

STOCK MANAGEMENT SYSTEM

APPROACH

BY

SAYED WADUD ISLAM

ID: 161-15-7127

This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Computer Science and Engineering

Supervised By

Aniruddha Rakshit

Senior Lecturer

Department of Computer Science and Engineering

Daffodil International University

Co-Supervised By

Ms. Subhenur Latif

Assistant Professor

Department of Computer Science and Engineering

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

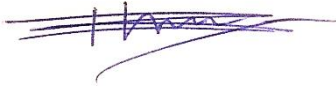
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APPROVAL

This Project/internship titled “**STOCK MANAGEMENT SYSTEM**”, submitted by Sayed Wadud Islam, ID No: 161-15-7127 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 02 June 2021.

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Chairman



Dr. Touhid Bhuiyan

Professor and Head

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



Subhenur Latif

Assistant Professor

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



Md. Abbas Ali Khan

Senior Lecturer

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University

Internal Examiner

Internal Examiner



External Examiner

Shah Md. Imran

Industry Promotion Expert

LICT Project, ICT Division, Bangladesh

DECLARATION

I hereby declare that, this project has been done by me under the supervision of **Aniruddha Rakshit, Senior Lecturer, Department of CSE** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



Aniruddha Rakshit

Senior Lecturer

Department of CSE

Daffodil International University

Co-Supervised by:



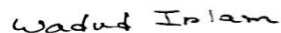
Ms. Subhenur Latif

Assistant Professor

Department of CSE

Daffodil International University

Submitted by:



Sayed Wadud Islam

ID: -161-15-7127

Department of CSE

Daffodil International University

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ABSTRACT

Project is purposed at developing a web based application called Stock Management System for managing the stock system of any store. In the age of current world everything has been digitalized and people come out from the traditional things. The mentioned system will allow salesman to place request rapidly and easily. This reduces the time expense. The Stock Management System (SMS) can be used to store the details of the stock, stock maintenance, update the stock based on the sales. This project is categorized individual perspective for the sales and stock management system. Stock Management System is important to ensure quality control in businesses that handle dealings resolving problems around consumer goods. Without proper stock monitoring, a large retail store may run out of stock on an important item. It also helps in maintaining stock data and also display how many products are present in the stock and also gives the details of these products sales history. A good stock management system will alert the wholesaler when it is time to restock. An automated Stock Management System helps to reduce the errors while recording the stock.

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CHAPTER 1

Introduction

1.1 PROJECT BACKGROUND

This project stock management System (SMS) is a complete web based application built on. The main objective of the project is to develop the stock management system template software in which all the information related to the organization's inventory will be presented. It is an internet-based web application that has an administration component to manage inventory and maintenance of the stock system. This web application is based on the management of the stocks of an organization. The application contains the general organization profile, sales details, purchase details and the remaining stock presented in the organization. There is also a provision to update the stock. This application also provides the remaining stock. Every action is established and authorized with the name and entry date of that action and it can also be updated at any time if necessary. The login page is established to protect the management of the stock of organization in order to prevent it from the threads and misuse of the stock. Stock management is the backbone of any business activity. With the development of technology and availability of process guided web applications, stock management has concluding revolutionary alternative. In any business or organization, all functions are interlinked and connected to each other and are often overlapping. Some key perspective like supply chain management, logistics and inventory from the backbone of the business delivery operation.

Therefore, this project will provide a solution for retailers who still use traditional way to maintain their inventory data. The stock management system is a computer web based system that provides the store structure to maintain and control the goods to be stocked. The stock management system's approach is avoid overstocking or product outrages by integrating the daily "Point of Sales" with store's inventory level.

1.2 GOALS OF THE PROJECT

Digital technology really has changed our lives forever. Now people want all things digitally. Because it is very easy to deal with things in a dynamic way. System based conducting data can also be store any time and anyone can access this data anytime when they need it. People can't do everything with the conventional way. It is very difficult for an institution or a company to operate and manage its stocks conventionally. And this go towards also takes time. As a result, the institution must tolerate a lot problem. For this reason, I determined to exhibit stock management system application. The project aims to provide an efficient way to manage stock. As I mentioned earlier, traditional stock management poses many challenges. There are many possibilities for loss if you manage your inventory in the traditional way. So i decided to create a web base system called stock management system. The prospective result of this system is to handle stock dynamically. When the full development of this system complete, the application should be able to configure the class, the product under the class, the supplier and the customer. Manager would be able to buy products and sell products and the necessary functionality in the buy and sell module. After development, the manager can get the current stock status and report periodically on the sale and purchase.

1.3 MOTIVATION

This project targets the massive inventory system in our country or beyond. Inventory management is a very complex process which also requires very efficient management. People tend to make mistakes like entering data and others. Manual entry is also very time consuming. Even the reports are not attractive. This project helps distributors to know all the details of the product in seconds and also reduces human errors and generates an attractive report. So, to help people with these management issues, I decided to build an effective system that can reduce their problem. The difficulties encountered by the complex process, which are affected by these issues, motivated me to carry out this project.

1.4 Objective

1.4.1 Security:

Appropriate authentication and authorization provisions have been put in place for site security so that only the registered user can access the site. Without a proper login, no one can access this site. The administrator and the seller have their own account for this site and through this account, these users can access this site and manage their process through this system. To protect data from hackers, the password will be saved in the database as an encrypted password.

1.4.2 Mobility:

Internet is available to everyone anywhere anytime which makes the site highly on mobile and desktop sites, this system will be easily understood and used by users. Access to inventory data and real-time analysis gives you accurate product and sales forecasts in an instant. You can use this data to predict market demand and increase or decrease your inventory at the right time, resulting in higher profits.

1.4.3 Time Effective:

People tend to make mistakes like entering data. Manual entry is also very time consuming. This web application will reduce human errors and also reduce time consumption.

1.4.4 Informative:

The site contains all the necessary details about the stocks and the sales. Therefore, provide all relevant information. It also keeps stock data and also shows how many products are in stock and also provides supplier details of those products. This app also provides or stores all sales information.

1.5 Schedule and Planning

Application development plan with target time is given below:

| Phase | Start Date | End Date | Days To Complete |
|-------------------------------------|-------------|-------------|------------------|
| Proposal | 1 Nov 2019 | 10 Nov 2019 | 9 |
| Requirements collection | 25 Nov 2019 | 5 Jan 2020 | 40 |
| Requirements Analysis | 18 Jan 2020 | 3 Mar 2020 | 43 |
| Software Requirements Specification | 20 Mar 2020 | 18 Apr 2020 | 29 |
| Project Plan | 2 May 2020 | 30 May 2020 | 28 |
| System Design | 27 Jun 2020 | 7 Aug 2020 | 41 |
| Prototype Implementation | 28 Aug 2020 | 30 Oct 2020 | 63 |
| Testing & Result | 29 Dec 2020 | 18 Feb 2021 | 51 |
| Summation Of Final Project | 25 Feb 2021 | 30 Mar 2021 | 33 |

Table 1.1: Schedule and Planning

Gantt chart:

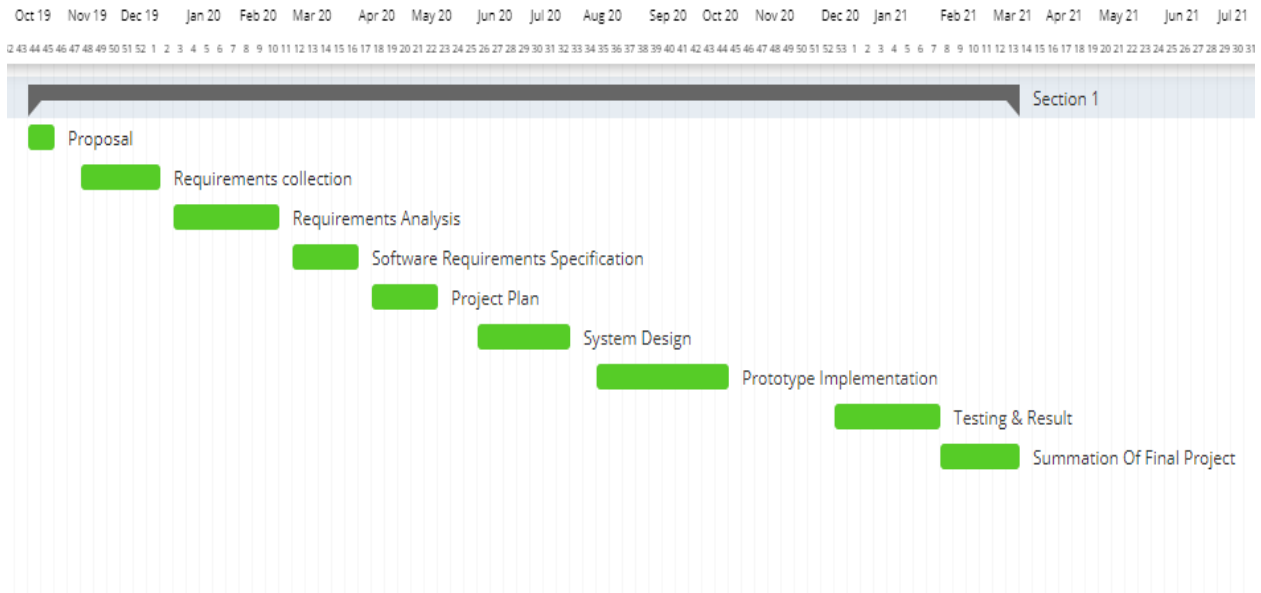


Figure 1.1 Gantt chart

1.6 Features of Project

This app allows you to view remaining stock and details about sales and purchases. Provide details on products, customers and sales history.

The detail components are described below:

1.6.1 Homepage:

When the application starts, the home page appears. If the user are new in this application then he/she have to click the register button for registration and after the complete registration successfully then he/she can click the login button for sign in. If user already complete his/her registration once then he/she can just click log in button to sign in.

1.6.2 Registration Page:

User registration is determined by the username, email and password. After successfully complete the registration then user can login in system.

1.6.3 Login Page:

User login is determined by username and password, who has full authority to add, update, and delete organization's stock as needed. Access of view details about stock in and remaining product stock available. It also displays the details of the product sales history.

1.6.4 Customers:

It shows the details about the customers along with has full authority to add, update, and delete organization's customers as needed.

1.6.5 Products Details:

Displays the details of the purchase made by the organization along with the price and quantity. Also has full authority to add, update, and delete organization's products as needed.

1.6.6 Sales Details:

Displays the details of the sales made by the organization along with the price and quantity.

1.7 Scope of the Application

The purpose of this application is to provide the user with an efficient working environment and more results can be generated through it. This application provides an easy to user interface that allows to know each of the usability functions of the system. This application also allows records to be tracked so that previous records can be substantiated through them and decisions could be made on basis of previous register records. This application finishes the job in much little time, which eventuality into less time costs. Application is providing in such a way that even a simple user can easily handle the system. The reckoning is done very fast and the record is saved immediately to the database. Every record can be recovered and substantiated for incoming transactions.

Stock Management System (SMS) is for small or medium organization that does not have many warehouses only for organizations that have only one power of authority. This system focuses on calculating the amount of inventory entering and leaving in a business.

Some of the scopes are:

- ✦ One person is responsible for assigning details or records
- ✦ Can add item and also add barcode/QR code of the item
- ✦ View stock list and information
- ✦ View the amount of stock

CHAPTER 2

Literature review

2.1 LITERATURE REVIEW AND RELATED WORK

Every day, millions of people participate in countless sales transactions across the world, creates a constant flow of value that forms the backbone of our economies. In general, sale means a transaction that takes place between two parties where the buyer receives goods, services or assets in exchange for money. Therefore, the process it forces each party to give up something in exchange for something precious to them. Sure On the other hand, inventory refers to raw materials, work in progress and finished products. goods considered to be part of the assets of a business that are ready to be sold This explains why the company needs an available stock to make sales to the customer in return for money which will generate profit.

There are two types of issues that businesses face when managing inventory level, which is high stock and low stock. Maintaining a high level of inventory for long periods of time is generally not good for a business due to the costs of inventory storage, obsolescence and deterioration. On the other hand, the low level of inventory is not good either, as the business is also at risk of losing potential sales and potential market share. In trying to solve inventory problems, the solution lies in effective inventory management.

The products are considered the business assets of the organization. This includes managing the product with an appropriate way of revising at any time as per the requirement. Therefore, it is important to have a web based stock management system that has the ability to maintain the balance of inventory, buying and selling details in the institution. Before manifesting this web application, I observed Two Stock Management System on the market [1], which helps to provide the knowledge necessary for the development of my project. Those applications are only used by large institutions, so I have developed the application that small businesses can use to manage their inventory. After looking at other's stock management system, I settled to comprehend some of the ordinary and primary features those should be comprised in every Stock management system, so I determined to cover the items that collaboration the small institution one way or another.

2.2 Problem Statement

After having analyzed some existing stock management applications, I had the obvious vision of the project to be developed. Before I started building the application, I had a lot of challenges.

I defined my problem statement as:

⇒ To cover all areas of the inventory management system, such as purchase details, sale details, and inventory management.

⇒ Product Form - Product Category Setup (Entry, Edit, Delete and Update)

⇒ Customer Form - Customer Setup (Entry, Edit, Delete and Update)

⇒ Supplier Form - Supplier Setup (Entry, Edit, Delete and Update)

⇒ Purchase Form - Purchase Setup (Entry, Edit, Delete and Update)

⇒ Sales Form - Sales Setup (Entry)

2.3 Limitations

⇒ User must manually enter data related to product information using this web application.

⇒ An internet connection is required to process user input and to authorize the user.

⇒ This app has no online transaction for the online shopping process.

2.4 Possible solution:

As I mentioned earlier, traditional stock management poses many challenges. There is a good chance of losing money if your stocks are managed in the traditional way. So I decided to create a web system called Stock Management System. The prospective consequence of the stock management system is to handle inventory dynamically. When the full development of this system complete, the application should be able to configure the class, the product under the class, the supplier and the customer. Manager would be able to buy products and sell products and the necessary functionality in the buy and sell module. After development, the manager can get the current stock status and report periodically on the sale and purchase

Chapter 3

Methodology

3.1 Introduction

In this section, the method and web application development tool used to develop the Stock Management System (SMS) will be discussed. The method used to develop the web application will be explained in details together with figure.

3.2 Method Use To Develop Application

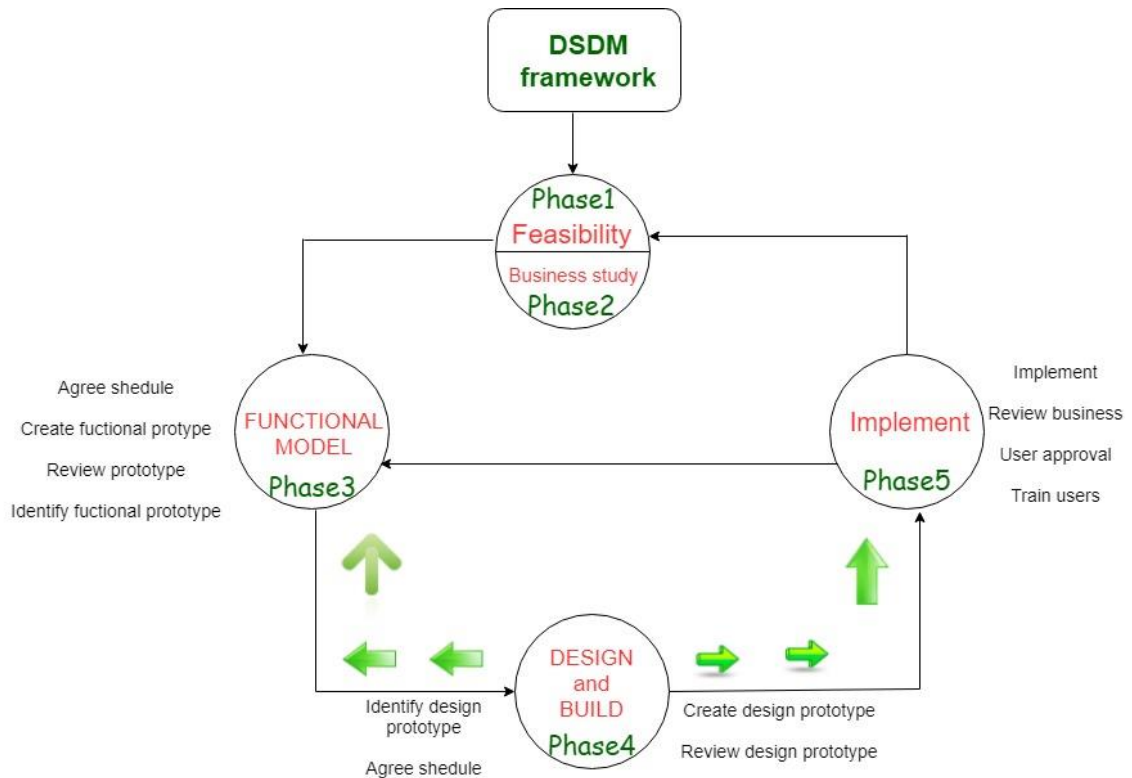
When developing the system, I choose to use the “Dynamic Systems Development Methodology (DSDM)”, which belongs to Agile methodology. Many cause to choose it. This assistance to generate concentration on the whole visualization in the time frame.

The main reason for using DSDM is explained below –

DSDM is an agile software development methodology [2]. It is an iterative and incremental approach that relies heavily on the Rapid Application Development (RAD) methodology. The method provides a four-phase framework comprising:

- ⇒ Feasibility and business study
- ⇒ Functional model / prototype iteration
- ⇒ Design and build iteration
- ⇒ Implementation

Below diagram describe the DSDM life cycle [3]-



Dynamic Systems Development Method life cycle

Figure 1.2 DSDM life cycle

Advantages of dynamic systems development method –

⇒ Projects are delivered on time, while allowing flexibility.

⇒ Progress can be easily understood across the organization.

⇒ Business cases are at the heart of the DSDM model, ensuring that delivered projects have real business value.

Disadvantages of the dynamic systems development method -

⇒ Not worthy for small organization.

⇒ DSDM is obstructive and tenacious to work.

Every development methodology has its strengths and weaknesses. After i comparison with all other methodology, I figure out DSDM would be the best methodology to practice.

That's why I choose to use Dynamic Systems Development Methodology (DSDM)

3.3 Data Collection Methods

In the first part of the project, research and information gathering play an important role. Two data collection research methods used in the project. The two data collection research methods are described below:

⇒ Interview: conducting interviews with the few owners of Store to see whether the system is useful for them as well as gathering information on the requirements of the system

⇒ Searching on the Internet: basic information about existing Stock Management System and how to develop Stock Management System in general.

3.4 Tools And Software

In the second part of the project, the tools used to develop the system are as follows:

i. Sublime Text 3[5]

Sublime Text three could be a light-weight, cross-platform code editor better-known for its speed. It's an incredible editor out of the box, however the important power comes from having the ability to boost its functionality exploitation Package management and make custom settings.

ii. XAMPP Server[6]

XAMPP is an abbreviation for cross-platform, Apache, MySQL, PHP and it permits you to make WordPress web site offline, on an area web server on your laptop. this easy and light-weight solution works on Windows, Linux – therefore the “cross-platform” part.

iii. Diagram Tools (Draw.io)

3.5 Implementation plans

Many key elements must be taken into account to implement the chosen methodology (DSDM) [4]. These are given below-



Figure 1.3 Nine fundamental principles

1. Active user involvement –

The first and most crucial is user participation. The user, the people who will use the final product, must actively participate throughout the development of the project. This helps reduce errors that may arise due to user perception and therefore also reduce the cost of rework. DSDM emphasizes working and keeping in touch with a small group of selected users on an ongoing basis, rather than meeting them occasionally in regular meetings and review sessions.

2. Empowered teams –

To proceed quickly and smoothly, this model encourages and empowers teams to make decisions. Here are some areas where team decision making is very critical.

⇒ Requirement decision

⇒ Prioritizing the activities and features delivery

3. Frequent delivery –

Frequent delivery of value to the customer ensures that bugs/errors are identified, fixed and resolved/reversed/checked at an early stage. The source of the error and the root cause are also found and corrected. It applies to all requirements documents, work models and program codes.

4. Fitness for business –

At DSDM, our goal is to deliver software that is efficient enough to solve a business need and accept changes or improvements in a later iteration. DSDM focuses on meeting business needs first and does not allow you to create ad hoc software. It keeps the process flow simple and efficient.

5. Incremental development –

To keep the big project simple and less complicated, it is essential to break it down into several small projects. Each release ensures that new functionality is delivered to the customer. This progressive development and delivery continue with the delivery of the full set of features required by the business.

6. Reversible changes –

In DSDM, iteration occurs in small increments. As all developers are well aware of all stages of development, the changes here are reversible. Therefore, the fear of a complete job loss is also very minor.

7. Base-line the requirements –

You need to establish high level baselines to limit the degree of freedom to make changes. During the trade agreement phase, the business and development team discusses and agrees on the baseline when change requests and requirements would be “frozen”.

8. Integrated testing –

At DSDM, tests are carried out right from the development phase to ensure that the product is free from technical faults. Developers and team leaders even check test documents. Helps troubleshoot at a very early stage and reduces rework, reducing costs and time.

9. Stakeholder collaboration –

An atmosphere of trust and honesty is essential for obtaining specific requirements and honest feedback on the resulting product. At DSDM, collaboration between business people and developers is essential to creating value. Clear business requirements and honest feedback contribute to rapid development leading to timely project delivery.

Chapter 4

Feasibility

4.1 All types of feasibility

Measures that the mentioned system would be economically, technically and operationally feasible or not.

4.1.1 Economic feasibility

A basic analysis was carried out to study the economic feasibility of the project. Financial analysis shows that the new system will reveal positive economic viability. In terms of software design and licensing, it can be found open source on the internet, so the owner does not need to purchase the software from the vendor.

The new system will require an additional cost in the hardware implementation part. Looking at the current situation of the store, the owner has to buy a desktop computer and one server to use the system and also a barcode scanner to scan the barcode of the products.

In terms of special staff training, the new system will not require any additional costs. Generally, the newly developed system will require special training for the user, but in this case the handling part of the system is very easy and eliminates the need for training. In addition, a user-friendly interface allows staff to work with less stress.

Necessary hardware's prices:

| Serial Number | Material | Price (BDT) |
|---------------|----------------------|-----------------|
| 01 | Desktop | 38,000/= |
| 02 | Wi-Fi Router | 3,000/= |
| 03 | Electrical component | 3,000/= |
| 04 | Cost of Web Hosting | 2,000/= |
| 05 | Barcode Scanner | 1,500/= |
| Total | | 47,500/= |

Table 1.2 hardware's prices

4.1.2 Operational Feasibility

The risk of familiarity with the application is medium because the users/staff have never become accustomed to the computerized system. Therefore, a brief introduction to system management is required to implement the system. In addition, since most of the store staff have no computer skills, the system will be easy to use and operate.

When different types of organizations use this application then they can manage their stock dynamically. There will be a user on this application named manager. To handle the stock, he can configure the category, product, customer and supplier. He have knowledge the current status of the stock in system. Below i will give a better kind of operational feasibility for my application-

- ⇒ Every user can effortlessly access in the application.
- ⇒ Every kind of product can add in system effortlessly.
- ⇒ All kind of stock can preserve effortlessly

4.1.3 Technical Feasibility

The technical aspect is the most important part in the development of the system. Since the system is offline, so to conduct a developed system, which is a web based system, all i want is a computer and a server. The computer is on the client side and the server is on the server side. All fact sent through the application will be gathered on the server. As needed, the data will be obtained from the server at the end of the client.

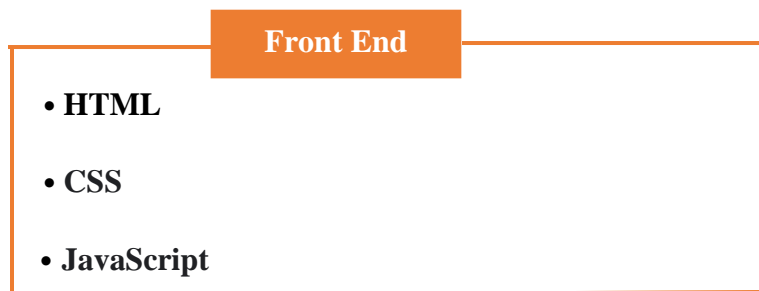
Chapter 5

System Architecture Overview

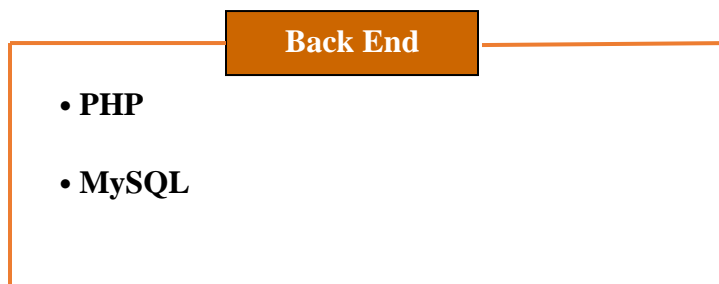
5.1 Development Environment

Web developers can be summarized into three general types, each serving a unique need in the process of building websites for the whole world. Before we continue, it's important to note that web development and web design are two different fields.

5.1.1 Front End[7]



5.1.2 Back End[8]



5.2 Functional Requirements

This section describes the use case of active actors. the administrator has an important role in this system. User must have functions to effectively manage inventory. The system must include functions allowing the user to add user, products and supplier to the database. User should also be able to delete any user, products and supplier from the database when not needed. The system must allow the user to create orders from supplier. The system must have a password protected access system such as that only people with authenticated can access the system

5.3 Non-Functional Requirements

Usability:

- ⇒ The system should be easy to use for users, so that they do not need to read a large number of manuals.
- ⇒ Users need to be able to access the system quickly.
- ⇒ The system should be intuitive and straight forward in the way it displays all relevant data and relationships.
- ⇒ System menus should be easily navigable by users.

Reliability:

- ⇒ The system must provide the user with an accurate inventory status on an ongoing basis. Any inaccuracies are corrected by periodically confirming the actual levels with the levels displayed in the system.
- ⇒ The system must provide the user with a password enabled login to prevent any foreign entity from modifying system data.
- ⇒ The system should provide updates to the user at the end of Requested processes and if the requested processes fail, system must provide the user with the reason for the failure.
- ⇒ The system should not update the data in any database for any failed process.

5.4 Use Case Diagram

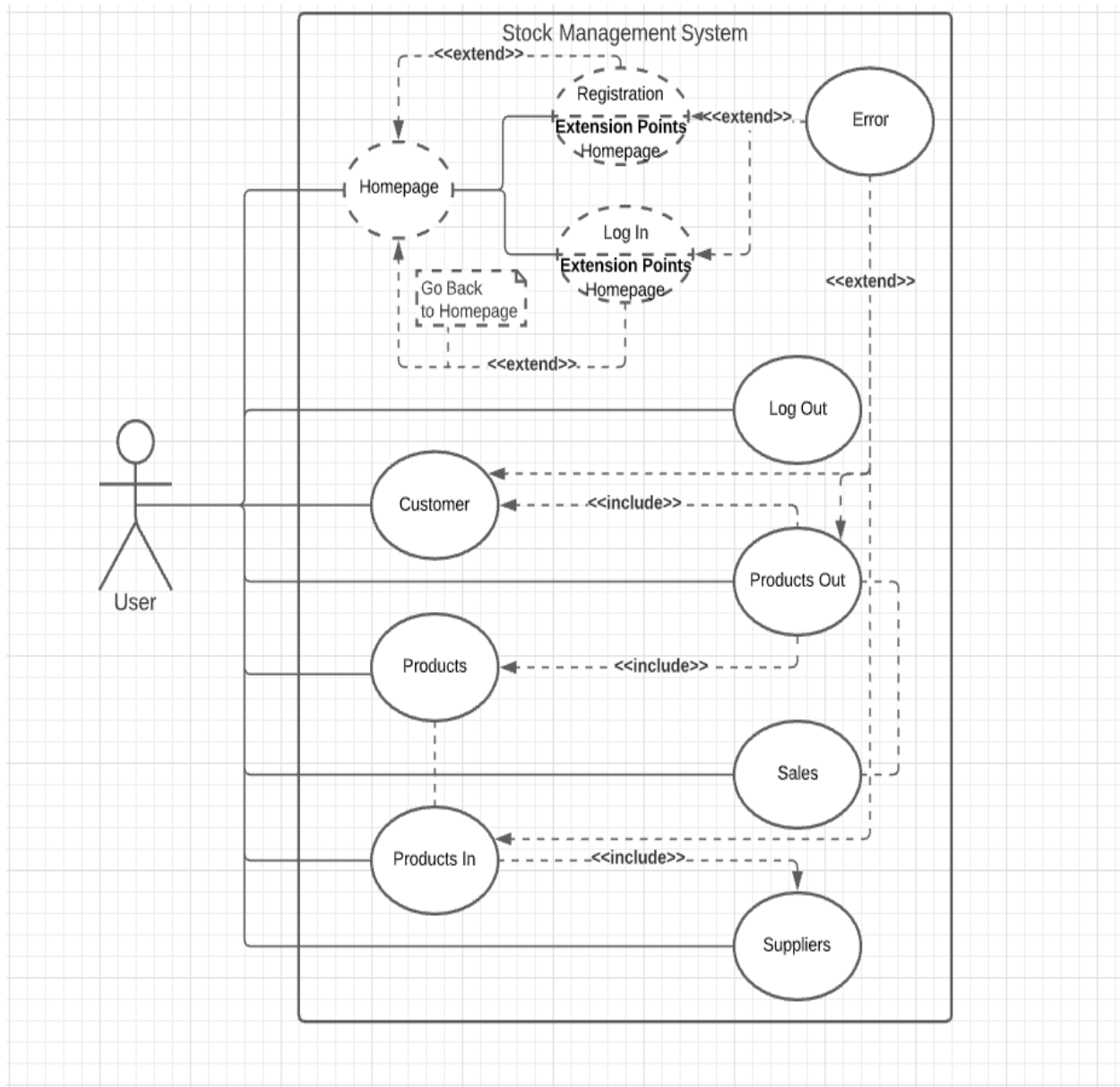


Figure 1.4 Use Case Diagram

5.4.1 Association Diagram

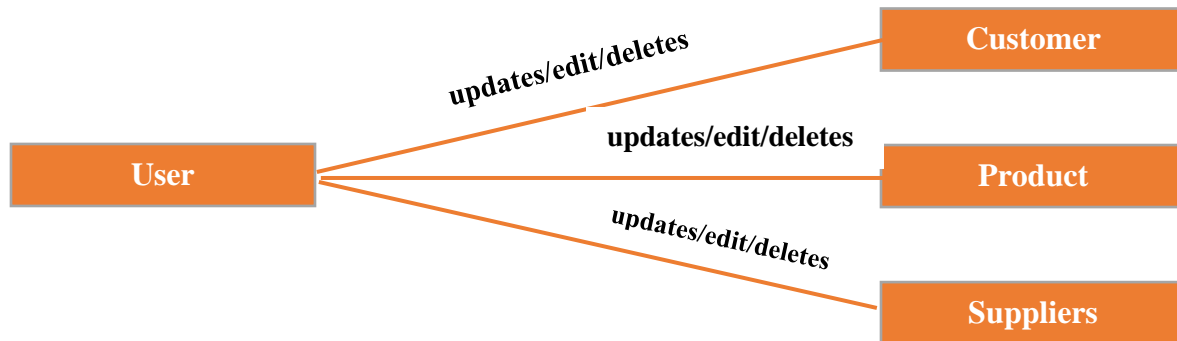


Figure 1.5 Association Diagram

5.5 Activity Diagrams

5.5.1 Login Activity

The user goes to the website, enters the username and password for the login process and receives a welcome message with valid details.

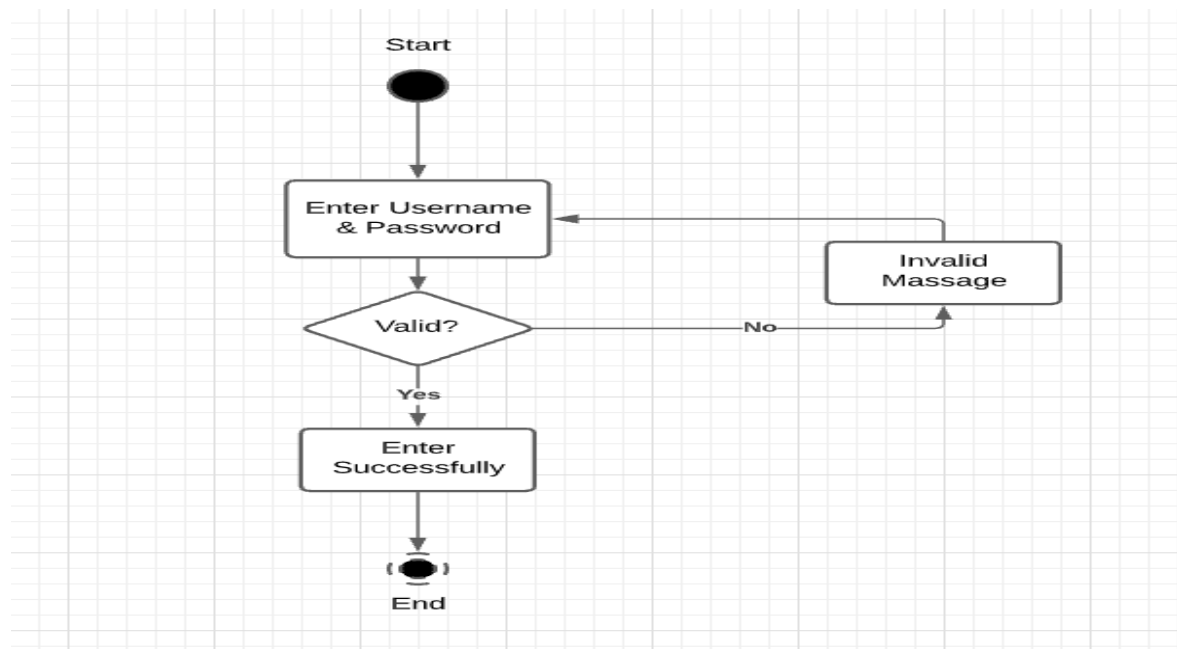


Figure 1.6 Login Activity

5.5.2 Customer Add Activity

After login user select add Customer, enters the firstname, lastname, email and password for the customer add process and click save button to receives a message with valid details.

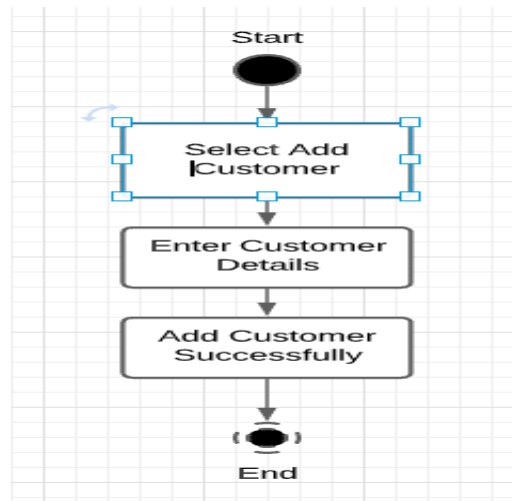


Figure 1.7 Customer Add Activity

5.5.3 Product Add Activity

After login user select product in, Select the product name and supplier name then barcode and price automatic complete for the product add process. Enter quantity and click save button to receives a message with valid details.

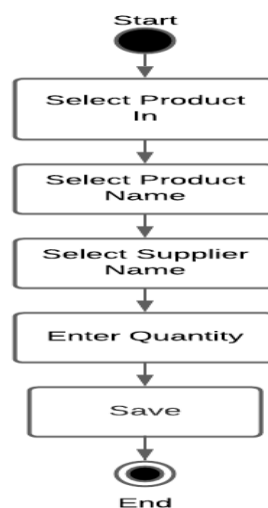


Figure 1.8 Product Add Activity

5.5.4 Product Out Activity

After login user select product out, Select the product name and customer name then barcode automatic complete for the product out process. enter quantity, selling price and click save button to receives a message with valid details.

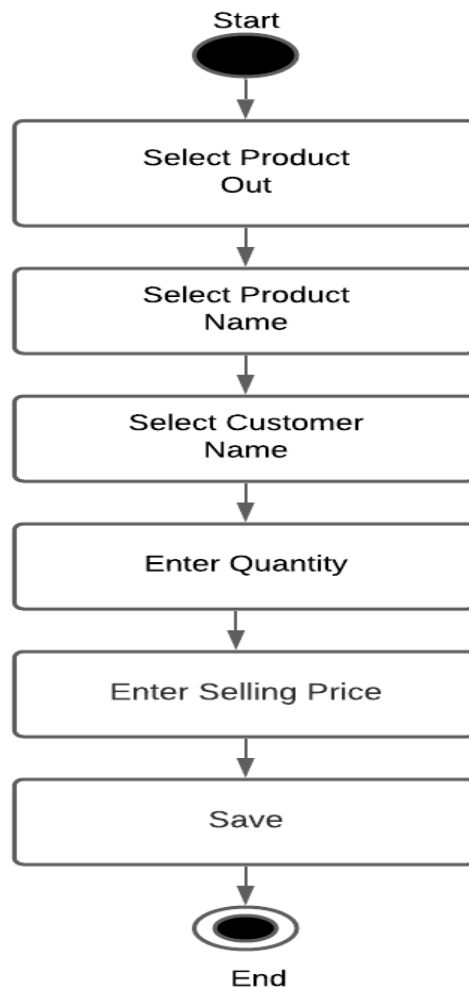


Figure 1.9 Product Out Activity

5.5.5 Supplier Activity

After login user select Supplier, enters the Company name, Product name, Barcode and Product Price for the supplier add process and click save button to receives a message with valid details.

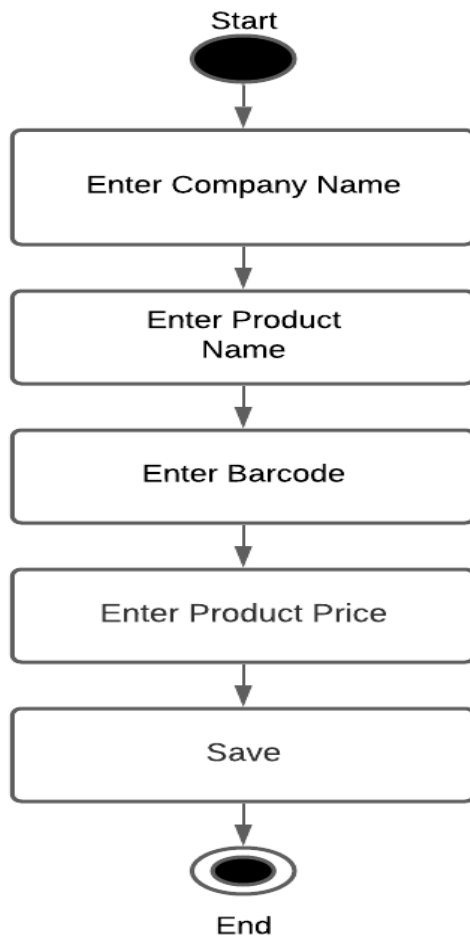


Figure 2.0 Supplier Activity

5.6 Class Diagram

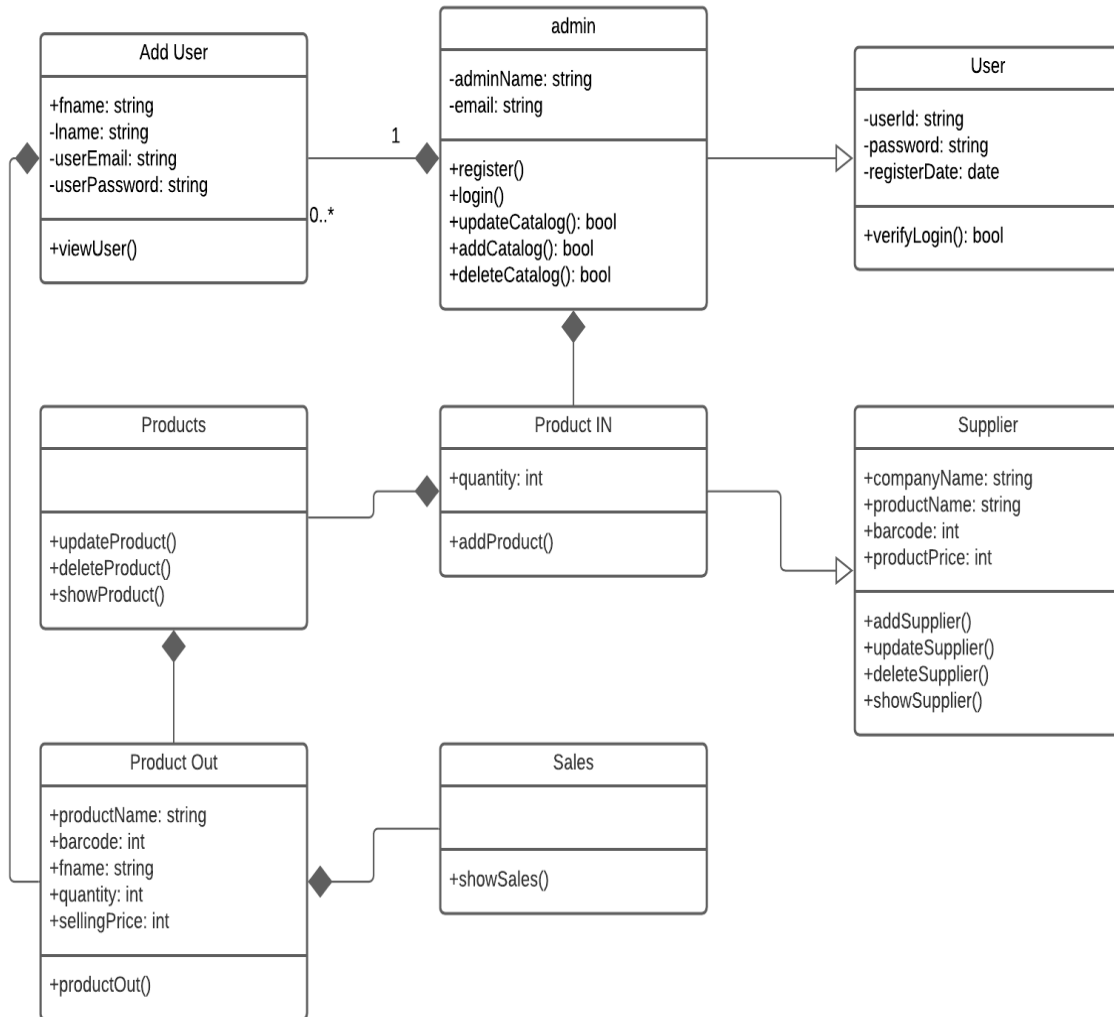


Figure 2.1 Class Diagram

5.7 Sequence Diagram

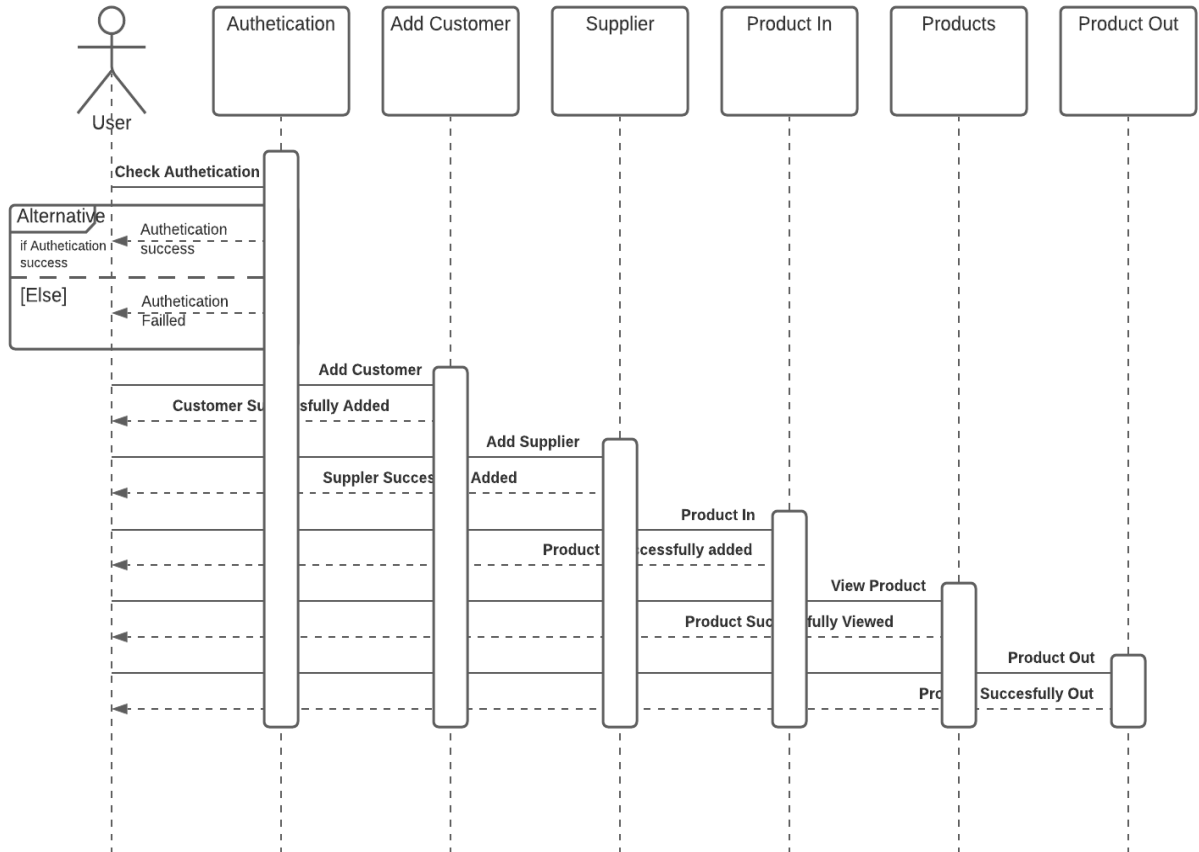


Figure 2.2 Sequence Diagram

Chapter 6

System Testing

6.1 Testing Materials

6.1.1 Software Requirements

The system encoding is done in Sublime Text 3 and the database administration utility used is MySQL. Since the system does not use network connectivity, the system does not require any other specialized software for network connectivity. Any operating system that supports these two modules is an ideal operating system for testing purposes.

⇒ Sublime Text 3

⇒ MySQL

⇒ Windows XP, 7,8,10[9]

6.1.2 Hardware Requirements

The hardware requirements for the test are specifically a Laptop / Desktop with the following minimum Hardware configuration

⇒ Processor: 800MHz Intel Pentium III or equivalent

⇒ Memory: 512 MB

⇒ Disk space: 750 MB of free disk space.

6.2 Testing Features

6.2.1 Features to be tested

For this project I am going to test below features:

1. Login.
2. Logout.
3. Registration
4. Add new Customer.
5. Add new product.
6. Sell product.
7. Add new supplier

6.2.2 Features not to be tested

The features which will not be tested is given below:

1. Security issues.
2. Products delete.
3. Products update
4. Customer delete
5. Customer update

6.3 Test Cases

6.3.1 Integration Testing Case Module

6.3.2 Log In:

| | |
|---|-------------------------------------|
| Test Case ID.1 | Module name: Login |
| Module: User Login Module | Test Designed: Sayed Wadud Islam |
| Test Priority: (Low/Medium/High): High | Test date: 11.01.2021 |
| Test Title: Verify login with valid username and password | Test executed by: Sayed Wadud Islam |
| Description: Test login page | Test executed date: 14.01.2021 |

Table 1.3 Login testing Case Module

Pre-condition: user must have valid Email and password.

| | |
|-------------------|---|
| Test case 1 | Test login page |
| Test steps | 1. Go to login page 2. Provide valid email 3. Provide valid Password 4. Click login button |
| Test data | Username: test1@gmail.com Password: 123456 |
| Expected results | User should able to login |
| Actual result | User successfully logged in |
| Status(pass/fail) | pass |

Table 1.4 Login testing result Case Module

6.3.3 Log Out:

| | |
|--|-------------------------------------|
| Test Case ID.2 | Module name: Logout |
| Module: User Logout Module | Test Designed: Sayed Wadud Islam |
| Test Priority: (Low/Medium/High): High | Test date: 12.01.2021 |
| Test Title: Verify logout | Test executed by: Sayed Wadud Islam |
| Description: Test logout page | Test executed date: 15.01.2021 |

Table 1.5 Logout testing Case Module

Pre-condition: user must have login first.

| | |
|-------------------|--|
| Test case 2 | Test logout page |
| Test steps | 1. Go to logout page 2. Click logout button |
| Test data | |
| Expected results | User should able to logout |
| Actual result | User successfully logout |
| Status(pass/fail) | pass |

Table 1.6 Logout testing result Case Module

6.3.4 Registration:

| | |
|--|-------------------------------------|
| Test Case ID.3 | Module name: Registration |
| Module: User Registration Module | Test Designed: Sayed Wadud Islam |
| Test Priority: (Low/Medium/High): High | Test date: 14.01.2021 |
| Test Title: Verify Registration with username email and password | Test executed by: Sayed Wadud Islam |
| Description: Test Registration page | Test executed date: 18.01.2021 |

Table 1.7 Registration testing Case Module

Pre-condition: user must have username, email and password.

| | |
|-------------------|--|
| Test case 3 | Test Registration page |
| Test steps | <ol style="list-style-type: none">1. Go to Registration page2. Provide Username3. Provide Email4. Provide Password5. Click Registration button |
| Test data | Username: Fahim Anan Email: test1@gmail.com Password: 123456 |
| Expected results | User should able to Registration |
| Actual result | User successfully Registration |
| Status(pass/fail) | pass |

Table 1.8 Registration testing result Case Module

6.3.5 Add new Customer:

| | |
|---|-------------------------------------|
| Test Case ID.4 | Module name: Add new Customer |
| Module: Add new Customer Module | Test Designed: Sayed Wadud Islam |
| Test Priority: (Low/Medium/High): High | Test date: 20.01.2021 |
| Test Title: Add new Customer | Test executed by: Sayed Wadud Islam |
| Description: Test Add new Customer page | Test executed date: 28.01.2021 |

Table 1.9 Add new customer testing Case Module

Pre-condition: user must have Login.

| | |
|-------------------|--|
| Test case 4 | Test Add new customer page |
| Test steps | <ol style="list-style-type: none">1. Go to Add customer page2. Provide Username3. Provide Email4. Provide Password5. Click Save button |
| Test data | Username: Amit Kundu Email: test2@gmail.com Password: 123456 |
| Expected results | User should able to Add new customer |
| Actual result | User successfully Add new customer |
| Status(pass/fail) | pass |

Table 2 Add new customer testing result Case Module

6.3.6 Add new product:

| | |
|--|-------------------------------------|
| Test Case ID.5 | Module name: Add new product |
| Module: Add new product Module | Test Designed: Sayed Wadud Islam |
| Test Priority: (Low/Medium/High): High | Test date: 22.01.2021 |
| Test Title: Add new product | Test executed by: Sayed Wadud Islam |
| Description: Test Add new product page | Test executed date: 30.01.2021 |

Table 2.1 Add new product testing Case Module

Pre-condition: user must have Login and product must have in supplier

| | |
|-------------------|--|
| Test case 5 | Test Add new product page |
| Test steps | <ol style="list-style-type: none">1. Go to Add product page2. Provide product name3. Provide supplier4. Provide quantity5. Click Save button |
| Test data | Username: computer Supplier: Ryan quantity: 50 |
| Expected results | User should able to Add new product |
| Actual result | User successfully Add new product |
| Status(pass/fail) | pass |

Table 2.2 Add new product testing result Case Module

6.3.7 Sell product:

| | |
|--|-------------------------------------|
| Test Case ID.6 | Module name: Sell product |
| Module: Sell product Module | Test Designed: Sayed Wadud Islam |
| Test Priority: (Low/Medium/High): High | Test date: 24.01.2021 |
| Test Title: Sell product | Test executed by: Sayed Wadud Islam |
| Description: Test Sell product page | Test executed date: 3.02.2021 |

Table 2.3 Sell product testing Case Module

Pre-condition: user must have Login and product must have available

| | |
|-------------------|---|
| Test case 6 | Test sell product page |
| Test steps | <ol style="list-style-type: none">1. Go to product out page2. Provide product name3. Provide Customer name4. Provide quantity5. Click Save button |
| Test data | Username: computer Customer name: Anan quantity: 10 |
| Expected results | User should able to sell product |
| Actual result | User successfully sell product |
| Status(pass/fail) | pass |

Table 2.4 Sell product testing result Case Module

6.3.8 Add new supplier:

| | |
|--|-------------------------------------|
| Test Case ID.7 | Module name: Add new supplier |
| Module: Add new supplier Module | Test Designed: Sayed Wadud Islam |
| Test Priority: (Low/Medium/High): High | Test date: 4.02.2021 |
| Test Title: Add new supplier | Test executed by: Sayed Wadud Islam |
| Description: Test supplier page | Test executed date: 18.02.2021 |

Table 2.5 Add new supplier testing Case Module

Pre-condition: user must have Login

| | |
|-------------------|---|
| Test case 7 | Test Add new supplier page |
| Test steps | <ol style="list-style-type: none"> 1. Go to product out page 2. Provide product name 3. Provide Company name 4. Provide barcode 5. Provide product price 6. Click Save button |
| Test data | product name: computer Company name: Ryan barcode: 1001 product price: 10000 |
| Expected results | User should able to Add new supplier |
| Actual result | User successfully Add new supplier |
| Status(pass/fail) | pass |

Table 2.6 Add new supplier testing result Case Module

6.4 User Interface Sketches

6.4.1 UI Sketch for “Home” page

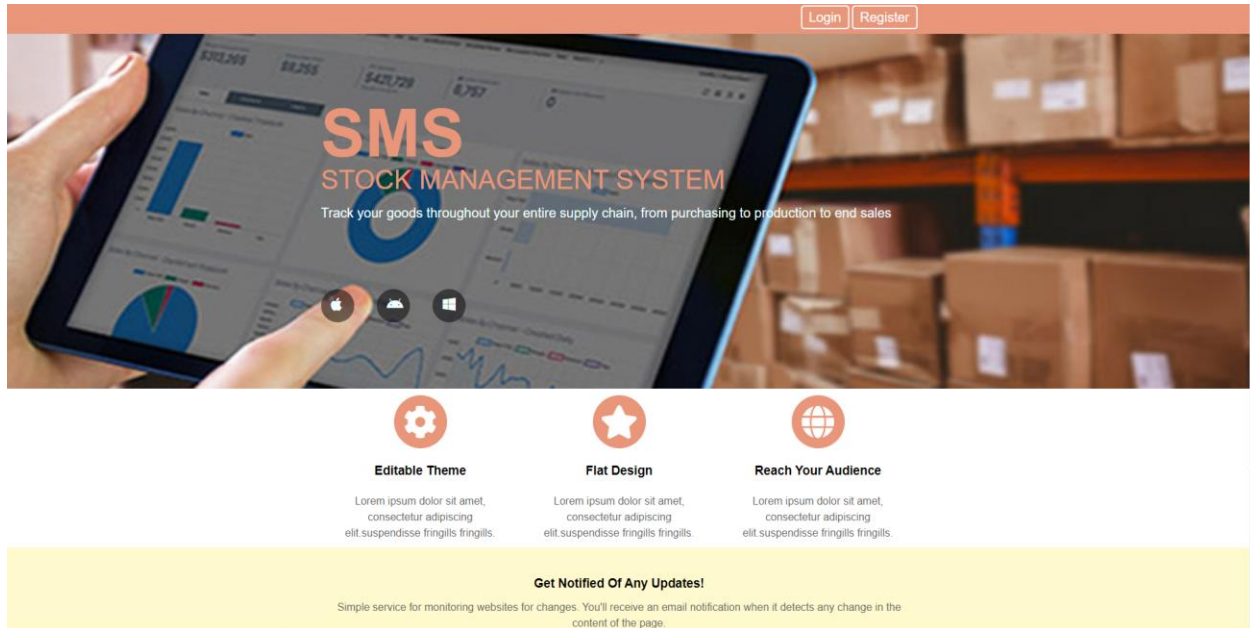


Figure 2.3 UI (Home Page)

6.4.2 UI Sketch for “Register” page



Figure 2.4 UI (Register Page)

6.4.3 UI Sketch for “Login” page

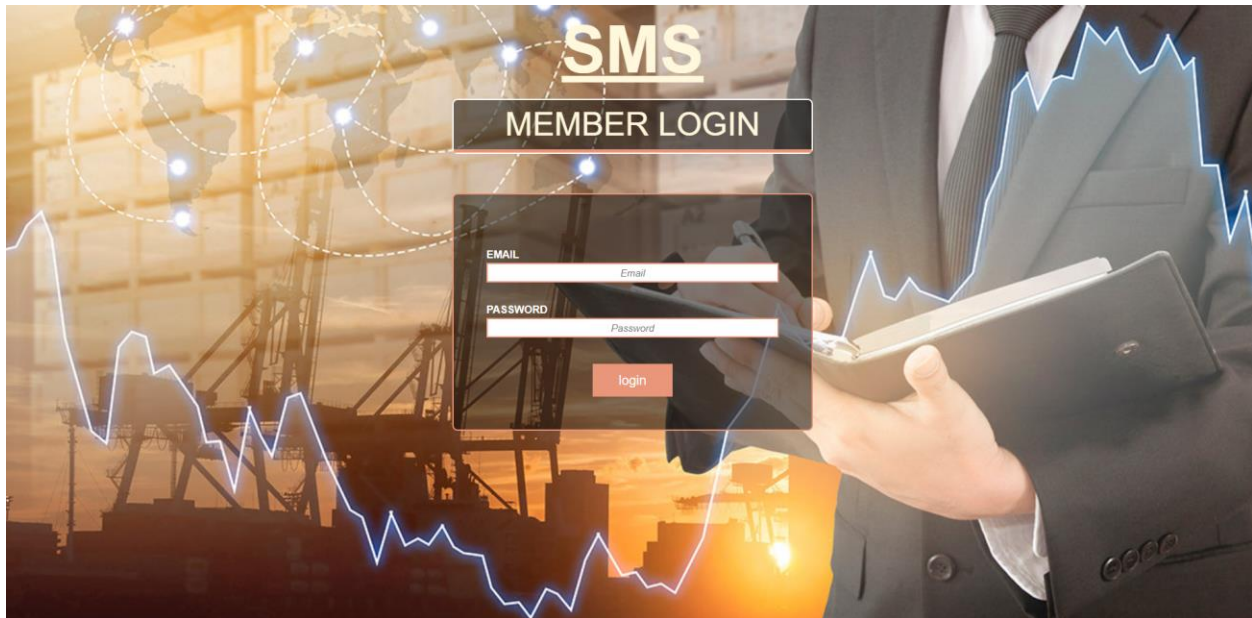


Figure 2.5 UI (Login Page)

6.4.4 UI Sketch for “Add Customer” page

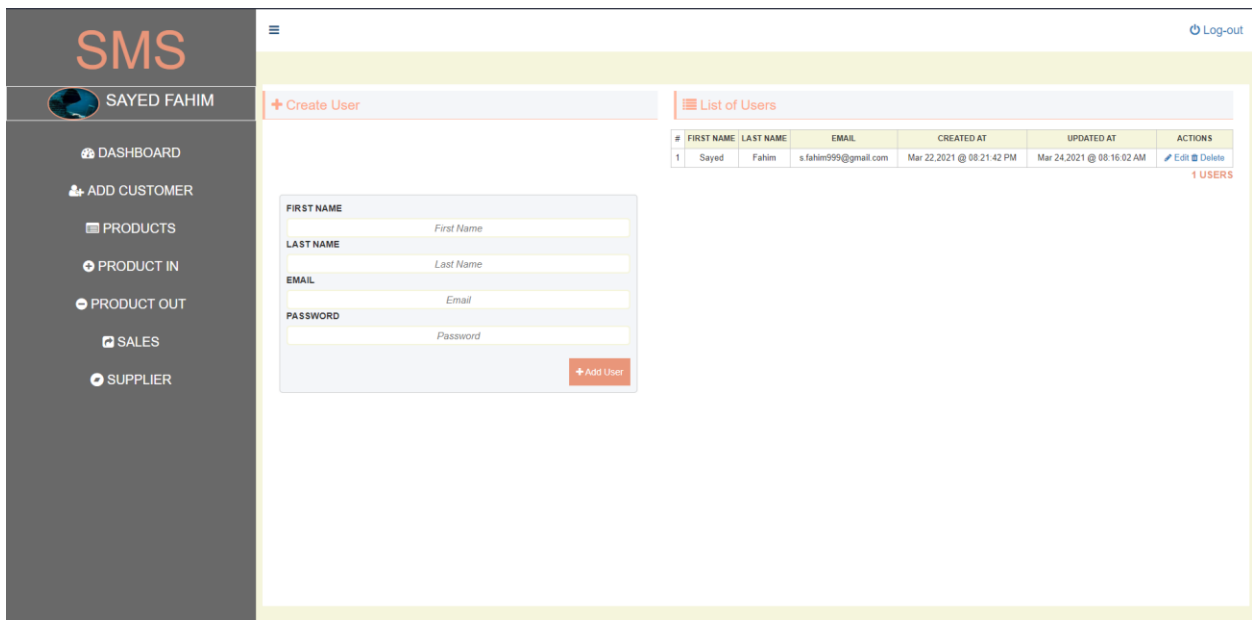


Figure 2.6 UI (Add Customer Page)

6.4.5 UI Sketch for “Product In” page

The UI sketch for the "Product In" page shows a sidebar on the left with the "SMS" logo and user profile "SAYED FAHIM". The main content area has a "+ Add New Product" button. The form contains the following fields:

- BARCODE: Barcode
- PRODUCT NAME: Select Product Name
- PRICE: Price
- QUANTITY: Quantity
- SUPPLIER: Select Supplier
- DESCRIPTION: (Text area)
- Save button

Figure 2.7 UI (Product in Page)

6.4.6 UI Sketch for “Product Out” page

The UI sketch for the "Product Out" page shows a sidebar on the left with the "SMS" logo and user profile "SAYED FAHIM". The main content area has a "+ Product Outgoing" button. The form contains the following fields:

- BARCODE: Barcode
- PRODUCT NAME: Select Product
- SELLING PRICE: Selling Price
- QUANTITY: Quantity
- CUSTOMER: Select Customer
- DESCRIPTION: (Text area)
- Save button

Figure 2.8 UI (Product out Page)

Chapter 7

Conclusion

In short, the project works, it is the relevance to the objectives set. The project is designed on the basis of a preliminary study that was carried out with any store. Therefore, the planning and analysis system development activities are based on the result obtained from the observation interview. Not only that, as it would be the first computerized system to be used by the store, the functions only focused on solving a major problem which is the problem of inventory management. The interface design is also classified as user-friendly due to the lack of computer knowledge of the workers, which means that the system can be managed by people who do not even have IT experience. When creating the software, every effort was made to create a graphical user interface (GUI) that was very easy to use. I've done my best to include as many features as possible within the time limit available.

I have gone to great lengths to ensure the success of this project and make it more flexible, but there are many areas for improvement such as: System security needs to be stronger. Again, some of the new features should be implemented to make it more attractive. Due to time constraints, I cannot implement many features in the system, so I have some suggestions for further work to continue. First of all, the development of the integration between the system and the supplier system of the store. By integrating the two systems, the Store system can send the inventory order request directly to the supplier when the stock level is low.

REFERENCES

[1] Observed Two Stock Management System on the market

https://www.megaventory.com/?utm_source=Capterra&utm_medium=cpc&utm_campaign=Dec_20&utm_content=InvMgmt&utm_term=features&utm_channel=capterra

https://www.ezrentout.com/?r=capterra_inventory_management&gartner=capterra

[2] The Dynamic Systems Development Method (DSDM) -Agile Methodology

<https://www.linkedin.com/pulse/dynamic-systems-development-method-dsdm-agile-alaa>

[3] DSDM life cycle

<https://www.geeksforgeeks.org/dynamic-systems-development-method-dsdm/>

[4] *DSDM has* nine fundamental principles

<https://www.toolsqa.com/agile/dsdm-guide/>

[5] Sublimetext

<https://www.sublimetext.com/>

[6] XAMPP Server

<https://www.apachefriends.org/index.html>

[7] Front End

<https://frontendmasters.com/books/front-end-handbook/2018/what-is-a-FD.html>

[8] Back End

<https://www.guru99.com/what-is-backend-developer.html>

[9] Windows

<https://www.microsoft.com/en-us/software-download/windows10>

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