

**ACCOUNTING SYSTEM INTEGRATED POS FOR SUPER  
SHOPS**

**BY**

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

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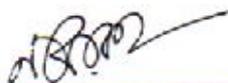
This Project/internship titled “Accounting System Integrated Pos For Super Shops”, submitted by Nayeem Ahmed and Mst Ruhila Yeasmin, ID No: 163-15-8360 and 163-15-8343 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial 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 12 September 2019.

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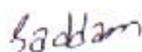
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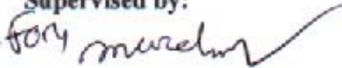
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## DECLARATION

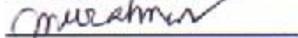
We hereby declare that, this project has been done by us under the supervision of **Md. Sadekur Rahman, Assistant Professor, Department of CSE Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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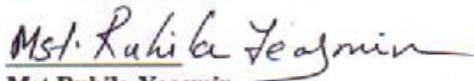


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## **ABSTRACT**

Once, when to order any product from online shop was nothing but a luxurious act, this time, the scenario has been totally reversed, rather to go to shop to buy anything has become considered nothing but a foolish activity. Actually, such act is the consequence of fourth revolution that has taken place because of fantasy development of technology. The present universe is enjoying the miracle blessings of it and online Inventory system is such a blessing of modern technological development. Managing a business has become easier than before for the blessing of it. A businessman can now easily track, manage and handle his product sales, material purchases, delivery of goods and common product processes.

We as Software Engineers are trying to do and contribute something in this regard. We try to take some special features and try to ensure highest security on this business application.

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# **CHAPTER 01**

## **Introduction**

### **1.1 Introduction**

The world is running so fast, in this regard, the demand of society is increasing too and thus complexity is being complexed day by day. In the very first civilization, small businesses were run but now besides small businesses, lots of big businesses are noticed. As businesses are becoming bigger, so managing and maintaining them are becoming tougher too. Now, the situation is like this that manually handling of these businesses are quite impossible. This impossible thing has become not only possible rather much easier than before only because of such kind of business application.

### **1.2 Motivation**

There are lots of valid reasons to work with such kind of business application. Actually, a country's prosperity is mostly dependent on its economy. If one country is economically solvent, they are overall prosperous. Because, to fulfill her basic demands, her citizens must need to be financially independent and this financial independency is fully dependent on her small and big businesses. In this case, manually managing is quite tough, in some cases, it has become fully impossible. Such kinds of business application keep good impact in this case. Actually, this thing motivated us badly to work with such application.

Secondly, as today's world is technologically much improved, we try to use this improvement on the business sector.

### **1.3 Objectives**

The Objectives of our Project are pointed out below

- To provide a systematic way of business.
- To make the business easier.
- To track and manage product sales more comfortably.
- To make it easier of material purchase and delivery of goods.
- To make the business more secured.
- To reduce the time of business.

- To digitalize the business process.
- To minimize the business cost

#### **1.4 Expected Outcome**

Inventory application software can save not only time but also can handle the business systematically. Our expected outcome is to make a business activity more systematic, easier, comfortable and more secured. Some functionality of business will do automatically by this application like price calculation, notify in some special cases.

#### **Our system has following features:**

- To control the application divide users into like super admin, admin, customers etc.
- To show the all business reports, dashboard panel exists.
- Configure section is responsible for:
  - Create grades of a product.
  - Add brands.
  - Add models.
  - Create categories.
  - Create items.
  - Add company.
  - Add departments.
  - Add employees.
  - Assign stories.
  - Manage users.
  - Manage permission and etc.
- Easily handle the purchase activity.
- Store requisition.
- Maintain the production.
- Handle the sales activity.
- POS is the special feature of our application and etc.

## 1.5 Report Layout

The report is divided into five (5) chapters. Each chapter deals with the different aspects of Business. Each chapter has various parts explained in detail.

- Chapter 1 : Introduction

This chapter deals with the introductory discussion of our project. What motivated us, what are the main features, what are the objectives, what are our expected outcomes is explained briefly in this chapter.

- Chapter 2 : Background

The second chapter is basically a comparative section. In this chapter, very first, discuss on the related works with our project. Here, try to show the comparative studies and scope of the problem.

- Chapter 3 : Requirement Specification

Chapter 3 deals with our BPM, means, Business Process Modeling, requirement collection and analysis, use case modeling and description, logical data model and design requirements.

- Chapter 4 : Design Specification

This chapter is mainly focus on developing phase of our project. This chapter Discuss on :

- Front End design.
- Back End design
- Interaction design
- UX and implementation requirements.

- Chapter 5 : Implementation and Testing

This chapter mainly focuses on implementation of our project. Implementation of database and testing are two main topics of this chapter. In the last section of this chapter, some results as well as some reports are being discussed.

- Chapter 6 : Conclusion and Future Scope

This is our final chapter. This chapter discusses about the conclusion. The main section of this chapter is discussion part of future scope of our project.

## CHAPTER 02

### Overall Project Background

#### 2.1 Introduction

The Main Background of this project is to minimize the time and cost of any business which involve with daily sales and inventory Management. In the Manual systems every store or business owner has to calculate all sales and inventory.

In before days, we do not mark the Middle Ages and before that. We are discussing about the period before the business when merchants had to write note about all purchases ,Sales and keep track on how lot of items were sold a day and how many products are rest of them. Since they certainly didn't have a sales ERP or inventory Management system, the business owner had to forecast future needs by themselves, which was not always accurate and faced lot of problem in their business for tracking sales and manage inventory management [1].

#### 2.2 Related works

To solve these problem in 1940 first invented the bar coding system and then day by day by revolution of technology the need of inventory was arise.

In any business organization all function are link to each other and are often overlapped. The key aspects as like supply chain and logistics management and inventory Management is the main backbone of a sales based organization.

The application and functionalities like our system are done before but the main methodologies of our Cloud Based inventory and POS management system is to track all sales in a cloud enable server. All products are must have to enter via web server.POS will also allow a wide range of POS user by a authorized key after login to the system. This is very unique than the other related works [2].

It's not only the Sales and product management but also point of sales can manage purchases, Requisition and Stock as well.

Inventory management system has a very important function that determines the health of the supply chain as well as the impacts the financial health of the balance

sheet. Every organization constantly strives to maintain optimum inventory to be able to meet its requirements and avoid over or under inventory that can impact the financial figures [3,4,5].

### **2.3 Comparative studies**

The web Based inventory management and POS is comparatively added a new dimension that the other desktop based Inventory application. The comparison can be understandable as followings features of our offered solution than the other inventory Management solutions.

- The System is totally web based and can support cloud enable services.
- The system supports and multi authenticate user via web hosting so it can accessible from the anywhere around the world.
- Can inventory of products and Set Special price, Group price, Tier price for your products.
- Stock can manage dynamically and can generate reports daily.
- Keep track of your damaged products.
- Most effective Dashboard to View overall at a glance.
- Set Tax Rule and Rate against products.
- Create Order and Invoice.
- Generate PDF of order and invoice.
- Send Email of invoice to clients.
- Effective Dashboard to view total sales per month.
- View profit / loss report.
- User Role Management.

So, after gathering these features we can easily can compare our offered solutions to the other inventory Management system. The main strength and comparative objectives is its totally web application and Cloud based Services can be implemented.

## 2.4 Scope of the Problems

We worked on the web application following the software development process. We went through each part completion the past. The web application was planned and developed for a month long to collect requirements and gather relative information.

### 2.4.1 Management Scheduling Time

The system are development, planning and time management schedule time is given below.

Table 2.1: Time schedule for the project

Planning	1 Month (approximately)
Design and Analysis	2 Months (approximately)
Coding	3 Months (approximately)
Testing and Implementation	1 Month (approximately)
Data Collection	1 Month (approximately)
Total	8 Months (approximately)

## 2.5 Challenges

The most challenging part was building order system in both customer and admin. Data synchronization was also taking time to plan. Additionally, a designing database for the whole system was challenging. Working with the real time people connection was also challenging.

## CHAPTER 03

### Requirement Specification

#### 3.1 Business Process Modeling

We know that, in every enterprise, there has a Business Process Model. Actually, this business process modeling in business process management and system engineering in the activity of representation process of an enterprise. And the goal of business process model is to analyze, improve and automation of any current process of the enterprise [6].

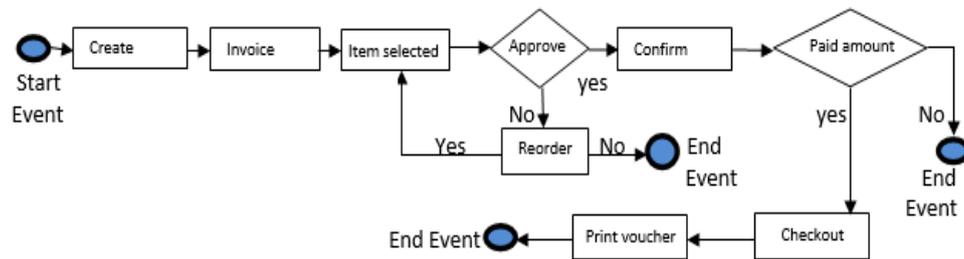


Figure 3.1: Business Process Model System

#### 3.2 Requirement Collection and Analysis

##### 3.2.1 Software Requirements

To develop this application, we used following Software Requirements:

- Operating System: Windows
- System Design: CSS
- Language: PHP
- Database: MySql
- Tools : PHP, Dreamweaver
- Internet Browser: Chrome ,Firefox

Software Requirements for running the application:

- Operating System : Any OS in Web Platform
- Network : Wi-Fi or Cellular Network
- Compatible Browsers : Chrome, Firefox

### **3.2.2 Hardware Requirements**

To develop this application, we need the following Hardware Requirements:

- Processor : Intel Pentium Core
- RAM: 1 GB
- Space on disk: 1GB

### **3.2.3 Functional Requirements**

- Graphical User Interface which the application user.
- Give ease of understanding to the application through Wi-Fi.

## **3.3 Use Case Modeling and Description**

### **3.3.1 System Model**

- Admin Module
- Customer Module
- Manager Module
- Cashier Module

#### **Admin Module**

Admin is super user of this application. He can perform the below operation in this web application.

a) **Login**

To do any operation in the application, admin must need to log in. Without log in admin cannot get the access of the dashboard.

b) **Manage User**

Admin can manage the users of this application. But for this power, admin should be logged int.

c) **Update Inventory**

Admin has another access on that application. Admin can update inventory by keeping himself logged in.

## **Customer Module**

Customer can do several things on this application.

### **1. Check Out**

Customer can check out any item. But this can be done by several ways like:

#### **a) Scan Item**

By scanning item, customer can check out an item.

#### **b) Taxes**

By taxes, a customer can also check out an item.

#### **c) Payment**

By paying, a customer can also check out an item. But in this regard, there are three ways to pay for any item.

##### **i) Cash**

By direct paying by cash, a customer can check out an item.

##### **ii) Debit/Credit**

By using debit or credit card, a user can also pay for an item and by this he can check out the item.

##### **iii) Point Redemption**

By this point redemption method, a user can check out the expected product or item from this application.

### **2. Return Item**

A user has the access of returning any item by following the terms and conditions of our enterprise application system.

### **3. Cancel**

Our user can also cancel any product.

## **Manager Module**

Manager can do some things in this application.

### **i. Log in**

Manager has to do login for doing any perform in this application

### **ii. Sales Report**

Manager has another important role in this application and that is Sales Report.

### **iii. Reorder Report**

Manager can also generate reorder report.

## **Cashier Module**

Cashier module is our last module of our enterprise application. He has three types of responsibility in this application.

### **i. Login**

To do anything in this application, cashier should be logged in.

### **ii. Inventory Receipt**

Cashier can generate inventory receipt for the customer.

### **iii. Print Receipt**

Cashier can also print the receipt for the customer.

## **3.3.2 Use Case Diagram and Description**

We know that to describe a business model, use case diagram is so much helpful. Use case diagram, actually, a graphical representation of the interactions among the elements of a system [7]. Figure 3.4 shown our project's use case diagram.

### **Actor of the Customer**

- a) This use case starts when a customer enter the system.
- b) Customer can access checkout, return item and cancel

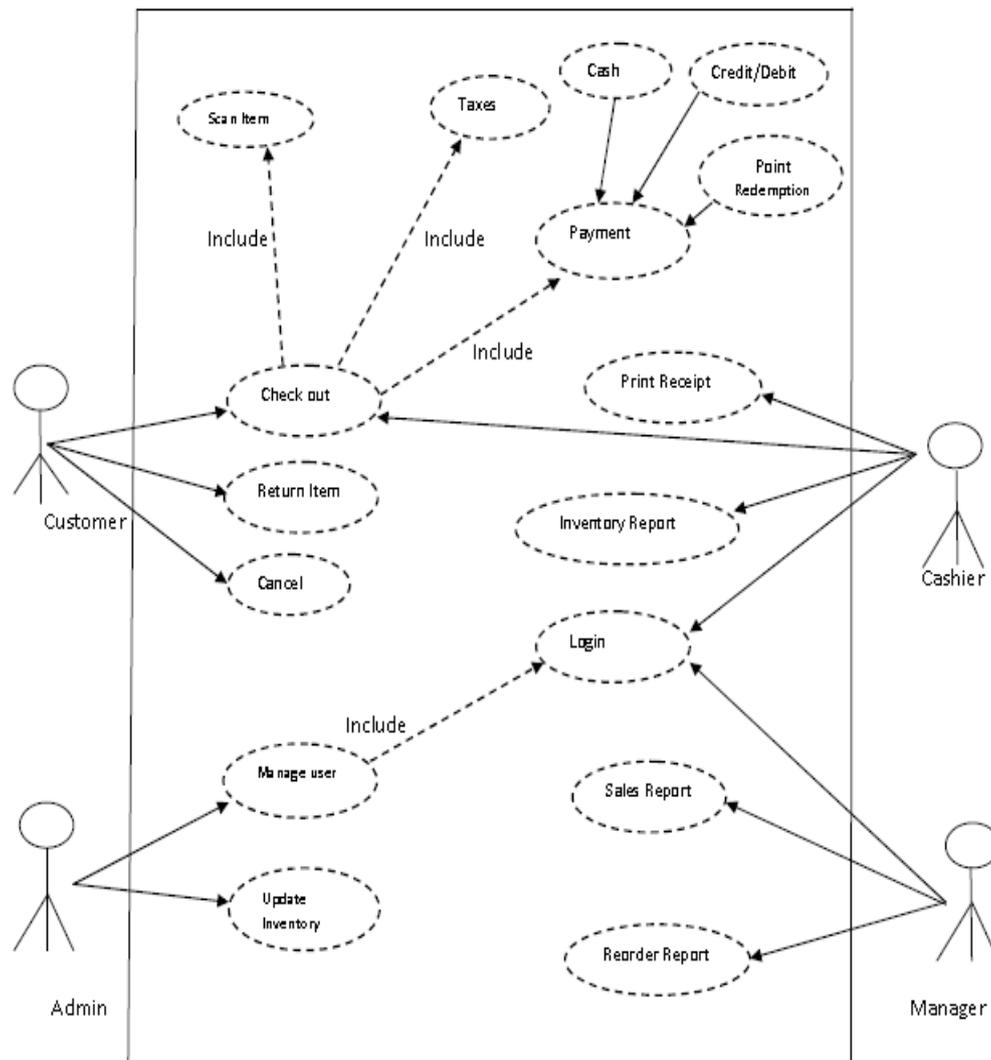


Figure 3.2: Use Case Diagram of System

### Actor of the Customer

Login with given username and password

The flow steps are

- a) Admin can control the system by login.
- b) Admin can manage by user and reporting all history.

### Actor of the Managers

- a) Manager can access when the system login
- b) Check up the sales and recorder report and reporting by administration.

### 3.4 Logical Data Model

The logical data model represents the data processing modules. It used for data analysis and processing easily [8]. The Entity-relationship diagram/model represents the logical data model

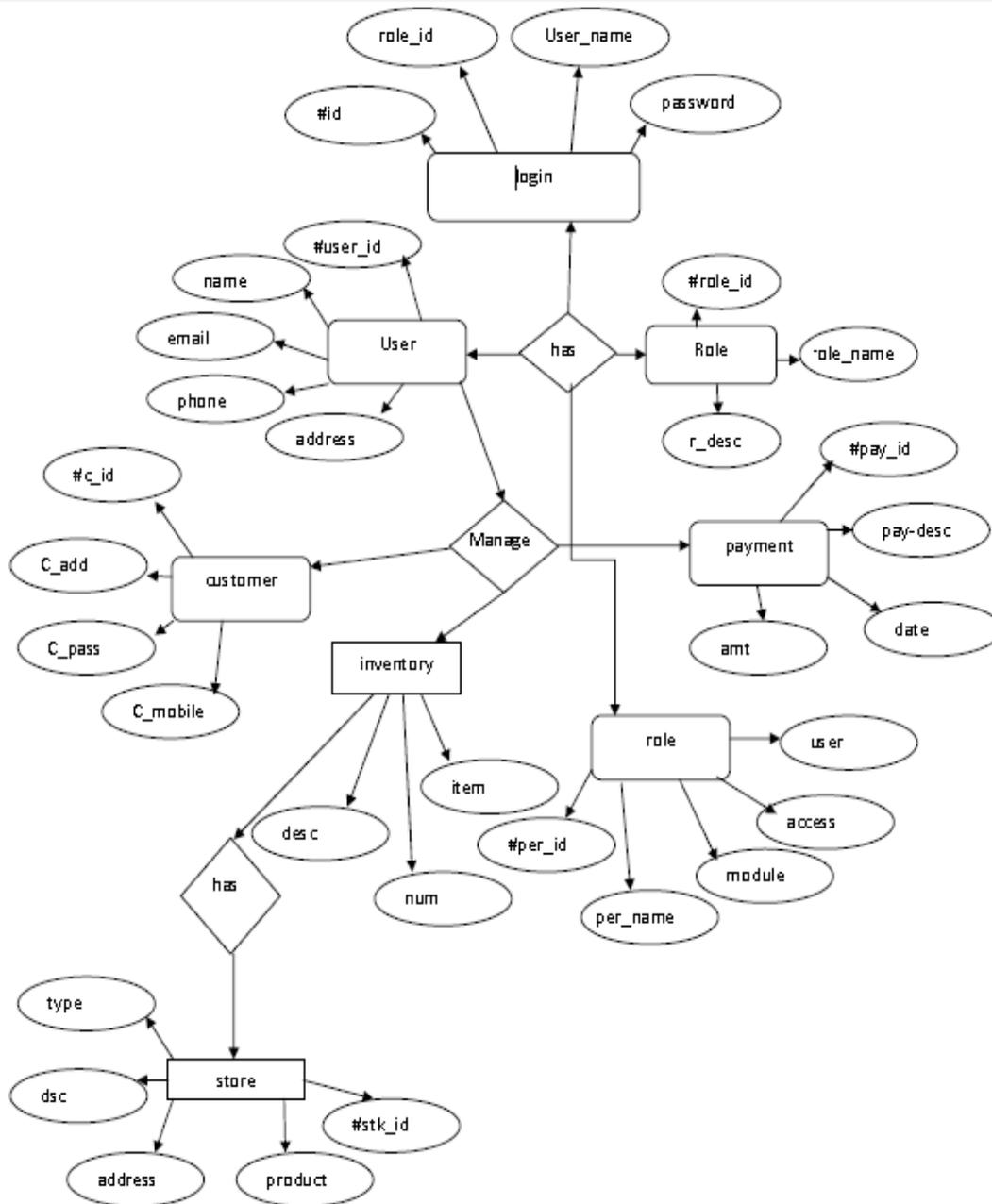


Figure 3.3: ER-Diagram of System

### 3.5 Design Requirements

When designing system or software, following issues must be considered that reproduce the overall design of the goals that the system expected to achieve. The following goals were kept in mind while designing the system [9].

Make system simple and flexible for users: the system users are able to have a great amount of control over their purpose in achieving objectives. Make the system compatible. It should be fit in the total system, future maintenance and enhancement must less.

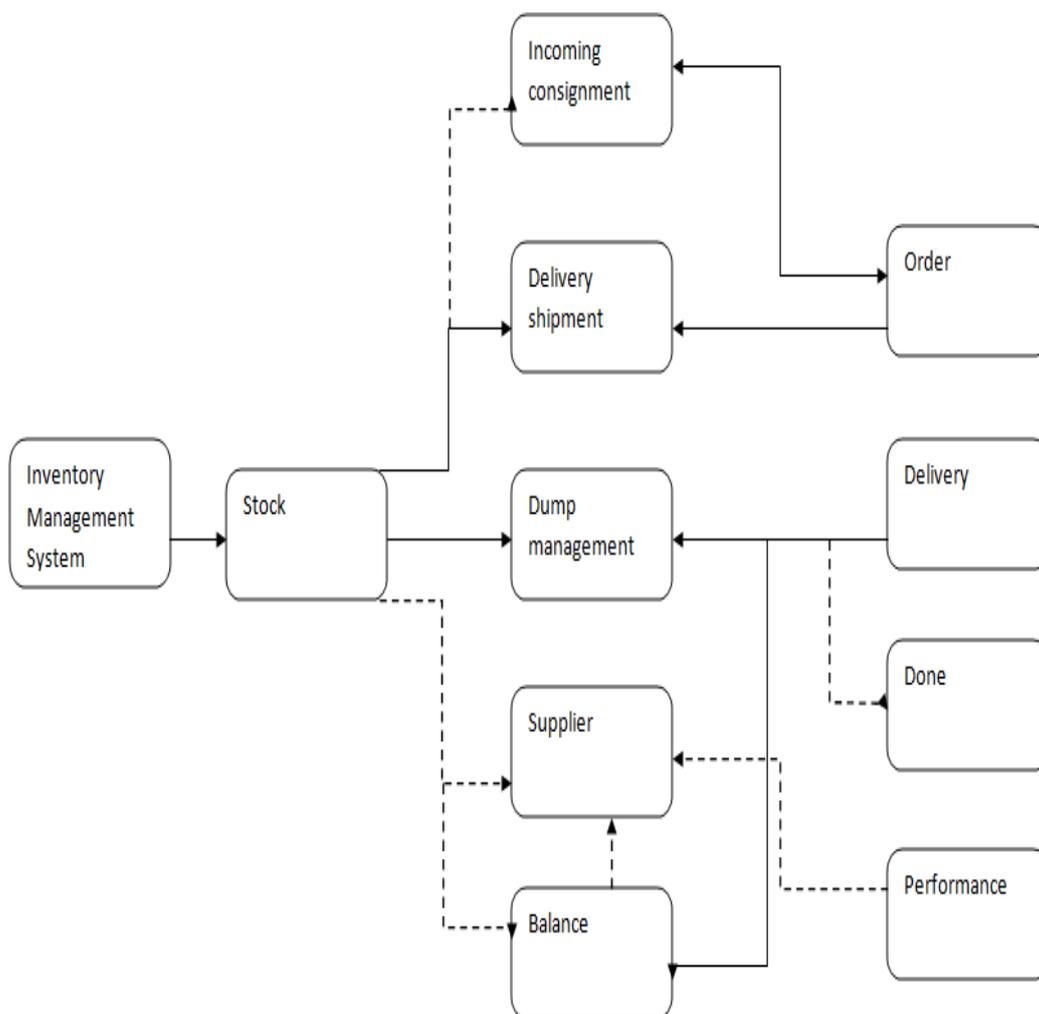


Figure 3.4: Stock Plane

## CHAPTER 04

### Design Specification

#### 4.1 Front end Design

One of the most important things of a software application is its front-end side. Actually, software applications are made for our users or clients. And our users interact with our application only from the front-end side. That's why; the front end side of an application should be more attractive and must be user friendly [10]. We tried to make our side more attractive. Our application has the following screens shown in Table 4.1.

Table 4.1: Activity list of the system

No.	Screens
1	Admin login Screen
2	Dashboard Screen
3	Add Admin Screen
4	Configure Screen
5	Item Grades Add Screen
6	Item Brand Add Screen
7	Item Model Add Screen
8	Item Country Add Screen
9	Item Category Add Screen
10	Item Sub-Category Add Screen
11	Item Add Screen
12	Item Barcode Add Screen
13	Add Costing Price Screen
14	Add Selling Price Screen
15	Company Screen
16	Add Company Screen
17	Add Designation Screen
18	Add Department Screen
19	Add Employee Screen

20	Add Manufacturers Screen
21	Add Suppliers Screen
22	Add Customers Screen
23	Add Members Screen
24	Add Points Conf. Screen
25	Add Banks Screen
26	Add Stores Screen
27	Counter Screen
28	Assign Stories Screen
29	Manage Users Screen
30	Manage Permission Screen
31	Home Purchase Screen
32	Requisition Screen
33	Create Procurement Screen
34	Manage Procurement Screen
35	Payment Receipt Screen
36	Home Store Requisition
37	Send Stock Screen
38	Approve Stock Screen
39	Return Stock Screen
40	Manage Stock Screen
41	Home Production Screen
42	Production Input Screen
43	Production Return Screen
44	Production Manage Screen
45	Production Wastage Screen
46	Production Manage Screen
47	Home Sale Screen
48	Sale Order Screen
49	Sale Delivery Screen
50	Sale Return or Manage Screen

51	Sale Bill Screen
52	Sale Money Receipt Screen
53	Sale Credit Memo Screen
54	POS Create Screen
55	POS Transaction Screen
56	POS Recycle Bin Screen
57	Home Reports Screen
58	Purchase Report Screen
59	All Supplier Screen
60	All Customer Screen
61	Specific Supplier Screen
62	Specific Customer Screen

## 4.2 Back end Design

The special feature of this modern web application is being dynamic. Our application is nothing but a dynamic application. Everything is controlled by the user interactions. User can access only the front-end but they have no access on back-end. The most powerful tool of our application is internet [11]. Trough the internet, user can access our application from remotely.

The following figure 4.1 shows how user gets output from back-end database.

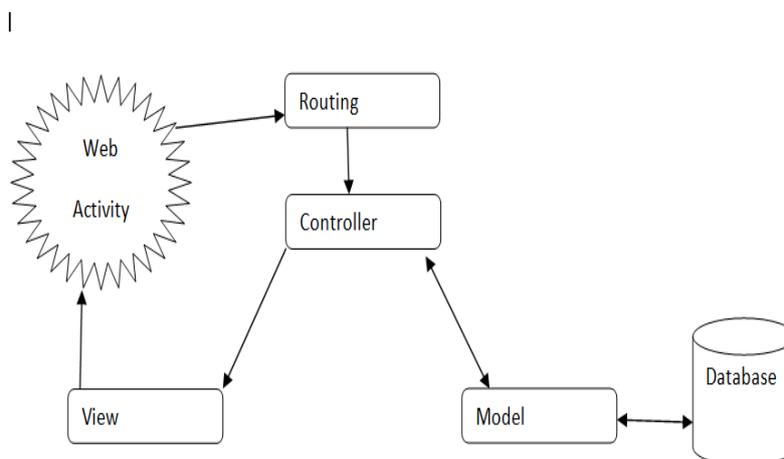


Figure 4.1: Request lifecycle

DBMS tables: The following figure 4.2 has shown our database table.

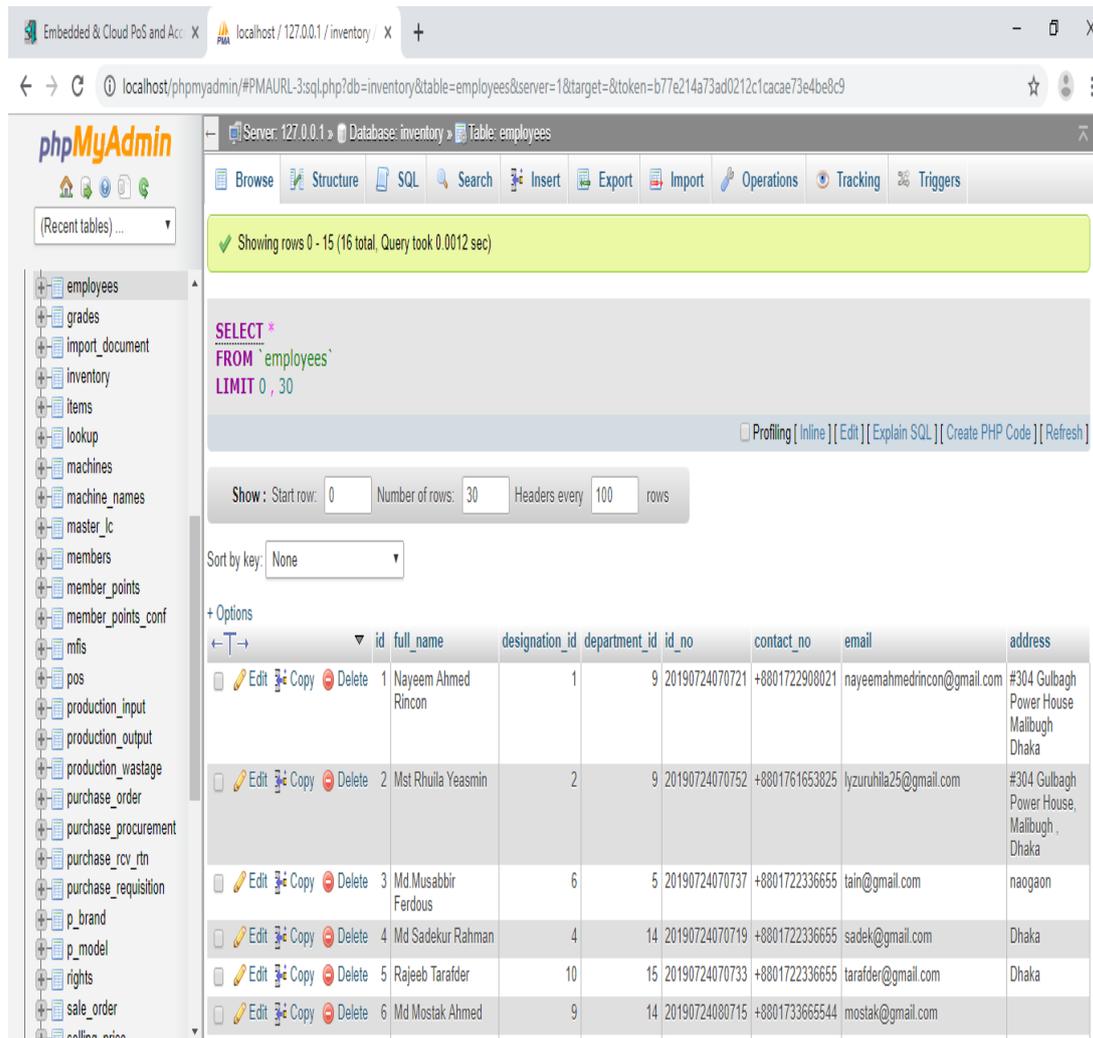


Figure 4.2: System DBMS tables

### 4.3 Interaction Design and UX

User Experience (UX) is the most important thing of an application. Indeed, it sometimes defines the success or failure of a product in the market. That's why, UX design has become most issue in a web application development. A developer has to very conscious about this design. He must develop such a UX that is so attractive and user friendly to the user[12].

There are some factors that describe user experience, according to Peter Morville.

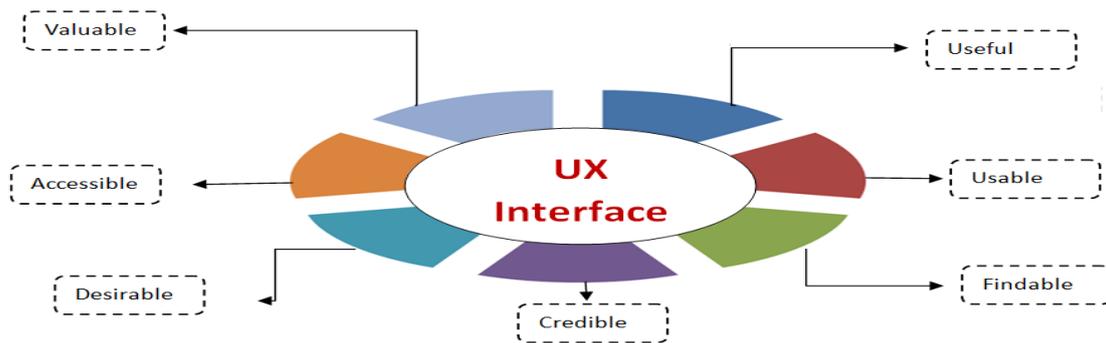


Figure 4.3: Factors Influence User Experience

### 4.3.1 Home Screen Interaction Design and UX

Home page is our first interface that has come to visible to the user to go our application. Our home page is so simply. We avoid the unnecessary thing that is not related to our application from our application. There has a log in form in our home page of our application. By using valid Email and Password a supper admin or admin can go to the dashboard. That means our home page is connected to the dashboard. So, to go to dashboard, one and only way is this home page.

### 4.3.2 Dashboard Screen Interaction and UX

Our dashboard is most attractive. The all elements are so organized and categorized. User can see their profile through dashboard. Purchase, Storage, Production, Sale etc all related things are present in our dashboard.

Super admin can delete or restrict a user or admin from the dashboard. Finally, to go out from the dashboard, log out activity is included in the dashboard.

## 4.4 Implementeation Requirements

Implementeation Requirement is given below:

- |                   |                 |            |
|-------------------|-----------------|------------|
| 01. PHP           | 05. Dreamweaver | 08. HTML5  |
| 02. CSS3          | 06. Bootstrap   | 09. Jquery |
| 03. JavaScript    | 07. Ajax        | 10. MySQL  |
| 04. YII Framework |                 |            |

# CHAPTER 05

## Implementation and Testing

### 5.1 Implementation of Database

Database Management System is the most important thing of an application. It is the storage part of the application that can store all information related to the application as an organized and structured way. For our application, we use MySQL as our DMBS. Some screenshots of our database are shown below

### 5.2 Implementation of Front end Design

For implementing front-end design of our application, we use HTML, CSS, JQuery, JavaScript, Bootstrap and Ajax.

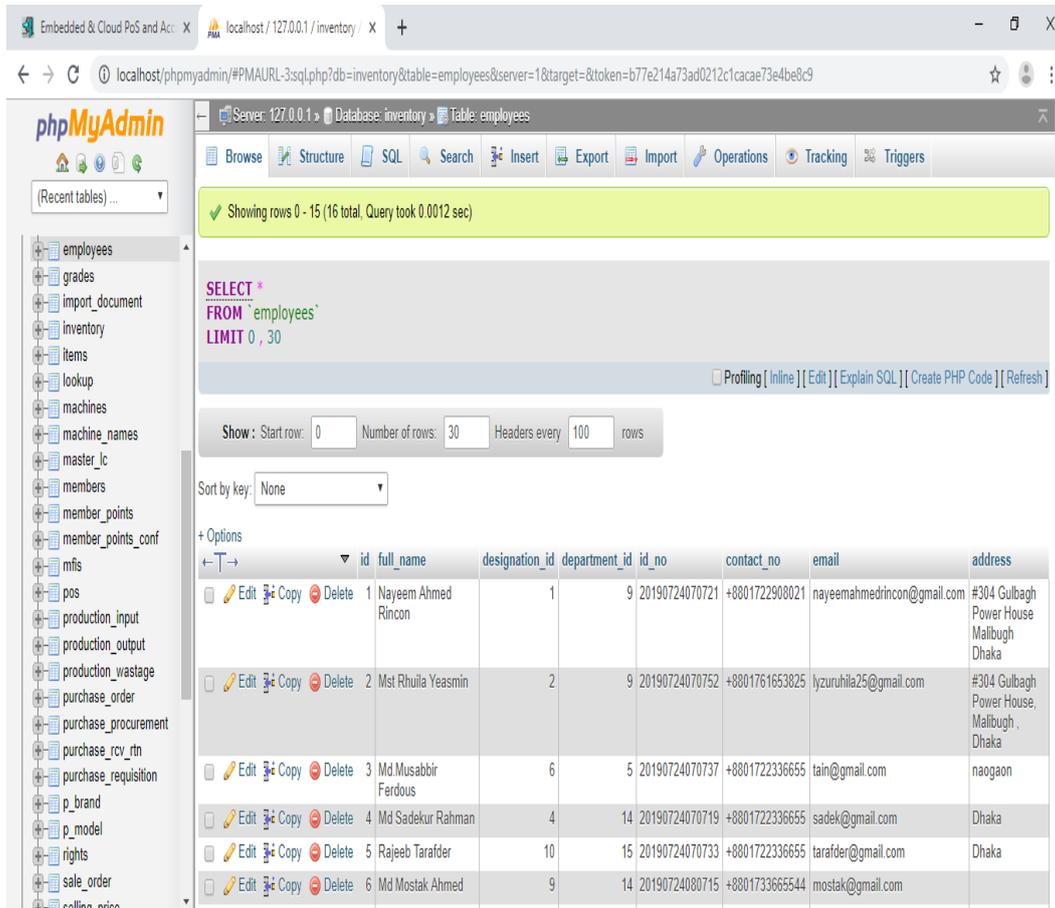


Figure 5.1: Database Designed

## 5.2.1 Login Page

Login page is our starting page. To access our system needs to be logged in. Our login page is very simple, just need to provide email and password to go to our system dashboard.

Embedded & Cloud PoS and Accounting System

Username \*   
Username cannot be blank.

Password \*   
Password cannot be blank.

CLOSE Login

Recommended: Mozilla Firefox Version 41.0.2

q w e r t y u i o p  
a s d f g h j k l  
caps lock z x c v b n m backspace  
?123 , { } . close

Figure 5.2: Login Page

## 5.2.2 Dashboard

This is our dashboard page. There are some buttons in this page and every button is dropdown button. That means, the button that we seeing in the dashboard page, actually, contains some more options in each button.

Embedded & Cloud PoS and Acc: x localhost / 127.0.0.1 / inventory | x +

localhost/inventory/inv/site/dashBoard

DASHBOARD CONFIGURE PURCHASE STORE REQUISITION PRODUCTION SALE POS INVENTORY REPORTS LOGOUT ( NAYEEM AHMED RINCON(CHAIRMAN) )

Start Date

End Date

Liabilities Purchase Sales Graph

If the given date range is empty, results will be generated over whole transactions.

**LIABILITIES**

Purchase

Total Purchased(Received) Amount	Total Paid Amount			Total Payable Amount
	Paid	Discount	Total	
0	0	0	0	0

Sales

Total Sold(Delivered) Amount	Total Billed Amount	Total Not-Billed Amount	Total Received Amount			Total Receivable Amount (Billed But Not Received)
			Received	Discount	Total	
0	0	0	0	0	0	

**PURCHASE**

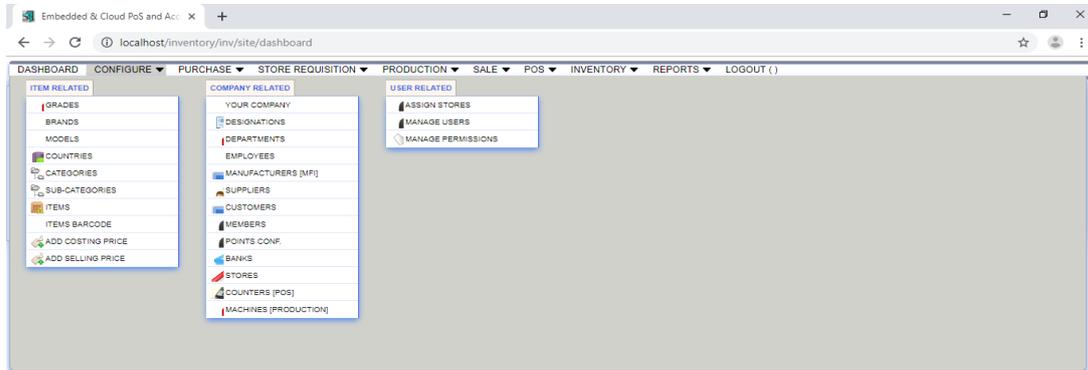
Requisition Qty	Procurement Qty	Order Qty	Receive Qty
-----------------	-----------------	-----------	-------------

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Figure 5.3: Dashboard

### 5.2.3 Configure Page

Our configure page contains some more functions related to product setup. Add brand, grade, item, company etc can be done from this page.

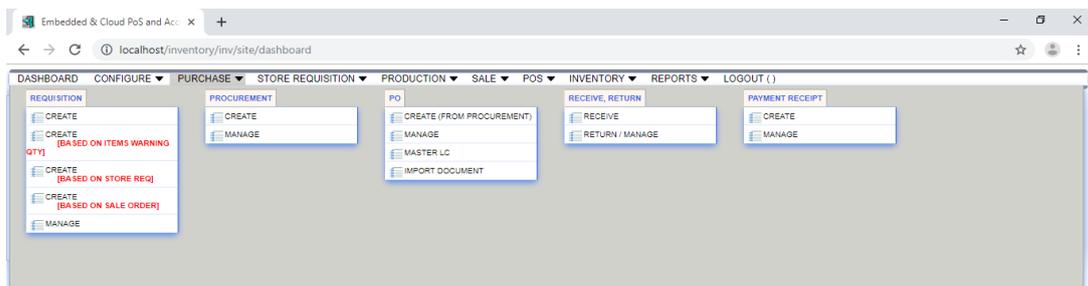


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Figure 5.4: Configure Page

### 5.2.4 Purchase Page

Our purchase page is responsible for purchase related activities like create-manage requisition, create-manage procurement etc.



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Figure 5.5: Purchase Page

## 5.2.5 Requisition Page

This page is for storing Requisition of any product. From this page, items can be searched from various aspects like brand, product type, model, category etc.

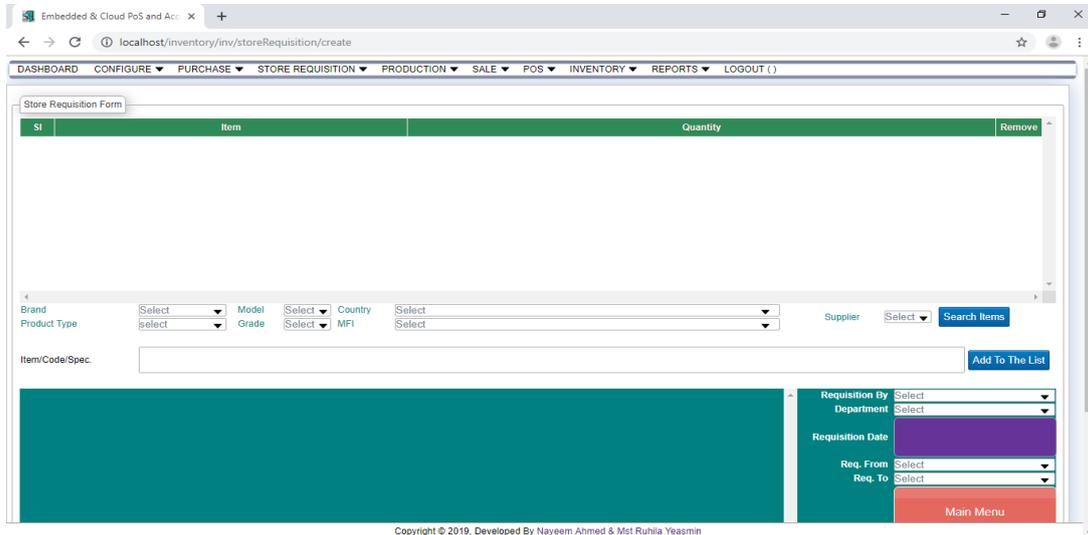


Figure 5.6: Requisition Page

## 5.2.6 Production Page

This is our production page. This page is responsible for managing production related activity like product wastage.

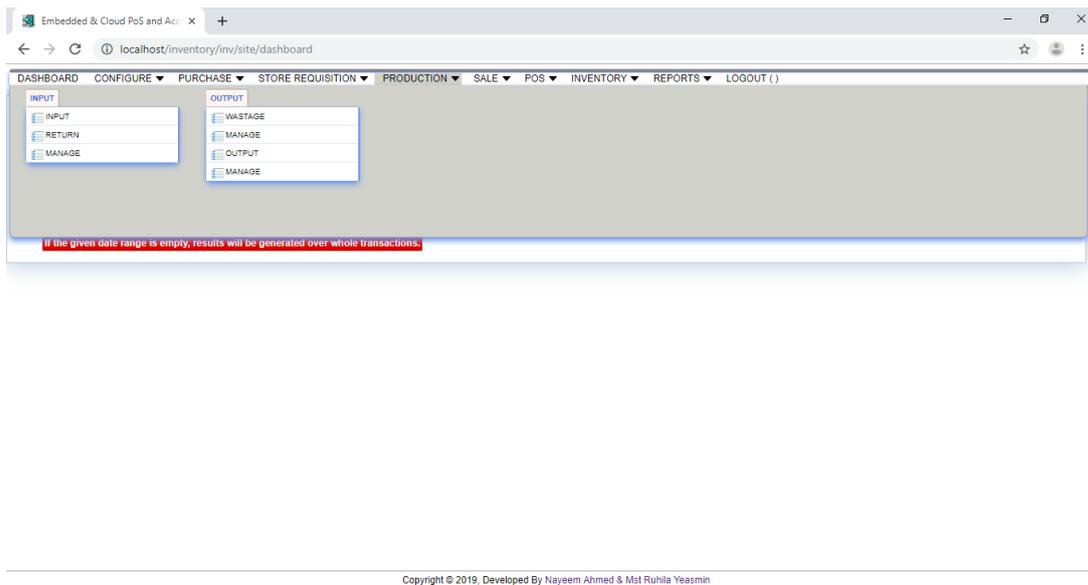


Figure 5.7: Production Page

## 5.2.7 Sale Page

Sale page most important part of our inventory application. This activity is more sensitive as transaction is been done here.

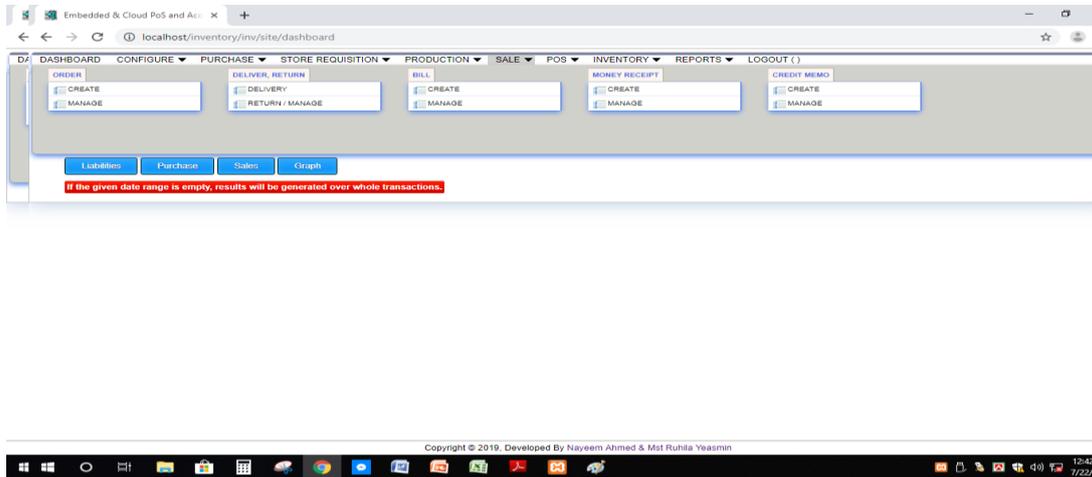


Figure 5.8: Sale Page

## 5.2.8 POS Page

In our project, we keep a special feature of POS. POS can be easily handled by using this inventory application.

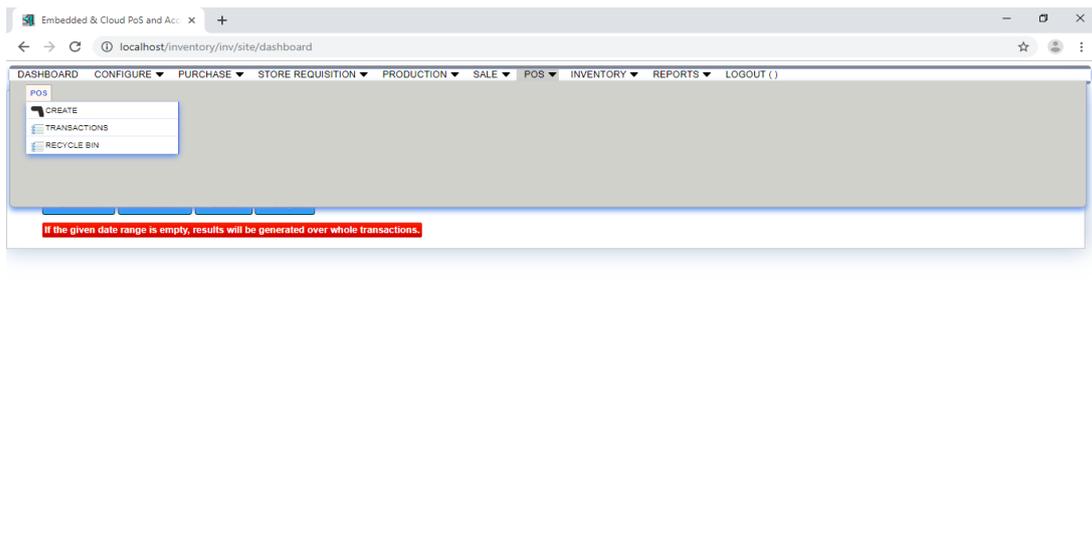


Figure 5.9: POS Page

## 5.2.9 Inventory Page

This is our inventory page. Inventory related tasks are accomplished by this page.

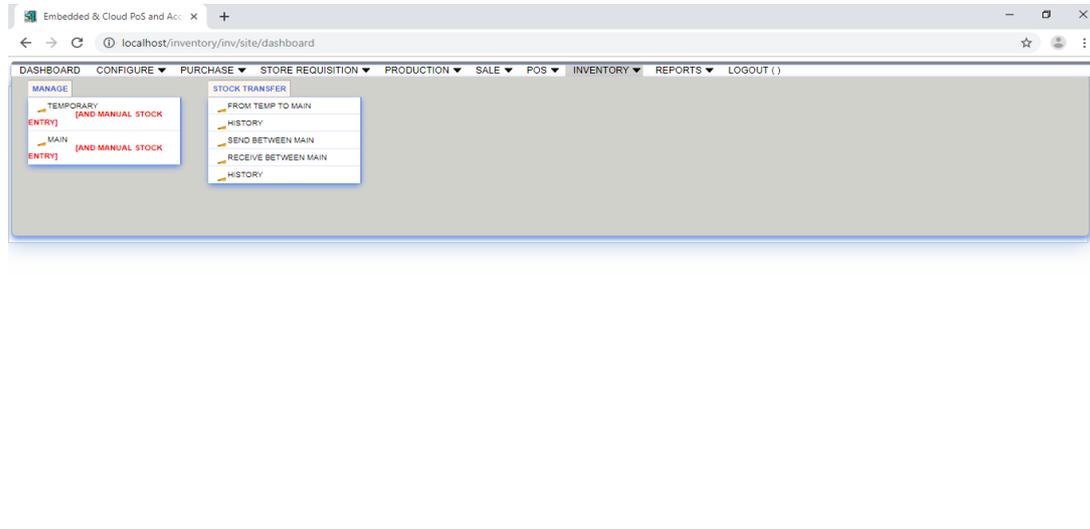


Figure 5.10: Inventory Page

## 5.2.10 Order page

Listings will be submitted here at the time of sale of any item transaction.

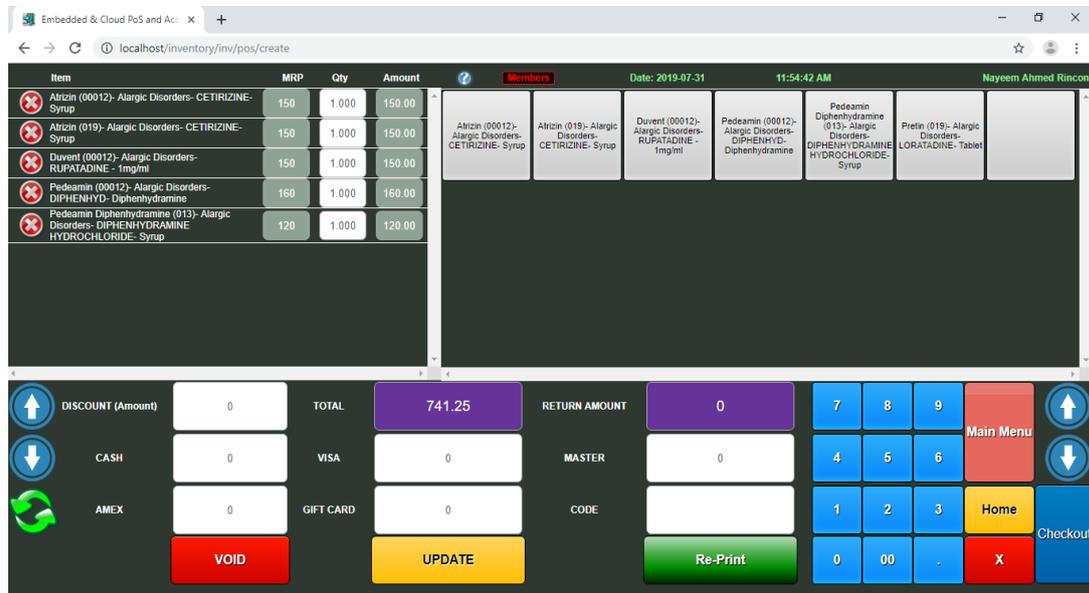


Figure 5.11: Order Page

### 5.2.11 Report Page

Finally, this is our report page. An admin can generate several reports from various perspective like purchase report, sales report, store requisition report etc.

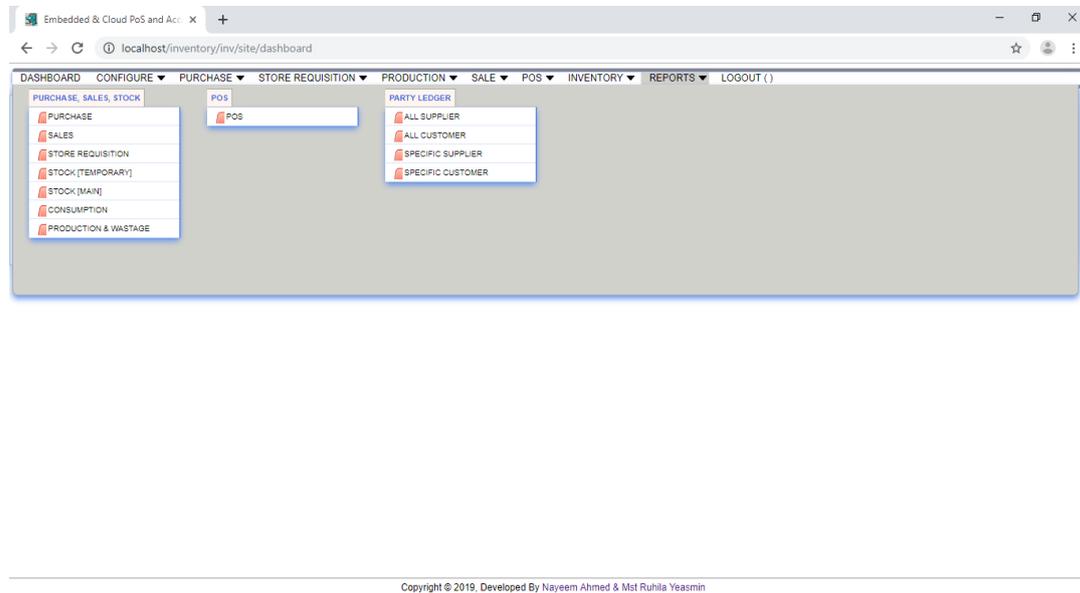


Figure 5.12: Report Page

### 5.3 Implementation of Interactions

Interaction of a system is very crucial thing of a system. Here, interaction refers to the communication among one page to another page, more specifically; go to one function to another function. We did this thing with special care. We try to handle the interaction more securely and more accurately as well as user friendly [13]. We can claim that the satisfaction level of user of using our system should be high.

### 5.4 Testing Implementation

Testing is the last but not least part of a system. When a system is ready, then the system should be tested from various angles. We tested our system from various aspects like:

1. Login System
2. Registration System.
3. Add Product checking.
4. Manage Configure Checking.

5. Storage Testing.
6. Production Testing.
7. Sale Testing.
8. POS Testing.
9. Inventory Testing.
10. Purchase Testing.

## **CHAPTER 06**

### **Conclusion and Future Scope**

#### **6.1 Discussion and Conclusion**

We are really thankful to our almighty that we completed our project. Behind this project, there has a good amount of time spent for the developing purpose of this product. Very first, when we decided to do it as our final year project, lots of confusions were existed. But after that, we made plan, did meeting and spent lots of time thinking how could we implement our project. Finally, our dream comes true and we developed an enterprise application completely. We believe that this application can keep good contribution in the business aspect. A businessman can easily and efficiently manage his all necessary things related to his business by using this application.

#### **6.2 Scope for Future Development**

The future scopes of this inventory management system will be different as we are entering in the IOT and machine learning ERA. The web based inventory management and POS counter can be developed more efficient by using IOT devices by creates sales of product by self sales using a Booth Machine. In the IOT base Devices POS will be installed and customer can scan QR and Press the checkout and payment by electronic cashless Method.

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## **APPENDIX**

By design, Development and implementation this project we learned about a total web based Application process. We Used PHP and Yii framework and HTML5, CSS for the front end Design. Web Application process learning is the main outcomes through this projects. We get more confident that we can develop any web based enterprise resources application in our future professional career path.

