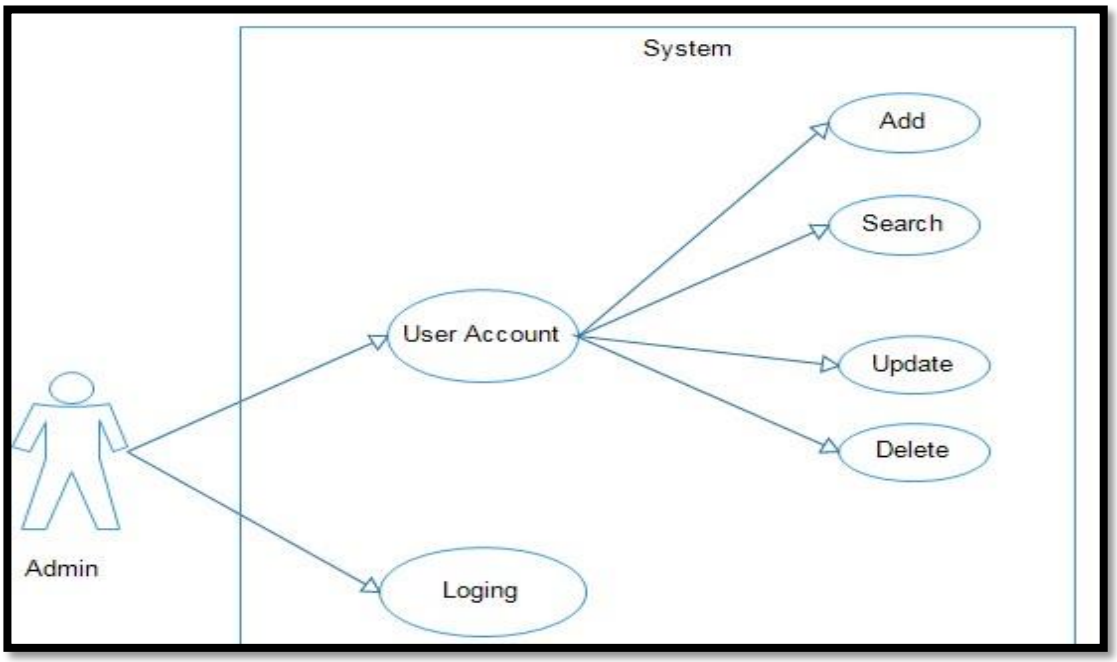


Figure 4.9Use Case Diagram for Admin

4.5.4 DATA FLOW DIAGRAM

The *Data Flow Diagram* (DFD) is a graphical representation of the flow of data through an information system. It enables you to represent the processes in your information system from the viewpoint of data. The DFD lets you visualize how the system operates, what the system accomplishes and how it will be implemented, when it is refined with further specification.

Data flow diagrams are used by systems analysts to design information-processing systems but also as a way to model whole organizations. You build a DFD at the very beginning of your business process modeling in order to model the functions your system has to carry out and the interaction between those functions together with focusing on data exchanges between processes. You can associate data with conceptual, logical, and physical data models and object-oriented models. (SyBooks Online, 2016)

An external entity could be a person, organization, or system that is external to the system but interacts with it. DFD level 0 diagrams show all the major processes that comprise the overall system: how the major processes are interrelated by data flows, how they interact with external entities and how they add data stores. There are also DFD level 1 and 2 diagrams. In general, DFD level 1 diagram is created for each of the major processes shown on the level 0 diagram. It shows

all the internal processes that comprise a single process on the level 0 diagrams and also how the information moves to and from each of these processes.

Context Diagram level 0

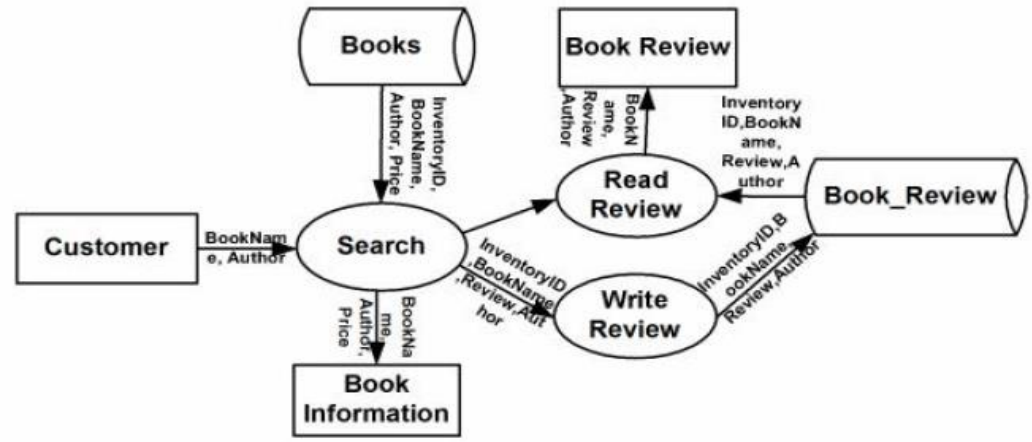


Figure 4.10

Context diagram level 1

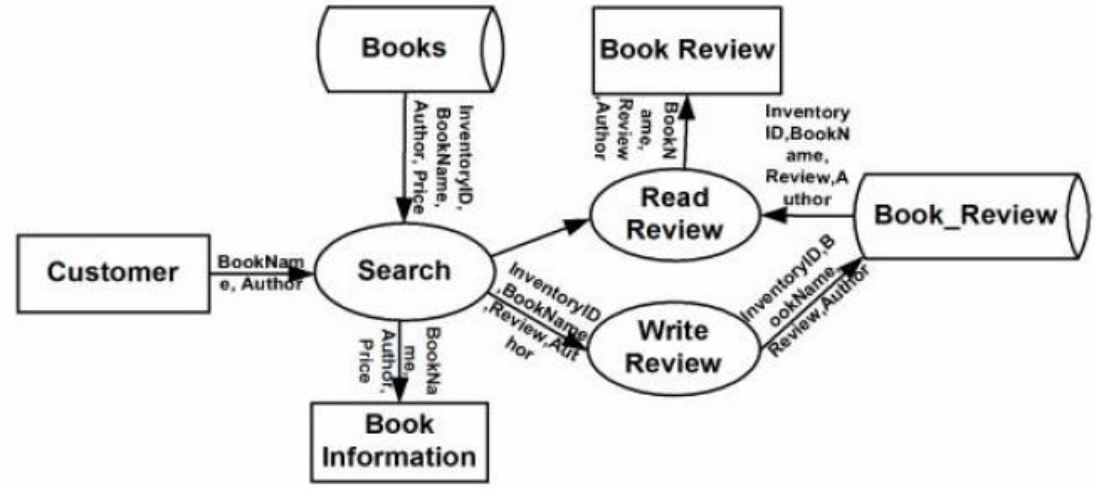


Figure4.11Context diagram level

Context diagram level 2, 3 Level 2 Dataflow diagram for customer shopping

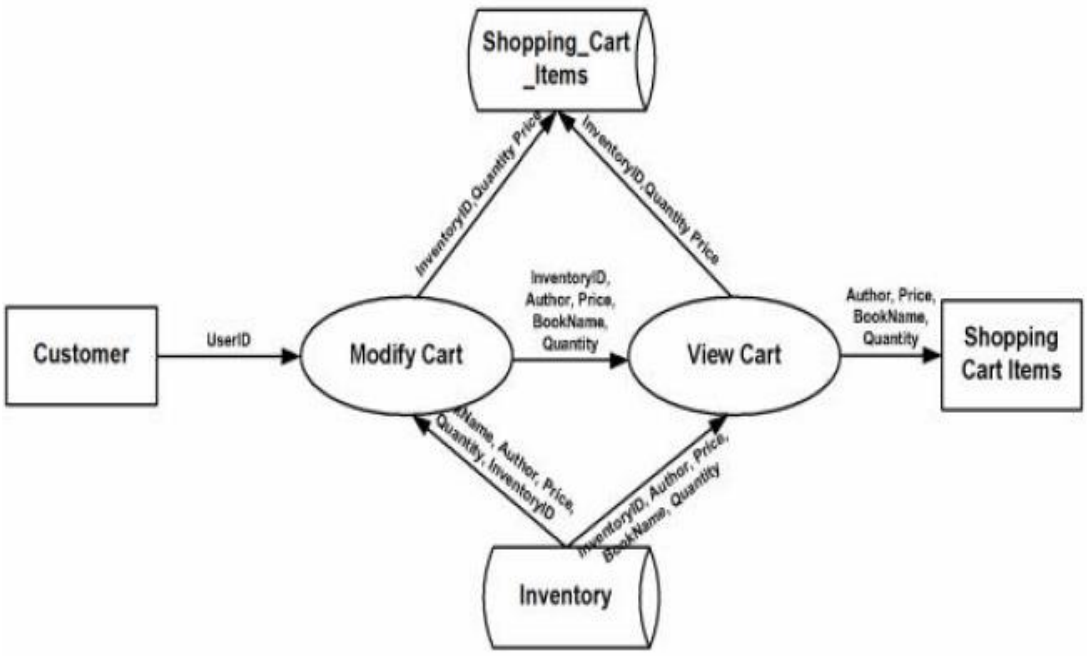


Figure4. 12 Context diagram level 2, 3 Level 2

Level 2 Dataflow diagram for Payment process

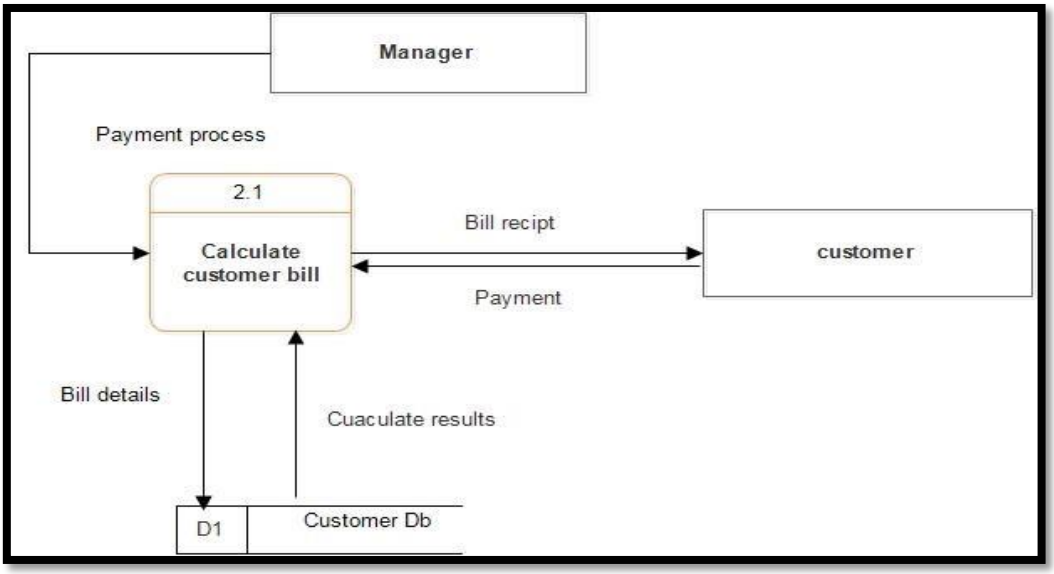


Figure 14: Context diagram level 2

LEVEL 3 DATAFLOW DIAGRAM

Level 3 Dataflow diagram for Payment process

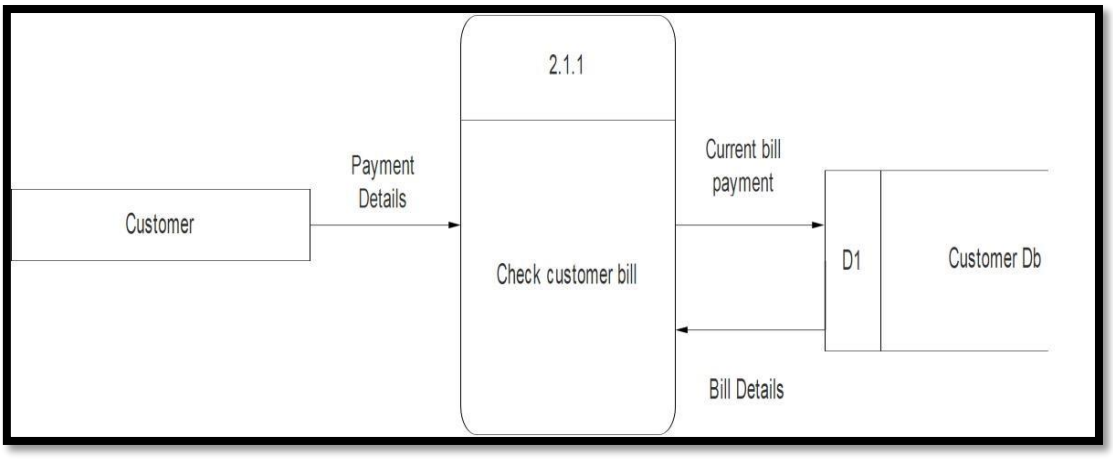


Figure 16: Context diagram level 3

4.5.5 STRUCTURED CHART

A Structure Chart (SC) in software engineering and organizational theory is a chart which shows the breakdown of a system to its lowest manageable levels they are used in structured programming to arrange program modules into a tree. Each module is represented by a box, which contains the module's name. The tree structure visualizes the relationships between modules. A structure chart is a top-down modular design tool, constructed of squares representing the different modules in the system, and lines that connect them. The lines represent the connection and or ownership between activities and sub activities as they are used in organization charts.

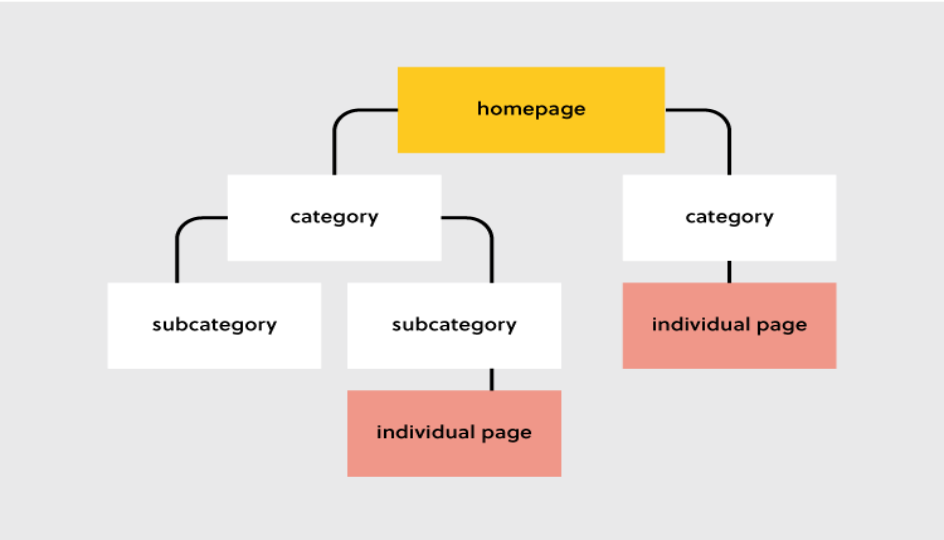


Figure 4.8: Structured Chart

4.5.6 CLASS DIAGRAM AND METHODS USED IN THE CLASS DIAGRAM

A class diagram is an illustration of the relationships and source code dependencies among classes in the Unified Modeling Language (UML). In this context, a class defines the methods and variables in an object, which is a specific entity in a program or the unit of code representing that entity. Class diagrams are useful in all forms of object-oriented programming. In a class diagram, the classes are arranged in groups that share common characteristics. A class diagram resembles a flowchart in which classes are portrayed as boxes, each box having three rectangles inside.

The top rectangle contains the name of the class, the middle rectangle contains the attributes of the class, and the lower rectangle contains the methods, also called operations, of the class.

Class diagrams are the backbone of almost every object-oriented method including UML. They describe the static structure of a system. Classes represent an abstraction of entities with common characteristics. Associations represent the relationships between classes. Illustrate classes with rectangles divided into compartments. Place the name of the class in the first partition (centered, bolded, and capitalized), list the attributes in the second partition, and write operations into the third.

Class diagrams are used to describe the structure of the system. Classes are abstractions that specify the common structure and behavior of a set of object. Objects are instance of classes that are created, modified, and destroyed during the execution of the system. Class diagrams describe the system in terms of objects, classes, attributes, operations and other associations. (Object oriented software engineering using UML Patterns and Java, 2014)

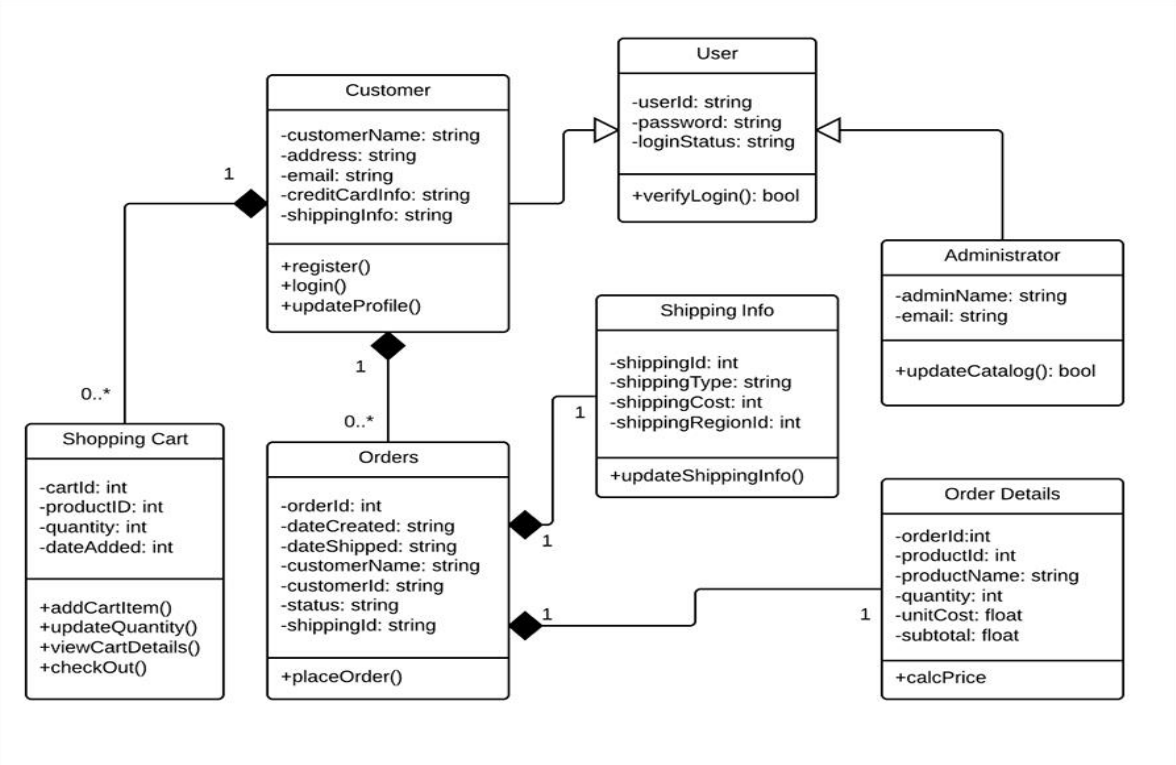


Figure 13 Class diagram

4.5.7 SEQUENCE DIAGRAMS

UML sequence diagrams are used to represent or model the flow of messages, events and actions between the objects or components of a system. Time is represented in the vertical direction showing the sequence of interactions of the header elements, which are displayed horizontally at the top of the diagram. Sequence Diagrams are used primarily to design, document and validate the architecture, interfaces and logic of the system by describing the sequence of actions that need to be performed to complete a task or scenario. (Bernd Bruegge & Allen H.Dutoit, Object Oriented

software engineering using UML Patterns and Java) UML sequence diagrams are useful design tools because they provide a dynamic view of the system behavior which can be difficult to extract from static diagrams or specifications.

Sequence diagrams are used to show the interaction between objects and to illustrate the activities that are performed in retail order system and how data moves around in this system. An important characteristic of a sequence diagram is that time passes from top to bottom, the interaction starts near the top of the diagram and ends at the bottom.

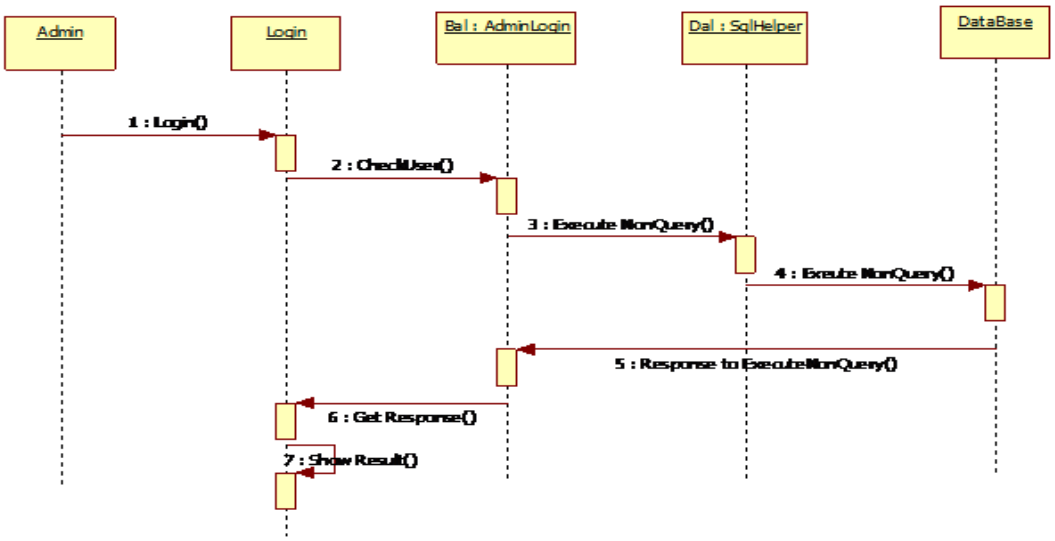


Figure 14Sequence Diagram for shopping cart

Sequence Diagram for Customer

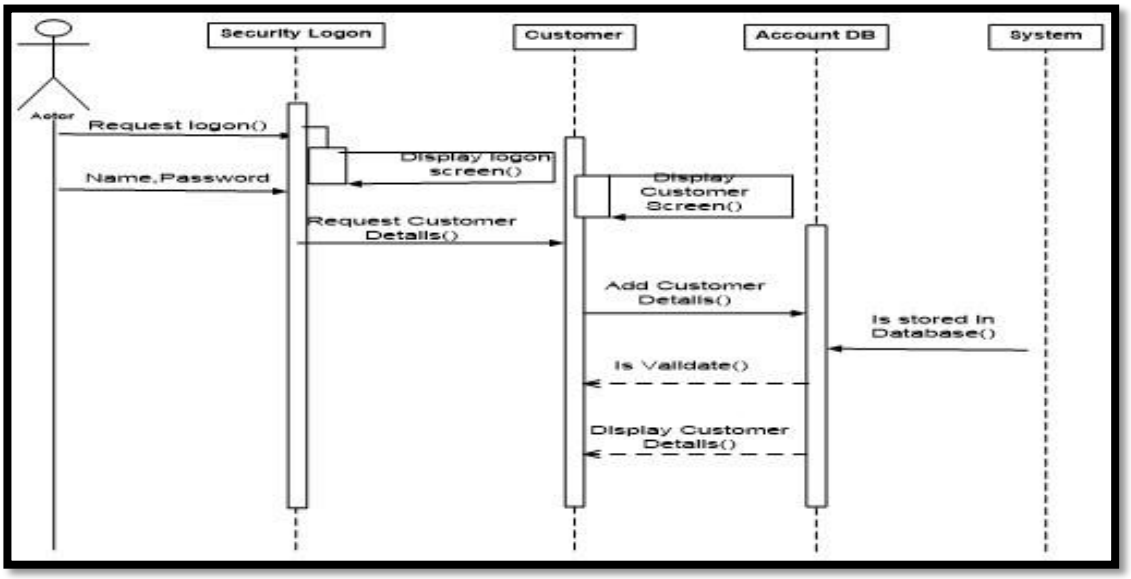


Figure*7.15Sequence Diagram for Customer*

Sequence Diagram for Payment

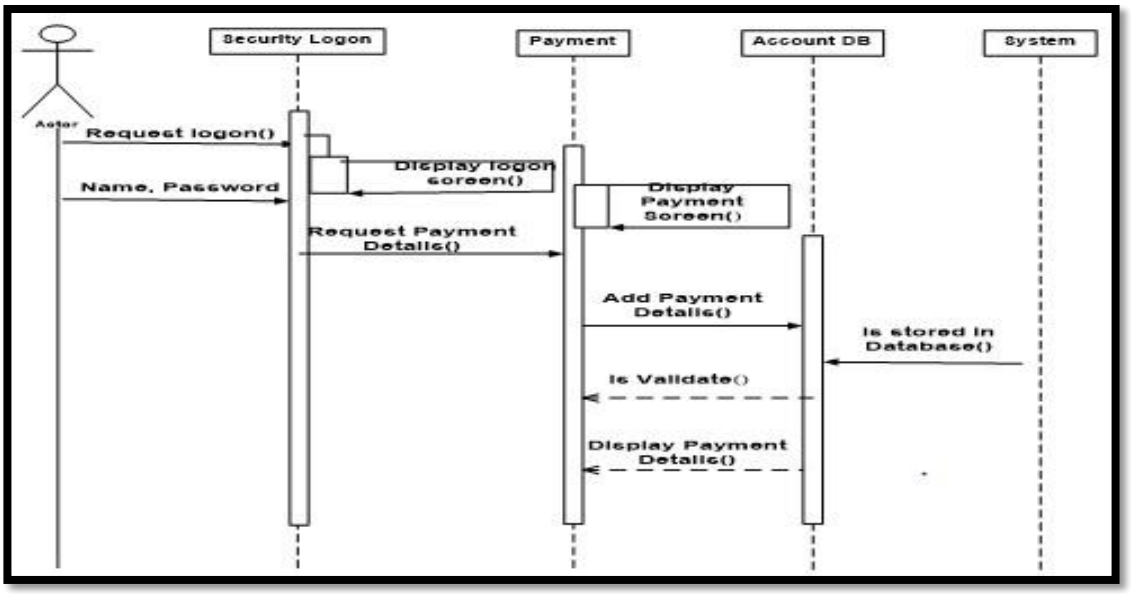


Figure : Sequence Diagram for Payment

4.5.8 ACTIVITY DIAGRAM

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step by-step workflows of components in a system. An activity diagram shows the overall flow of control.

Activity is a particular operation of the system. Activity diagrams are not only used for visualizing dynamic nature of a system but they are also used to construct the executable system by using forward and reverse engineering techniques. The only missing thing in activity diagram is the message part. It does not show any message flow from one activity to another. Activity diagram is some time considered as the flow chart. Although the diagrams looks like a flow chart but it is not. It shows different flow like parallel, branched, concurrent and single (UML - Activity Diagrams, 2016)

ACTIVITY DIAGRAM LOGIN

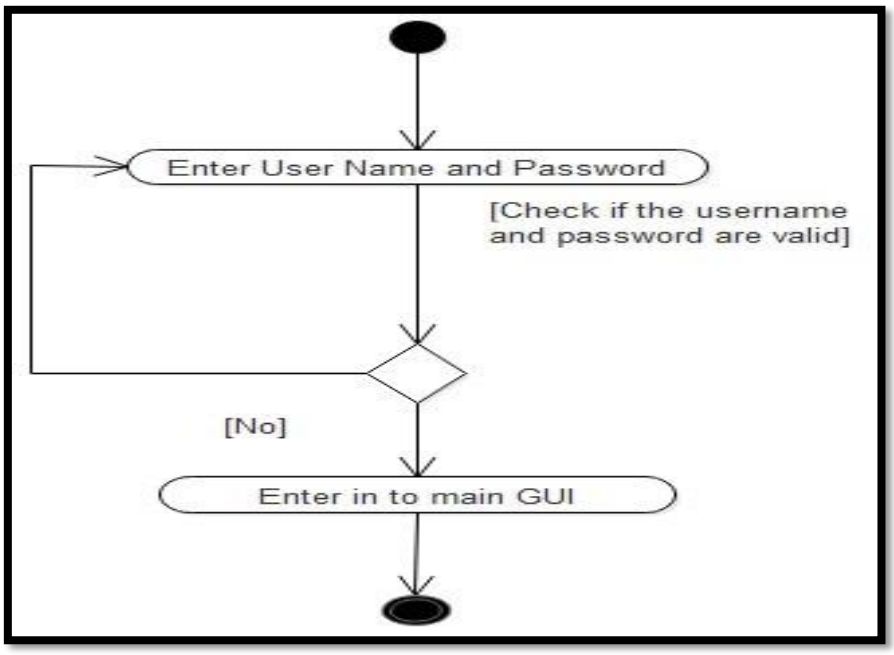


Figure 23: Activity Diagram Login Activity Diagram-User Account Creation

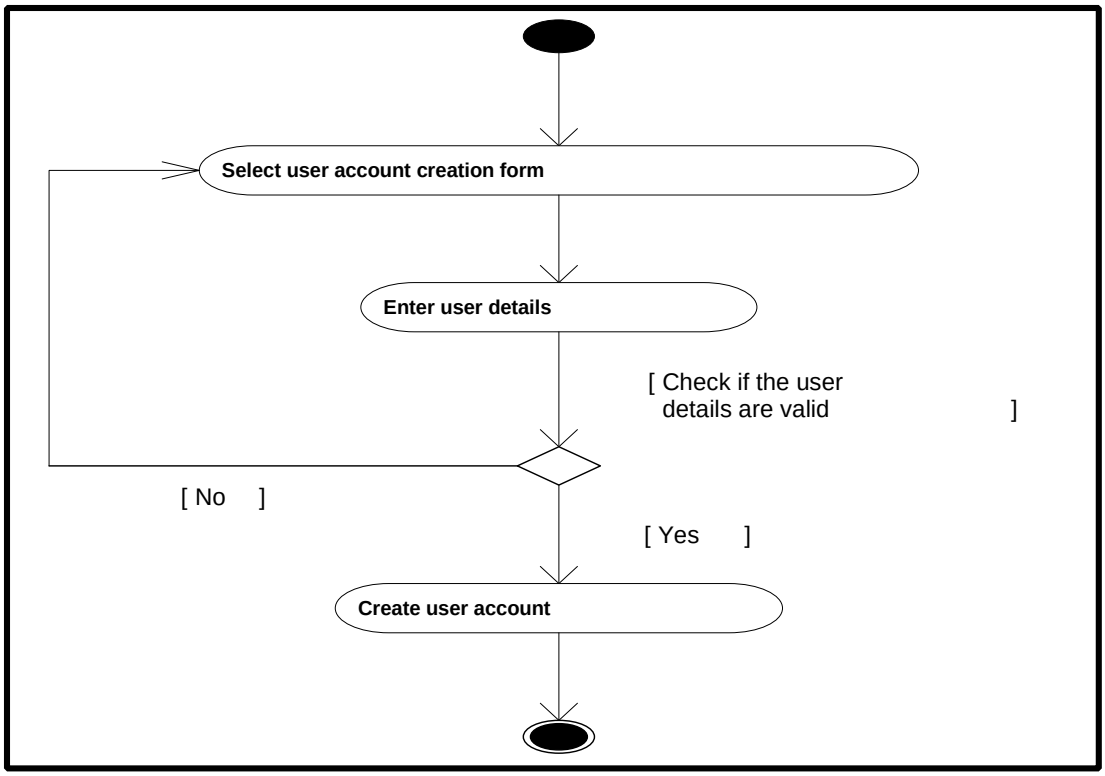


Figure 24: Activity Diagram-User Account Creation

Activity Diagram-Bill payment form

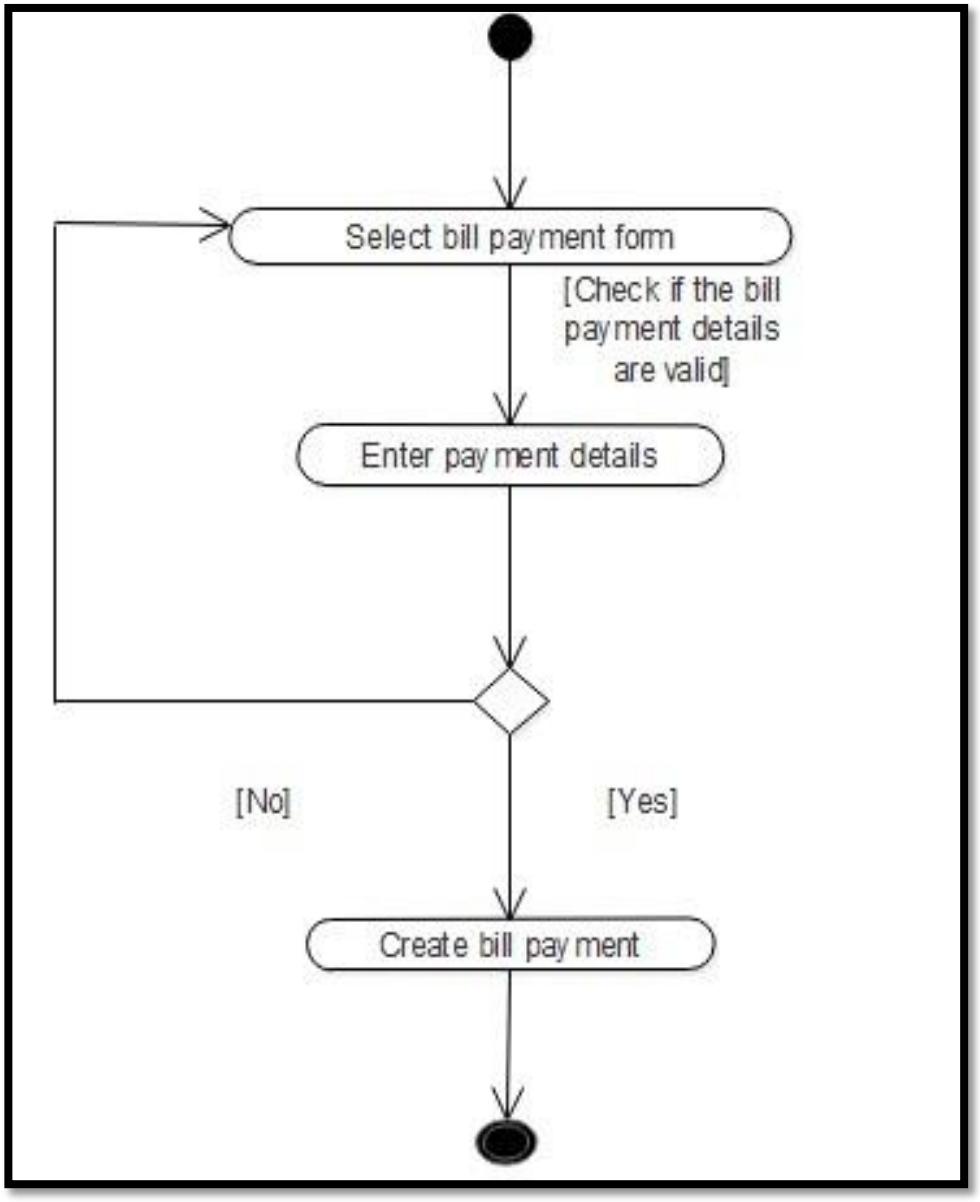


Figure 25: Activity Diagram-Bill payment form

Activity Diagram-Customer

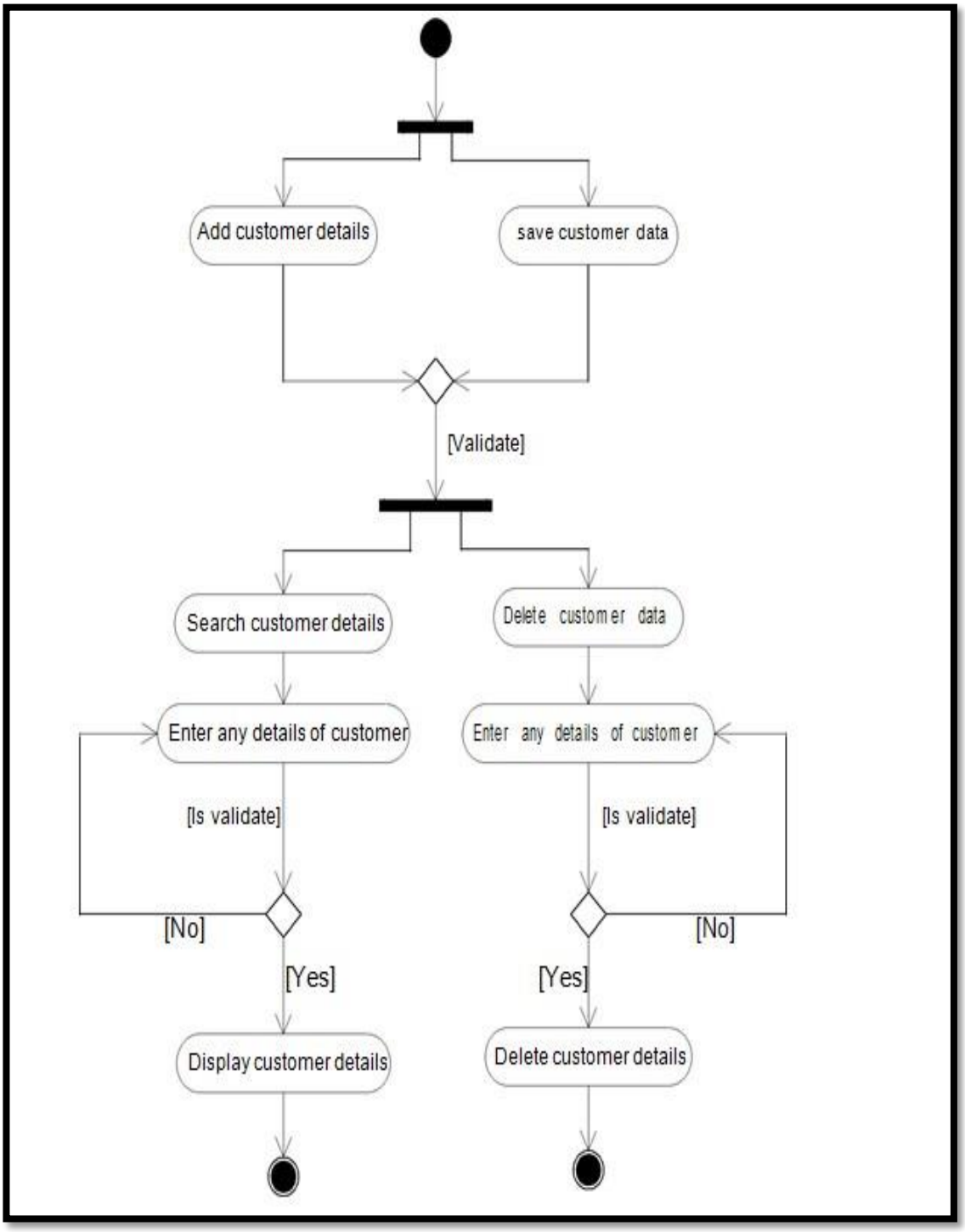


Figure 26: Activity Diagram -Customer

Activity Diagram for Buy Item

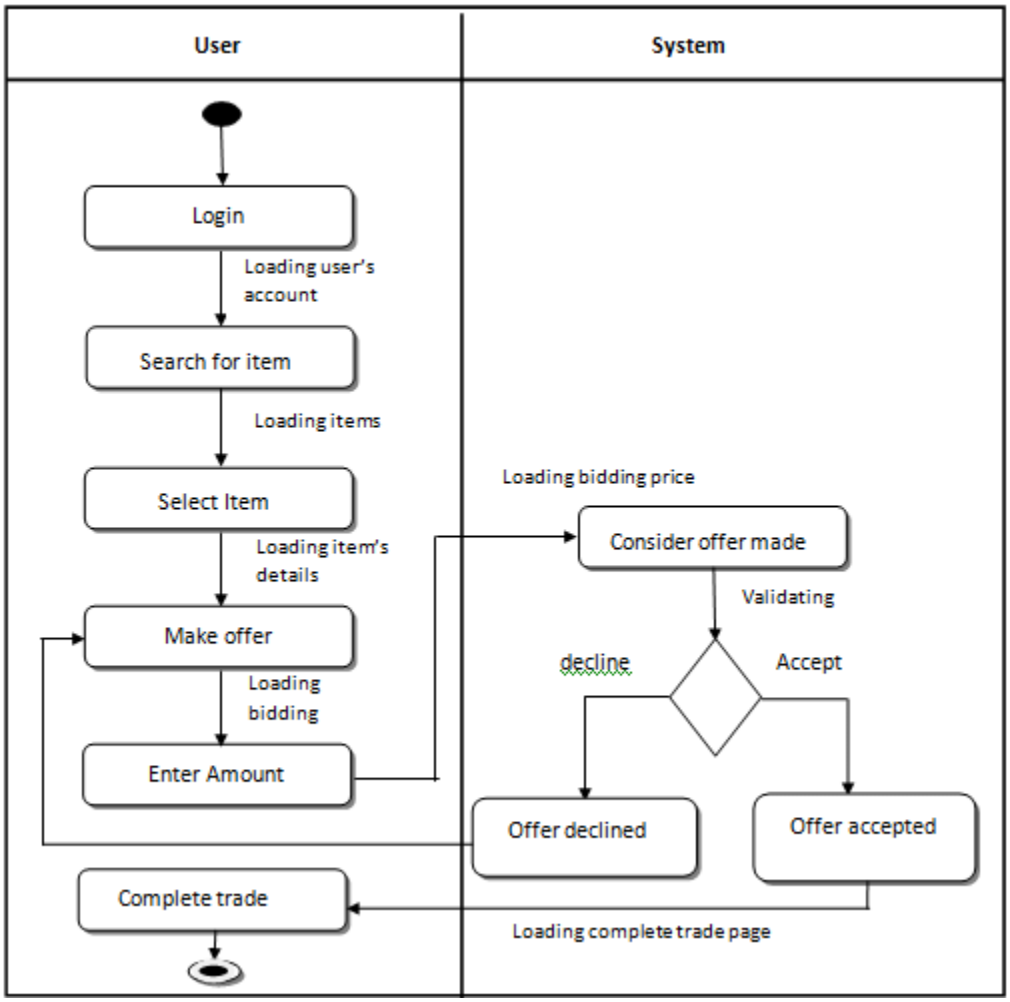


Figure 16 Activity Diagram for Buy Item

4.5.9 STATE CHART DIAGRAM

A state chart diagram describes a state machine. Now to clarify it state machine can be defined as a machine which defines different states of an object and these states are controlled by external or internal events.

State chart diagram is one of the five UML diagrams used to model dynamic nature of a system. They define different states of an object during its lifetime. And these states are changed by events. Reactive systems can be defined as a system that responds to external or internal events.

State chart diagram describes the flow of control from one state to another state. States are defined as a condition in which an object exists and it changes when some event is triggered. So the most important purpose of State chart diagram is to model life time of an object from creation to termination.(UML – State chart Diagrams,2016)

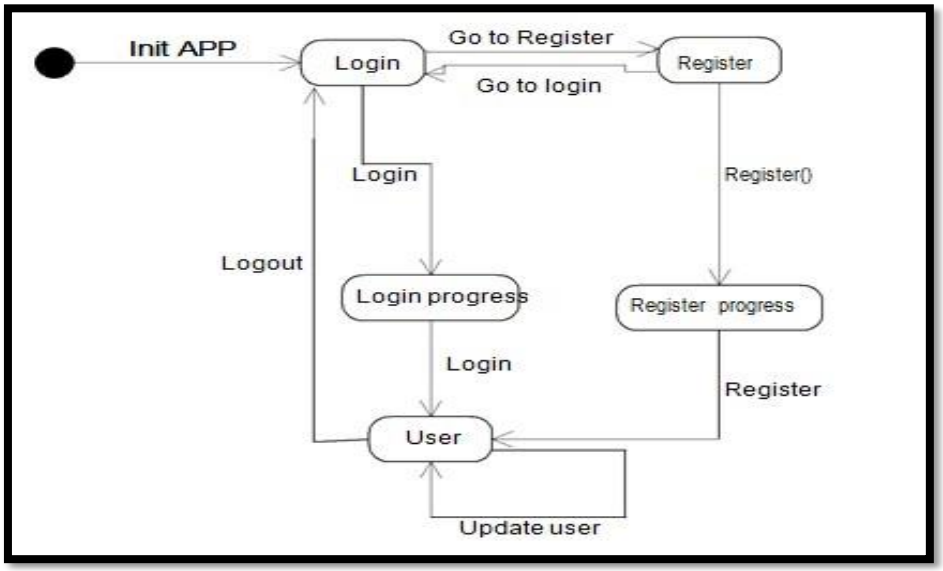


Figure 17state chart diagram

4.5.10 COMPONENT DIAGRAM

In the Unified Modeling Language, a component diagram depicts how components are wired together to form larger components and or software systems. They are used to illustrate the structure of arbitrarily complex systems. Components are wired together by using an assembly connector to connect the required interface of one component with the provided interface of another component.

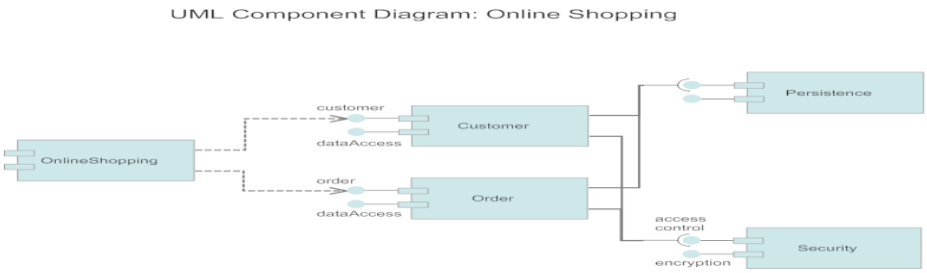


Figure 18Component diagram

4.5.11 DEPLOYMENT DIAGRAM

Deployment diagrams represent the physical relationships among software and hardware components as realized in a running system. This type of diagram is useful for showing how components and objects move about in distributed systems. Deployment diagrams depict the physical resources in a system including nodes, components, and connections.
Deployment diagrams model the physical architecture of a system.

Deployment diagrams, which you typically prepare during the implementation phase of development, show the physical arrangement of the nodes in a distributed system, the artifacts that are stored on each node and the components and other elements that the artifacts implement. Nodes represent hardware devices such as computers, sensors, and printers, as well as other devices that support the runtime environment of a system. Communication paths and deploy relationships model the connections in the system.

It shows the relationships between the software and hardware components in the system and the physical distribution of the processing. Nodes represent hardware devices and communication paths and deploy relationships model the connections in the system. We can use this type of diagrams to assess the implications of distribution and resource allocations.

DEPLOYMENT DIAGRAM

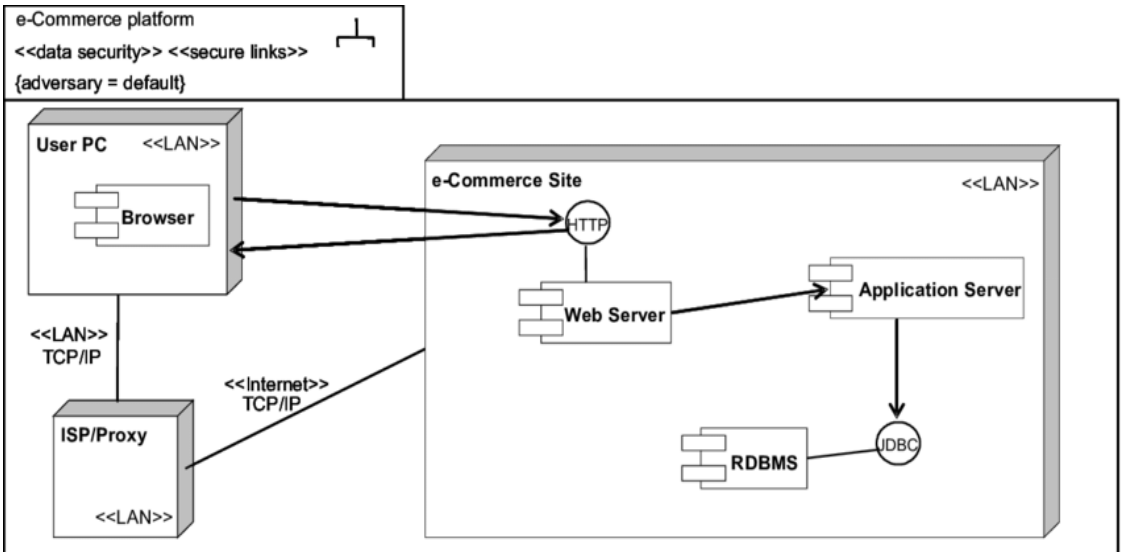


Figure 19Deployment Diagram

4.6 CONCLUSION

This chapter provides logical representation of proposed Online asfaq retail store System and also it includes ER diagram, use case diagram, class diagram, decomposition diagram, component diagram, deployment diagram, and state chart diagram and data flow diagram to show the logical design of the system.

CHAPTER FIVE

PHYSICAL DESIGN AND SYSTEM DEVELOPMENT

5.1 INTRODUCTION

This chapter discuses physical design and system development of proposed asfaq retail store System It is decided to develop the proposed system using the waterfall model and it will be discussed in this chapter under the system development life cycle. Further story board of main interfaces, physically designed component of the system including database relationship, forms and report generation screen shot and interfaces of the system are included in this chapter.

5.1.1 SYSTEM DEVELOPMENT METHOD LIFE CYCLE

Generally, project life cycles are the process of decomposing or subdividing the activities or process of software development and assigning logical loops between separate phases of the entire development course. Various life cycles can be applied in computerized information system developments and I decide to follow a widely accepted model called water fall life cycle model in the development of proposed asfaq retail store System The logic behind waterfall model is linear and sequential. This means that any phase in the development process begins only if the previous phase is complete. Waterfall development has distinct goals for each phase of development.

There is clear compartmentalization of work and control in the model. Since there is compartmentalization, it is easier to set schedule for the tasks to be completed within a specified time period. The other advantage of this model is that only after the work for a particular phase is over, does the other phase start, due to which there is no overlapping of phases or the product does not have to go through different iterative steps. This model is the easiest to implement in the eyes of most of the system developers, due to its linear model. Since the processes of this model are carried out in linear manner, the cost of resources is reduced to a large extent, which in turn helps in reducing the cost of the project considerably. Lastly, the documentation and testing happens at the end of each phase, which helps in maintaining the quality of the project. The waterfall models Phases involve in developing proposed system is described below.

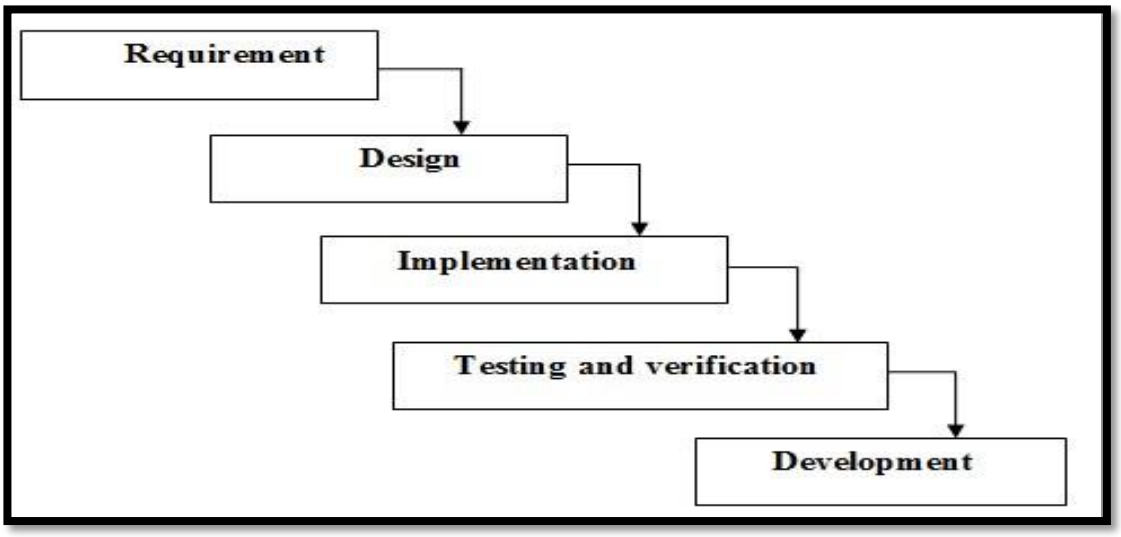


Figure5. 20System development method life cycle

Requirements Analysis: This phase includes a meeting with the administrative officer asfaq retail store to understand their requirements. This is the most crucial phase as any misinterpretation at this stage may give rise to validation issues later. The software definition must be detailed and accurate with no ambiguities.

System Design: The customer requirements are broken down into logical modules for the ease of implementation. Hardware and software requirements for every module are identified and designed accordingly. Also the inter relation between the various logical modules is established at this stage. Algorithms and diagrams defining the scope and objective of each logical model are developed. In short, this phase lays a fundamental for actual programming and implementation.

System Implementation: This is the software process in which actual coding takes place. A software program is written based upon the algorithm designed in the system design phase. A piece of code is written for every module and checked for the output.

System Testing and Verification: The programmatically implemented software module is tested for the correct output. Bugs, errors are removed at this stage. In the process of software testing, a series of tests and test cases are performed to check the module for bugs, faults and other errors. Erroneous codes are rewritten and tested again until desired output is achieved.

System Deployment: This is the final phase of the waterfall model, in which the completed software product is handed over to the client after testing. After the software has been deployed, if the customer suggests changes or enhancements the software process has to be followed all over again right from the first phase.

5.1.2 STORY BOARD OF MAIN INTERFACES/WEB PAGES OF THE SYSTEM

Storyboarding is used in system development as part of identifying the specifications for particular software. During the specification phase, screens that the software will display are drawn, to illustrate the important steps of the user experience. The storyboard is then modified by the developers and the client while they decide on their specific needs. The reason why storyboarding is useful during software engineering is that it helps the user understand exactly how the software will work, much better than an abstract description.

It is also cheaper to make changes to a storyboard than an implemented piece of software. Storyboarding was developed specifically to minimize the risks inherent in all system development projects: missed delivery deadlines, exceeded budgets, deliverable ambiguity and client expectations and finally an end product with minimum bugs. Following figures show the storyboards of some major interfaces of Hospital Information System that I created to describe the system.

STORY BOARD LOGIN PAGE

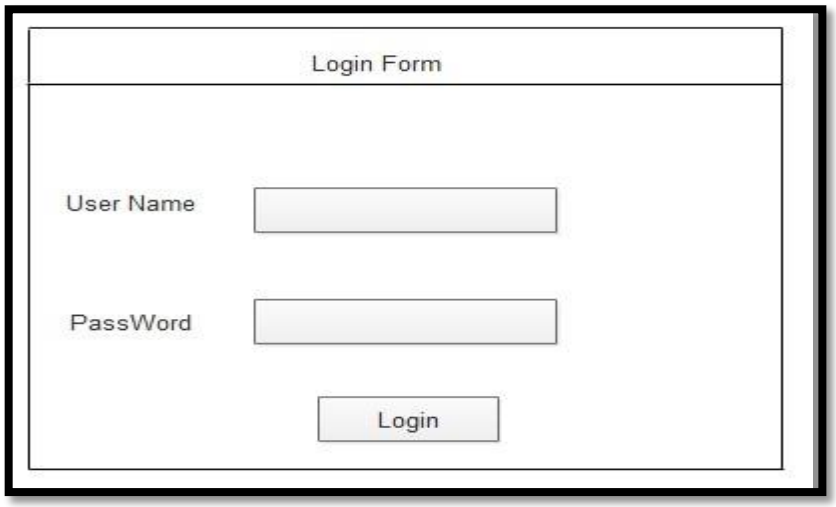


Figure5.21 Story board Login page

STORY BOARD OF HOME PAGE

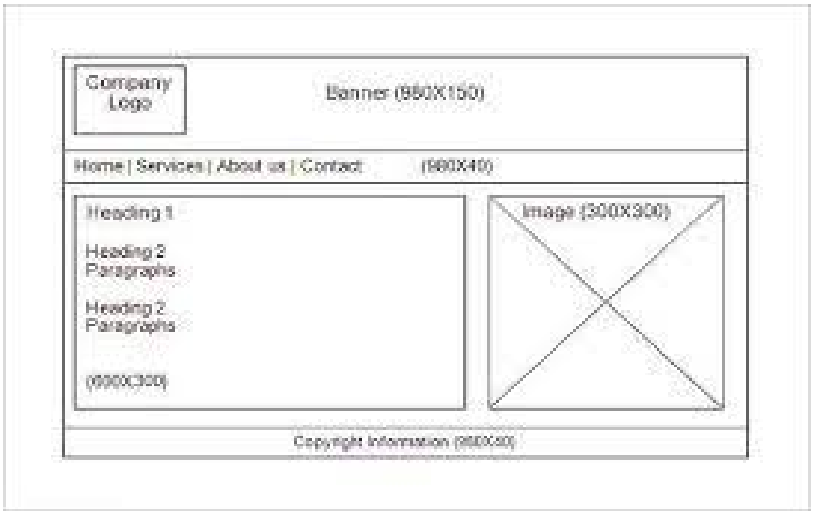


Figure5.2 Story board of home page

STORY BOARD OF USER NAME PASSWORD PAGE

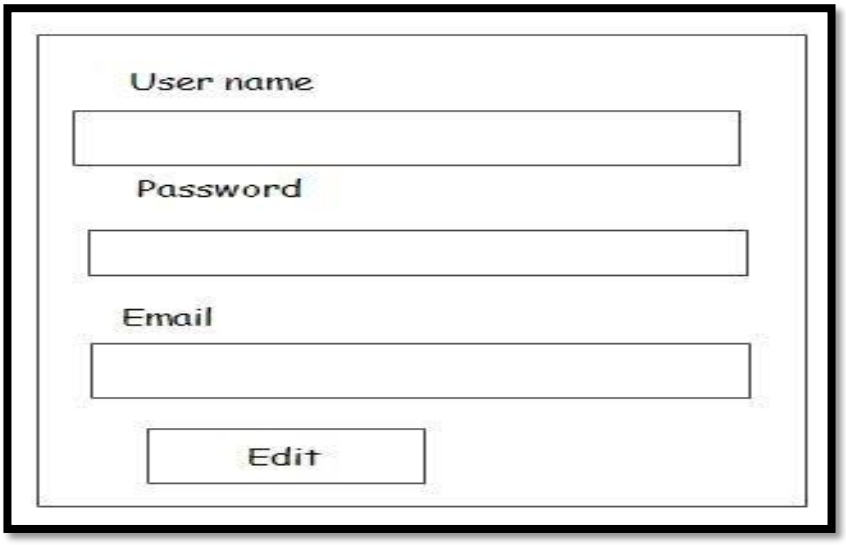


Figure : Story board of User Name password page

5.1.3 PHYSICALLY DESIGNED COMPONENT OF THE SYSTEM

The physical design relates to the actual input and output processes of the system. This is laid down in terms of how data is input into a system, how it is verified or authenticated, how it is processed, and how it is displayed as output. Physical design of systems can generally be broken down into three sub-tasks. User interface design, Data design and Process design.

User interface design is concerned with how users add information to the system and with how the system presents information back to them. Data design is concerned with how the data is represented and stored within the system. Finally, Process design is concerned with how data moves through the system, and with how and where it is validated, secured and transformed as it flows into, through and out of the system. Following section shows the physically developed components of asfaq retail store System.

5.1.4 Database relationship

The main objective of database is to store millions of data of the organization. A database refers to a collection of interrelated data stored with minimum redundancy to serve many users quickly and effectively. Database design of new system is the following.

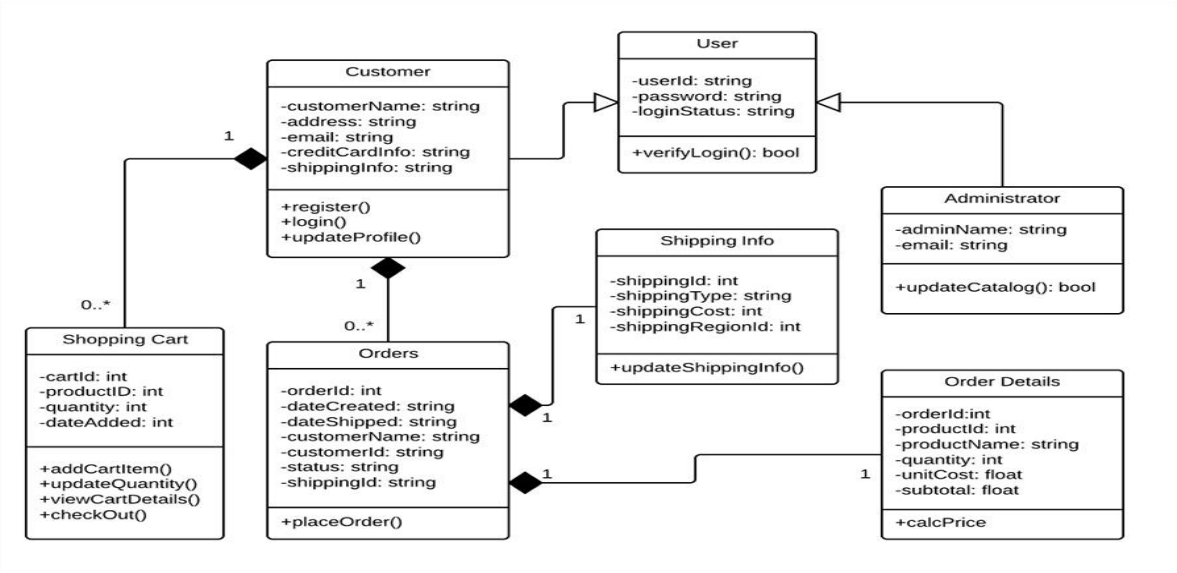


Figure5.22Database relationship

5.1.5 Forms

The shape and structure of anything, as distinguished from the material of which it is composed, particular disposition or arrangement of matter, giving it individuality or distinctive character and external appearance. The following figures I have created to my proposed system.

5.1.5. Sign up Form

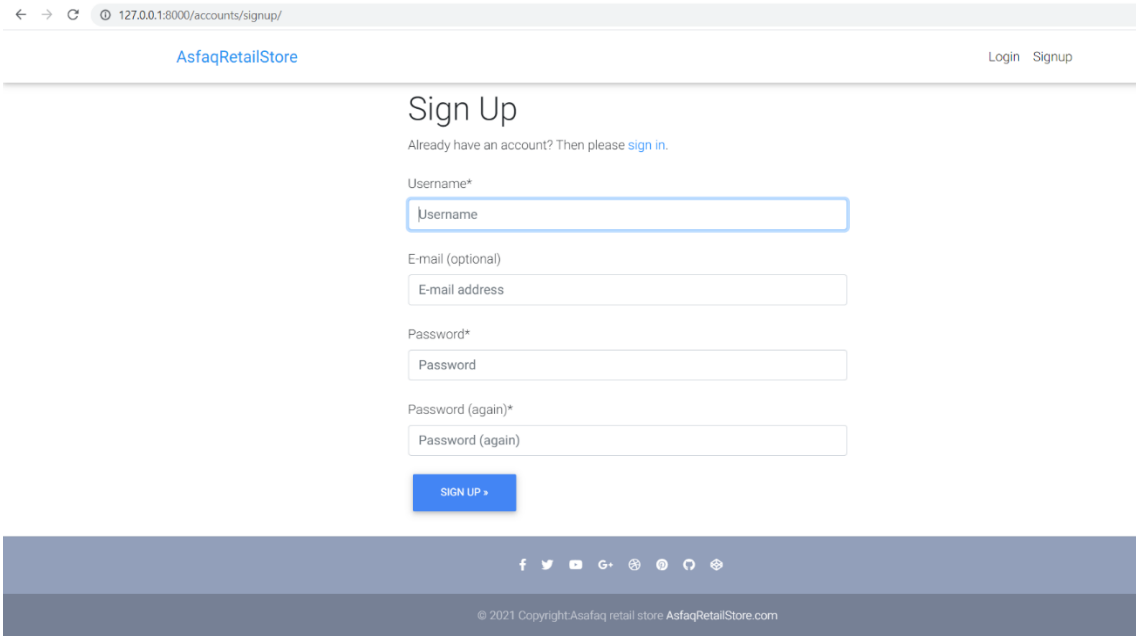
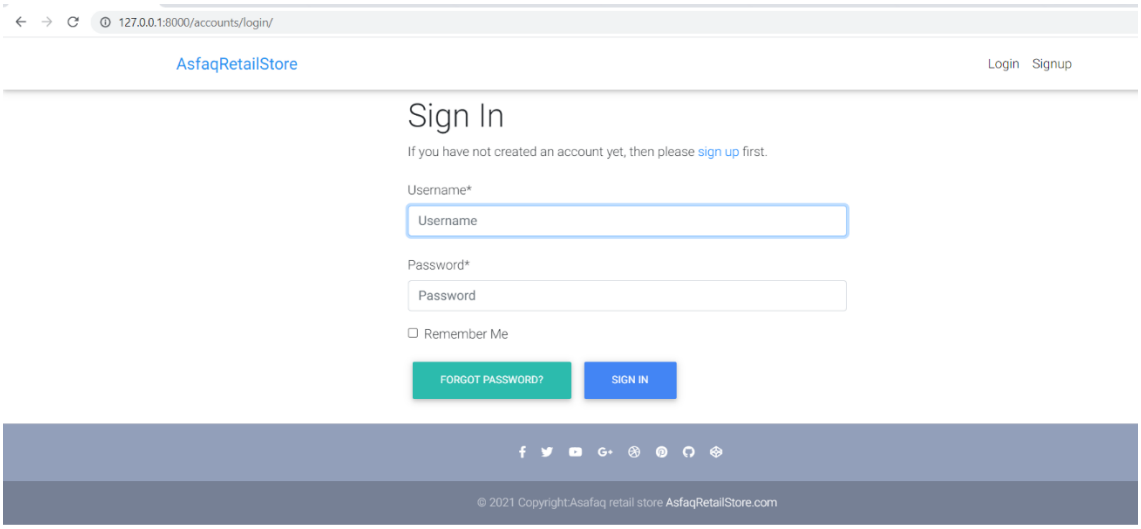


Figure5.23Sign up Form

This is the sign up form. First type username and password email after click on sign up button.

5.1.5.2 Login Form



(Here we can use our previous form Email, Password)

5.1.5.4 Home Page

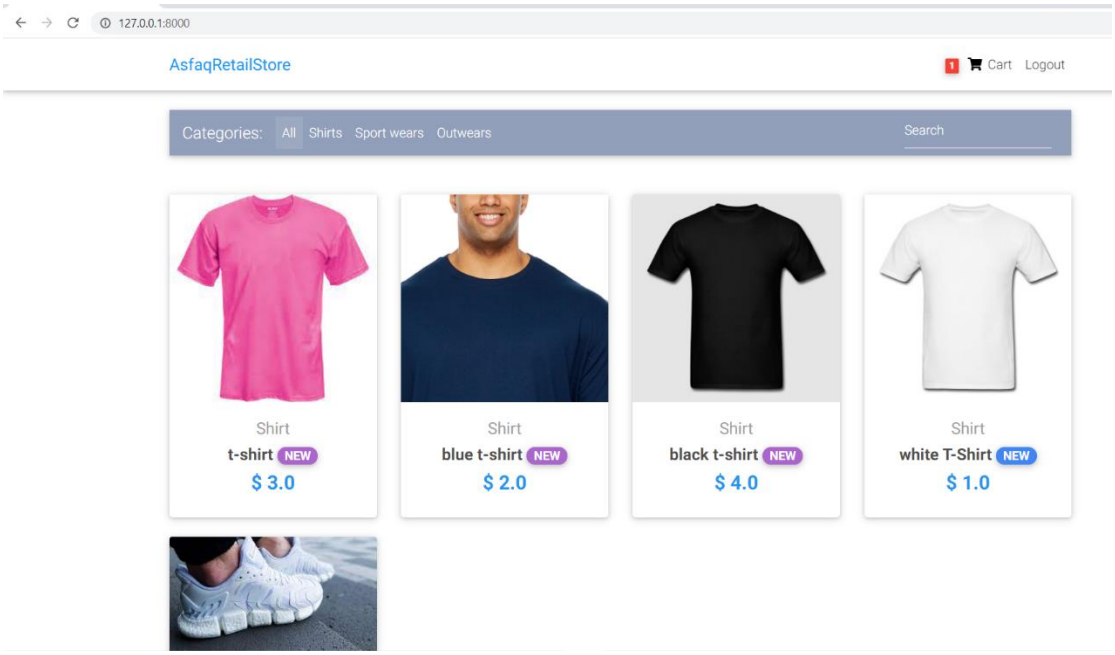


Figure5.24 Home Page

5.1.5.5 Adding items in website

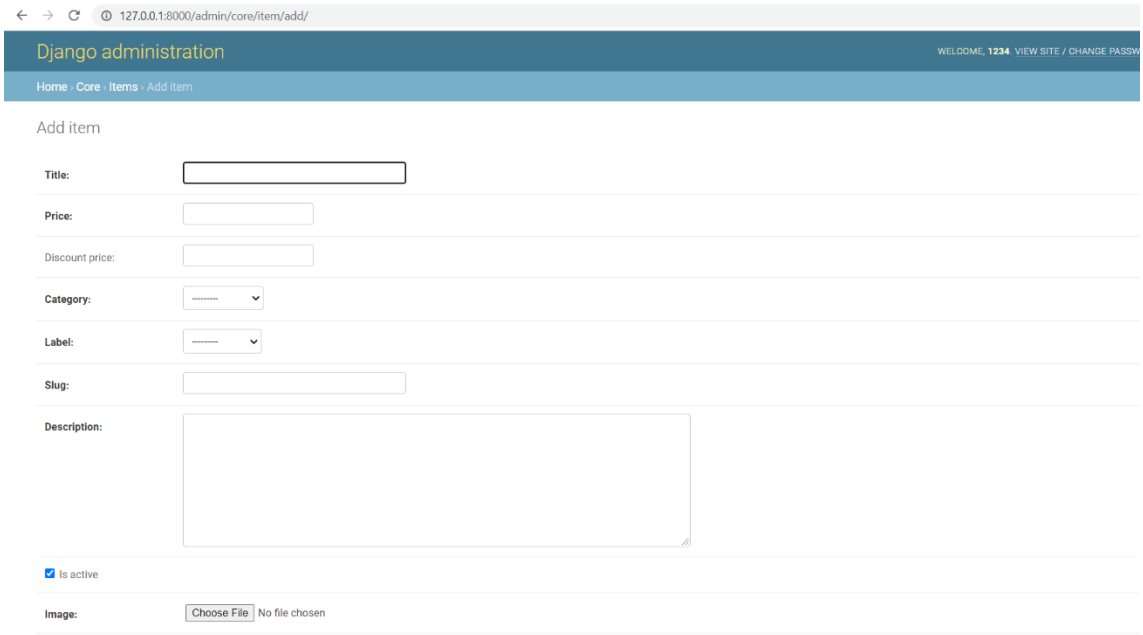


Figure5.25Adding items in website

Here for the adding items in website process

1. Choose the item button
2. Fill out the form
3. Must include pictures,description

Finally select save button

5.1.5.6 Billing info

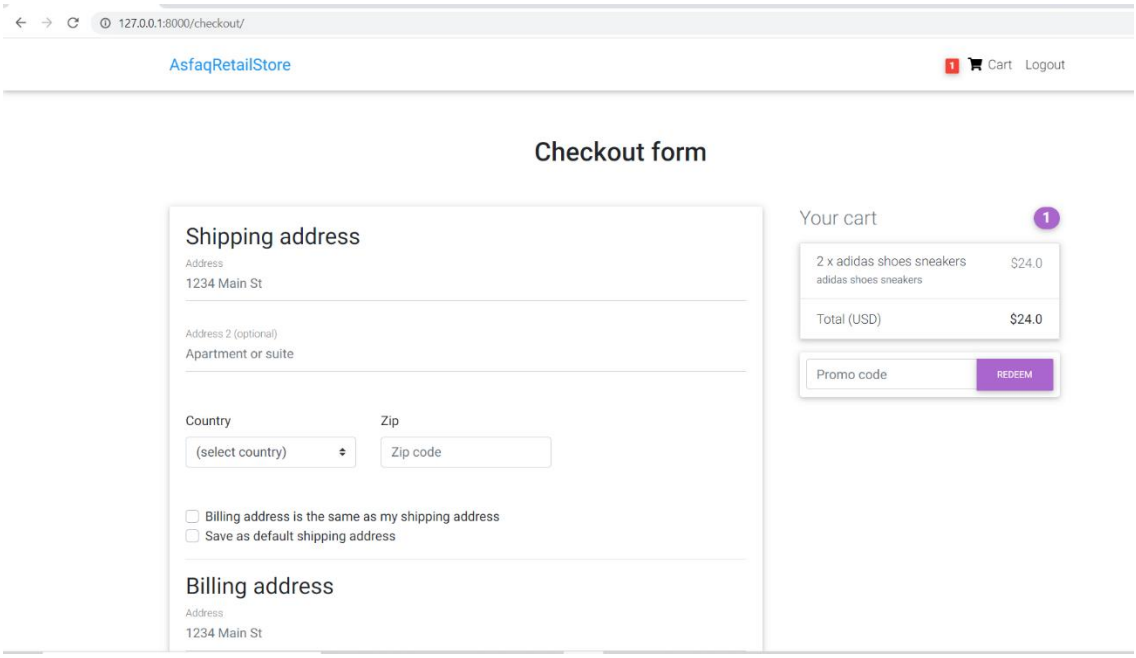


Figure5.26Billing info

Here we can use default billing addresses for online purchasing by saved method First we want to enter our particular Information and browser will save as default address details

5.1.6.1 purchasing in payooneer

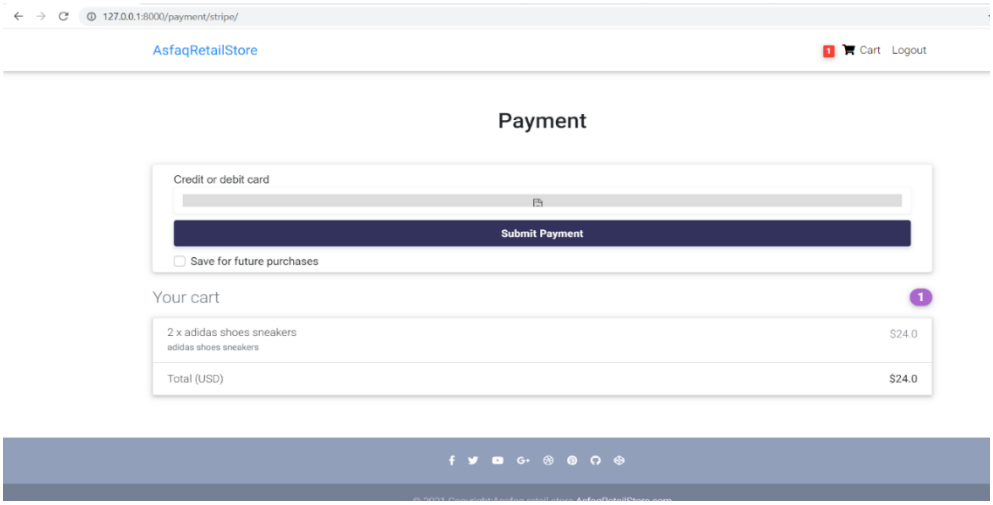


Figure : Confirm and Cancel vehicle Reservation/Rental form

Here admin can cancel customer's reservation.

And if the customer canceled their order or purchase it through payoneer or debit cart.

5.2 CONCLUSION

This chapter was included system development life cycle (waterfall model), story board of main interfaces and the figures of physical design component of the proposed system including database relationship, forms and report generation screen shot for the online asfaq retail store System for online product selling.

CHAPTER SIX

TESTING AND SYSTEM DEBUGGING

6.1 INTRODUCTION

This chapter of the project discuss about the testing techniques. The objective of this testing phase is to prove that the developed asfaq retail system satisfies the requirements defined earlier. Several types of tests will be conducted in this phase. Testing is an important phase of system development because it can ensure the system matches the specification. Besides that, testing also ensures that the system functions in the correct and proper manner with the minimum amount of error and that helps ensure the quality of the eventual system.

6.2 DIFFERENT TEST CASES

A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly. The process of developing test cases can also help find problems in the requirements or design of an application.so it is a set of conditions or variables under which a tester will determine if a requirement upon an application is partially or fully satisfied. It may take many test cases to determine that a requirement is fully satisfied. The characteristics of a test case are that there is a known input and an expected output, which is worked out before the test. In the web application testing we can see different test cases. That are,

Functionality: In testing the functionality of the web sites the following should be tested.

Links: Internal links, external links, mail Links, and broken links

Forms: Field validation, error message for wrong input, optional and mandatory field.

Database: Testing will be done on the database integrity.

Cookies: Testing will be done on the client system side, on the temporary Internet files.

Performance: Performance testing can be applied to understand the web site's scalability, or to benchmark the performance in the environment of third party products such as servers and middleware for potential purchase.

Security: The primary reason for testing the security of a web is to identify potential Vulnerabilities and subsequently repair them.

Usability: Usability testing is the process by which the human-computer interaction characteristics of a system are measured, and weaknesses are identified for correction.

Server Side Interface: In web testing the server side interface should be tested. This is done by verify that communication is done properly. Compatibility of server with Software, hardware, network and database should be tested.

6.2.1 Test case for Admin Login process

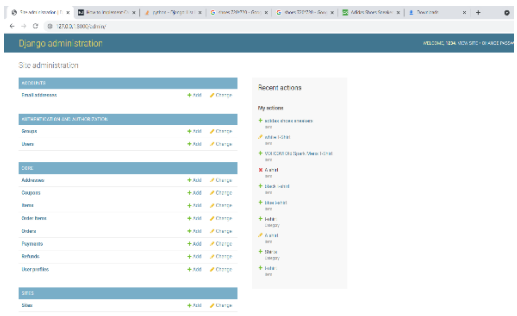
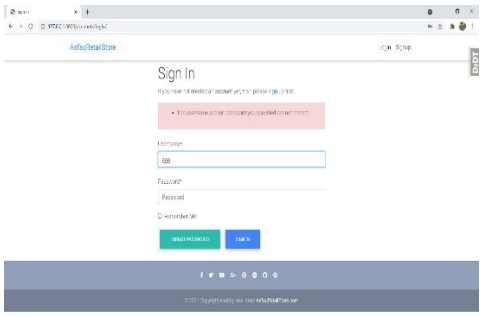
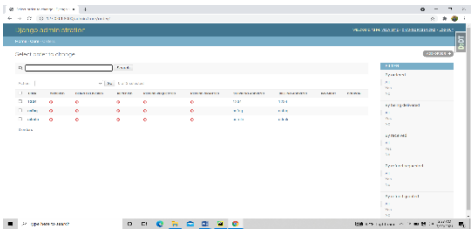
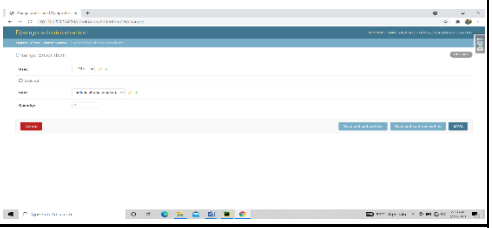
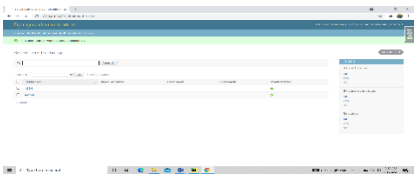
Test No	Module	Condition Being Tested	Expected Result
1	Login	Enter valid Username and password	Display admin form 
2	Login	Enter invalid Username and password	The username and/or password you specified are not correct. 

Table 0.1Test Case for admin login process

6.2.2 Test case for product order process

6.2.3 Test case for user process

Test No	Module	Condition Being Tested	Expected Result
1	order	Click order button	Display the order form 
2	Ordered product	Click cancel button	Display the confirmation number 
Test No	**Module**	**Condition Being Tested**	**Expected Result**
1	User	Delete User	Display Message in window 

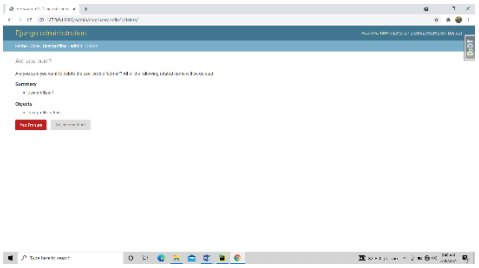
2	User Profile	Delete Profile	Display Message in window 

Table 0.2Test case for user process

6.2.4 Test case for product process

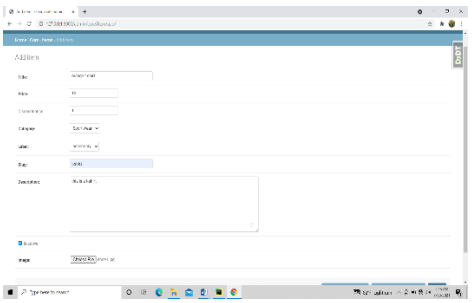
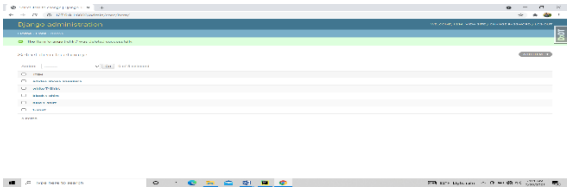
Test No	**Module**	**Condition Being Tested**	**Expected Result**
1	**product**	Add **product**	Display Add new **product** 
2	**product**	Delete **product**	Display Delete **product** Record 

Table 0.3Test case for product process

6.3 TYPES OF TESTING CARRIED OUT FOR SYSTEM

The System is first developed in small program and it is extends in step by step integration of that small programs. Coding and testing are carried out in parallel. Most important two tests are applied to asfaq retail System. Its necessity is listed below

6.3.1 Unit Testing

Unit testing is a software development process in which the smallest testable parts of an application called units are individually and independently scrutinized for proper operation. Unit testing involves only those characteristics that are vital to the performance of the unit under test. This encourages developers to modify the source code without immediate concerns about how such changes might affect the functioning of other units or the program as a whole. Unit testing was done while implementing the project Unit testing is a white box test type used to validate that individual units of source code are working properly it ensure that,

- Robust – the code should not fail under any circumstances.
- Functionally correct – the code should carry out the task defined by the code design Correct interface – the inputs and outputs from the code should be as defined in the design

The primary goal of unit testing is to take the smallest piece of testable software in the application, isolate it from the remainder of the code, and determine whether it behaves exactly as you expect. Each unit is tested separately before integrating them into modules to test the interfaces between modules. Unit testing has proven its value in that a large percentage of defects are identified during its use.

6.3.2 Integration Testing

Integration testing is a software testing methodology used to test individual software components or units of code to verify interaction between various software components and detect interface defects. Components are tested as a single group or organized in an iterative manner. After the integration testing has been performed on the components, they are readily available for system testing.

One of the most significant aspects of a software development project is the integration Testing. Integration may be performed all at once, top-down, bottom-up, critical piece first, or by first

integrating functional subsystems and then integrating the subsystems in separate phases using any of the basic strategies. This test also did while
Implementing the project. This testing mainly focused to check whether links between the forms and reports in the system work correctly. This can be done in two ways.

- Top down integration: Modules are integrated by moving downwards through the control hierarchy, beginning with main control module are incorporated into the structure in either a depth first or breadth first manner.

- Bottom up integration: It begins with construction and testing with atomic modules i.e. modules at the lowest level of the program structure. Because modules are integrated from the bottom up, processing required for the modules subordinate to a given level is always available and the need of stubs is eliminated.

6.4 SOFTWARE TESTING STRATEGIES

Software test strategy is an outline that describes the testing approach of the software development cycle. It is created to inform project managers, testers, and developers about some key issues of the testing process. This includes the testing objective, methods of testing new functions, total time and resources required for the project, and the testing environment.

Test strategies describe how the product risks of the stakeholders are mitigated at the test-level, which types of test are to be performed, and which entry and exit criteria apply. They are created based on development design documents. System design documents are primarily used and occasionally, conceptual design documents may be referred to. Design documents describe the functionality of the software to be enabled in the upcoming release. For every stage of development design, a corresponding test strategy should be created to test the new feature sets.
Reviews, walkthroughs, or inspections are referred to as static testing, whereas actually executing programmed code with a given set of test cases is referred to as dynamic testing. Static testing can be omitted, and unfortunately in practice often is.

Dynamic testing takes place when the program itself is used. And also Box approach testing Strategy Software testing methods are traditionally divided into white- and black-box testing. These two approaches are used to describe the point of view that a test engineer takes when designing test cases.

6.4.1 Black-box testing

Black-box in data structures or external database access, behavior or performance errors, and, Initialization and termination testing, also called behavioral testing, focuses on the functional requirements of the software. That is, black-box testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program. Black-box testing is not an alternative to white-box techniques. Rather, it is a complementary approach that is likely to uncover a different class of errors than white-box methods. Black-box testing attempts to find errors in the following categories. Incorrect or missing functions, interface errors, errors.

The asfaq retail system represents a new approach to security auditing asfaq retail system does not need the source code to analyze and uncover vulnerabilities. Black-box testing treats the software as a "black box", examining functionality without any knowledge of internal implementation. The tester is only aware of what the software is supposed to do, not how it does it. Black box test no required any knowledge of the inner design of the code or logic. It also known as functional testing will only focus on the programmed interface the interfaces only includes the inputs and outputs of a particular program.

6.4.2 White-Box Testing

While white-box testing can be applied at the unit, integration and system levels of the software testing process, it is usually done at the unit level. It can test paths within a unit, paths between units during integration, and between subsystems during a system– level test. Though this method of test design can uncover many errors or problems, it might not detect unimplemented parts of the specification or missing requirements.

White Box Testing is the testing of a software solution's internal coding and infrastructure. It focuses primarily on strengthening security, the flow of inputs and outputs through the application, and improving design and usability. White box testing is also known as clear, open, structural, and glass box testing. It is one of two parts of the "box testing" approach of software testing. White box testing is based on the inner workings of an application and revolves around internal testing. The term "white box" was used because of the see-through box concept. The clear box or white box name symbolizes the ability to see through the software's outer shell into its inner workings.

White box test is a test type which based on an analysis of internal workings and structure of a piece of software. To do the white box test proper knowledge of the inner design of the code or logic is required. This is the main difference of black box testing and white box testing.

6.5 DEBUGGING - METHODS / APPROACHES FOR SYSTEM DEBUGGING

Debugging is a methodical process of finding and reducing the number of bugs, or defects, asfaq retail system software in computer program or a piece of electronic hardware, thus making it behaves as expected. Debugging tends to be harder when various subsystems are tightly coupled, as changes in one may cause bugs to emerge in another.

In contrast to the general purpose computer software design environment, a primary characteristic of embedded environments is the sheer number of different platforms available to the developers. asfaq retail system is by definition, not general-purpose designs: they are typically developed for a single task and the platform is chosen specifically to optimize that application. Not only does this fact make life tough for embedded system developers, it also makes debugging and testing of these systems harder as well, since different debugging tools are needed in different platforms.

6.6 SUMMARY

In this chapter testing and debugging are discussed. Besides that, testing also ensure that the function in the correct and proper manner with the minimum amount of deploy the system successfully. And this chapter includes test cases, white box and black box testing as well as steps of debugging the asfaq retail system.

CHAPTER-SEVEN

IMPLEMENTATION, MAINTENANCE AND USER MANUAL WITH SCREEN SHOT

7.1 INTRODUCTION

This chapter basically describe about implementation and maintenance of online asfaq retail System for Electronic selling. It include about system conversion, technical and procedural requirements for system stages types of system implementation under this direct implementation, phase implementation, parallel implementation are discusses and also system maintenance, system maintenance process models and finally this chapter describe about user manual with screen shots - interfaces finally discusses conclusion of the chapter.

7.2 SYSTEM CONVERSION

This section is concern about system conversion. If it is only selected parts of the system will undergo conversion, identify which components will and will not be converted. If the conversion process will be organized into discrete phases, this section should identify which components will undergo conversion in each phase. Include hardware, software, and data as appropriate. In online asfaq retails system is concern Intra language conversion is a conversion between different versions of the same computer language or different versions of a software system, such as a database management system (DBMS), operating system. Also hardware conversion Strategy, software conversion strategy and data conversion Strategy must concern in this section.

7.3 HUMAN, TECHNICAL AND PROCEDURAL REQUIREMENTS FOR SYSTEM IMPLEMENTATION

System implementation is the practice of creating or modifying a system to create a new business process or replace an existing business process. Technology integration is the practice of integrating multiple system activities to interact and generate information efficiently. In both cases, the system development lifecycle is heavily integrated in these practices.

The implementation plan describes how the E- asfaq retail will be deployed and transitioned into web browsers. The plan contains an overview of the system, a brief description of the major tasks involved in the implementation, the overall resources needed to support the implementation effort (such as hardware, software facilities) and any site specific implementation requirements. The plan

is developed during the design phase and is updated during the development phase. The final version is provided in the Integration and Test Phase and is used for guidance during the Implementation Phase.

Following are the recommended Hardware, Software requirements for system implementation

- Intel Core i3 2.50GHz processor or higher
- 2 GB DDR-Ram
- 500 GB Hard-disk space or higher
- DVD RW Driver
- 15”Monitor (can support up to 1366X768 Resolution)
- US system of Keyboard and double click scroll mouse
- HP LaserJet Printer
- Windows 8.1 Operating System
- PostgreSQL Server for Database Management System
- Pycharm

7.4 STAGES / TYPES OF SYSTEM IMPLEMENTATION

The term implementation can be defined as the act of accomplishing some aim or executing some order, and if you consider the context of its use in system development, you will understand what the task implementation does exactly. The act of implementation in software development is nothing but installing the software other than the developing environment or in the actual client’s environment to deploy the software. There are three strategies that can be used to do this: direct, phased or parallel running.

7.4.1 DIRECT IMPLEMENTATION

This involves taking the old system offline and putting the new system. This is cheap but also quick, allowing new features to be put to use immediately. This usually takes place on a set date, often after a break in production or a holiday period so that time can be used to get the hardware and software for the new system installed without causing too much disruption.

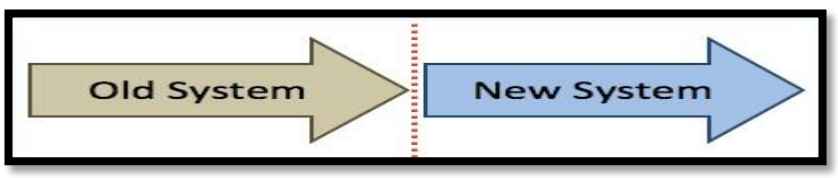


Figure7.27Direct Implementation

Advantages

- The most rapid of all the strategies, provided it works.
- Less risk of confusion between old and new systems.

Disadvantages

- Most stressful for the users - the old system has gone so there is no going back if they have difficulties.
- Most difficult to train staff on as the new system was not in place to learn on before the changeover.
- Most stressful for the developers - all the data and files from the old system will have to be converted ready for use on the new one.

7.4.2 Phase implementation

This involves taking offline parts of the old system and replacing them with the corresponding parts of the new system. The actually conversion from the old parts of the system to the new parts may be either parallel or direct. This provides a compromise between parallel and direct conversion.

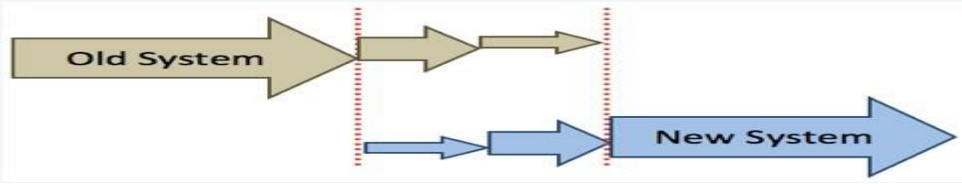


Figure: Phase implementation

Advantages

- Very structured, each phase can be fully evaluated before moving onto the next one.
- Lower risk, a well-planned and controlled introduction of the new system.
- Easy to train staff by letting they learn new skills on each phase as it is introduced.

Disadvantages

- Slower than direct implementation.
- Although each phase is easy to evaluate, you have to wait until all the phases are complete before you can evaluate the whole change over.

7.4.3 Parallel implementation

Parallel conversion involves keeping the old system running alongside the new system for the first couple of weeks or months after the introduction of the new system. This means that any problems with the new system will not affect the continuation of the business. The problem with parallel implementation is that it costs more to run both systems and it also means data has to be entered twice which take more time and is liable to errors. During changeover, a new system and an existing system run side by side. To input the same data and perform the same processes, compare their output and prove the reliability of the new system. If the new system is accepted, the existing system will stop running and will be replaced by the new one.

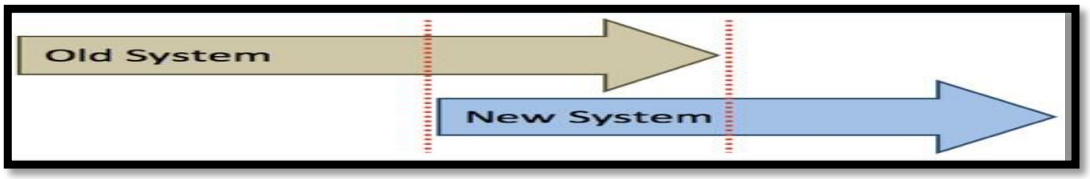


Figure : Parallel implementation

Advantages

- If there are initial problems with the new system then the old one can still be used.
- Both systems can easily be compared.
- Easy to train staff by letting they learn new skills on the parallel system.
- Easy to evaluate because the new and old systems are both running.

Disadvantages

- Expensive - both systems are being run as fully operating versions so both are doing the same job. This may mean duplication of staff and hardware.
- Some risk - there is a greater chance of confusion or errors if the two different systems are being run side-by-side.

7.5 SYSTEM MAINTENANCE

Software maintenance is a very broad activity that includes error corrections, enhancements of capabilities, deletion of obsolete capabilities, and optimization. Because change is inevitable, mechanism must be developed for evaluation, controlling and making modifications. So any work done to change the software after it is in operation is considered to be maintenance work. The

purpose is to preserve the value of software over the time. The value can be enhanced by expanding the customer base, meeting additional requirements, becoming easier to use, more efficient and employing newer technology. There are four types of system maintenance.

Corrective Maintenance: - This type of maintenance implies removing errors in a program, which might have crept in the system due to faulty design or wrong assumptions. Thus, in corrective maintenance, processing or performance failures are repaired.

Adaptive Maintenance: - In adaptive maintenance, program functions are changed to enable the information system to satisfy the information needs of the user. This type of maintenance may become necessary because of organizational changes which may include Change in the organizational procedures, Change in organizational objectives, goals, policies, Change in forms, Change in information needs of managers. **Perfective Maintenance**: - Perfective maintenance means adding new programs or modifying the existing programs to enhance the performance of the information system.

This type of maintenance undertaken to respond to user's additional needs which may be due to the changes within or outside of the organization.

Preventive Maintenance: - Preventive maintenance involves changes made to a system to reduce the chance of future system failure. An example of preventive maintenance might be to increase the number of records that a system can process far beyond what is currently needed or to generalize how a system sends report information to a printer so that the system can adapt to changes in printer technology.

7.6 SYSTEM MAINTENANCE PROCESS MODELS

There are many types of software maintenance process models such as

- Waterfall Model
- Spiral Model
- Quick-Fix Model
- Iterative Enhancement Model

There are several approaches to software maintenance. These approaches have different features. The selection of software maintenance approach is done based on specific needs of the maintenance problem. It has been decided to perform the System Maintenance for developed system through the Quick-Fix model.

Quick-Fix Model

A typical approach to software maintenance is to work on code first, and then make the necessary changes to the accompanying documentation. This approach is captured by the quick-fix model. The model is preferred for projects involving small reworks where the code is changed directly

and the changes are reflected in the relevant documents later. In this approach, the project starts by gathering the requirements for changes. The requirements are next analyzed to formulate the strategies to be adopted for code change. This is usually done by associating a few members of the original development team. The availability of a working old system facilitates the task of the maintenance team as they get a good insight into the working of the old system. They can also compare the working of their modified system with the old system. Also, debugging of error becomes easy as the program traces of both the systems can be compared to localize the bugs.

7.7 Home page

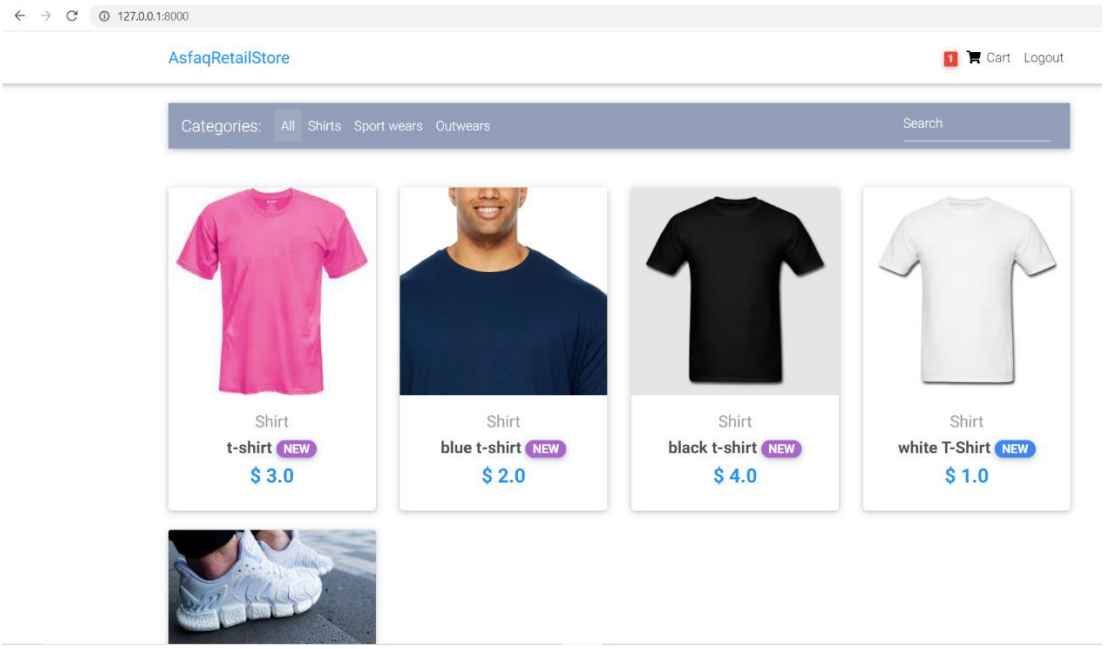


Figure Interface for Main Page

This page displays all of the products that are added in the website. A user can browse through this page to explore products.

7.7 login page

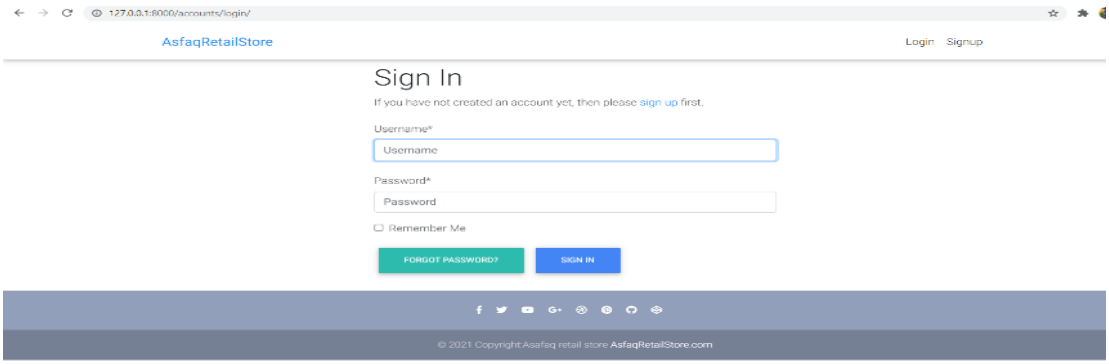


Figure : Interface for Admin Login Page

After welcome screen hidden login form will be opened, here if you type administrator user name and password you will get startup screen.

User Name: - admin

Password: -12345678

7.7.2 Interface for the Admin

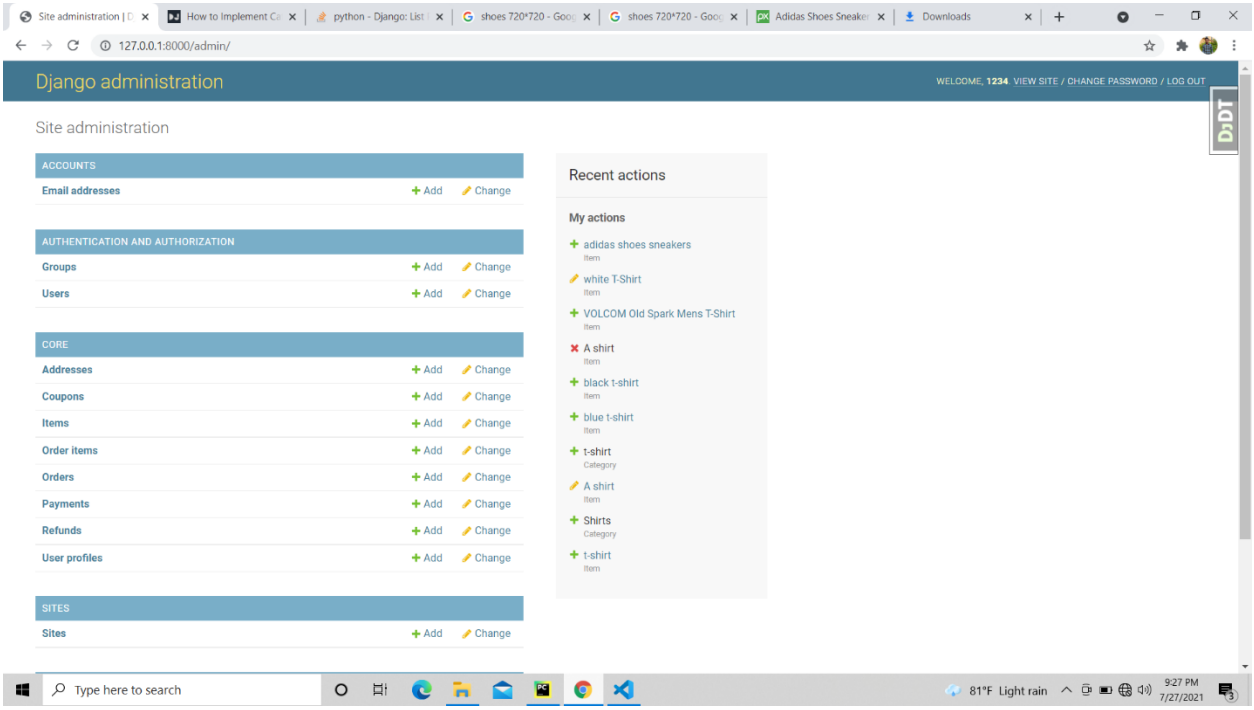


Figure 57: Interface for the Admin

Admin page controls every aspects of the website. It is responsible for adding products, orders, coupons, payment and can edit, delete those things properly.

7.7.3 Interface for Address

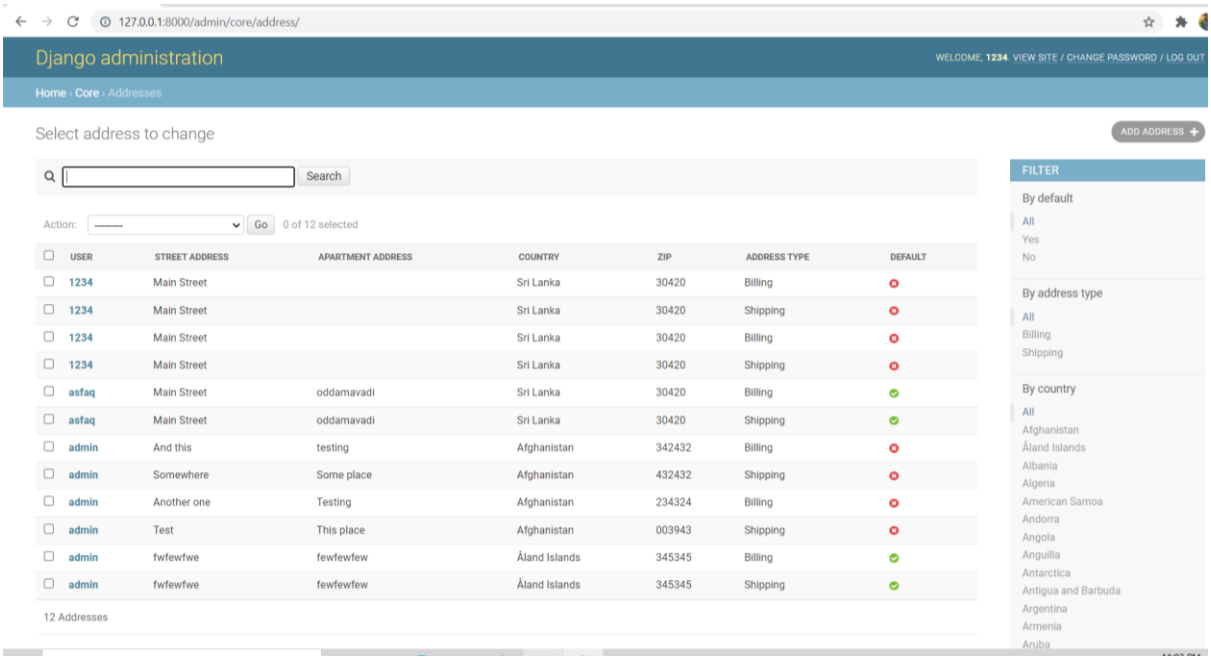


Figure : Interface for address

It shows User name, street address, apartment address, country, zip, address type, and it is an default address or not

7.7.4 Interface for the Username

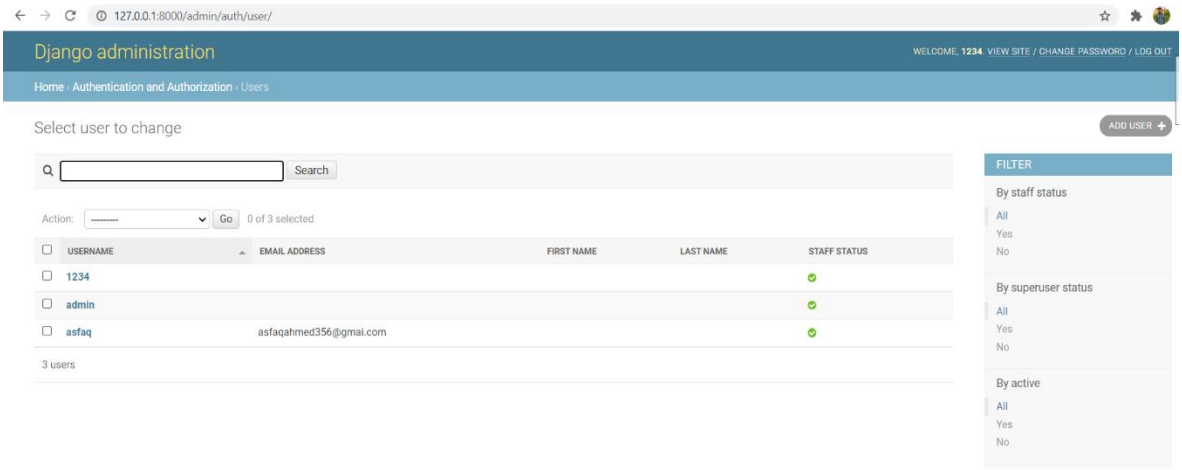


Figure: Interface for the Username

7.7.5 Interface for the Payment

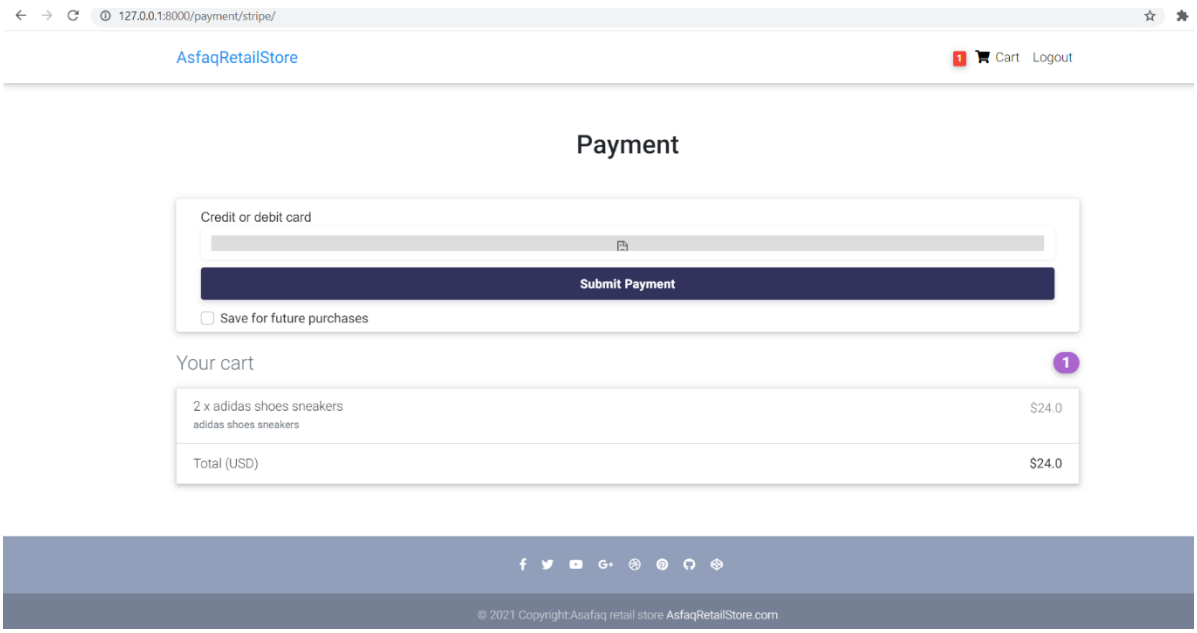


Figure 60: Interface for the Payment

This is the payoneer payment interface, you can use your debit card to purchase.

7.7.7 Interface for adding coupoun

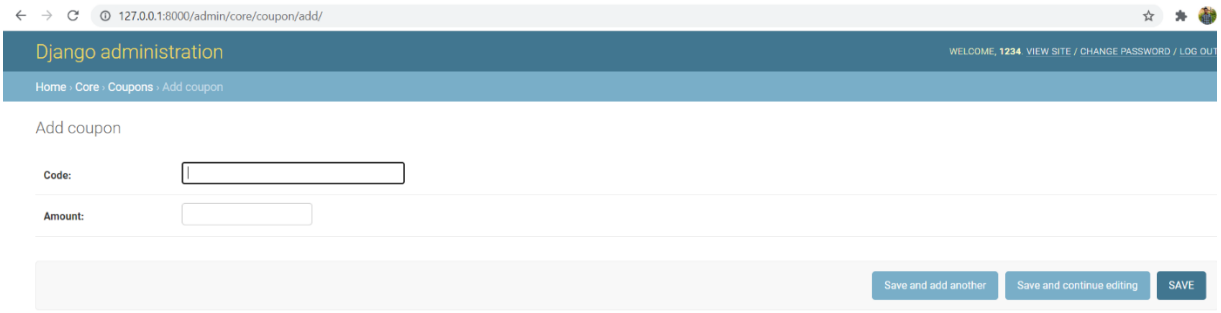


Figure7.28Interface for adding coupon

Add coupon by adding code for example like ASFAQ and add an amount to it. Then if a user this code this amount wil be deducted.

7.7.8 Interface for requesting refund

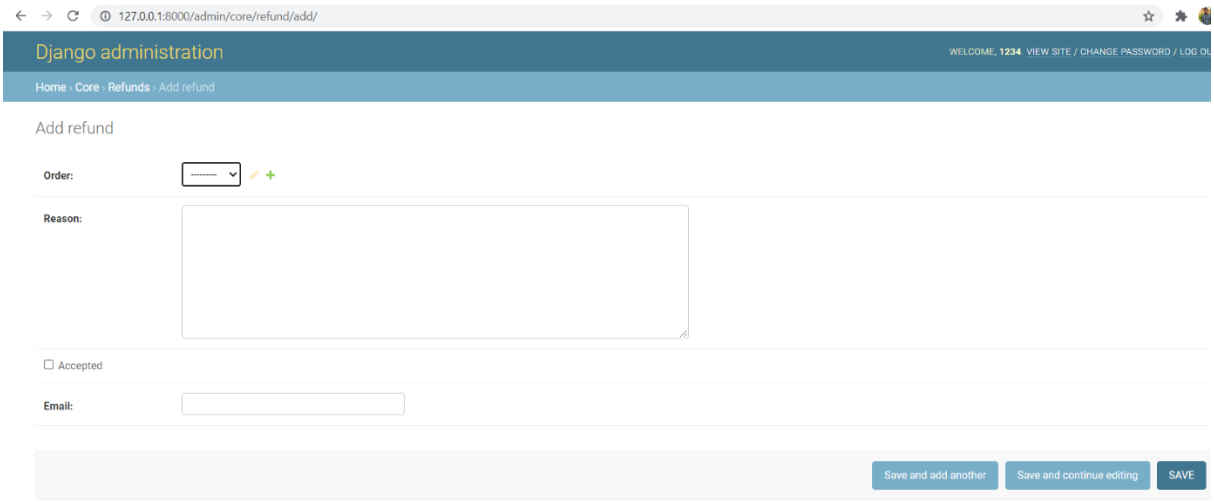


Figure7.29Interface for requesting refund

This figure explain why a user ask refund and confirmation of customers, details detail.

7.7.9 Interface for the adding items

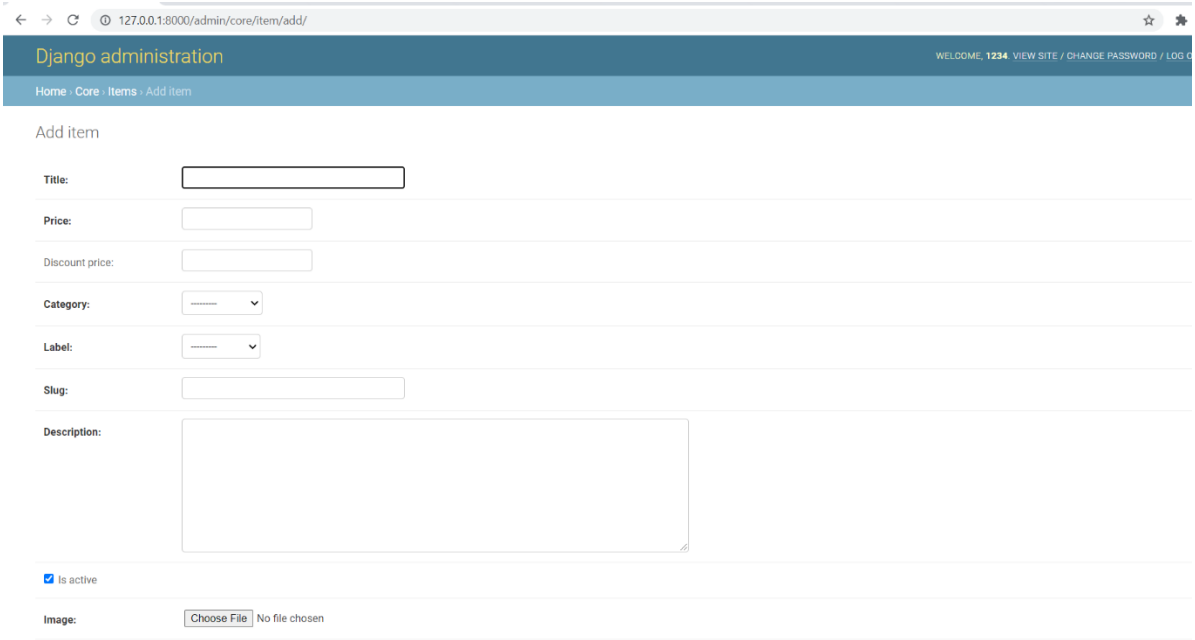
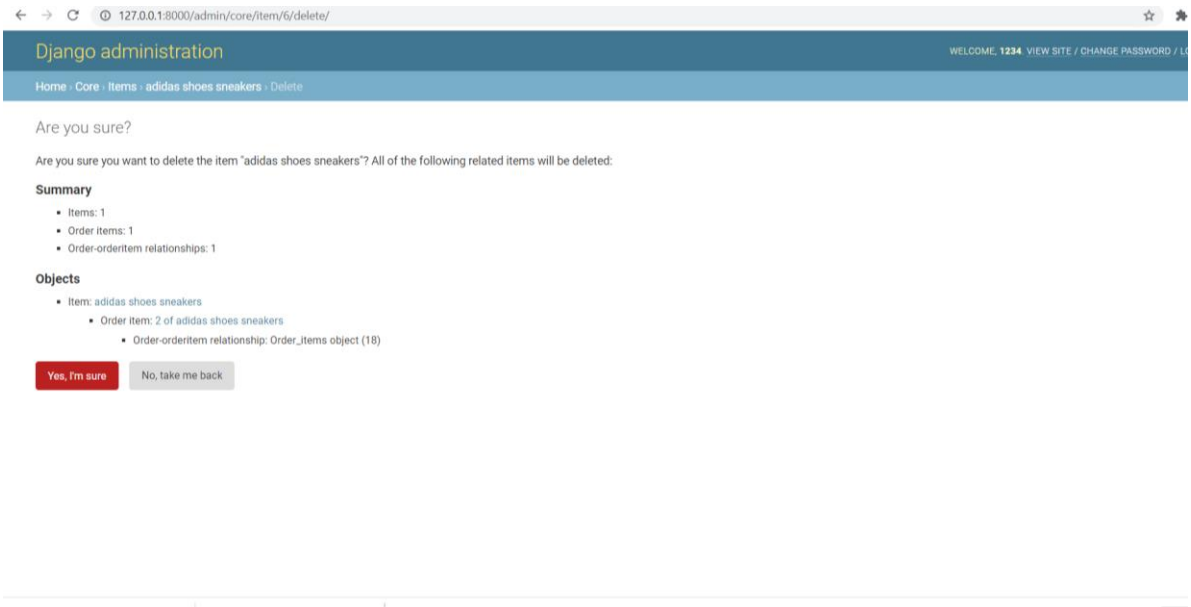


Figure 64: Add items, their image

If that add items form is correctly we can view design, all information about items, edit and delete. If you need change items description can upload.

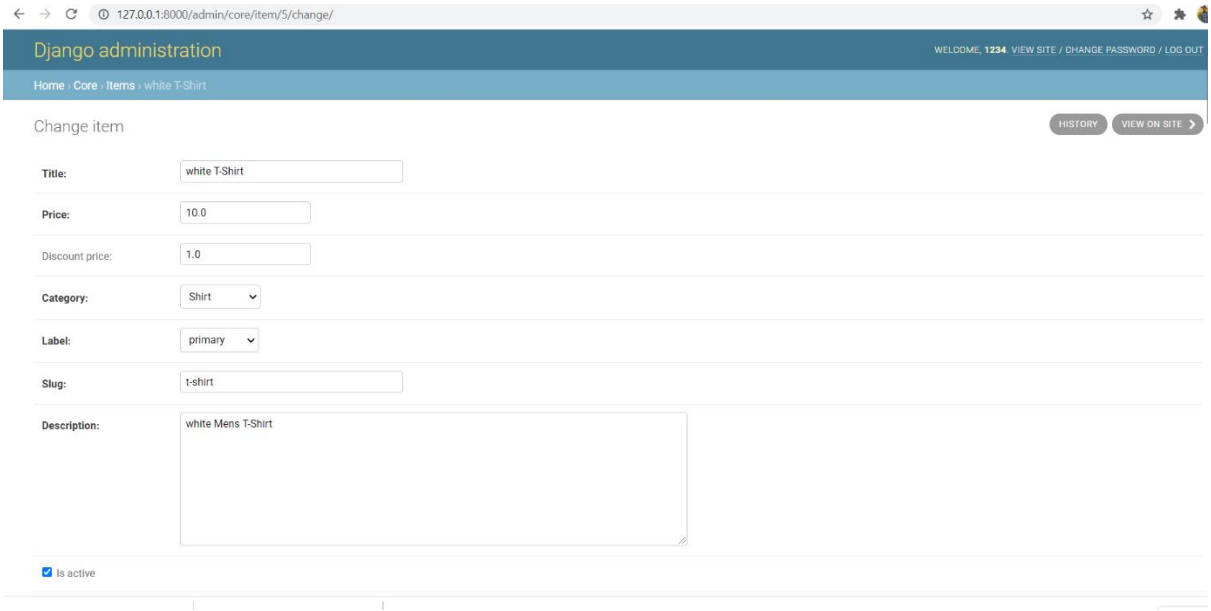
7.7.10 Screen shot for Item delete

If you want to delete click on the red button otherwise no



7.7.11 Screen shot for Edit

If you show that Product details click on the edit



Insert the title, Rate , description about your Product and add the category, slug then check is active box click the save button

Now total product details will change

7.7.14 Interface for the online payment

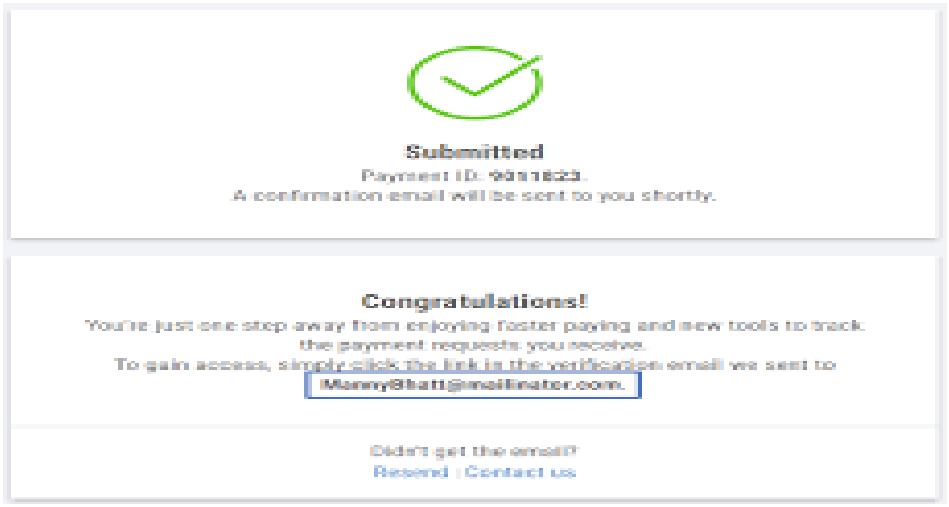


Figure 30Interface for the online payment

If you want to pay according to this picture please follow the sandbox and create an account after that you can pay using user name and password.
You can get your payment receipt through your Email.

CHAPTER-EIGHT

FUTURE IMPROVEMENTS AND CONCLUSION

8.1 INTRODUCTION

This chapter summarizes and concludes the entire Project. It discusses the newly developed System's Features and achieved results carrying out this project. In addition to that, it suggests some potential areas for further improvements to implement this project effectively.

8.2 NEWLY DEVELOPED SYSTEM'S FEATURES AND ACHIEVED RESULTS

The Online asfaq retail store is to provide efficient and effective service through the online than manual system and delivered the quick services to customers. Prepare and provide staying bill for every customer and easy to access all and specific details about customers when needed the new system should concern the requirements of the customer. It has the following many features:

- **We can move one page to another page and update all information**

- **Easiness in modification of data:** The proposed system provides managing of huge data effectively and efficiently for efficient results, storing the details of the customers, employees etc. in such a way that the database can be modified.

- **Quickly to Search:** Searching is a very importance in the features of System.

because order placement, payment, Customer details, profit and cost are quickly available over online.

- **User friendly:** The proposed system is user friendly because the retrieval and storing of data is fast and data is maintained efficiently. Moreover the graphical user interface is provided in the proposed system, which provides user to deal with the system very easily.

- **Sharing the data is possible:** Data can be shared in proposed system. This means that two or more persons can use the same data in existing system provided that they have right to access that data. Information and data with their regular customers and their branches

- **No or very few paperwork:** The proposed system either does not require paper work or very few paper works is required. All the data is feted into the computer immediately and pawn receipts and reports can be generated through computers.

Since all the data is kept in a database no data of the organization can be destroyed. Moreover work becomes very easy because there is no need to keep data on papers.

- **Support strategic competitive advantage:** Proposed system supports strategic competitive advantages. Since the proposed systems provide easiness in reports generating it will provide strategic advantages among competitors.

- **Computer operator control:** Computer operator control will be there so no errors. Moreover storing and retrieving of information is easy. So work can be done speedily and in time.

8.2.1 Limitation of the system

First shortcoming of this project is all about a temporal factor; the time schedule which has been given in the first chapter is not being followed by me since the work time table had made a big impact when I make my own schedule to work with the system. But still I have left the schedule for reality.

However one of the important security or database integrity aspects still lies in the system and which can make relatively minimal problems in the integrity of the data in the database. There is no more filtering or data authentication feature in the front end of the system and which can cause serious problems if the user unintentionally enters some erroneous data in the fields.

There will be no issues provided that the user carefully inserts new records or updates existing records with appropriate data into the database components. This specific shortcoming and other lacking things will be ratified in the future upgrading and more further advancements will also take place to make the software as a professional one in future.

8.3 FUTURE IMPROVEMENTS & FUTURE AVENUE

As with many project that have been undertaken do far, the "Finalized" solution is quite often open to additions. When considering this project under the above aspect, there are number of possible improvements that better take place which will improve the performance and quality of this system. Decided future works are below

8.3.1 Phase I- Suggestion for future work

In this first phase it has been decided to develop the system overall order Process. Through this improvement it can provide users details and physical resources storage and functionalities.

In the second phase it has decided to provide Android App based system to provide customer services to the community by connecting the Mobile- asfaq retail store to the other order companies products. Through this improvement people can obtain Customer services within hand.

8.3.2 Phase II - Suggestion for future work

In the second phase it has decided to provide based system to provide customer services to the community by connecting the E- asfaq retail store to the other companies portals.

Through this improvement people can obtain Customer services by many portals.

8.4 CONCLUSION

As describe throughout this document the main purpose of implementing the asfaq retail store is to provide our customer easy, economic, efficient and accurate web based solution to help in their routine business activities. Hence my main and biggest objective was to come up with a complete computerized, automated system and to fulfill all the requirements of new products in order to enhance efficiency and increase accuracy, and add some value to Clients Company by giving them more capability than other store company in the field.

Most of the stores are using paper base documents to do their routine work and it is more tedious work to handle large number of documents. Other firms that use computers are only use simple office automation applications such as MS Word, MS Excel to store details about customers, booking and other documents and that is inappropriate way to store details, it is too hard when search details or update (change) data and leads to inconsistent information. To make sure that this works which helps us to understand existing level of technology and drawbacks of those systems.

After the gathering of requirements the next step was to analyze the gathered requirements. Analysis of the gathered requirements was also done with a lot of care and I paid a lot of attention in bringing out the requirements. In this step I clarify all the problems and misunderstandings about what should be the requirements (problems) I should solve throughout this project.

After a complete analysis of all the gathered requirements I moved to the design phase. I broke down the whole process into smaller sub systems and divide responsibility over the members in the group to handle particular parts of the system such as customer registration, order handling, calculating payment, users handling and administrator's so that it would be much easier for us to design perfect design and even the smallest errors can be noticed. I did through requirements specification and design solutions using UML diagrams such as use case diagrams, activity diagrams to get function wise good design and to map whole solution as one, entity relationship diagram and class diagrams have used and those diagrams are appended to this document.

This project gave me the opportunity to get knowledge about many new programming languages and programming practices. I gained lots of knowledge about the programming and software development process and also about modeling methods, and improve my project management skills as well.

The computerized store system and integrated services are new business model yet with a high scope; in my project I have tried to cover almost all the functionalities, and features. But there are lots of opportunities to add features with, forecasting, and other various admin functions. Due to the large scope of the project I have covered up to my possible level with dynamic content and

features to get the best output from available time scale. The ecommerec system function is the function that I spent most of my time and create attractive dynamic content GUIs. Pycharm gave me good experience.

The proposed system enable to work easily maintain all of the activities of company by computer as soon as possible. The new system helps and reduces the difficulties of current system and gives many more features to administration.

Following features are recommended by new system.

New system manage and maintain main function of administrator such as adding items for customer, Preparing bill for stayed days and Customer can order for every day by computer. System enable customer to check and find details about all of the product facilities by this system as well as admins also.

New computerized system helps to reduces all human errors and giving effectiveness and efficiency. When the data is maintained in a file or any kind of documents the stationary cost like pen, papers, and files. Deleting, updating and editing also will affect the stationary cost. So after computerizing the manual system we can bring down the cost of stationary, which will economy.

The calculating process is very difficult such as customer charge calculation (work charge) the company balance checking. In the manual system for every process there should be needed more workers. Not only can't they work accurately and in the correct time. After that computerizing make easy to work. The new system

Provides faster access to the system and new features to make work easier. So the workload of the staff is reduced. Customer registration activity is take a long time in the manual system but the proposed system do this registration very quickly. At the end I have implemented a high-quality working model for the new business model and address to the relevant user requirements according to the analysis done.

8.5 CONCLUSION

This chapter discussed about features and future improvement of newly developed Lifeline in briefly. Further it provides conclusion of the project shortly.

APPENDIX

9.1 ITEM MODEL DATABSE

```
class Item(models.Model):
    title = models.CharField(max_length=100)
    price = models.FloatField()
    discount_price = models.FloatField(blank=True, null=True)
    category = models.CharField(choices=CATEGORY_CHOICES, max_length=2)
    label = models.CharField(choices=LABEL_CHOICES, max_length=1)
    slug = models.SlugField()
    description = models.TextField()
    is_active = models.BooleanField(default=True)
    image = models.ImageField()

    def __str__(self):
        return self.title

    def get_absolute_url(self):
        return reverse("core:product", kwargs={
            'slug': self.slug
        })

    def get_add_to_cart_url(self):
        return reverse("core:add-to-cart", kwargs={
            'slug': self.slug
```

```
        })

    def get_remove_from_cart_url(self):
        return reverse("core:remove-from-cart", kwargs={
            'slug': self.slug
        })
```

9.2 PAYMENT MODEL

```
class Payment(models.Model):
    stripe_charge_id = models.CharField(max_length=50)
    user = models.ForeignKey(settings.AUTH_USER_MODEL,
                             on_delete=models.SET_NULL, blank=True, null=True)
    amount = models.FloatField()
    timestamp = models.DateTimeField(auto_now_add=True)

    def __str__(self):
        return self.user.username
```

9.3 ORDER MODEL

```
class Order(models.Model):
    user = models.ForeignKey(settings.AUTH_USER_MODEL,
                             on_delete=models.CASCADE)
    ref_code = models.CharField(max_length=20, blank=True, null=True)
    items = models.ManyToManyField(OrderItem)
    start_date = models.DateTimeField(auto_now_add=True)
```

```
    ordered_date = models.DateTimeField()
    ordered = models.BooleanField(default=False)
    shipping_address = models.ForeignKey(
        'Address', related_name='shipping_address', on_delete=models.SET_NULL, blank=True,
null=True)
    billing_address = models.ForeignKey(
        'Address', related_name='billing_address', on_delete=models.SET_NULL, blank=True,
null=True)
    payment = models.ForeignKey(
        'Payment', on_delete=models.SET_NULL, blank=True, null=True)
    coupon = models.ForeignKey(
        'Coupon', on_delete=models.SET_NULL, blank=True, null=True)
    being_delivered = models.BooleanField(default=False)
    received = models.BooleanField(default=False)
    refund_requested = models.BooleanField(default=False)
    refund_granted = models.BooleanField(default=False)

    def __str__(self):
        return self.user.username

    def get_total(self):
        total = 0
        for order_item in self.items.all():
            total += order_item.get_final_price()
        if self.coupon:
            total -= self.coupon.amount
        return total
```

9.4 USER PROFILE

```
class UserProfile(models.Model):
    user = models.OneToOneField(
        settings.AUTH_USER_MODEL, on_delete=models.CASCADE)
    stripe_customer_id = models.CharField(max_length=50, blank=True, null=True)
    one_click_purchasing = models.BooleanField(default=False)

    def __str__(self):
        return self.user.username
```

9.5 css

```
html,body,

.view {

  height: 100%; }

/* Half Page Carousel itself*/

.carousel {

  height: 50%; }

  .carousel .carousel-inner {

    height: 100%; }

    .carousel .carousel-inner .carousel-item,

    .carousel .carousel-inner .active {

      height: 100%; }

@media (max-width: 776px) {

  .carousel {

    height: 100%; } }.page-footer {background-color: #929FBA; }
```

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