

**COMSATS University Islamabad  
Abbottabad Campus**

**Medical Store Distributor Consumer Network**

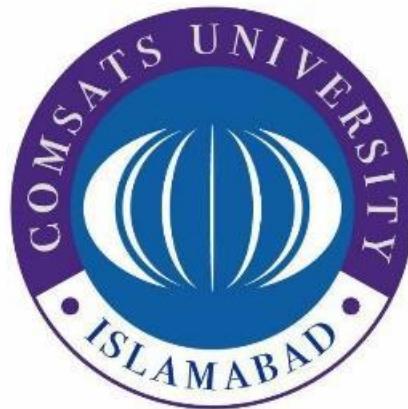
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***Bachelor of Science in Computer Science (2017-2021)***

**The candidate confirms that the work submitted is their own and appropriate credit has been given where reference has been made to the work of others.**



**COMSATS University Islamabad  
Abbottabad Campus**

**Medical Store Distributor Consumer Network**

**A project presented to  
COMSATS University Islamabad, Abbottabad**

**In partial fulfillment  
of the requirement for the degree of**

***Bachelor of Science in Computer Science (2017-2021)***

***By***

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## **DECLARATION**

We hereby declare that this software, neither whole nor as a part has been copied out from any source. It is further declared that we have developed this software and accompanied report entirely based on our personal efforts. If any part of this project is proved to be copied out from any source or found to be reproduction of some other. We will stand by the consequences. No Portion of the work presented has been submitted of any application for any other degree or qualification of this or any other university or institute of learning.

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**CERTIFICATE OF APPROVAL**

This page is to certify that this Final Year Project (FYP) of BSE “Medical Store Distributor Consumer Network” was developed by **ABDULLAH IQBAL (CUI/FA17-BSE-030)**, **ARMAGHAN HASSAN (CUI/FA17-BSE-045)** and **MAJID DURANI (CUI/FA17-BSE-023)** under the supervision of “**SIR KASHIF NASR**” and that in (their/his/her) opinion it is fully adequate, in scope and quality for the degree of Bachelor’s in Software Engineering.

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**Head of Department  
(Department of Computer Science)**

## **EXECUTIVE SUMMARY**

There are many different software's available, but they all have different problems i.e., notification problem, online store not available, online transaction not available and inventory management not available. So, because of all those problems we develop a website not a software that a person downloads and fulfills the required requirements to run it, we developed this website as a whole package. This website will contain Point of Sale, Inventory Management, Online Store, Reports Generation, Medicine shortage Notification and Online Transaction.

## **ACKNOWLEDGEMENT**

All praise is to Almighty Allah who bestowed upon us a minute portion of His boundless knowledge by virtue of which we were able to accomplish this challenging task.

We are greatly indebted to our project supervisor "**Sir Kashif Nasr**". Without his personal supervision, advice and valuable guidance, completion of this project would have been doubtful. We are deeply indebted to him for their encouragement and continual help during this work.

And we are also thankful to our parents and family who have been a constant source of encouragement for us and brought us the values of honesty & hard work.

Abdullah Iqbal

Armaghan Hassan

Majid Durani

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## **ABBREVIATION**

<b><u>ABBREVIATION</u></b>	<b><u>FULL FORM</u></b>
<b>MSDCN</b>	Medical Store Distributor Consumer Network
<b>SRS</b>	Software Requirement Specification
<b>FR</b>	Function Requirement
<b>NFR</b>	Non-Functional Requirement
<b>UC</b>	Use Case
<b>BR</b>	Business Requirement
<b>ADMIN</b>	Administrator
<b>PRE</b>	Precondition
<b>POST</b>	Postcondition
<b>UT</b>	Unit Test
<b>ST</b>	System Test
<b>IT</b>	Integration Test

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## **1. Introduction**

### **1.1.Brief**

Life in the age of technology has changed, now a days we are surrounded by the technology and the age of Information, Communication, and Technology (ICT) is at its most effective time. We cannot think single moment without the Internet.

The Medical Store Distributor Consumer Network (MSDCN) is a website which allows the Retailer and Distributer to maintain their inventory and to sell their stock, this will be used by medical store and Pharmaceutical Distributors. This website will store details of medicine purchase and selling w.r.t Retailer and Distributor. The website will also consist of Billing generation, Reporting module, Transection and Medicine shortage notification module.

### **1.2.Relevance to Course Modules**

- Software Engineering (SE-1)
- Object Oriented Software Engineering (OOSE)
- Web Technologies
- Mobile Application and Development
- Object Oriented Programming (OOP)
- Software Requirement Engineering (SRE)
- Software Testing
- Software Design and Architecture (SDA)
- Software Project Management (SPM)

### **1.3.Project Background**

The idea about the project comes from the real-world problem because there is no proper monitoring of payment, billing, selling, and buying of the medicine and that process and not traceable. So, because of that we decided to develop Medical Store Distributor Consumer Network (MSDCN).

### **1.4.Literature Review**

For the literature review we have reviewed some of the existing software and some of the websites. As a conclusion we came to know that these other projects are not dynamic and does not fulfill the complete requirements of the market. Our website is dynamic and smoother which allows the user to use it without any hassle.

### **1.5. Analysis for Literature Review**

Unlike the old software's there are a lot of drawbacks, all the websites are not dynamic, and this system is mostly implemented on the system application not on the website basis.

Older systems only target the audience of the one domain either Retailer or Distributor.

### **1.6. Methodology and Software Lifecycle for the Project**

The methodology that we use is the iterative lifecycle for the development of this project. The iterative period is divided into 3 iterations where each starts with a development phase and ends with a complete tested and working unit or module.

#### **1.6.1. Rationale behind Selected Methodology**

The main reason that we considered behind using the iterative lifecycle is because all the requirements were not cleared, and the requirements were kept on changing which were causing the changes in the product. The requirement gathering and the implementation phases were working parallelly till the end of the project.

## **2. Problem Definition**

### **2.1. Problem Statement**

In the age of information and technology medical stores are still depended on paperwork. All the billing and transaction details are still on the paper. Sometime the store owner forgets to place order for medicines because there is no proper mean to notify him about the medicine shortage, and sometimes medicine providers misplace the order details. Because of this, medical stores face's problem of shortages and delay. There is no proper back traceability.

### **2.2. Deliverables and Development Requirements**

*Table 1 show all the deliverables and development requirements.*

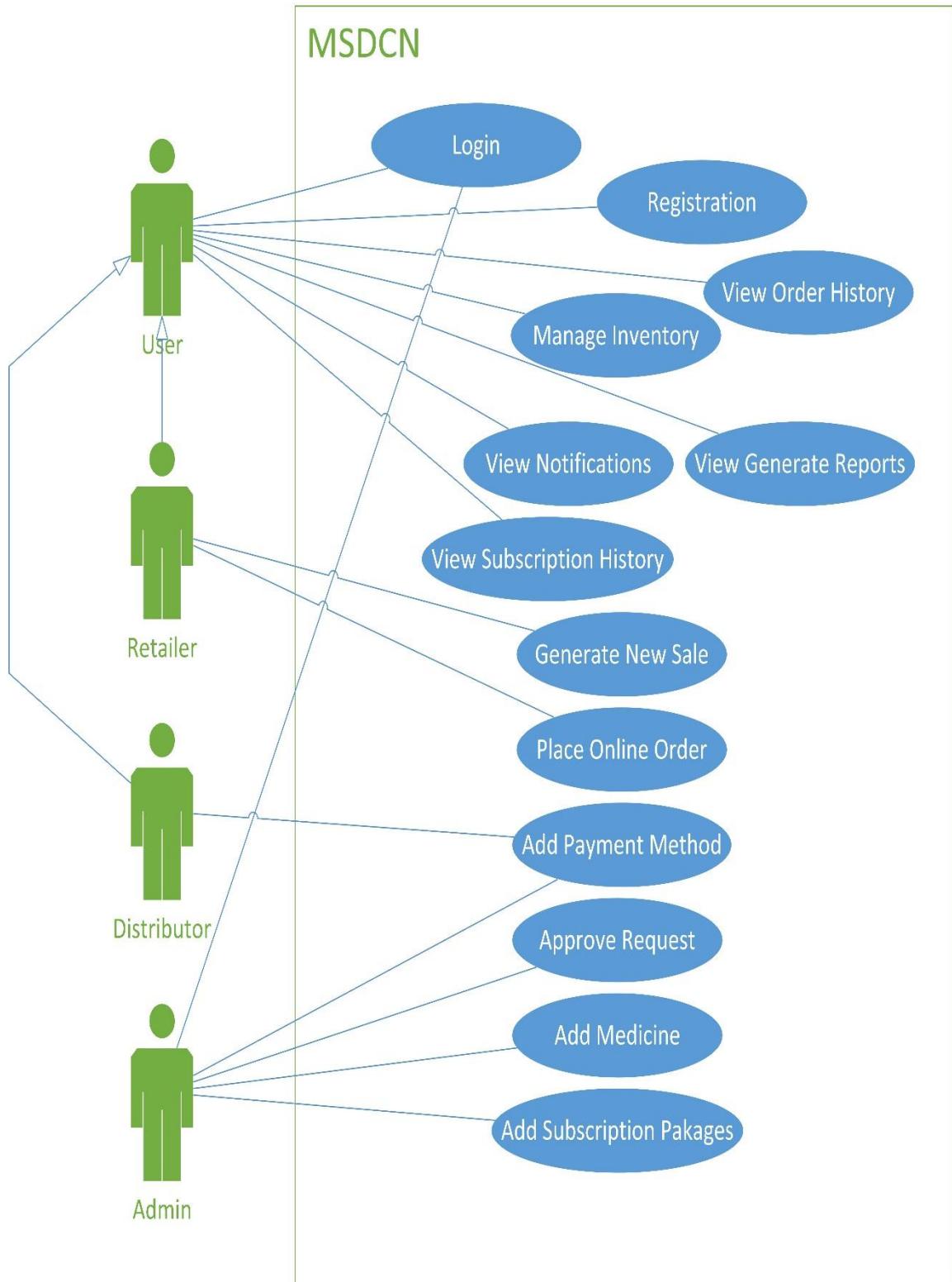
*Table 1: Deliverables and Development Requirements*

<b><i>Specification</i></b>	<b><i>Required</i></b>
Programing Language	Html CSS PHP Java Script Java
Hardware Platforms	Computers Laptops Android Phone
IDE	VS Code Android Studio
Operating System	Windows 7,8,8.1 & 10 Android 6.0+
Database	MySQL

### 3. Requirements Analysis

#### 3.1. Use Case Diagram

Figure 1 Shows the use case diagram.



*Figure 1 Use Case Diagram*

### 3.2. Detail Use Cases

#### 3.2.1. Registration

Table 2 Detail use case of Registration

*Table 2 Use Case Registration*

<b>Use Case ID:</b>	UC-1
<b>Use Case Name:</b>	Registration
<b>Actor:</b>	Primary Actor: User
<b>Description:</b>	User can register themselves.
<b>Trigger:</b>	When user will click the sign-up button.
<b>Preconditions:</b>	PRE-1: System should be ideal.
<b>Postconditions:</b>	POST-1: User will be able to fill the registered.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. User enters the required credentials like Name, Email etc.</li> <li>2. User clicks next.</li> <li>3. User enters the shop credentials like Shop Name, License etc.</li> <li>4. User clicks next,</li> <li>5. User selects the desire package.</li> <li>6. User Selects the payment method.</li> <li>7. User clicks proceeds.</li> </ol>
<b>Alternative Flow:</b>	<ol style="list-style-type: none"> <li>1. User directly enters the signup URL in browser.</li> </ol>
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. User wants to move next step without providing the credentials.</li> <li>2. User wants to move next without selecting the package.</li> <li>3. User wants to move next without providing the credit card details.</li> <li>4. Website Fails/Crash</li> <li>5. Website display error message.</li> </ol>
<b>Business Rules:</b>	BR-1 User should be able to complete the registration form.
<b>Assumptions:</b>	User is at the home page of the website.

#### 3.2.2. Login

Table 3 Detail use case Login

*Table 3 Use case Login*

<b>Use Case ID:</b>	UC-2
<b>Use Case Name:</b>	Login
<b>Actor:</b>	Primary Actor: User
<b>Description:</b>	User can login themselves.
<b>Trigger:</b>	When user clicks the login button.
<b>Preconditions:</b>	PRE-1: System should be ideal.
<b>Postconditions:</b>	POST-1: User will be able to login.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. User enters the registered email.</li> <li>2. User enters the registered password.</li> <li>3. User clicks on login.</li> </ol>
<b>Alternative Flow:</b>	<ol style="list-style-type: none"> <li>1. User directly enters the login URL in browser.</li> </ol>

<b>Exception:</b>	1. User press login without providing the credentials. 2. Email incorrect. 3. Password incorrect. 4. Website Fails/Crash 5. Website display error message.
<b>Business Rules:</b>	BR-1 User will be able to login.
<b>Assumptions:</b>	User is at the login page of the website.

### 3.2.3. Place Online Order

Table 4 Detail use case Place Online Order

*Table 4 Use Case Place Online Order*

<b>Use Case ID:</b>	UC-3
<b>Use Case Name:</b>	Place Online Order
<b>Actor:</b>	Primary Actor: Retailer
<b>Description:</b>	Retailer will be able to buy medicines online
<b>Trigger:</b>	When user will click the Online Order button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: Retailer should be login.
<b>Postconditions:</b>	POST-1: Retailer buys new Medicines.
<b>Normal Flow:</b>	1. Retailer searches the required medicine. 2. Retailer clicks on the medicine picture or name. 3. Retailer selects the quantity. 4. Retailer clicks add to the cart. 5. Retailer clicks the cart button. 6. Retailer clicks check out. 7. Retailer selects the payment method. 8. Retailer click confirm button.
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	1. User wants to move next step without providing the credentials. 2. Website Fails/Crashes 3. Website display error message. 4. Retailer did not select the payment method.
<b>Business Rules:</b>	BR-1 User will be able to place medicines order to the distributor.
<b>Assumptions:</b>	User is at the online Order tab.

### 3.2.4. Manage Inventory

Table 5 Detail use case Place Online Order

*Table 5 Use Case Manage Inventory*

<b>Use Case ID:</b>	UC-4
<b>Use Case Name:</b>	Manage Inventory
<b>Actor:</b>	Primary Actor: User
<b>Description:</b>	User can view and manage their inventory.

<b>Trigger:</b>	When user click on the Inventory button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: User should be login.
<b>Postconditions:</b>	POST-1: User viewed and managed their inventor.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. User scrolls to see their inventory.</li> <li>2. User clicks add item to add the new medicine to the inventory.</li> <li>3. User clicks remove to delete the item from the inventory.</li> <li>4. User clicks on edit to update the existing item details.</li> </ol>
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. Website Fails/Crash.</li> <li>2. Website display error message.</li> <li>3. User click ADD without providing credentials while adding.</li> <li>4. User click SAVE without providing credentials while update</li> </ol>
<b>Business Rules:</b>	BR-1 User will be able to manage their inventory
<b>Assumptions:</b>	User is at the Inventory tab.

### 3.2.5. Generate New Sale

Table 6 Detail use case Generate New Sale

Table 6 Use Case Generate New Sale

<b>Use Case ID:</b>	UC-5
<b>Use Case Name:</b>	Generate New Sale
<b>Actor:</b>	Primary Actor: Retailer
<b>Description:</b>	Retailer can sell their stock.
<b>Trigger:</b>	When Retailer clicks in Make a Sale button at dashboard tab.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: Retailer should be login
<b>Postconditions:</b>	POST-1: Retailer successfully sells the product.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Retailer adds every single item.</li> <li>2. Retailer adds the discount percentage if there is any.</li> <li>3. Retailer clicks on Checkout.</li> </ol>
<b>Alternative Flow:</b>	<ol style="list-style-type: none"> <li>1. Retailer clicks on sale button,</li> <li>2. User clicks on Make a new sale.</li> <li>3. Retailer adds every single item.</li> <li>4. Retailer adds the discount percentage if there is any.</li> <li>5. Retailer clicks on Checkout.</li> </ol>
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. Website Fails/Crashes.</li> <li>2. Website display error message.</li> </ol>
<b>Business Rules:</b>	BR-1: Retailer will successfully sell products.
<b>Assumptions:</b>	User is at the Dashboard tab.

### 3.2.6. View Reports

Table 7 Detail use case Generate Reports.

*Table 7 Use Case Generate Reports*

<b>Use Case ID:</b>	UC-6
<b>Use Case Name:</b>	View Reports
<b>Actor:</b>	Primary Actor: User
<b>Description:</b>	User can see the generated reports.
<b>Trigger:</b>	When user click the Report button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: User should be login
<b>Postconditions:</b>	POST-1: User can successfully see the reports.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Select the date.</li> <li>2. Select the month.</li> <li>3. Select the quarter.</li> </ol>
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. If there is no data present.</li> <li>2. System Fails/Crashes.</li> <li>3. System display error message.</li> </ol>
<b>Business Rules:</b>	BR-1: User can see their business reports.
<b>Assumptions:</b>	N/A

### 3.2.7. View Order History

Table 8 Detail use case View Order History

*Table 8 Use Case View Order History*

<b>Use Case ID:</b>	UC-7
<b>Use Case Name:</b>	View Order History
<b>Actor:</b>	Primary Actor: User
<b>Description:</b>	User can view the order placed history.
<b>Trigger:</b>	When user click the Order History button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: User should be login.
<b>Postconditions:</b>	POST-1: User can successfully see the past orders history.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. User can select All.</li> <li>2. User can select Completed.</li> <li>3. User can select Pending.</li> <li>4. User can select the Cancelled.</li> </ol>
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. If there is no past order data present.</li> <li>2. System Fails/Crashes.</li> <li>3. System displays an error message.</li> </ol>
<b>Business Rules:</b>	BR-1: User can see their transaction reports.
<b>Assumptions:</b>	User is at the Dashboard.

### 3.2.8. Add Payment Method

Table 9 Detail use case Add Payment Method

*Table 9 Use Case Add Payment Method*

<b>Use Case ID:</b>	UC-8
<b>Use Case Name:</b>	Add Payment Method
<b>Actor:</b>	Primary Actor: Distributor
<b>Description:</b>	Distributor can add the payment method.
<b>Trigger:</b>	When Distributor clicks on Setting button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: Distributor should be login
<b>Postconditions:</b>	POST-1: Distributor can successfully add the payment method.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Select the payment type Easypaisa or JazzCash.</li> <li>2. Upload the bar code picture.</li> <li>3. Click Save.</li> </ol>
<b>Alternative Flow:</b>	<ol style="list-style-type: none"> <li>1. During sign user add the payment method.</li> </ol>
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. System Fails/Crashes.</li> <li>2. System displays an error message.</li> </ol>
<b>Business Rules:</b>	BR-1: Distributor can add the payment method.
<b>Assumptions:</b>	Distributor is at the Dashboard tab.

### 3.2.9. View Subscription History

Table 10 Detail use case View Subscription History

*Table 10 Use Case View Subscription History*

<b>Use Case ID:</b>	UC-9
<b>Use Case Name:</b>	View Subscription History
<b>Actor:</b>	Primary Actor: Retailer and Distributor
<b>Description:</b>	Retailer and Distributor can see their past subscribed history.
<b>Trigger:</b>	When clicks on the Subscription History button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: Distributor and Retailer should be login.
<b>Postconditions:</b>	POST-1: Will see past subscribed history.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Clicks on Subscription History Button.</li> </ol>
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. No history available.</li> <li>2. Website Fails/Crashes.</li> <li>3. Website display error message.</li> </ol>
<b>Business Rules:</b>	BR-1 Distributor and Retailer sees their history.
<b>Assumptions:</b>	Retailer and Distributor is at the Dashboard tab..

### 3.2.10. View Notifications

Table 11 Detail use case View Notification

*Table 11 Use Case View Notifications*

<b>Use Case ID:</b>	UC-10
<b>Use Case Name:</b>	View Notifications
<b>Actor:</b>	Primary Actor: Retailer and Distributor
<b>Description:</b>	Retailer and distributor can see the new notifications.
<b>Trigger:</b>	When clicks on the Notification button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: Distributor and Retailer should be login.
<b>Postconditions:</b>	POST-1: Admin will be able to login.
<b>Normal Flow:</b>	1. When clicks on Notification button.
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	1. Website Fails/Crashes. 2. Website display error message.
<b>Business Rules:</b>	BR-1 Retailer and Distributor sees the new notifications.
<b>Assumptions:</b>	Admin is at the Admin Login tab.

### 3.2.11. Admin Login

Table 12 Detail Use Case Admin Login

*Table 12 Use Case Admin Login*

<b>Use Case ID:</b>	UC-11
<b>Use Case Name:</b>	Login
<b>Actor:</b>	Primary Actor: Admin
<b>Description:</b>	Admin can login themselves.
<b>Trigger:</b>	Admin enters the Admin URL.
<b>Preconditions:</b>	PRE-1: System should be ideal.
<b>Postconditions:</b>	POST-1: Admin will be able to login.
<b>Normal Flow:</b>	2. Admin will provide registered Email. 3. Admin will provide registered Password. 4. Admin clicks on login.
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	4. Admin press login without providing the credentials. 5. Email incorrect. 6. Password incorrect. 7. Website Fails/Crashes. 8. Website display error message.
<b>Business Rules:</b>	BR-1 Admin can login.
<b>Assumptions:</b>	Admin is at the Admin Login tab.

### 3.2.12. Approve Requests

Table 13 Detail use case Approve Requests.

*Table 13 Use Case Approve Requests*

<b>Use Case ID:</b>	UC-12
<b>Use Case Name:</b>	Approve Request
<b>Actor:</b>	Primary Actor: Admin
<b>Description:</b>	Admin verifies the User Credentials.
<b>Trigger:</b>	When Admin press the Pending Requests button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: Admin should be login.
<b>Postconditions:</b>	POST-1: Admin approves Users joining request.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Admin scrolls through the pending requests.</li> <li>2. Admin click on approve on the User to approve it.</li> <li>3. Admin can write a message for any inconvenience.</li> </ol>
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. Website Fails/Crashes.</li> <li>2. Website display error message.</li> </ol>
<b>Business Rules:</b>	BR-1 User request gets approve
<b>Assumptions:</b>	Admin is at the Dashboard tab.

### 3.2.13. Add Medicine Information

Table 14 Detail use case Add Medicine Information

*Table 14 Use Case Add Medicine Information*

<b>Use Case ID:</b>	UC-13
<b>Use Case Name:</b>	Add Medicine Information
<b>Actor:</b>	Primary Actor: Admin
<b>Description:</b>	Admin can add medicine information.
<b>Trigger:</b>	Click on Medicine button.
<b>Preconditions:</b>	PRE-1: System should be ideal. PRE-2: Admin should be login.
<b>Postconditions:</b>	POST-1: Admin can add new medicine information in the database.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Admin click on Add medicine.</li> <li>2. Admin provides the required credentials.</li> <li>3. Click on Add</li> </ol>
<b>Alternative Flow:</b>	N/A
<b>Exception:</b>	<ol style="list-style-type: none"> <li>1. Website Fails/Crashes.</li> <li>2. Website display error message.</li> <li>3. Admin click add without adding the medicine credentials.</li> </ol>
<b>Business Rules:</b>	BR-1 Admin can add medicine information.
<b>Assumptions:</b>	Admin is at the Dashboard tab.

### **3.3.Functional Requirements**

Functional Requirements are:

1. Registration
2. Login
3. Admin Verifies Retailer and Distributor
4. Selection of desire package
5. Online Store
6. Point of Sale
7. Medicine Shortage Notification
8. Maintain Inventory
9. View Reports
10. View Transaction Details
11. Set Medicine Prices

#### **3.3.1. FR-01 Registration**

*Table 15 FR-01 Registration*

<b>ID</b>	<b>01</b>
<b>Title</b>	Registration
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Active Email Address require.</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Mandatory and must be used at least once.
<b>Priority</b>	High

#### **3.3.2. FR-02 Login**

*Table 16 FR-02 Login*

<b>ID</b>	<b>02</b>
<b>Title</b>	Login
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Registered Email and Password</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Mandatory and it must be used to avail the other functionalities.
<b>Priority</b>	High

#### **3.3.3. FR-03 Admin Verifies Retailer and Distributor**

*Table 17 FR-03 Admin Verifies Retailer and Distributor*

<b>ID</b>	<b>03</b>
<b>Title</b>	Admin Verifies Retailer and Distributor

<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Admin must be login.</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Mandatory and must be done at least once.
<b>Priority</b>	High

### **3.3.4. FR-04 Selection of Desire Package**

*Table 18 FR-04 Selection of Desire Package*

<b>ID</b>	<b>04</b>
<b>Title</b>	Selection of Desire Package
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Retailer or Distributor must be login.</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Mandatory and must be used after every 1 month
<b>Priority</b>	High

### **3.3.5. FR-05 Online Store**

*Table 19 FR-05 Online Store*

<b>ID</b>	<b>05</b>
<b>Title</b>	Online Store
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Retailer or Distributor must be login.</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Important part of the project.
<b>Priority</b>	High

### **3.3.6. FR-06 Point of Sale**

*Table 20 FR-06 Point of Sale*

<b>ID</b>	<b>06</b>
<b>Title</b>	Point of Sale
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Retailer or Distributor must be login.</li> <li>• There must be items in the Inventory.</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Important part of the project.
<b>Priority</b>	High

### **3.3.7. FR-07 Medicine Shortage Notification**

*Table 21 FR-07 Medicine Shortage Notification*

<b>ID</b>	<b>07</b>
<b>Title</b>	Medicine Shortage Notification
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Retailer or Distributor must be login.</li> <li>• There must be items in the Inventory.</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Important part of the project.
<b>Priority</b>	High

### **3.3.8. FR-08 Maintain Inventory**

*Table 22 FR-08 Maintain Inventory*

<b>ID</b>	<b>08</b>
<b>Title</b>	Maintain Inventory
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Retailer or Distributor must be login.</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Important part of the project.
<b>Priority</b>	High

### **3.3.9. FR-09 View Reports**

*Table 23 FR-09 View Reports*

<b>ID</b>	<b>09</b>
<b>Title</b>	View Reports
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Retailer or Distributor must be login.</li> <li>• There must be some transactions to see the reports.</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Important part of the project.
<b>Priority</b>	High

### 3.3.10. FR-10 View Transactions

Table 24 FR-10 View Transactions

<b>ID</b>	<b>10</b>
<b>Title</b>	View Transaction Details
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Retailer or Distributor must be login.</li> <li>• There must be some transactions to see their details</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Important part of the project.
<b>Priority</b>	High

### 3.3.11. FR-11 Set Medicine Price

Table 25 FR-11 Set Medicine Price

<b>ID</b>	<b>11</b>
<b>Title</b>	View Transaction Details
<b>Requirement</b>	<ul style="list-style-type: none"> <li>• Stable internet require.</li> <li>• Retailer or Distributor must be login.</li> <li>• There must be some medicines in the inventory</li> </ul>
<b>Source</b>	Student
<b>Rationale</b>	Important part of the project.
<b>Priority</b>	High

## 3.4. Non-Functional Requirements

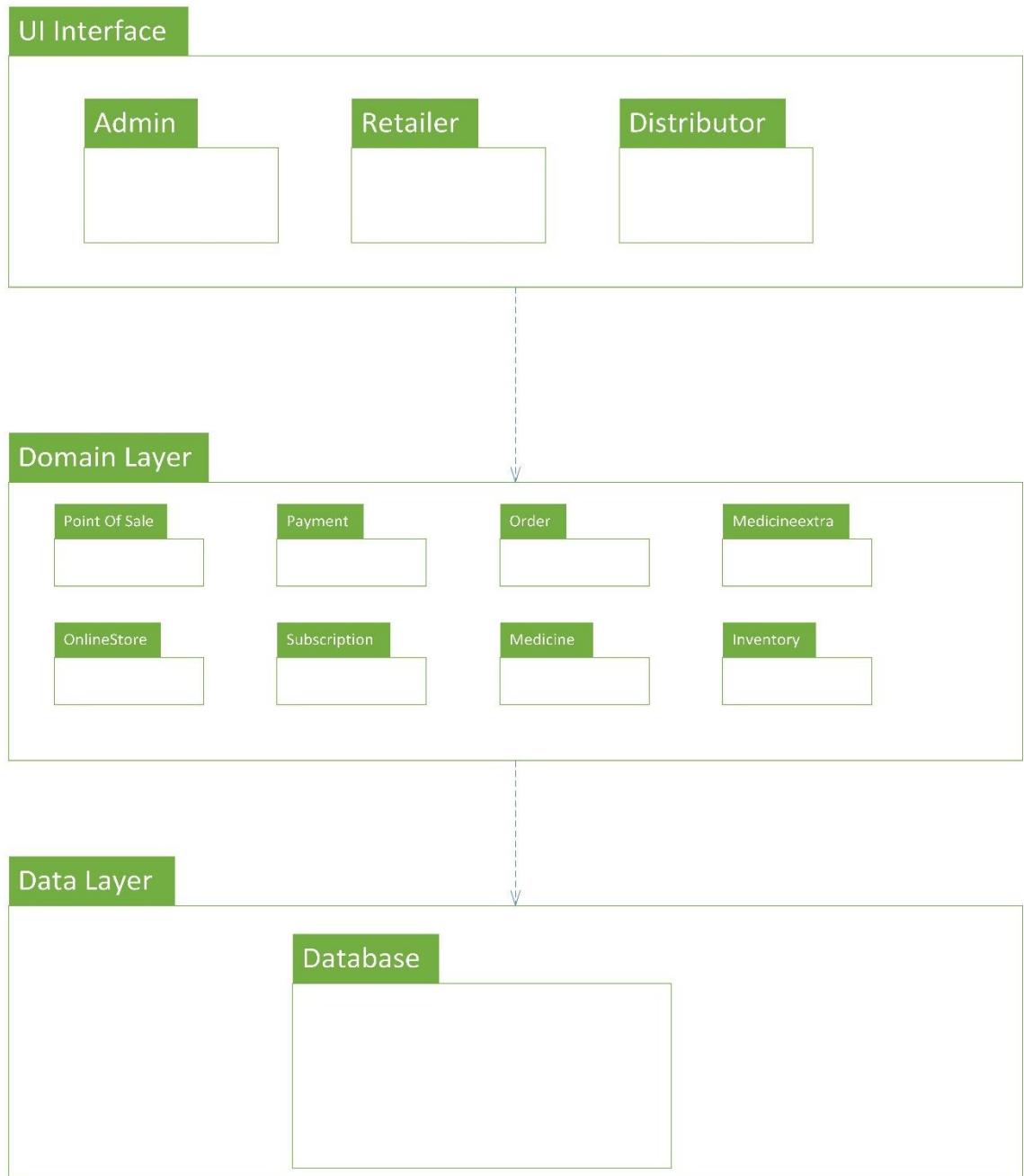
Below are all the Non-Functional Requirements (NFR)

1. **NFR-1:** Retailer and Distributor should be able to learn how to operate the website with in 30 min of training.
2. **NFR-2:** Down time of the website should not exceed more than 10 sec for continuous succession of 500 hrs.
3. **NFR-3:** Website should be able to handle 100 hits per minute.
4. **NFR-4:** Website should be able to work on any browser.
5. **NFR-5:** The system development process and deliverable documents shall conform to the ISO STANDARDS
6. **NFR-6:** The system shall not disclose any personal information about members of the MSDCN to other members except system administrators.
7. **NFR-7:** Credit Card details should be stored in an encrypted form.
8. **NFR-8:** Our company is complied with the local and national laws regarding the use of software tools and User privacy.

## 4. Design and Architecture

### 4.1. Package Diagram

This diagram shows the client and the server side of the project.



*Figure 2 Package Diagram*

## 4.2.Activity Diagram

### 4.2.1. Login

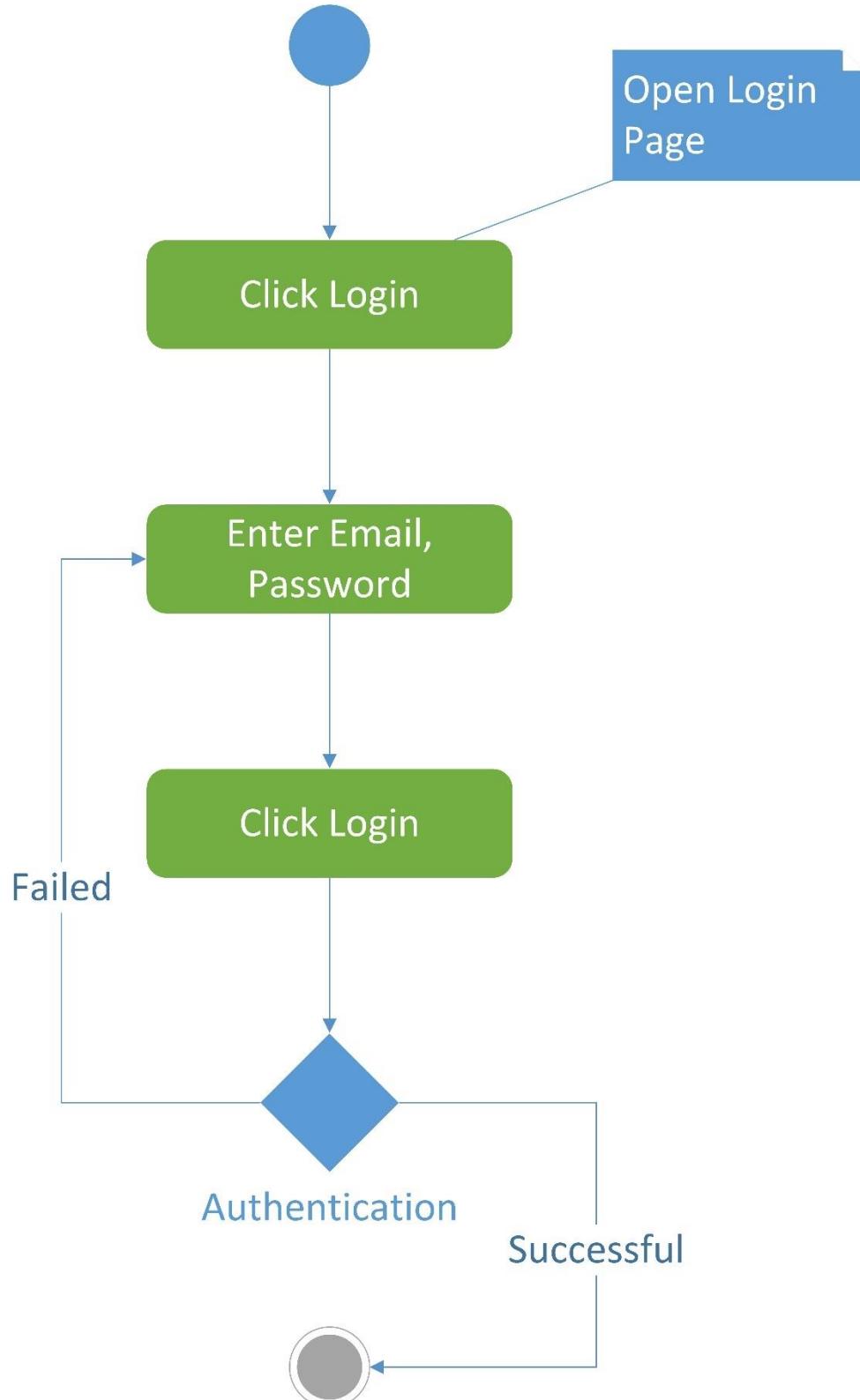


Figure 3.0 Activity Login

#### 4.2.2. Registration

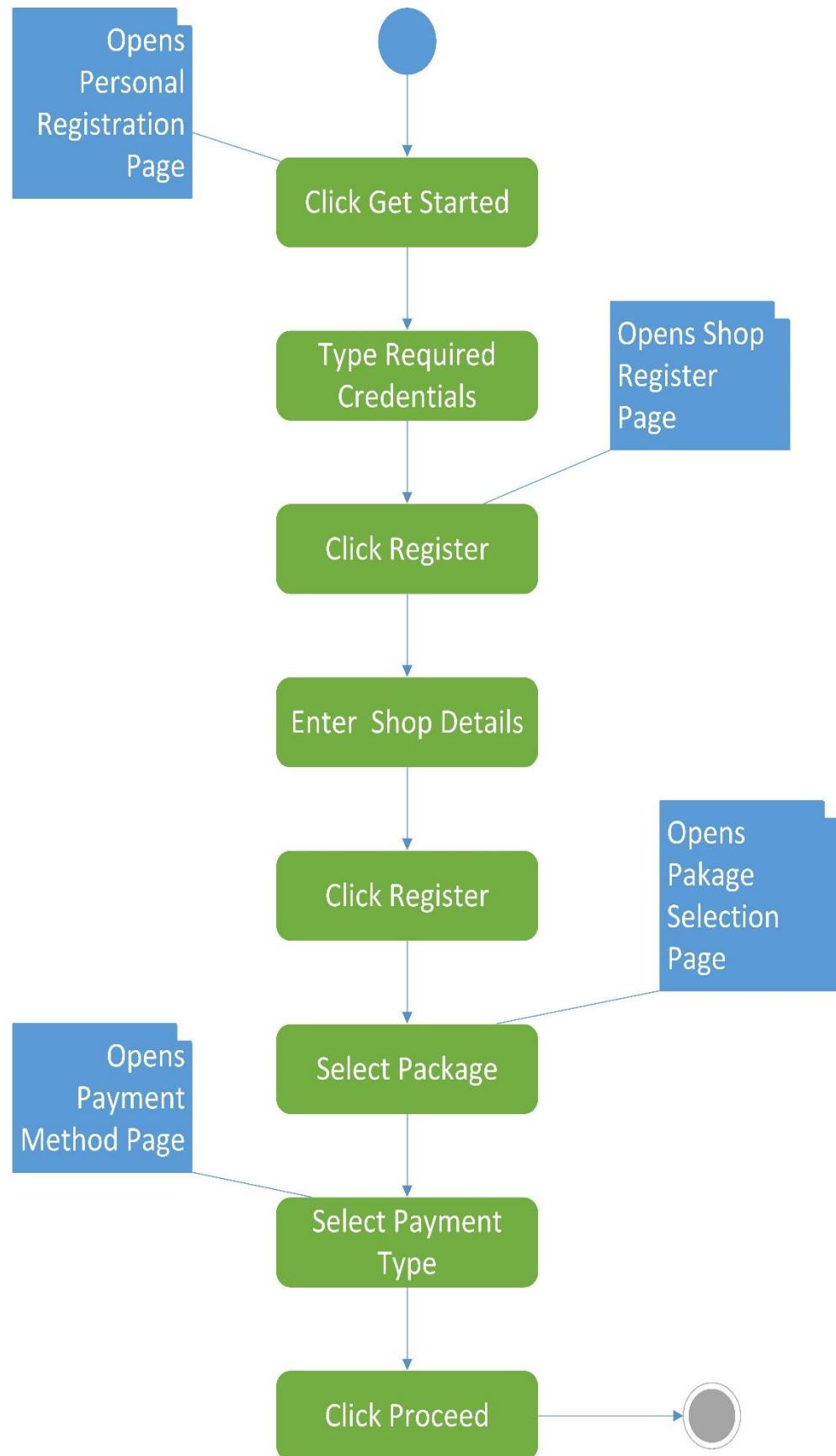


Figure 3.1 Activity Registration

#### 4.2.3. New Sale



*Figure 3.2 Activity New Sale*

#### 4.2.4. Order Online

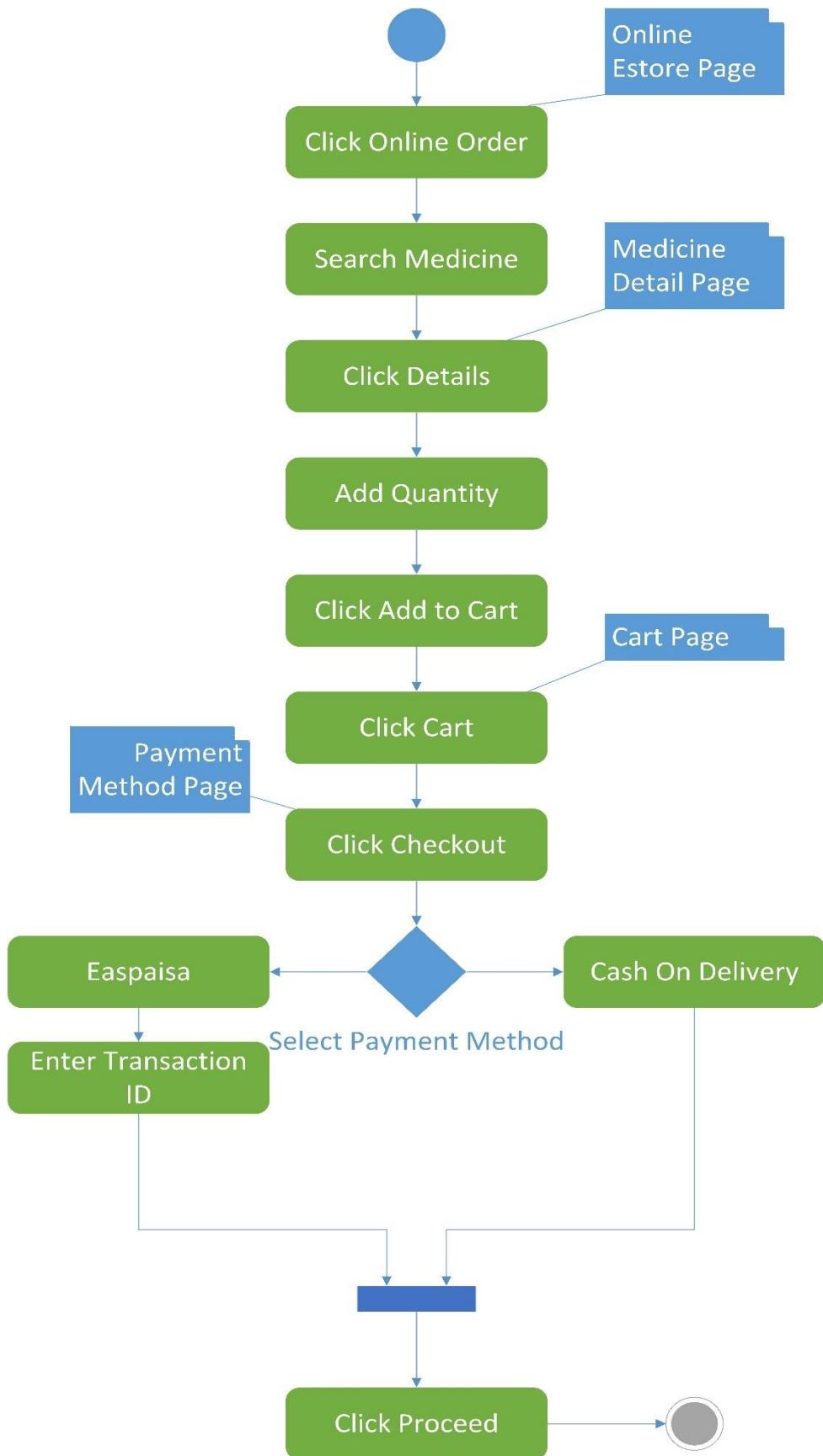
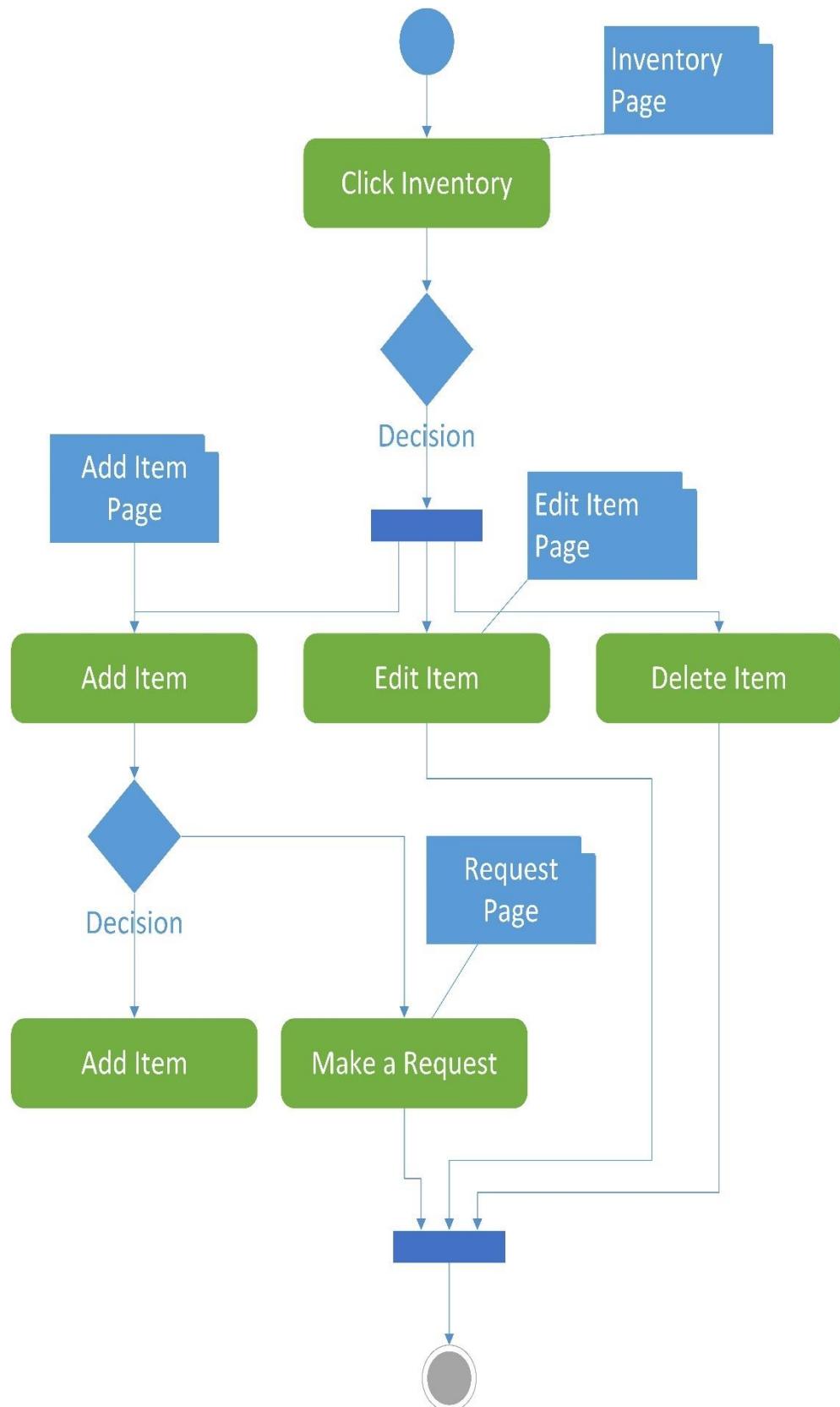


Figure 3.3 Activity Order Online

#### 4.2.5. Inventory



*Figure 3.4 Activity Inventory*

#### 4.2.6. Reports

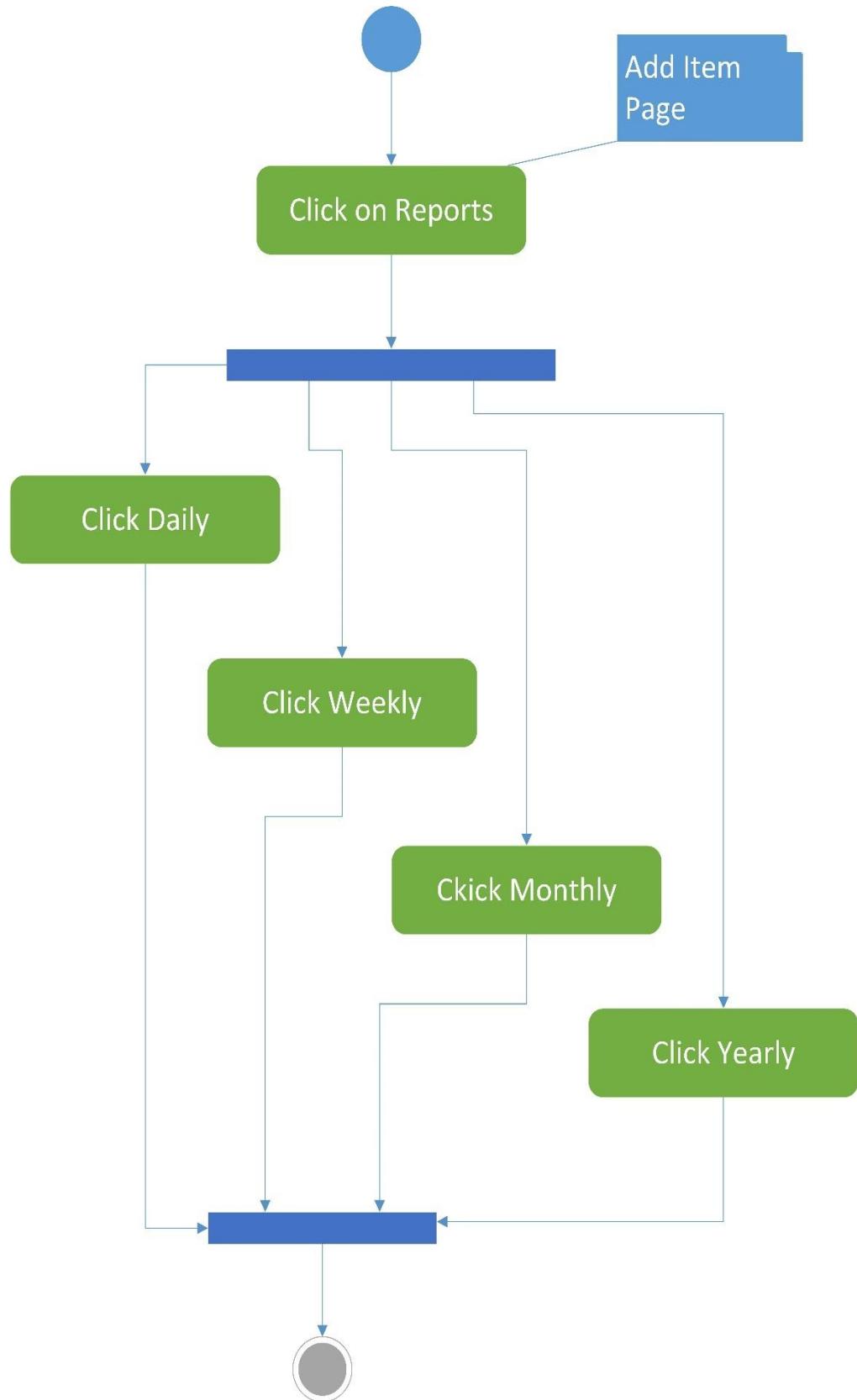
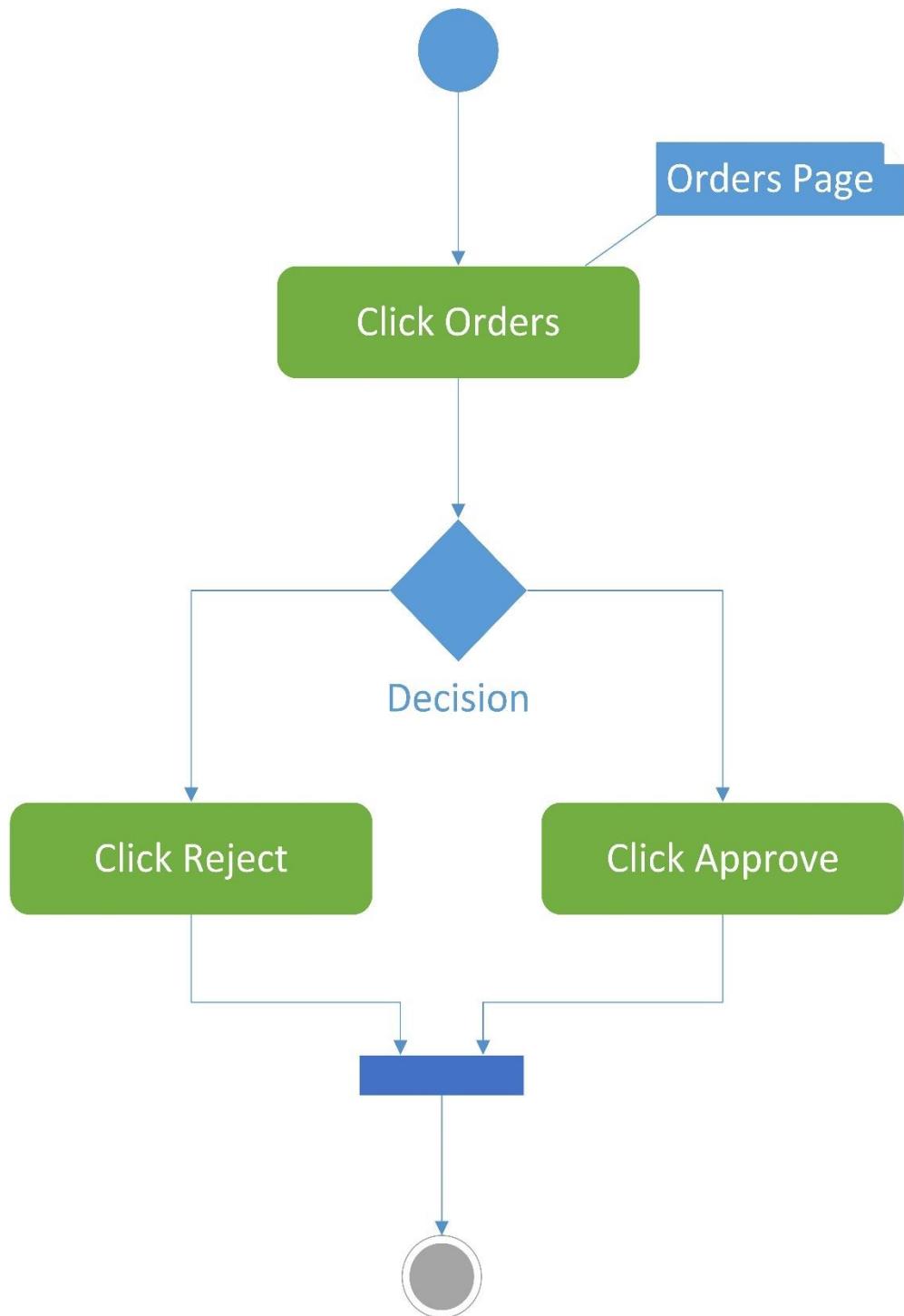


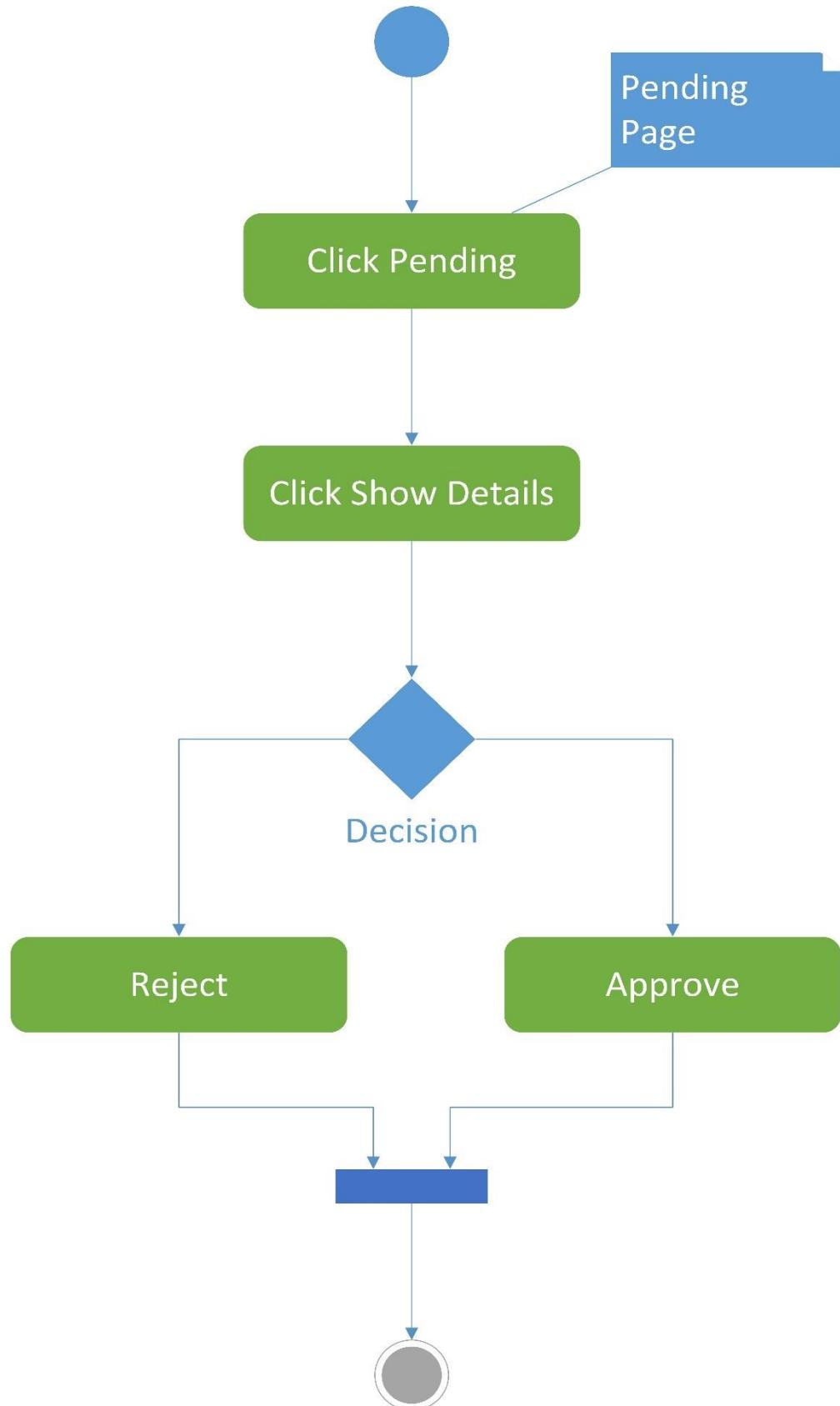
Figure 3.5 Activity Reports

#### 4.2.7. Order Receive



*Figure 3.6 Activity Order Receive*

#### 4.2.8. Pending Requests



*Figure 3.7 Activity Pending Requests*

#### 4.2.9. Add Medicine

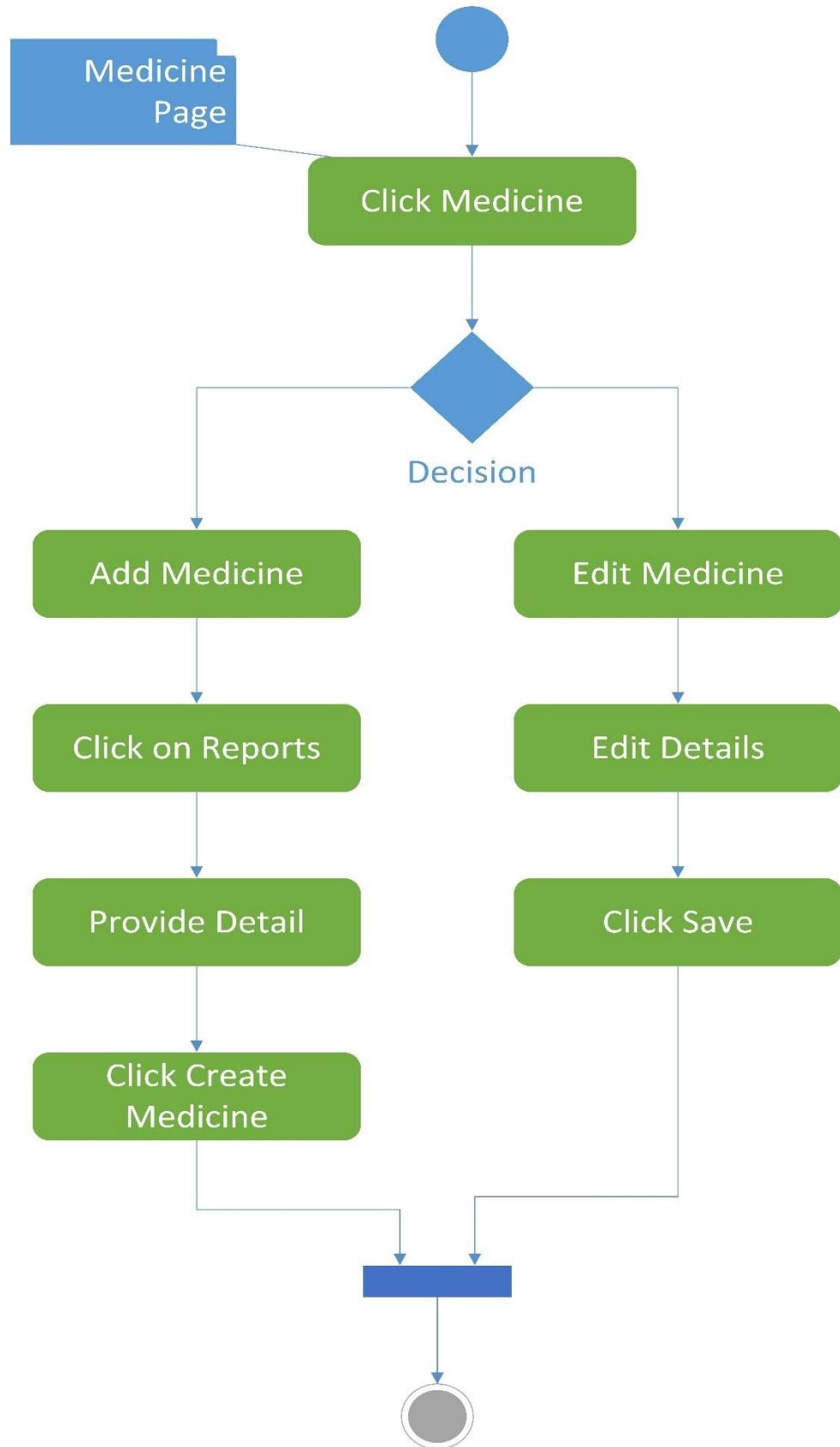


Figure 3.8 Activity Add Medicine

#### 4.2.10. Subscription Packages

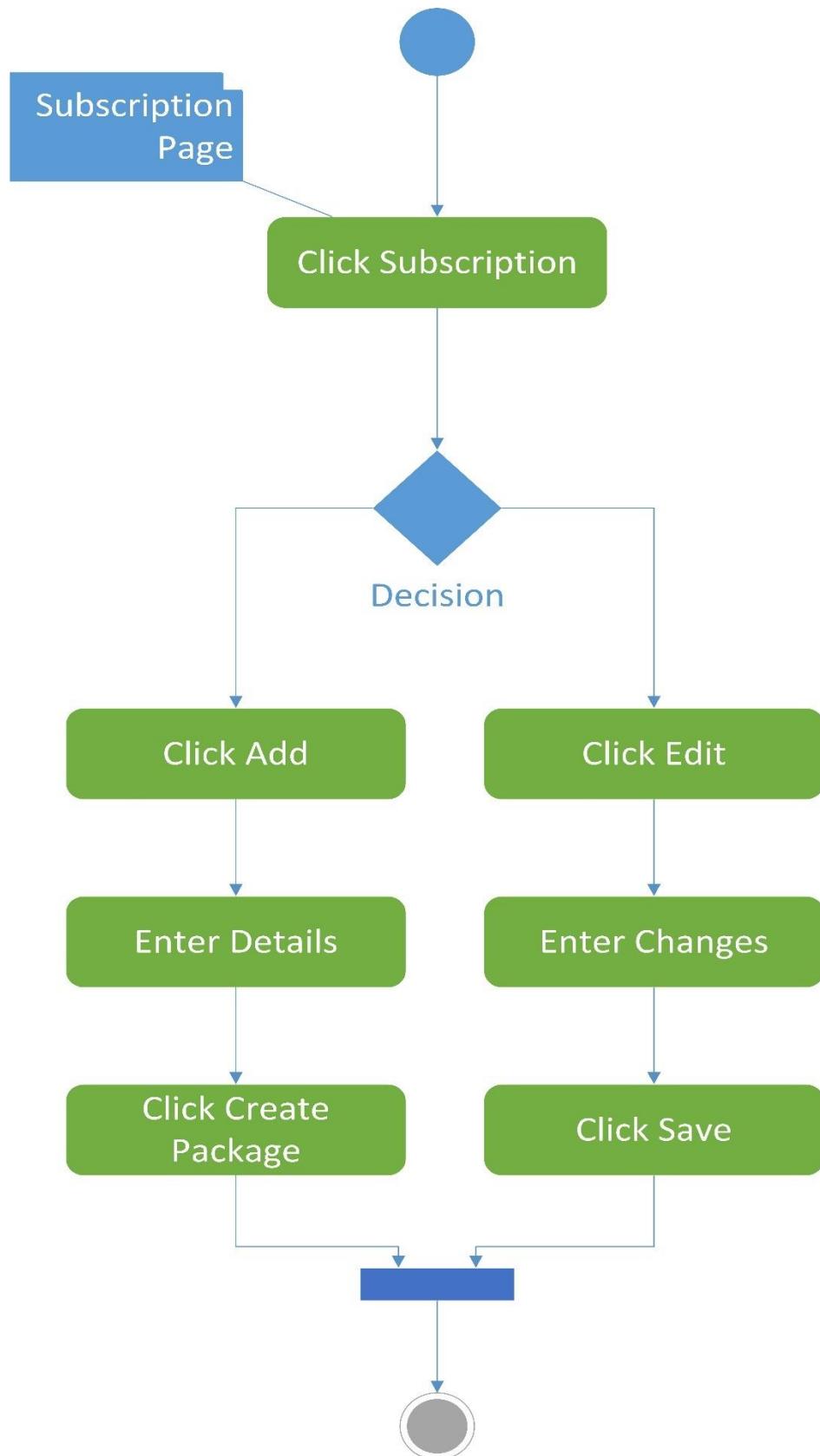
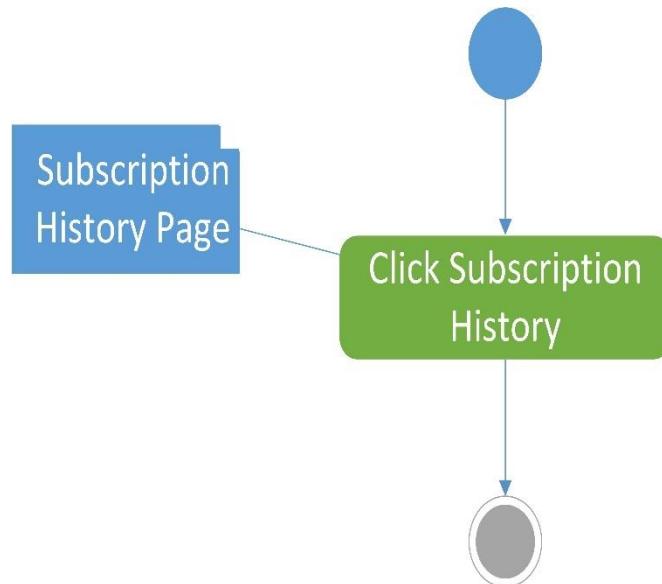


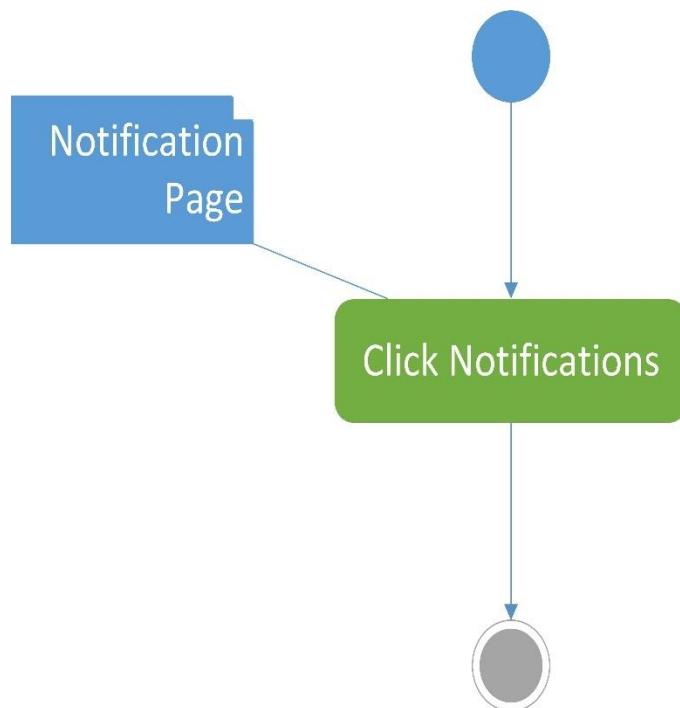
Figure 3.9 Activity Subscription Packages

#### **4.2.11. Subscription History**



*Figure 3.10 Activity Subscription History*

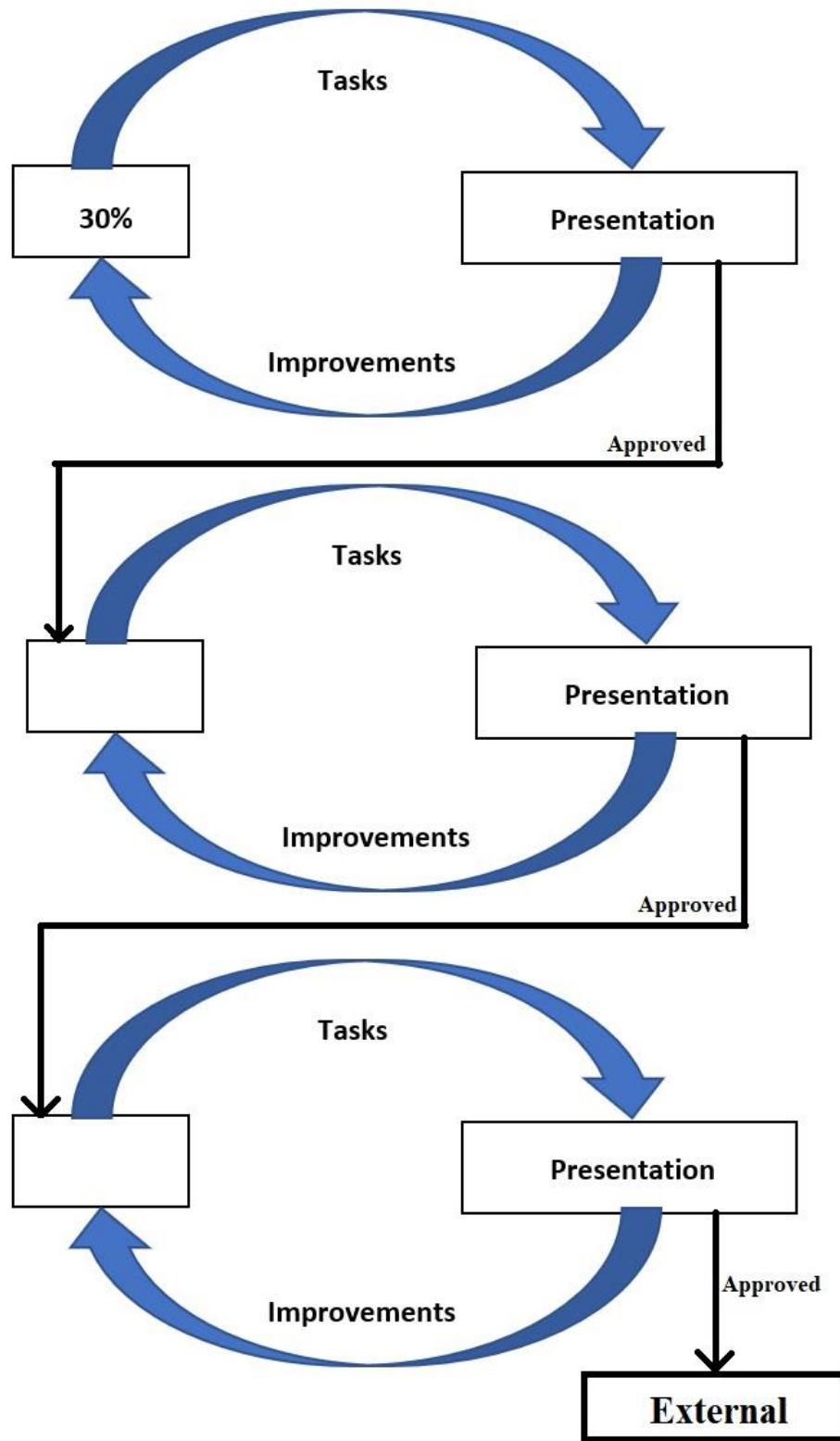
#### **4.2.12. Notifications**



*Figure 3.11 Activity Notifications*

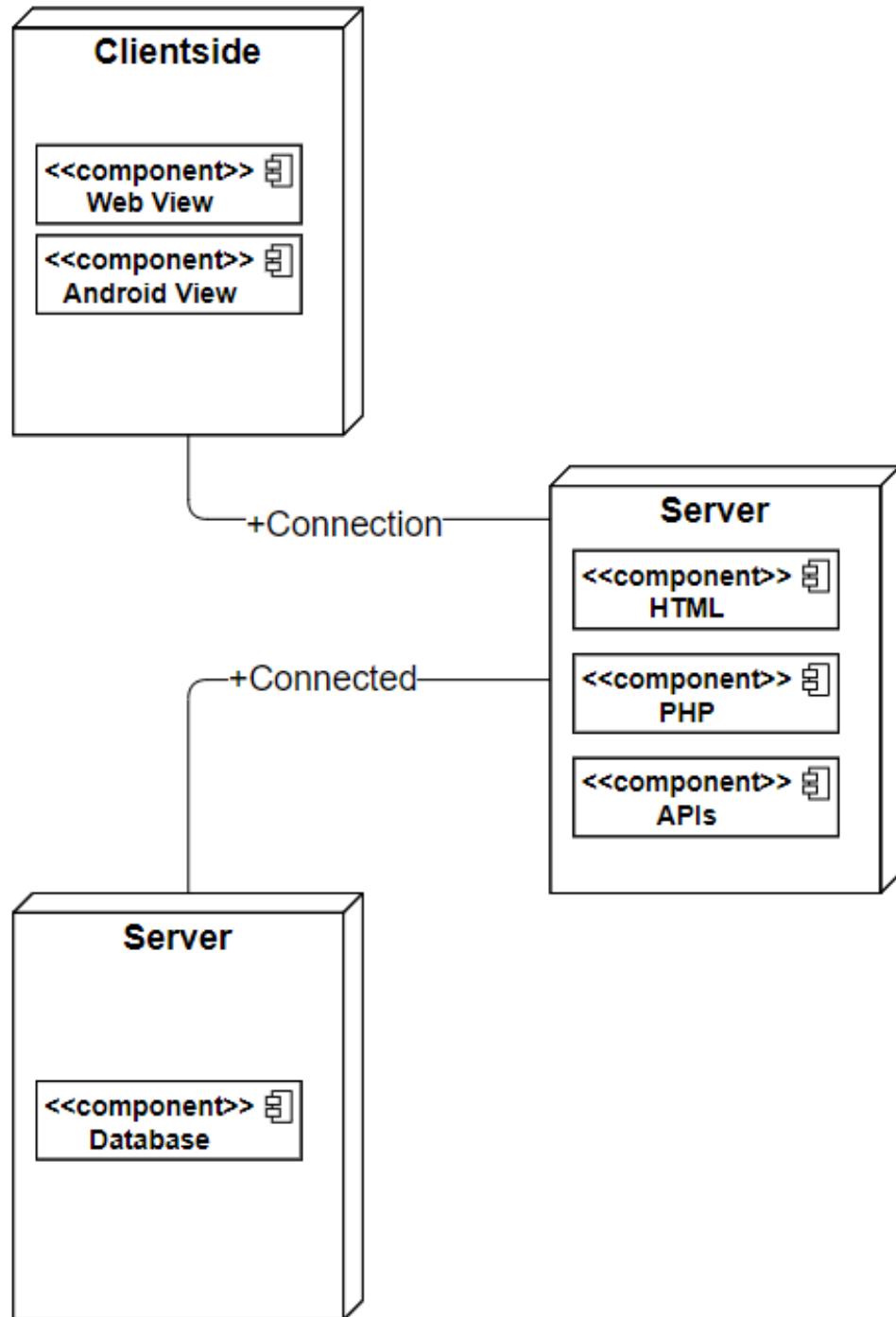
### **4.3.Design Models**

#### **4.3.1. Iterative Model**



*Figure 4 Iterative Model*

#### **4.4.Deployment Diagram**



*Figure 5 Deployment Diagram*

## 4.5. Class Diagram



Figure 6 Class Diagram

## 4.6.ERD Diagram

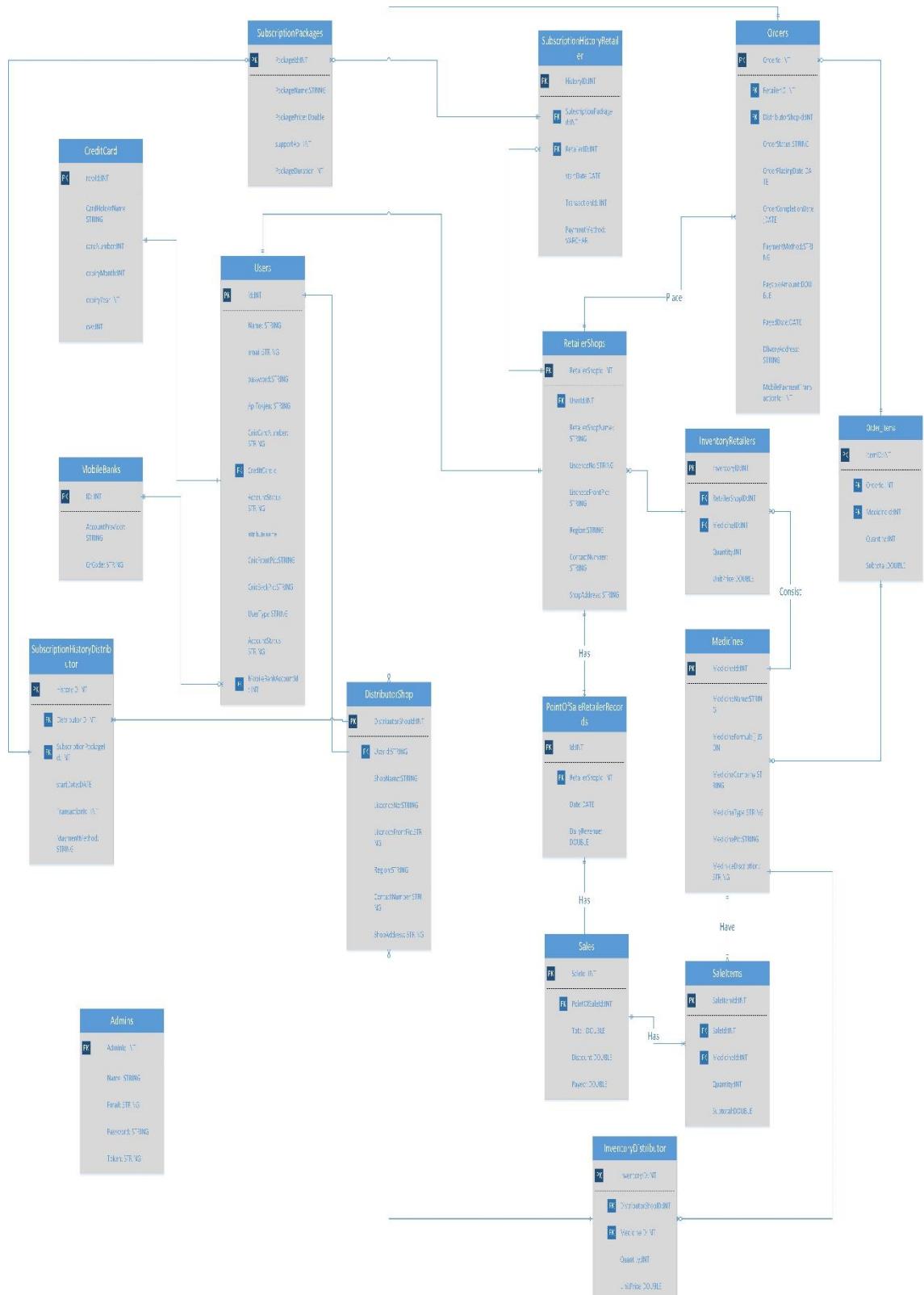


Figure 7 ERD

## 4.7. System Sequence Diagram

### 4.7.1. Registration

This sequence diagram shows when the registration method is called and how it will interact with the controller and model class. Retailer and Distributor both will follow these.

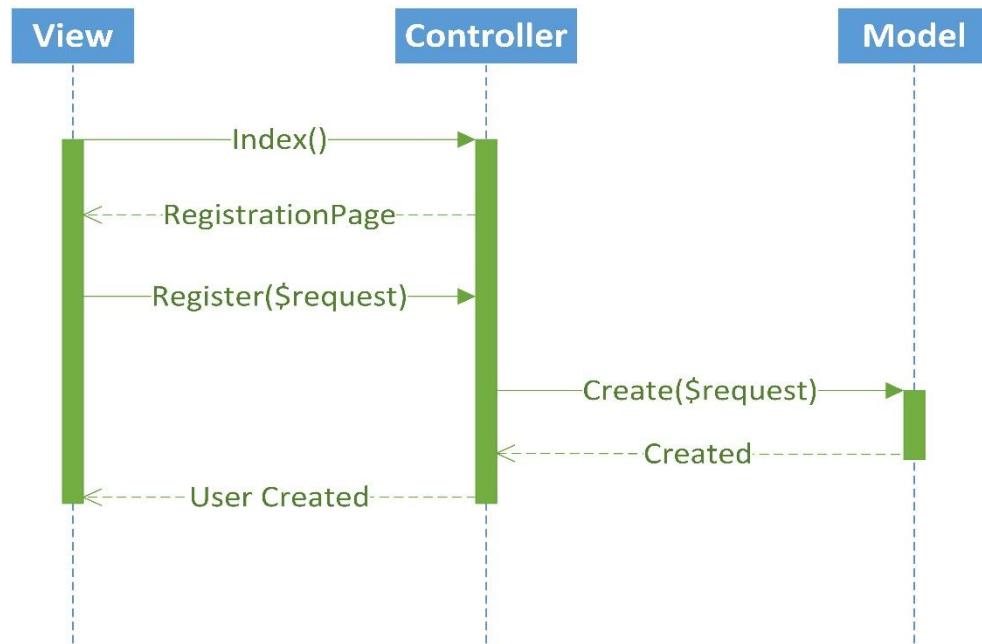


Figure 8.0 SD Registration

### 4.7.2. Login

This diagram shows the login when distributor and retailer will interact the login method.

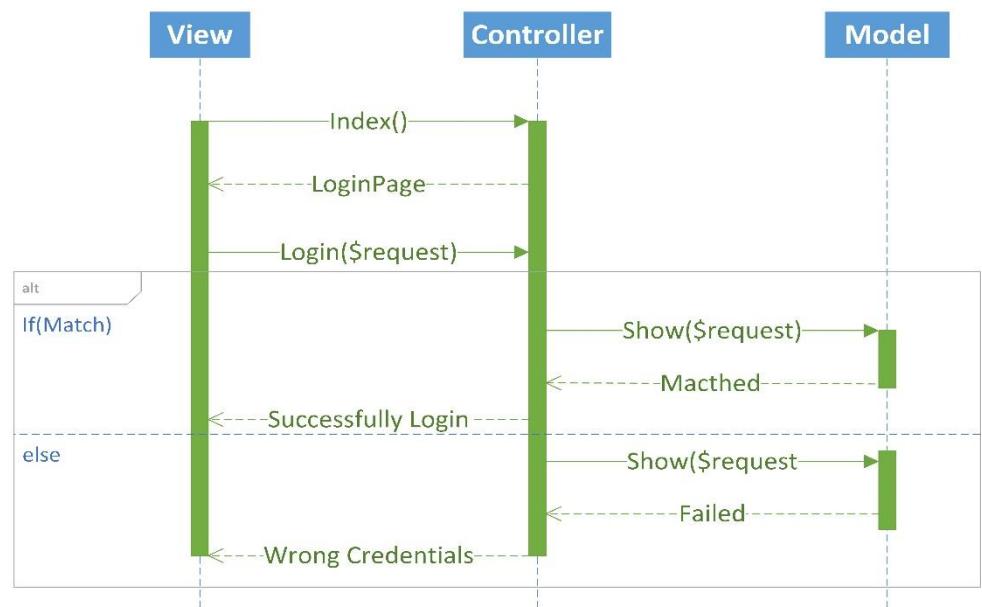


Figure 8.1 SD Login

#### 4.7.3. View Order History

This diagram shows the sequence operation between the View, Controller and Model classes when user wants to see the order history.

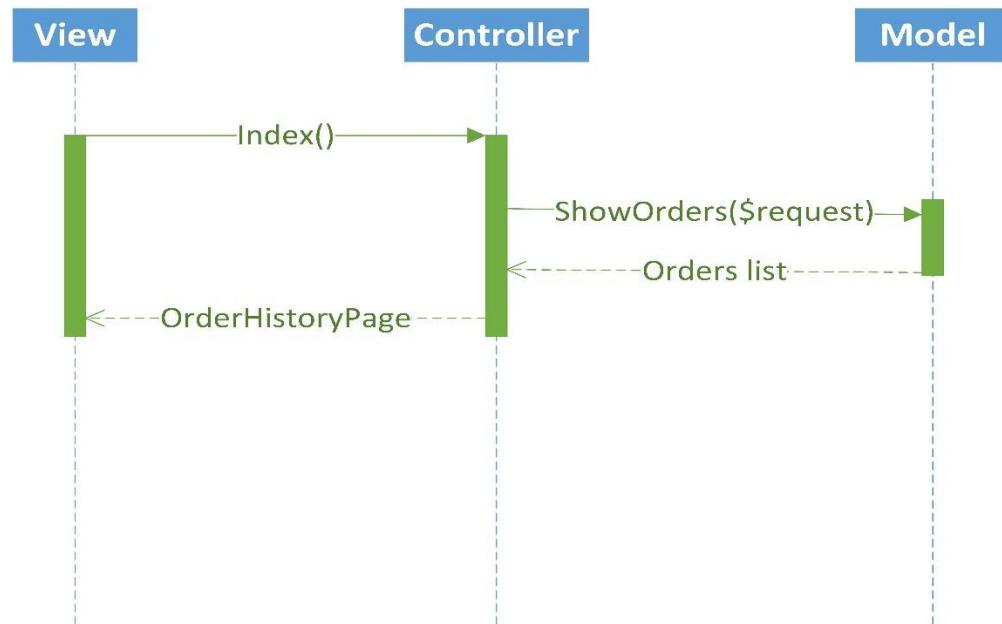


Figure 8.2 SD View Order History

#### 4.7.4. Online Order

This diagram is about the event when retailer place order and shows the operations between the View, Controller and Model classes.

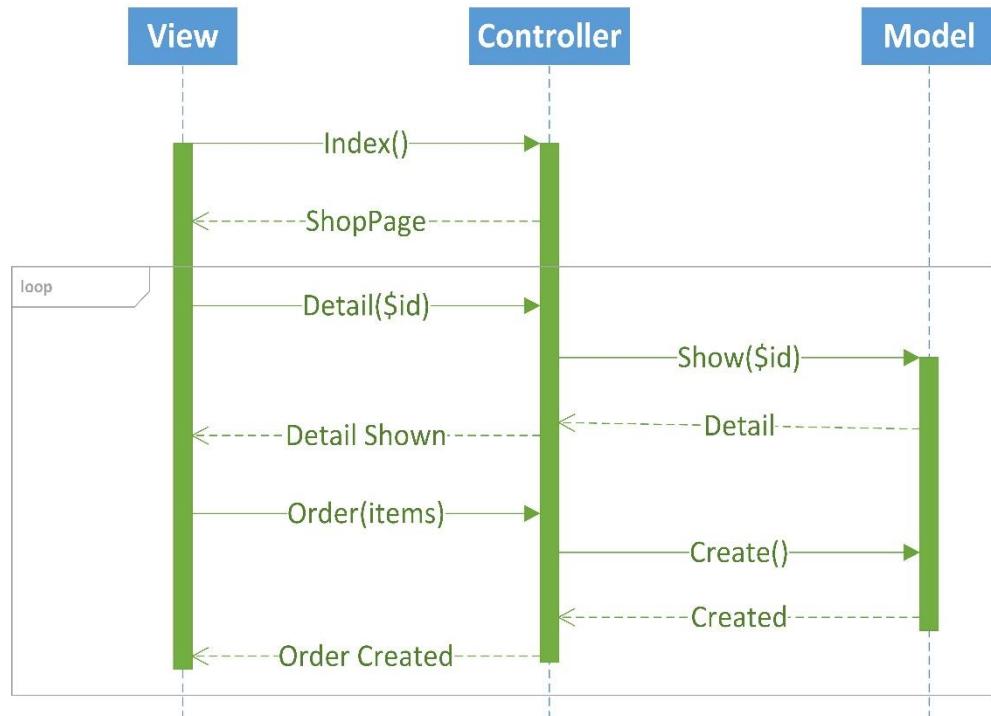


Figure 8.3 SD Online Order

#### 4.7.5. Manage Inventory

This diagram shows the interactions between the View, Controller and Model classes and their operation performs by the Retailer and Distributor.

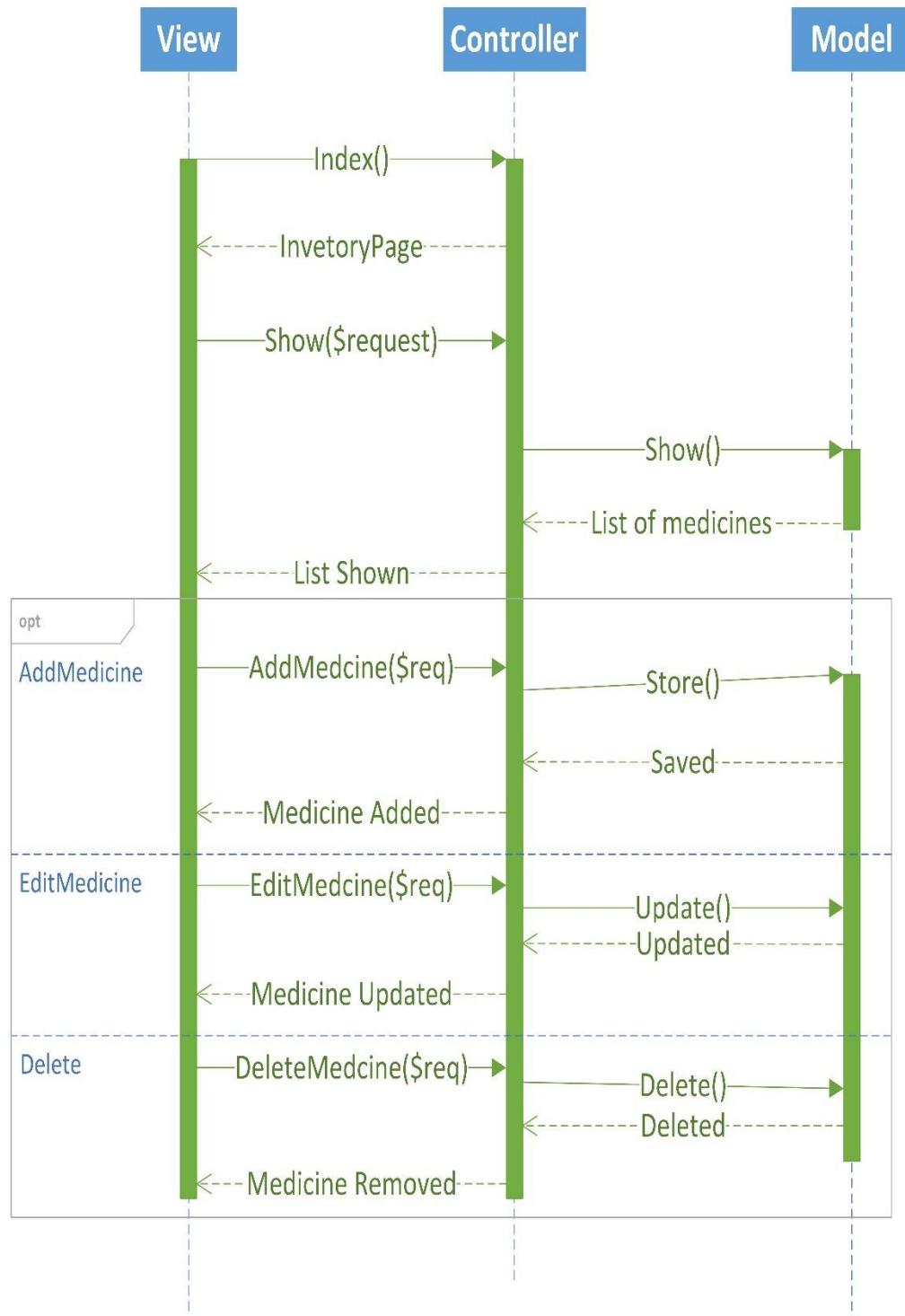


Figure 8.4 SD Manage Inventory

#### 4.7.6. Generate New Sale

This diagram shows the methods that retailors calls to make a sale and operations happen between the View, Controller and Models classes.

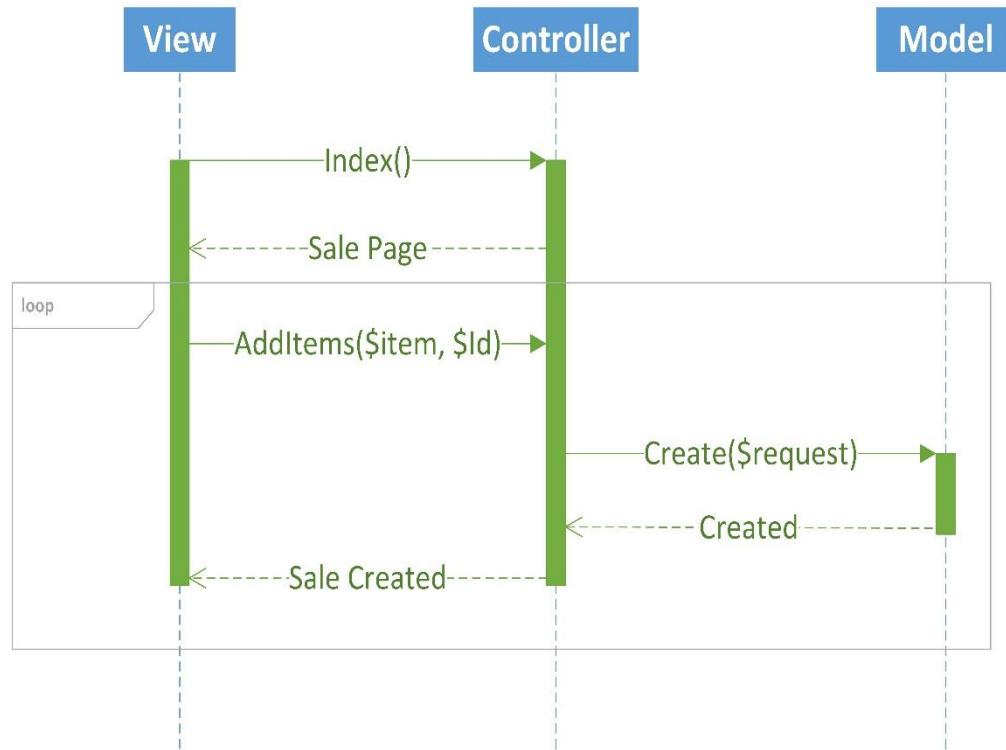


Figure 8.5 SD Generate New Sale

#### 4.7.7. View Reports

This diagram shows the operation happen between the View, Controller and Model classes when Retailer and Distributor wants to see the reports.

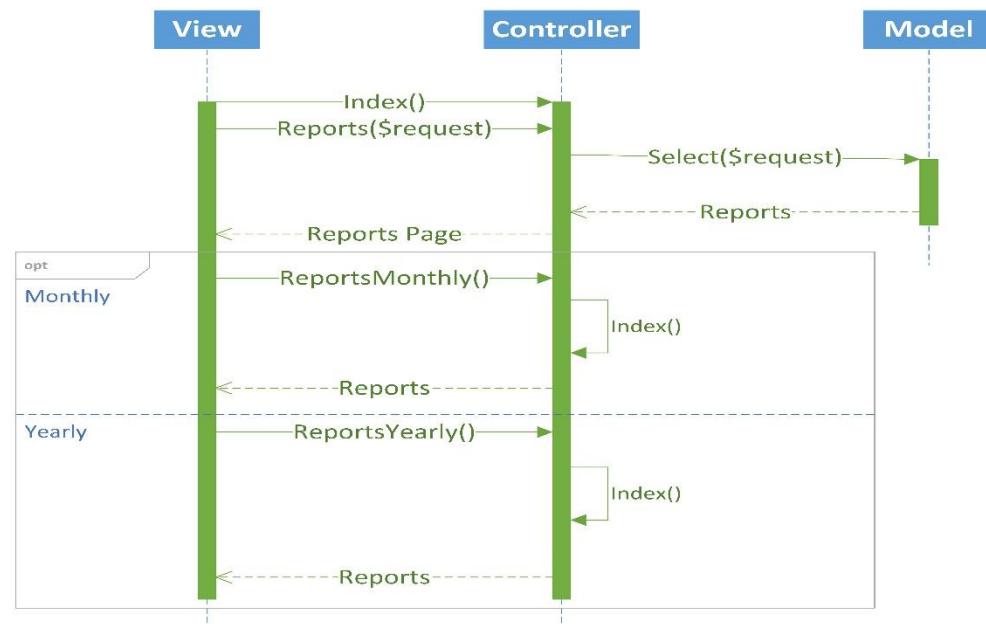


Figure 8.6 SD View Reports

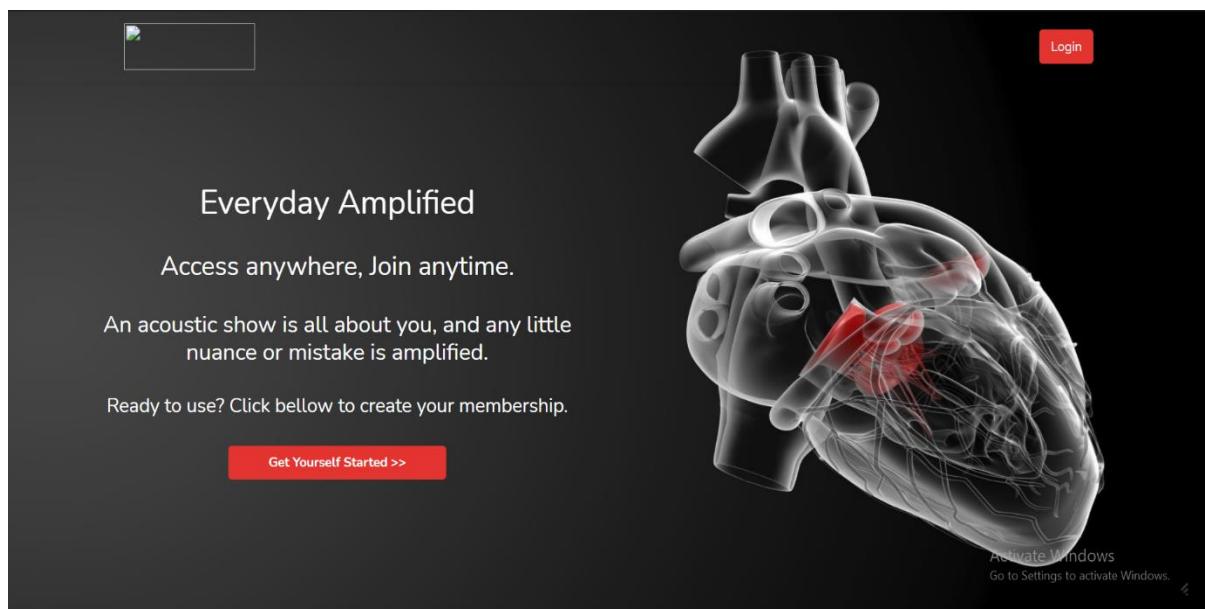
## **5. Implementation**

### **5.1. User Interface**

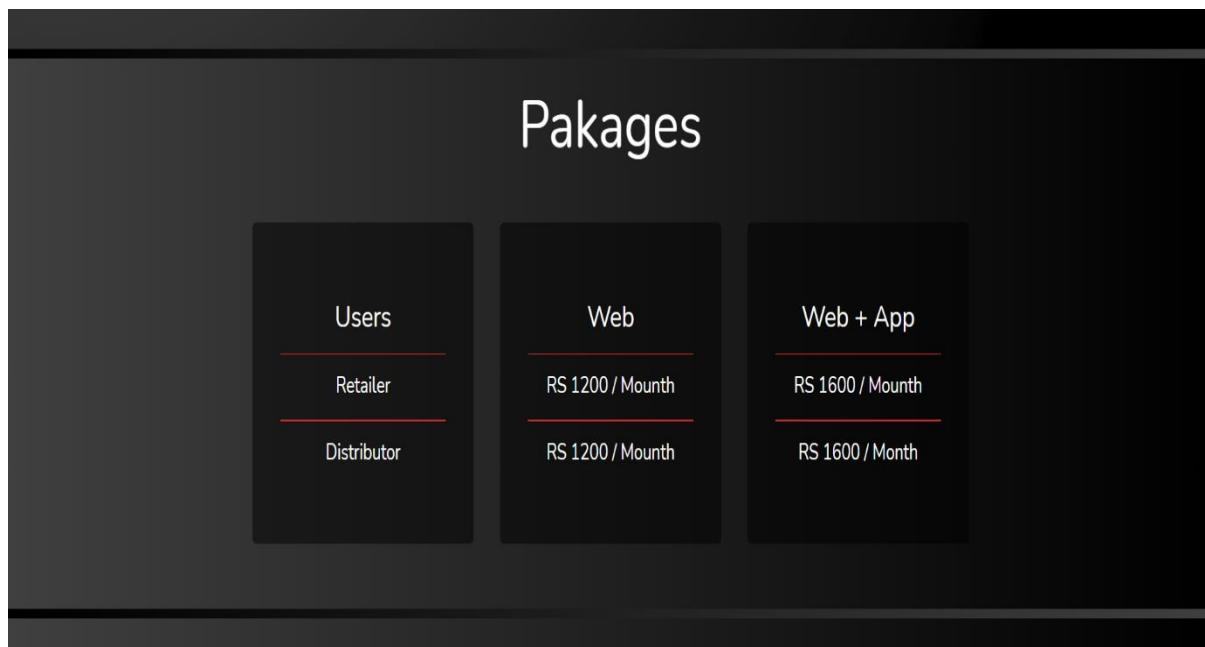
#### **5.1.1. Website**

##### **5.1.1.1. Welcome**

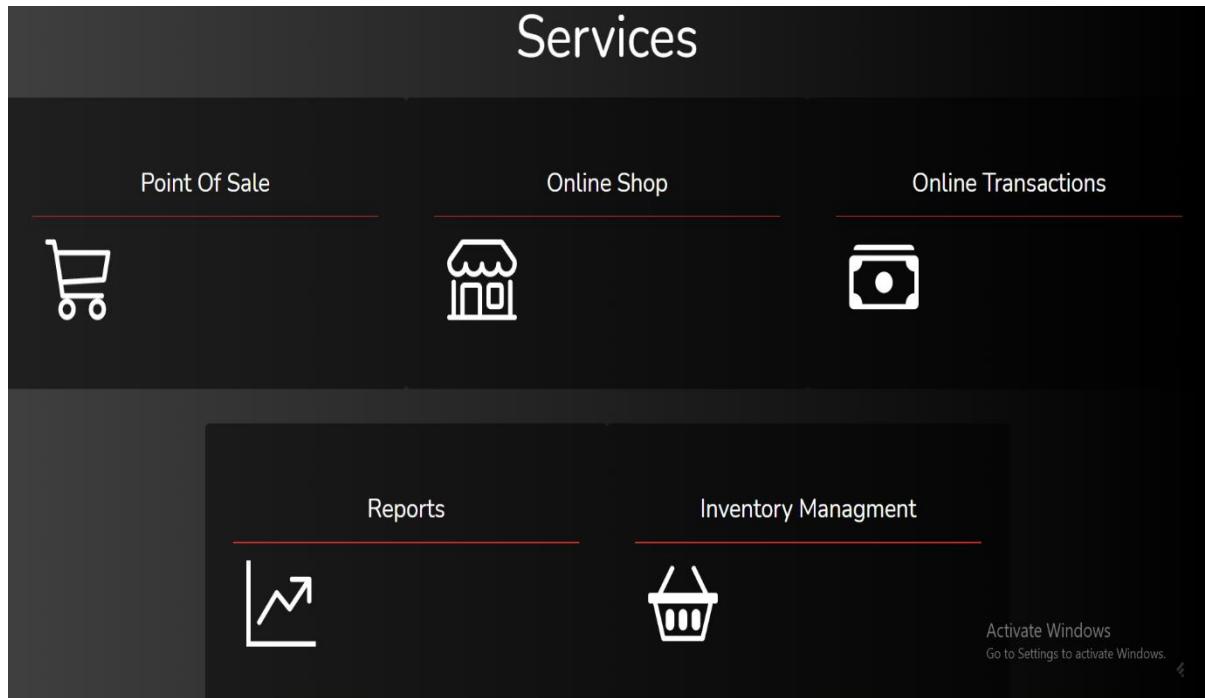
These pictures shows the welcome page of our website, figure 9.0 shows where Retailer and Distributor can click to either login or register. Figure 9.1 also is a part of a welcome page which shows our packages we offer. Figure 9.2 show the functionalities we offer. Figure 9.3 show the footer of our website.



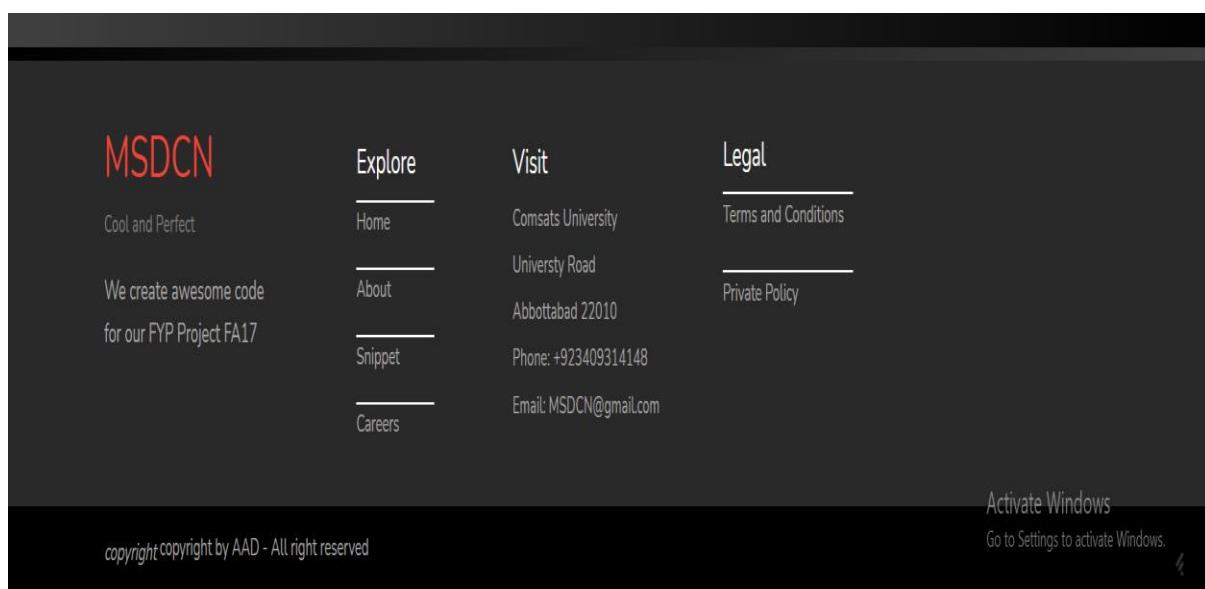
*Figure 9.0 Interface Welcome*



*Figure 9.1 Interface Packages*



*Figure 9.2 Interface Our Product Functionalities*



*Figure 9.3 Interface Footer Welcome*

### 5.1.1.2. Login

This picture shows the login page from where Retailer and Distributor can login themselves.

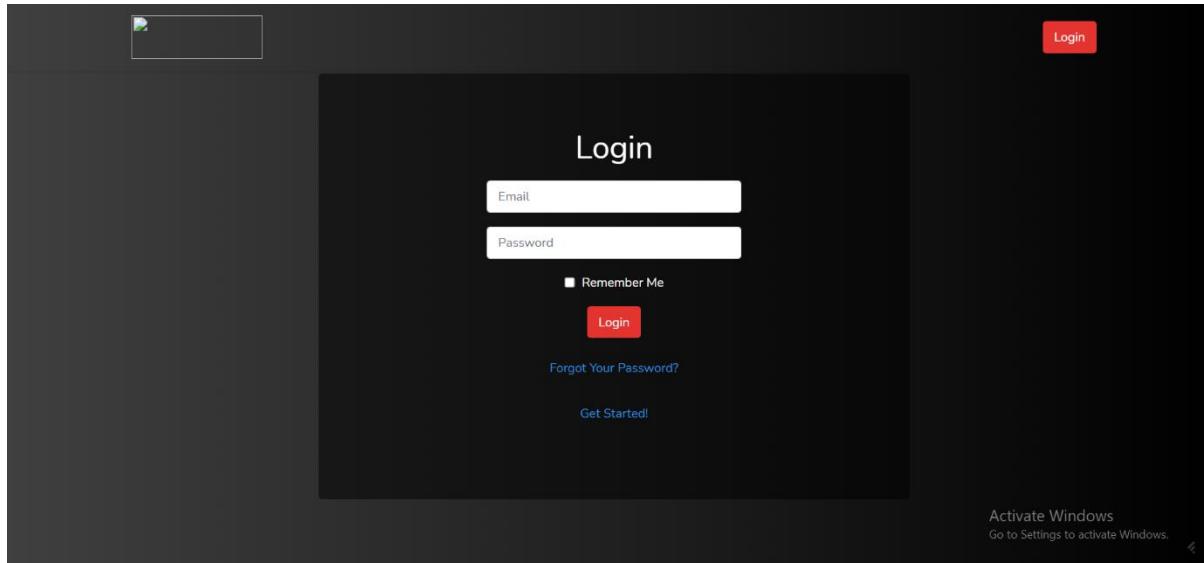


Figure 10 Retailer & Distributor Login

### 5.1.1.3. Registration

These pictures show the registration interface. *Figure 11.0* show the user register interface, *Figure 11.1* shows the shop register interface *Figure 11.2* shows the page where user select the package, *Figure 11.3* shows the interface where user select the payment method and completes the registration steps.

A screenshot of a user registration form. On the left, there is a list of required fields: "Enter your Original Name", "Enter your Valid Email Address", "Enter Strong Password", "Select your type Retailer or Distributor", "Enter your CNIC Number (13-digit number)", "Click Register Button", and "By clicking Register Button you will be redirect to next page, where you enter your shop details". To the right, the form fields are listed: "Name" (input field), "E-Mail Address" (input field), "Password" (input field), "Confirm Password" (input field), "User Type" (dropdown menu set to "Retailer"), "CNIC Number" (input field), "CNIC Front Pic" (file upload input with placeholder "Choose File | No file chosen" and notes about file size and supported formats: jpeg,jpg,png), "CNIC Back Pic" (file upload input with placeholder "Choose File | No file chosen" and notes about file size and supported formats: jpeg,jpg,png), and a red "Register" button at the bottom right. An "Activate Windows" message is visible at the bottom right.

Figure 11.0 Interface Register User

## Medical Store Distributor Consumer Network (MSDCN)

**Retailer Shop Registration**

- Shop Name
- Liscence No
- Region: Hazara
- Contact Number
- Liscence Picture: Choose File | No file chosen  
Max image size: 1.9 MB | Supported formats: jpeg,jpg,png

**Information**

- Enter your Original Shop Name
- Enter your Valid Liscence Number
- Select your Region
- Enter Valid Phone Number (e.g. 03331234567)

**Activate Windows**  
Go to Settings to activate Windows.

Figure 11.1 Interface Register Shop

standard	premium	test
1200 PKR Last 1 Month(s) Mobile App: NO	1600 PKR Last 1 Month(s) Mobile App: YES	1000 PKR Last 3 Month(s) Mobile App: NO
<b>Subscribe</b>	<b>Subscribe</b>	<b>Subscribe</b>

**Activate Windows**  
Go to Settings to activate Windows.

Figure 11.2 Interface Subscribe Package

premium
1600 PKR Last 1 Month(s) Mobile App: YES
• Your Credit Card info will be saved • Credit Card detail will automatically filled up if exist

**Credit Card Payment**

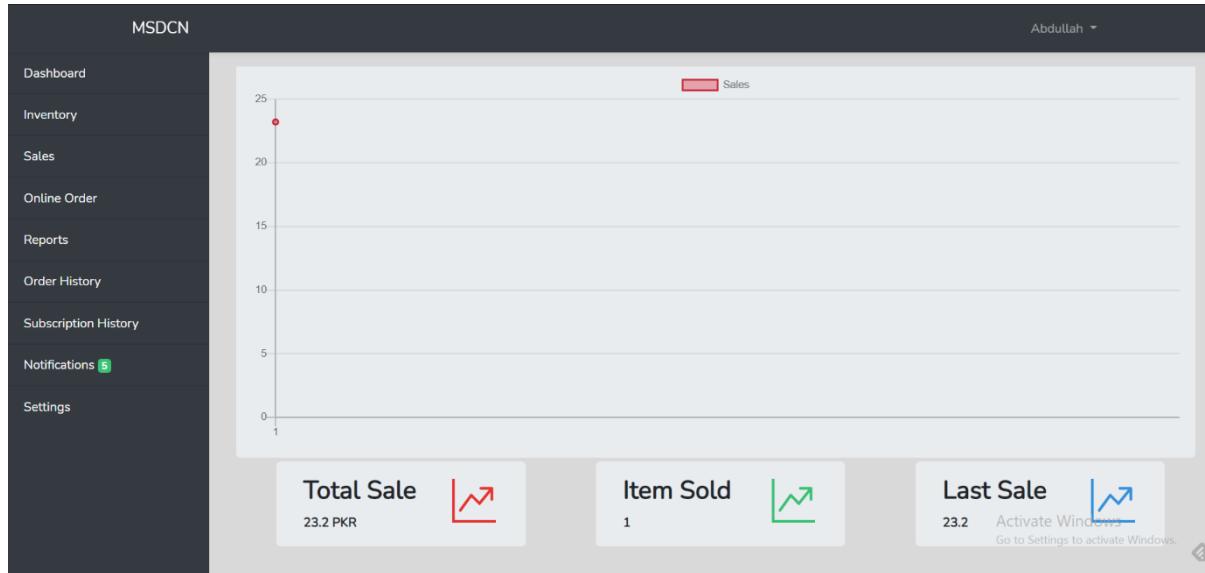
**Mobile Account Payment**

**Activate Windows**  
Go to Settings to activate Windows.

Figure 11.3 Interface Select Payment Method

#### **5.1.1.4. Retailer Dashboard**

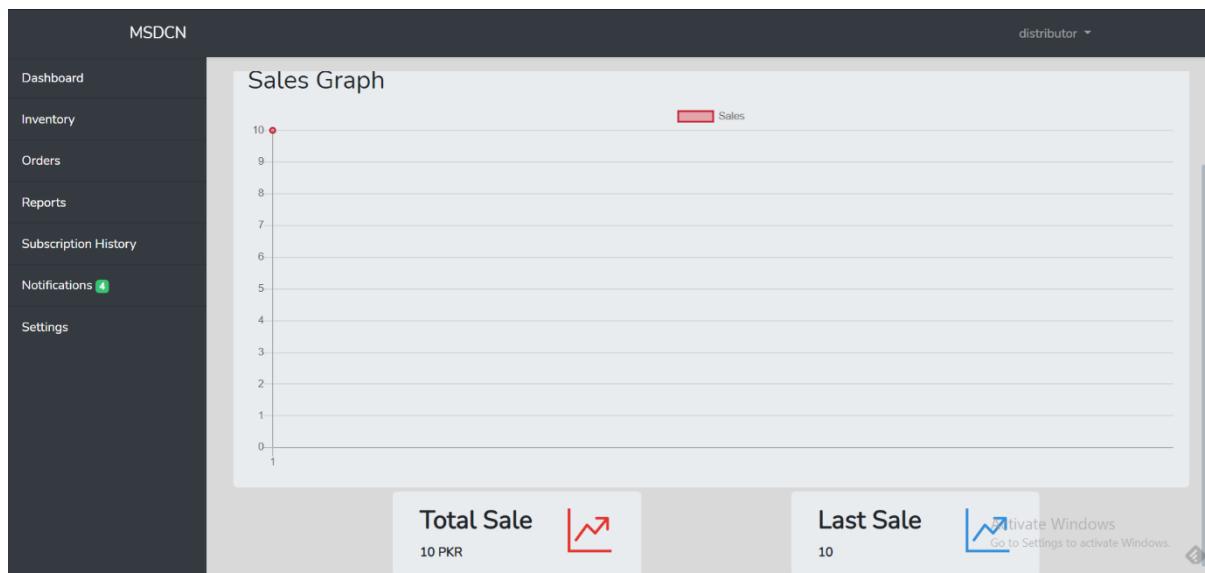
This interface shows the Retailer Dashboard and the main actions that retailer can perform. This page shows the details about the sales made and shows the graph of the sales.



*Figure 12 Interface Retailer Dashboard*

#### **5.1.1.5. Distributor Dashboard**

This interface shows the Distributor Dashboard and the main actions that Distributor can perform. This page shows the details about the sales made and shows the graph of the sales.



*Figure 13 Interface Distributor Dashboard*

### 5.1.1.6. Online Order

These interfaces *Figure 14.0* shows the online store where Retailer can buy the medicines online, *Figure 14.1* shows the detail about the medicine and retailer can set the quantity he wants and can add it to the cart, *Figure 14.2* show the cart of the retailer, *Figure 14.3* is a checkout place where retailer selects the payment method and add the address.

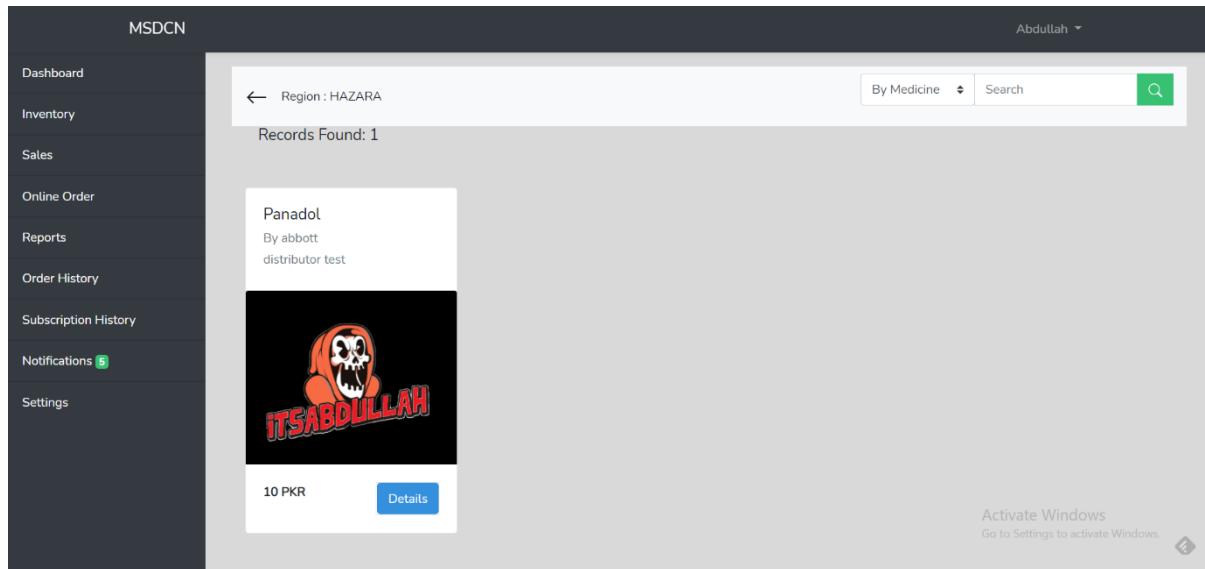


Figure 14.0 Interface Order Online

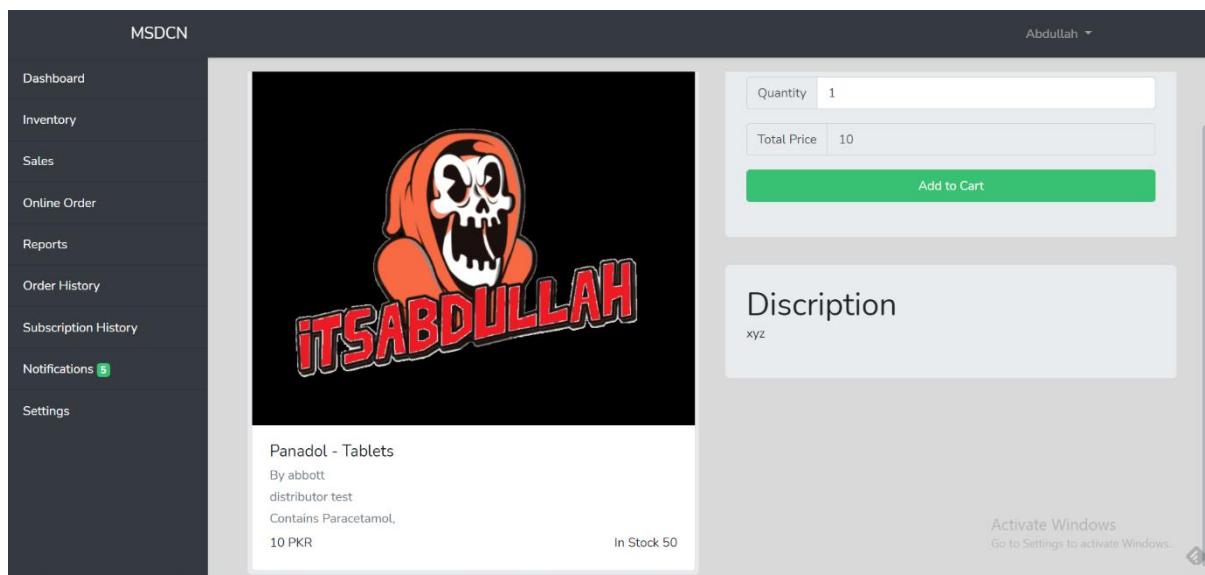


Figure 14.1 Interface Order Online Medicine Detail

## Medical Store Distributor Consumer Network (MSDCN)

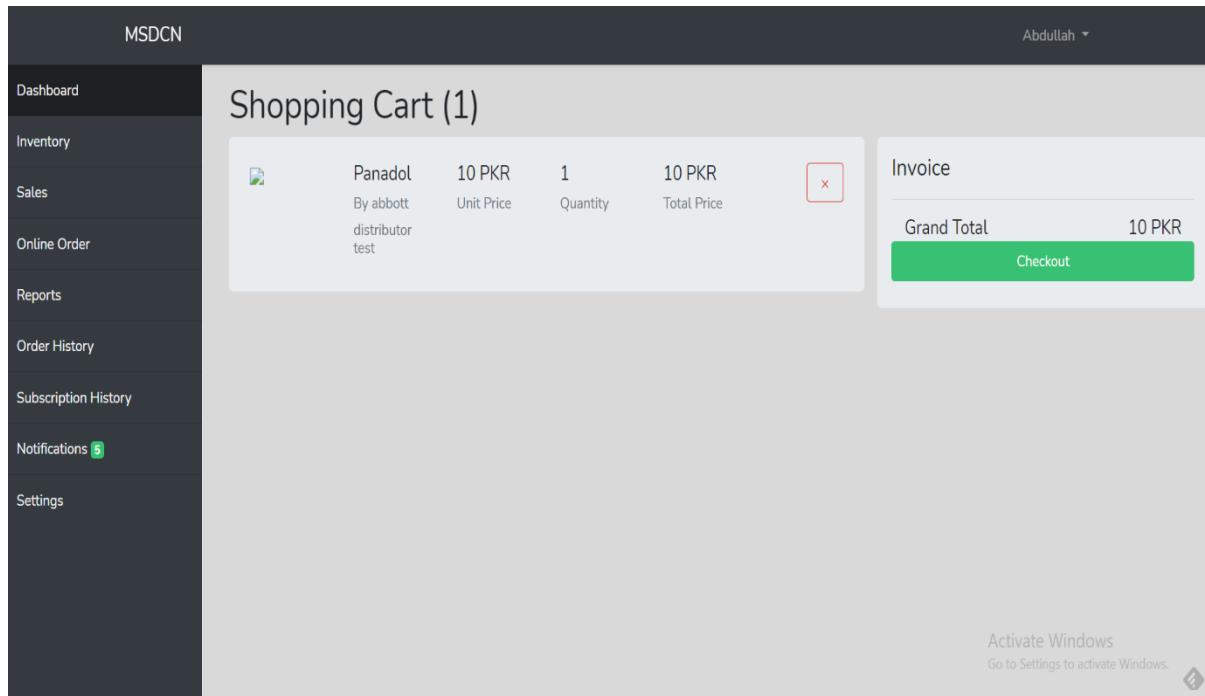


Figure 14.2 Interface Online Order Cart

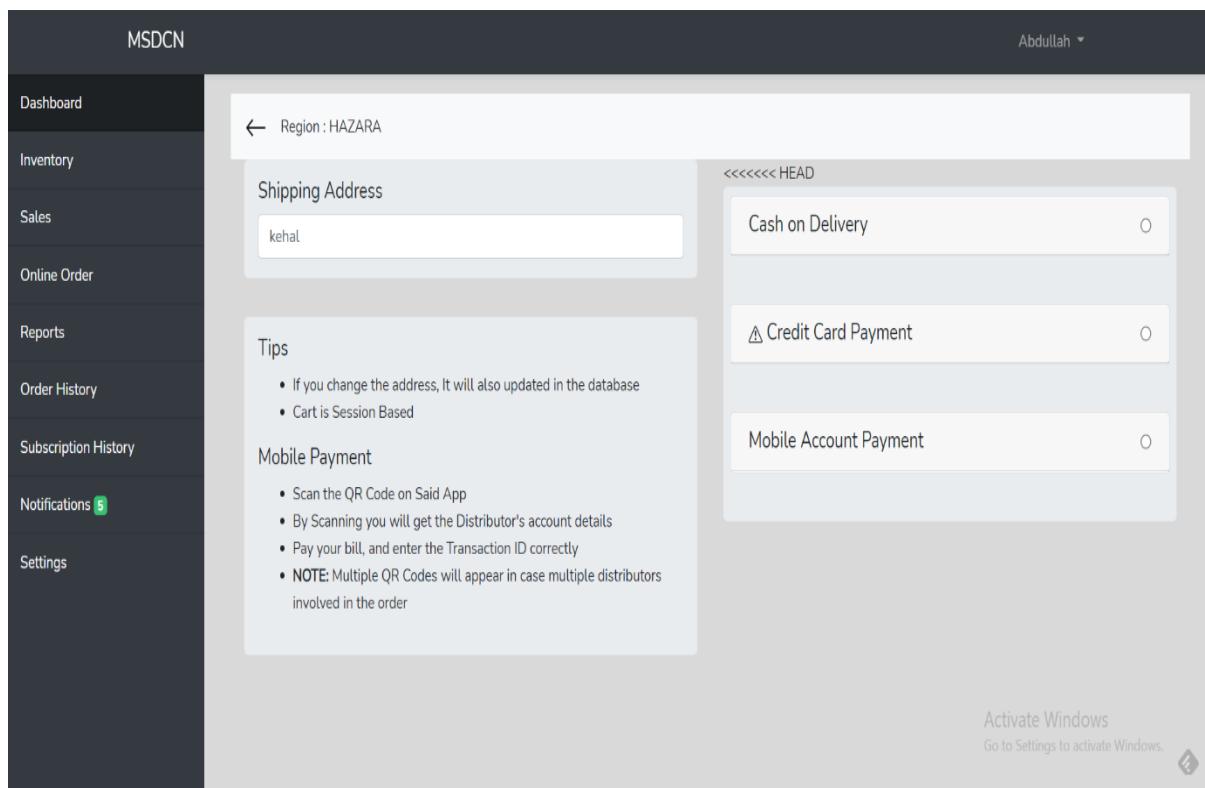


Figure 14.3 Interface Order Online Payment Method

### 5.1.1.7. Inventory

These interfaces show the inventory management, *Figure 15.0* shows all the inventory of the retailer and retailer can add, edit and delete the medicine from the record, *Figure 15.1* show the inventory adding page.

The screenshot shows the MSDCN application's inventory management screen. At the top, there is a navigation bar with the title 'MSDCN' and a user dropdown 'Abdullah'. On the left, a sidebar menu includes 'Dashboard', 'Inventory' (which is selected), 'Sales', 'Online Order', 'Reports', 'Order History', 'Subscription History', 'Notifications' (with 5 notifications), and 'Settings'. The main content area is titled 'Medicine Inventory' and displays a single medicine entry: Panadol (Medicine Name), Paracetamol (Formula), abbott (Company), Tablets (Type), 59 (Quantity), and 20 (Unit Price). There are edit and delete icons next to the entry. A green 'Add Item' button is located in the top right corner of the main content area. In the bottom right corner of the main content area, there is a watermark: 'Activate Windows Go to Settings to activate Windows.' with a small Microsoft logo.

Figure 15.0 Interface Inventory

The screenshot shows the MSDCN application's interface for adding new medicines. At the top, there is a navigation bar with the title 'MSDCN' and a user dropdown 'Abdullah'. On the left, a sidebar menu includes 'Dashboard', 'Inventory' (selected), 'Sales', 'Online Order', 'Reports', 'Order History', 'Subscription History', 'Notifications' (with 5 notifications), and 'Settings'. The main content area is titled 'Add New Medicines' and features a search dropdown containing 'abbott'. Below it, a list shows 'Panadol - Tablets' with 'Paracetamol' and 'abbott' details. To the right, there are input fields for 'Quantity' (0) and 'Unit Price' (0), each with a unit selection dropdown (labeled with a square icon). In the top right corner of the main content area, there are two buttons: 'Make a Request' (dark grey) and 'Add Medicines' (green). A watermark 'Activate Windows Go to Settings to activate Windows.' with a Microsoft logo is visible in the bottom right corner.

Figure 15.1 Interface Add Inventory

### 5.1.1.8. New Sale

These interfaces show the pages when Retailer wants to create a new sale to sell the medicines to his customers. *Figure 16.0* shows the all the previous sales and their receipt, *Figure 16.1* shows the new sale page where retailer add the medicines and make a sale and also can set the discount if he wants to give any.

MSDCN

Abdullah ▾

Dashboard

Inventory

Sales

Online Order

Reports

Order History

Subscription History

Notifications 5

Settings

msdcnrtyp.test/inventory

**SALE**

23.2 Today's Total

23.2 Today's Last

0 Yesterday's Total

Make a new Sale

**Today's Sales History**

1 Invoice# 23.2 Total 0 Discount 23.2 Payed

Activate Windows  
Go to Settings to activate Windows.

Figure 16.0 Interface New Sale

MSDCN

Abdullah ▾

Dashboard

Inventory

Sales

Online Order

Reports

Order History

Subscription History

Notifications 5

Settings

msdcnrtyp.test/inventory

**New Sale**

Quantity	Panadol	4	20	80
	abbott	Quantity	Unit Price	Subtotal
Total				80
G.S.T 16%				12.80
Total				92.8
Discount				0
Grand Total				92.80

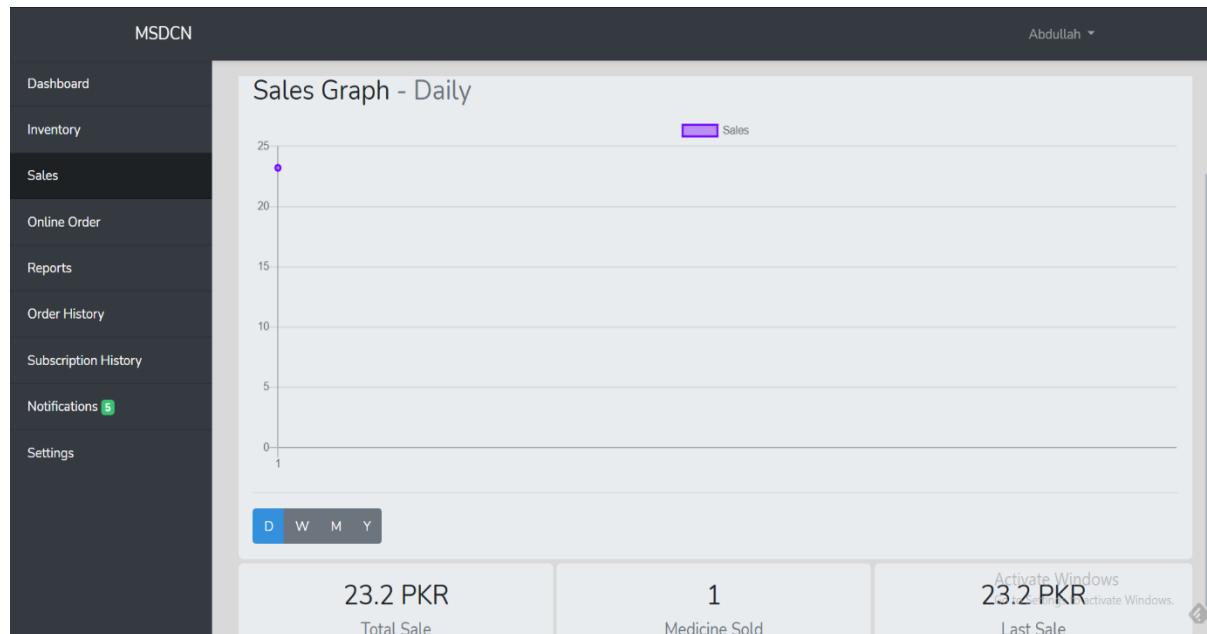
Activate Windows  
Go to Settings to activate Windows.

Checkout

Figure 16.1 Interface New Sale Add Items

### 5.1.1.9. Reports

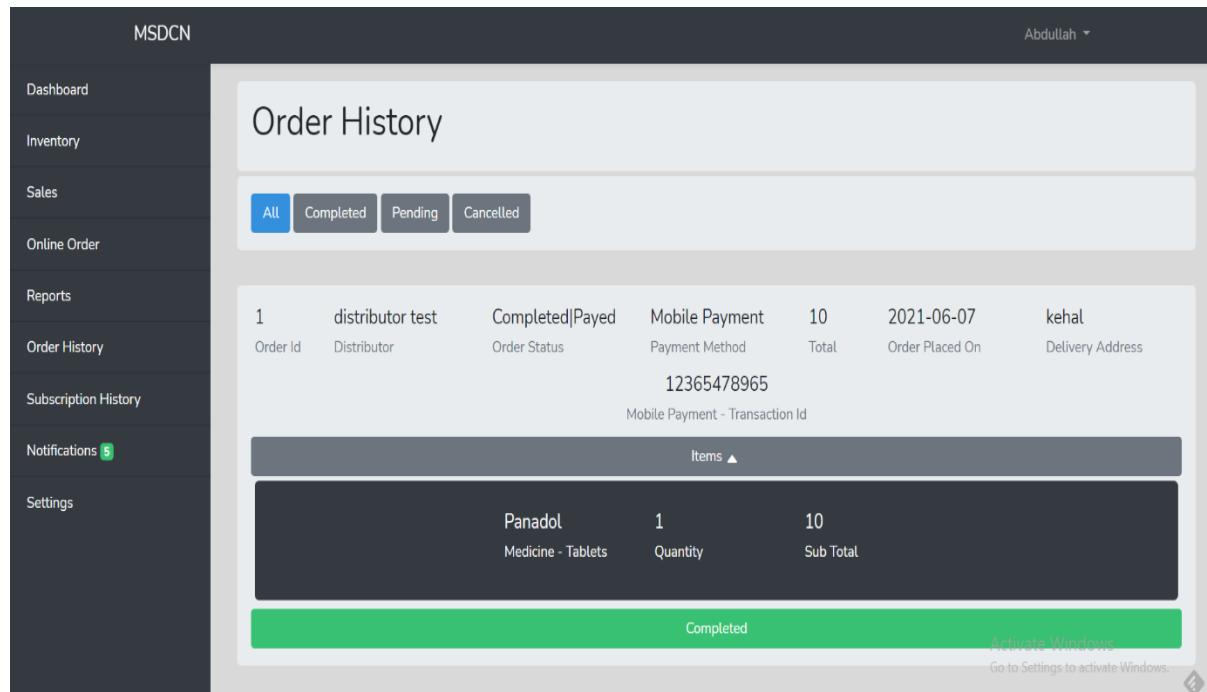
This interface *Figure 17* shows the reports by daily, weekly, monthly and yearly mean.



*Figure 17 Interface Reports*

### 5.1.1.10. Order History

This interface in *Figure 18* shows the details of all the orders placed in the online market and their status.



*Figure 18 Interface Order History*

### 5.1.1.11. Subscription History

Figure 19 shows the interface of the subscription history till the start. This page shows all the packages ever subscribed by the user.

Package Name	Duration (Months)	Start Date	Ending Date
Premium	1	2021-06-07	2021-07-07

Figure 19 Interface Subscription History

### 5.1.1.12. Notifications

Figure 20 shows the notification page interface, user will get every notion at this page and till he marks them read it will always pop up.

Notification Type	Details	Status
Panadol by abbott details has been updated	Notified On 2021-06-07 11:07:55	✓ ✘
Panadol by abbott details has been updated	Notified On 2021-06-07 11:07:37	✓ ✘
Your Request with id#1 is marked as completed	Notified On 2021-06-07 11:06:56	✓ ✘
Your Request with id#1 is marked as completed	Notified On 2021-06-07 11:06:50	✓ ✘
Your Request with id#1 is marked as completed	Notified On 2021-06-07 11:06:40	✓ ✘

Figure 20 Interface Notifications

### 5.1.1.13. Retailer Settings

These interfaces in *Figures 21.0, 21.1, 21.2 & 21.3* show the setting page where user can see his info and can change the settings.

The screenshot shows the 'Personal Info' section of the MSDCN settings. The left sidebar lists various menu items: Dashboard, Inventory, Sales, Online Order, Reports, Order History, Subscription History, Notifications (5), and Settings. The main content area is titled 'Personal Info' and contains the following fields:

- Name: Abdullah
- Email: abdullah@test.com
- CNIC#:
- Type: Retailer
- CNIC Front Picture: Click to show/hide picture
- CNIC Back Picture: Click to show/hide picture

*Figure 21.0 Interface Setting Personal Info*

The screenshot shows the 'Shop Info' section of the MSDCN settings. The left sidebar is identical to Figure 21.0. The main content area is titled 'Shop Info' and contains the following fields:

- Shop Name: Abdullah Pharmist
- Liscence#:
- Region: Hazara
- Contact#:
- Shop Address: kehal
- Liscence Picture: Click to show/hide picture

*Figure 21.1 Interface Setting Shop Info*

The screenshot shows two sections of the MSDCN settings: 'Credit Card Info' and 'Account Settings'. The left sidebar includes the 'Notifications (5)' item. The 'Credit Card Info' section has fields for Card Holder Name, Card#, and Expiry Date (mm/yy), along with 'Add New' and 'Remove' buttons. The 'Account Settings' section shows Account Status as 'ACTIVE' and an API Token field with a refresh icon.

*Figure 21.2 Interface Setting Credit Card Info*

## Medical Store Distributor Consumer Network (MSDCN)

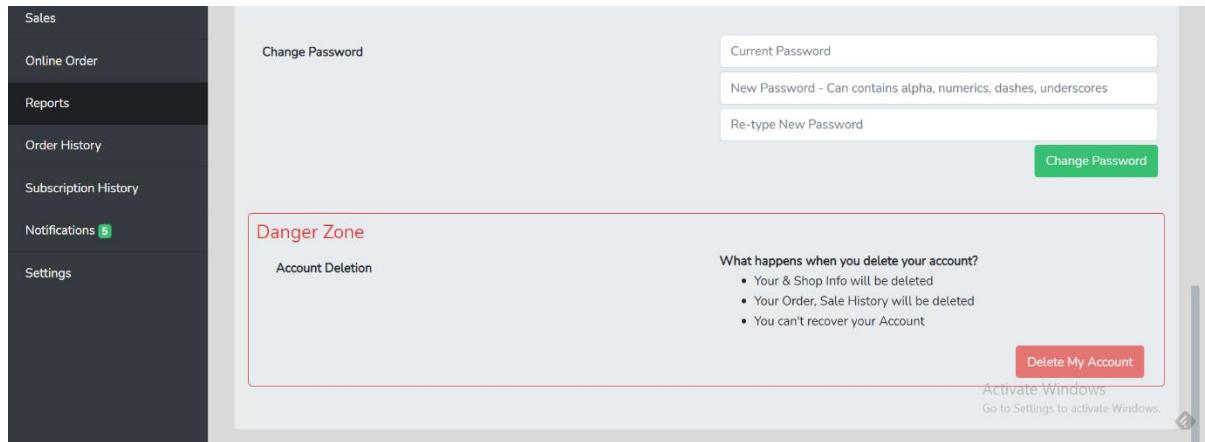


Figure 21.3 Interface Account Setting

### 5.1.1.14. Distributor Settings

Figure 22 show the only additional setting option that distributor has is the Easypaisa payment option.

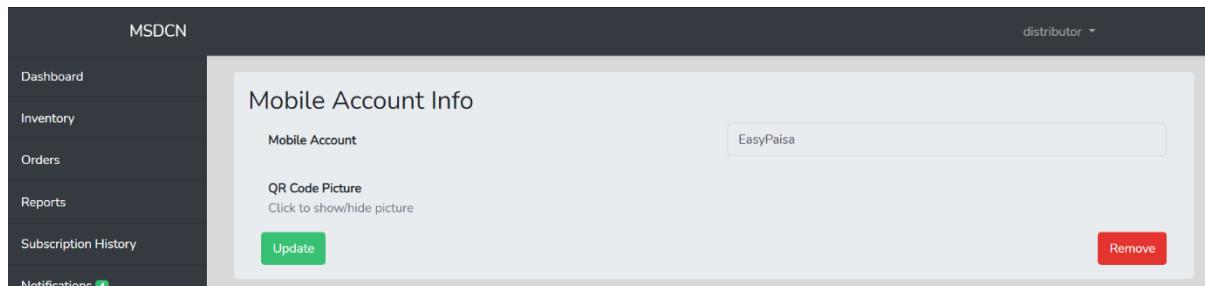


Figure 22 Interface Distributor EasyPaisa Setting

### 5.1.1.15. Distributor Order Receive

Figure 23 shows the order receive page where Distributor receives the orders placed by the Retailers and can approve, reject, and dispatch the status of the order.

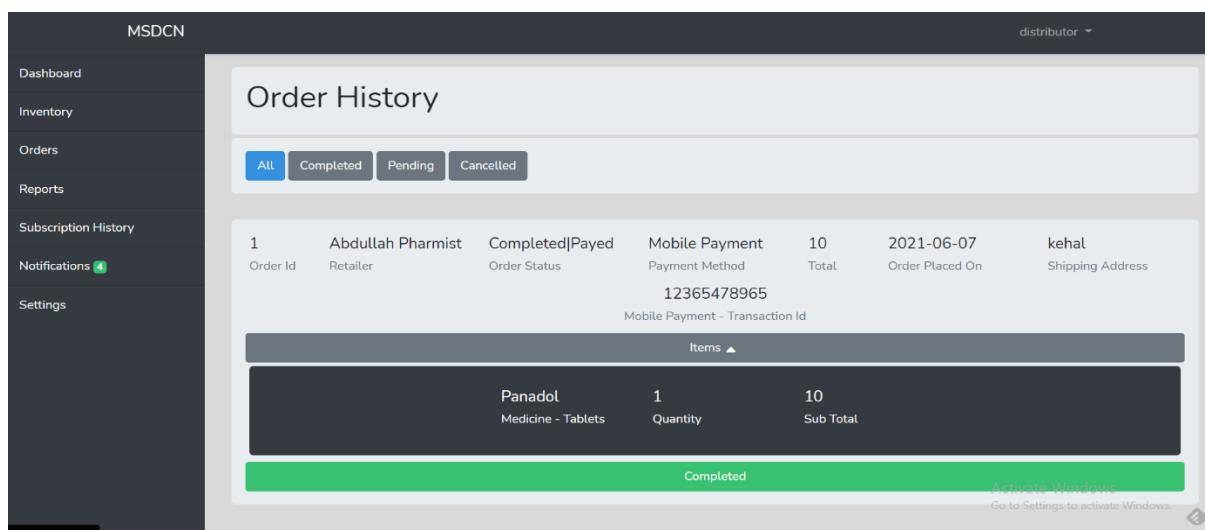
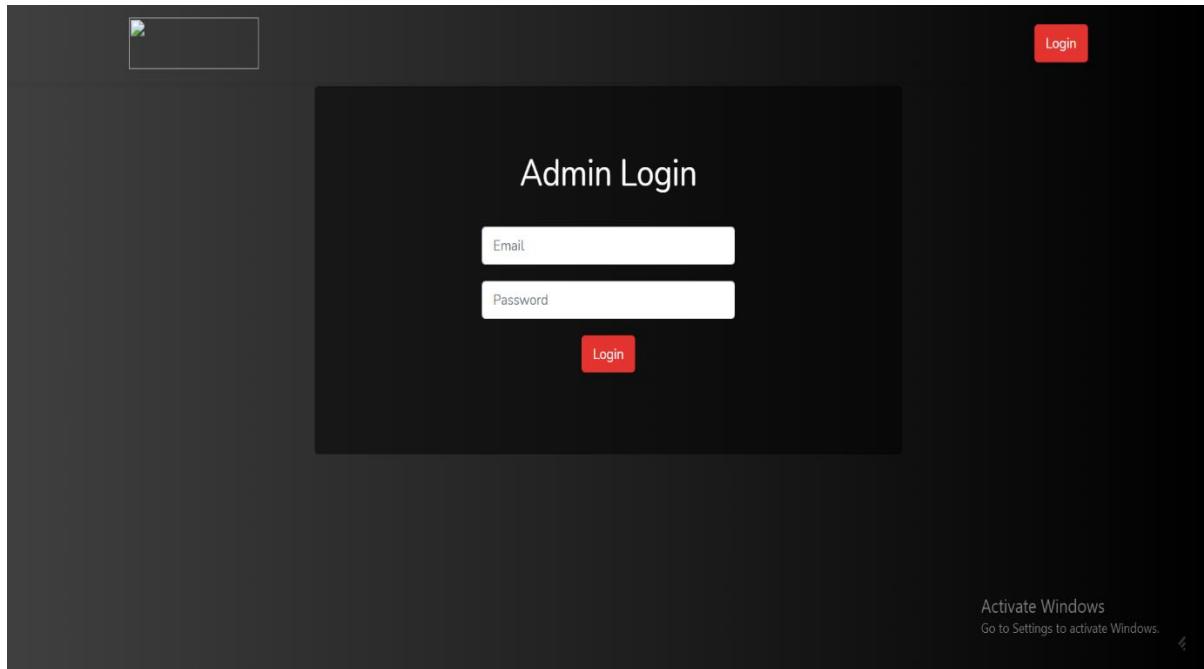


Figure 23 Interface Order Receive

#### **5.1.1.16. Admin Login**

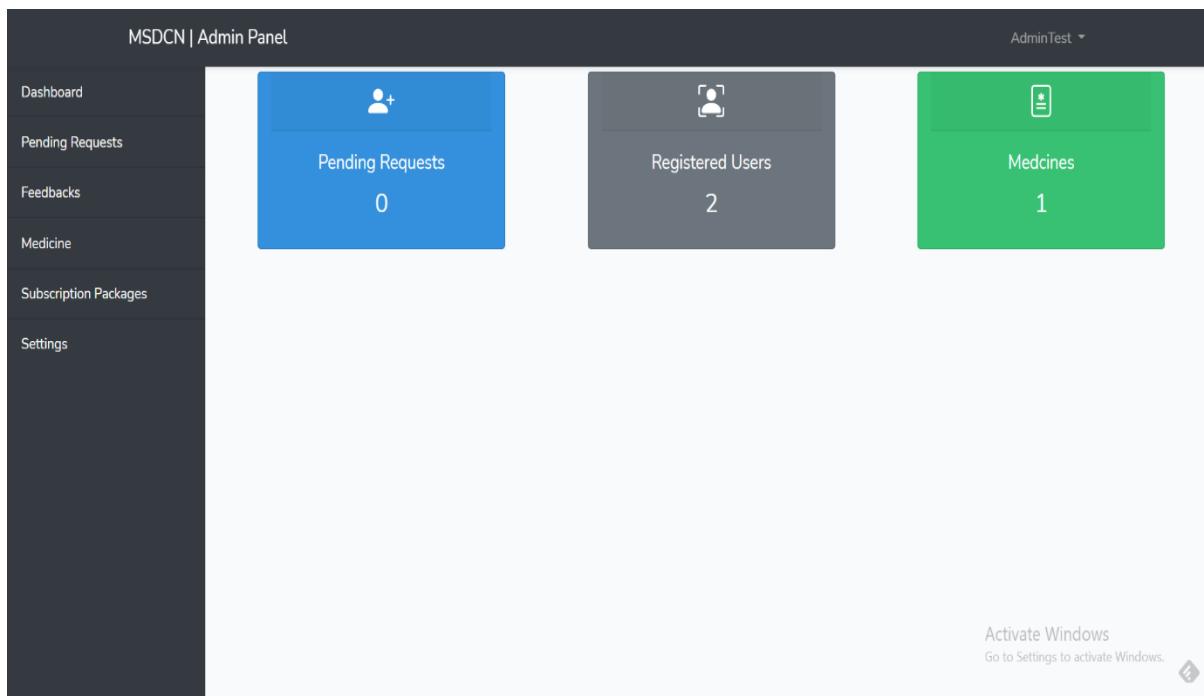
This interface shows the admin login from where admin can login.



*Figure 24 Interface Admin Login*

#### **5.1.1.17. Admin Dashboard**

This interface is the admin dashboard where admin can view the number of pending requests, total users registered, and total medicines in the database.



*Figure 25 Interface Admin Dashboard*

### 5.1.1.18. Pending Requests

This *Figure 26* shows the interface where all the requests of the new users to join the services and from here admin can approve or reject the request of the user.

User Id	User Name	User Email	Status	Creation Date
3	abdullah iqbal	abdullahiqbal@test.com	PENDING	2021-06-07 17:48:29

Cnic Front Picture  
Liscence Picture

Show Details

Activate Windows  
Go to Settings to activate Windows.

*Figure 26 Interface Admin Pending Requests*

### 5.1.1.19. Feedback

*Figure 27* show the interface where admin will receive all the feedbacks from the retailer and distributor and admin can reply to them if there are some further queries about that issue.

Feedback Id	Title	User Name	Submission Date
1	Brufine	Abdullah	2021-06-07 10:59:07

Activate Windows  
Go to Settings to activate Windows.

*Figure 27 Interface Feedback*

### 5.1.1.20. Medicines

*Figure 28.0* shows the interface where it shows all the medicines added by the admin in the database, and *Figure 28.1* shows the interface from admin can add a new medicine to the database and provides the information about the medicine.

The screenshot shows the 'Medicines' section of the MSDCN Admin Panel. On the left is a dark sidebar with navigation links: Dashboard, Pending Requests (1), Feedbacks, Medicine (selected), Subscription Packages, and Settings. The main area has a light gray header with the title 'Medicines' and a green 'Add New Medicine' button. Below is a table row with the following data:

1	Panadol	abbott	Tablets	Paracetamol	
Medicine Id	Medicine Name	Company	Type	Formula/Contains	

At the bottom right of the main area, there is a watermark: 'Activate Windows Go to Settings to activate Windows.' with a small gear icon.

*Figure 28.0 Interface Medicines*

The screenshot shows the 'Add Medicines' form in the MSDCN Admin Panel. The sidebar is identical to Figure 28.0. The main area has a light gray header with the title 'Basic Details'. The form fields include:

- Medicine Name
- Medicine Company
- Medicine Type: Vial (dropdown menu)
- Formula: separate each element by ,
- Medicine Picture: Choose File (button) - No file chosen
- Description: Text area

Below the form is a note: 'Maximum image size: 1.9MB | Supported formats: jpg, png, jpeg'. At the bottom is a large green 'Create Medicine' button. A watermark at the bottom right is identical to Figure 28.0.

*Figure 28.1 Interface Add Medicines*

### **5.1.1.21. Subscription Package**

The interface shown in *Figure 29.0* show the page where all the existing subscription packages are listed, and *Figure 29.1* shows when admin wants to add a new subscription package and can provides its information.

The screenshot shows the 'Subscription Packages' section of the MSDCN Admin Panel. On the left, there is a sidebar with links: Dashboard, Pending Requests (1), Feedbacks, Medicine, Subscription Packages (selected), and Settings. The main area has a title 'Subscription Packages' and a green button 'Add New Package'. Below is a table with two rows:

Package Id	Name	Price	Duration (Month(s))	Action
1	Standard	1200	1	
2	Premium	1600	1	

At the bottom right, there is a message: 'Activate Windows Go to Settings to activate Windows.' with a link icon.

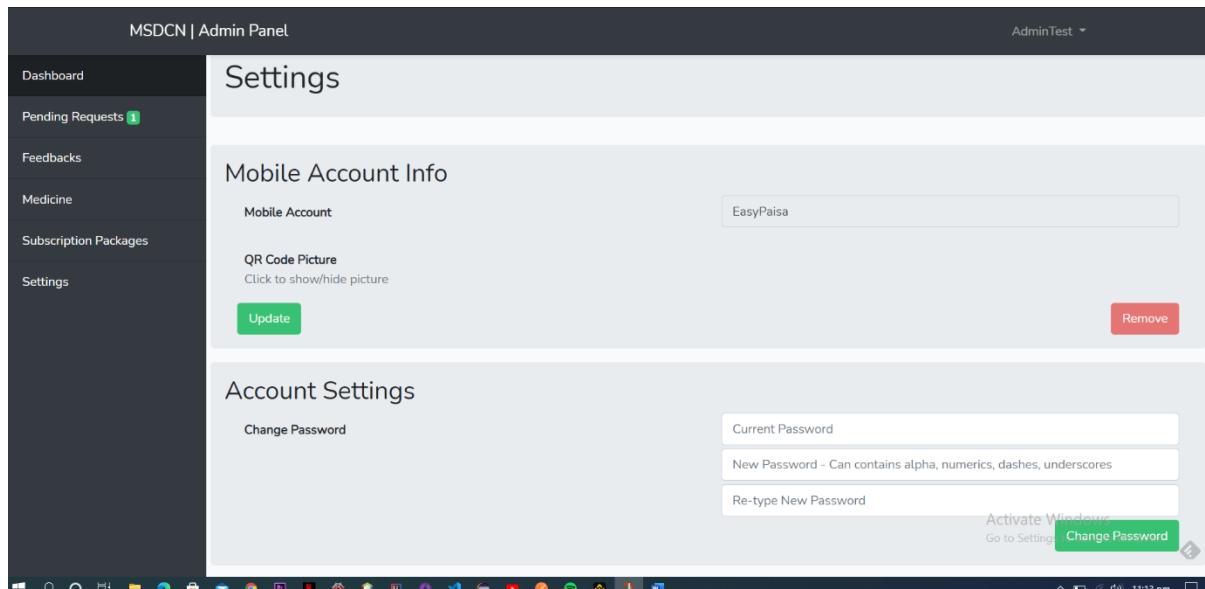
*Figure 29.0 Interface Subscription Packages*

The screenshot shows the 'Add New Subscription Package' form in the MSDCN Admin Panel. The sidebar is identical to Figure 29.0. The main area has a title 'Add New Subscription Package'. It contains a 'Basic Details' section with three input fields: 'Package Name', 'Package Price', and 'Package Duration'. Below this is an 'Options' section with a checkbox for 'Support API'. At the bottom is a large green button 'Create Package'.

*Figure 29.1 Interface Add New Subscription Packages*

### **5.1.1.22. Admin Settings**

The interface in *Figure 30* shows the admin setting page where they can set the mobile banking with QR code.

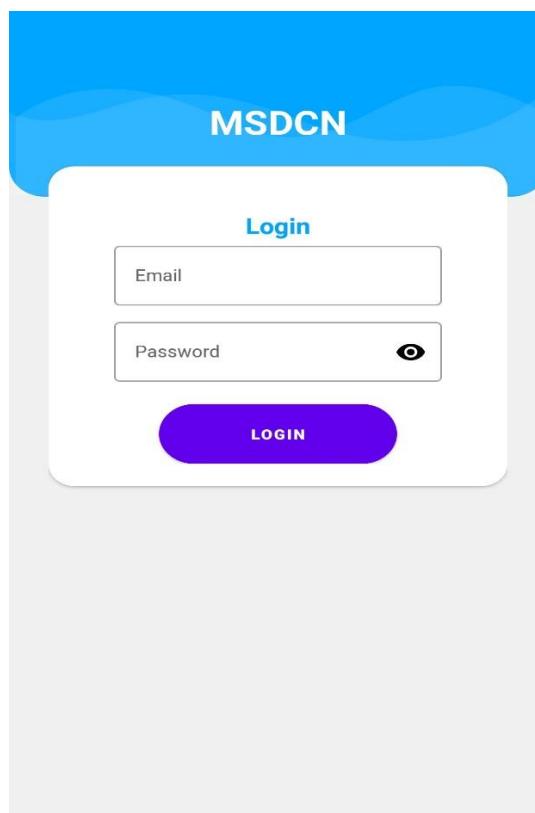


*Figure 30 Interface Admin Setting*

### **5.1.2. Android**

#### **5.1.2.1. Login**

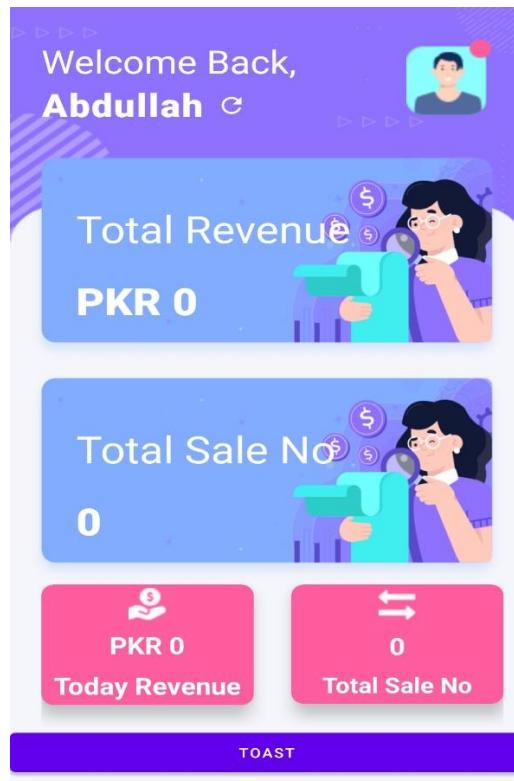
*Figure 31* shows the login activity of android application.



*Figure 31 Interface Android Login*

### **5.1.2.2. Dashboard**

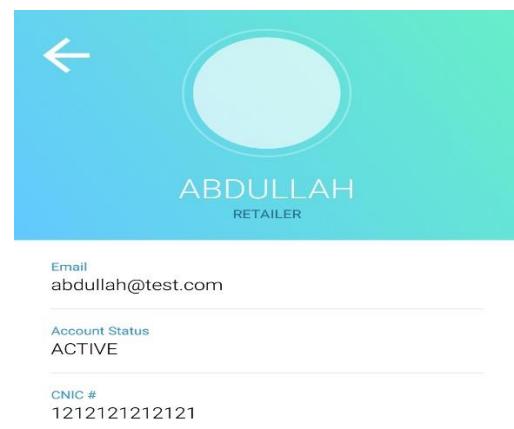
*Figure 32* shows the dashboard activity of the android application.



*Figure 32 Interface Android Dashboard*

### **5.1.2.3. About**

*Figure 33* shows the about activity of user in android application.



*Figure 33 Interface Android About*

## 6. Testing and Evaluation

### 6.1. Manual Testing

#### 6.1.1. System Testing

##### 6.1.1.1. Login

Table 26.0 ST Login

<b>Test Case Id</b>	01	<b>Test Module</b>	Login		
<b>Wrote By</b>	Developer Team	<b>Documented Date</b>	9/6/2021		
<b>Test Type</b>	Manual	<b>Test Suite</b>	N/A		
<b>Product Name</b>	MSDCN	<b>Version</b>	V 1.0		
<b>Test Case Description</b>	<b>Normal Flow</b>		<b>Expected Result</b>		
1. Retailer/Distributor enters the email and password in the given field. 2. Clicks on Login Button	User logged into the system successfully	“User should be logged into system successfully”			
<b>Actor</b>	Retailer/Distributor				
<b>Precondition</b>	1. System should be idle. 2. Retailer/Distributor should be registered				
<b>Tester</b>	Development Team	<b>Status</b>	PASS		

##### 6.1.1.2. Registration

Table 26.1 ST Registration

<b>Test Case Id</b>	02	<b>Test Module</b>	Registration		
<b>Wrote By</b>	Developer Team	<b>Documented Date</b>	9/6/2021		
<b>Test Type</b>	Manual	<b>Test Suite</b>	N/A		
<b>Product Name</b>	MSDCN	<b>Version</b>	V 1.0		
<b>Test Case Description</b>	<b>Normal Flow</b>		<b>Expected Result</b>		
1. User clicks on “Get yourself Registered Button”. 2. User enters valid credentials in User Registration Form. 3. User clicks “Register” button. 4. User enters valid credentials in Shop Registration Form. 5. User clicks “Register Shop” button. 6. User selects Subscription Package. 7. User selects payment method.	1. New user account created. 2. New Pending Request created for Admin	1. “New user account should be created.” 2. “New Pending Request should be created for Admin”			
<b>Actor</b>	User				
<b>Precondition</b>	1. System should be idle				
<b>Tester</b>	Development Team	<b>Status</b>	PASS		

### 6.1.1.3. Point of Sale

Table 26.2 ST Point Of Sale

<b>Test Case Id</b>	03	<b>Test Module</b>	Point Of Sale
<b>Wrote By</b>	Developer Team	<b>Documented Date</b>	9/6/2021
<b>Test Type</b>	Manual	<b>Test Suite</b>	N/A
<b>Product Name</b>	MSDCN	<b>Version</b>	V 1.0
<b>Test Case Description</b>		<b>Normal Flow</b>	<b>Expected Result</b>
1. Retailer clicks on “New Sale” button 2. Retailer search medicine, set quantity and add to the list. 3. Retailer clicks on “Make a sale” button		1. New Sale created 2. Medicine quantity deducted from inventory	1. “New Sale should be created”. 2. “Medicine quantity should be deducted from inventory”
<b>Actor</b>		Retailer	
<b>Precondition</b>	1. System should be idle. 2. User should be registered as Retailer. 3. Retailer must have medicine in inventory with enough quantity.		
<b>Tester</b>	Development Team	<b>Status</b>	PASS

### 6.1.1.4. Online Store

Table 26.3 ST Online Store

<b>Test Case Id</b>	03	<b>Test Module</b>	Online Store
<b>Wrote By</b>	Developer Team	<b>Documented Date</b>	9/6/2021
<b>Test Type</b>	Manual	<b>Test Suite</b>	N/A
<b>Product Name</b>	MSDCN	<b>Version</b>	V 1.0
<b>Test Case Description</b>		<b>Normal Flow</b>	<b>Expected Result</b>
1. Retailer clicks on medicine “Detail” button. 2. Retailer sets the desired amount. 3. Retailer clicks on “Add to cart” button. 4. Retailer open cart 5. Retailer clicks on “Checkout” button. 6. Retailer selects payment method and click on “Proceed” button.		1. New order is placed to the distributor	1. “New order should be placed to the distributor”
<b>Actor</b>		Retailer	
<b>Precondition</b>	1. System should be idle. 2. Medicine should be available in online store. 3. Retailer should be registered and subscribed. 4. Distributor should be registered and subscribed		
<b>Tester</b>	Development Team	<b>Status</b>	PASS

#### 6.1.1.5. Inventory Add

Table 26.4 ST Inventory Add

<b>Test Case Id</b>	04	<b>Test Module</b>	Inventory Add
<b>Wrote By</b>	Developer Team	<b>Documented Date</b>	9/6/2021
<b>Test Type</b>	Manual	<b>Test Suite</b>	N/A
<b>Product Name</b>	MSDCN	<b>Version</b>	V 1.0
<b>Test Case Description</b>		<b>Normal Flow</b>	<b>Expected Result</b>
1. Retailer / Distributor click on “Add Medicine” button. 2. Retailer / Distributor selects medicines, set quantity, and set unit price. 3. Retailer / Distributor click on “Add” button		1. Medicine added in the inventory of Retailer / Distributor	1. “Medicine added in the inventory of Retailer / Distributor”
<b>Actor</b>		Retailer / Distributor	
<b>Precondition</b>	1. System should be idle. 2. Medicine should be in the system. 3. Retailer / Distributor should be registered and subscribed		
<b>Tester</b>	Development Team	<b>Status</b>	PASS

#### 6.1.1.6. Inventory Delete

Table 26.5 ST Inventory Delete

<b>Test Case Id</b>	05	<b>Test Module</b>	Inventory Delete
<b>Wrote By</b>	Developer Team	<b>Documented Date</b>	9/6/2021
<b>Test Type</b>	Manual	<b>Test Suite</b>	N/A
<b>Product Name</b>	MSDCN	<b>Version</b>	V 1.0
<b>Test Case Description</b>		<b>Normal Flow</b>	<b>Expected Result</b>
1. Retailer / Distributor click on “Delete” button		1. Medicine deleted from inventory	1. “Medicine should be deleted from inventory”
<b>Actor</b>		Retailer / Distributor	
<b>Precondition</b>	1. System should be idle. 2. Medicine should be in the inventory. 3. Retailer / Distributor should be registered and subscribed		
<b>Tester</b>	Development Team	<b>Status</b>	PASS

#### 6.1.1.7. Inventory Update

Table 26.6 ST Inventory Update

<b>Test Case Id</b>	06	<b>Test Module</b>	Inventory Update
<b>Wrote By</b>	Developer Team	<b>Documented Date</b>	9/6/2021
<b>Test Type</b>	Manual	<b>Test Suite</b>	N/A
<b>Product Name</b>	MSDCN	<b>Version</b>	V 1.0
<b>Test Case Description</b>	<b>Normal Flow</b>		<b>Expected Result</b>
1. Retailer / Distributor click on “Update” button	1. Medicine updated in the inventory		1. “Medicine should be updated in the inventory”
<b>Actor</b>	Retailer / Distributor		
<b>Precondition</b>	1. System should be idle. 2. Medicine should be in the inventory. 3. Retailer / Distributor should be registered and subscribed		
<b>Tester</b>	Development Team	<b>Status</b>	PASS

#### 6.1.1.8. Mobile Payment

Table 26.7 ST Mobile Payment

<b>Test Case Id</b>	07	<b>Test Module</b>	Mobile Payment
<b>Wrote By</b>	Developer Team	<b>Documented Date</b>	9/6/2021
<b>Test Type</b>	Manual	<b>Test Suite</b>	N/A
<b>Product Name</b>	MSDCN	<b>Version</b>	V 1.0
<b>Test Case Description</b>	<b>Normal Flow</b>		<b>Expected Result</b>
1. Retailer / Distributor enters the transactions id in provide input field. 2. Retailer / Distributor click on “Proceed” button	1. Transaction id entered in the records		1. “Transaction id should be entered in the records”
<b>Actor</b>	Retailer / Distributor		
<b>Precondition</b>	1. System should be idle		
<b>Tester</b>	Development Team	<b>Status</b>	PASS

#### 6.1.2. Unit Testing

##### 6.1.2.1. Login Retailer Distributor

Table 27.0 UT Login Retailer Distributor

No.	Objective	Input Data	Expected Result	Result
1	Verifies Retailer or Distributor credentials after clicking “Login” button.	Email: <a href="mailto:abdullah@test.com">abdullah@test.com</a> Password: password	Successfully login to the relevant Dashboard page.	Pass
	Verifies Retailer or Distributor credentials after	Email: <a href="mailto:abdullah">abdullah</a> Password: pass	“Invalid Email or Password”	Pass

	clicking “Login” button.			
--	--------------------------	--	--	--

#### **6.1.2.2. Login Admin**

*Table 27.1 UT Login Admin*

No.	Objective	Input Data	Expected Result	Result
2	Verifies Retailer or Distributor credentials after clicking “Login” button.	Email: <a href="mailto:admin@test.com">admin@test.com</a> Password: password	Successfully login to the relevant Dashboard page.	Pass
	Invalid Retailer or Distributor credentials after clicking “Login” button.	Email: <a href="mailto:abd@test.com">abd@test.com</a> Password: pass	“Invalid Email or Password”	Pass

#### **6.1.2.3. Registration Retailer Distributor**

*Table 27.2 UT Registration*

No.	Objective	Input Data	Expected Result	Result
3	Retailer and Distributor enters the required credentials correctly and press “Register” button.	Email: <a href="mailto:armaghan@test.com">armaghan@test.com</a> Password: password CNIC: 1310160871515 Contact: 03409314148 CNIC-Front-Pic: .jpge/.png CNIC-Back-Pic: .jpge/.png Shop Name: Armag Shop License No: 123654789 License-F-Pic: .jpge/.png License-B-Pic: .jpge/.png Payment Method: Barcode Pic: .jpge/.png	Successfully shows the subscription package page.	Pass
	Retailer and Distributor enters any of the required credentials incorrectly and press “Register” button.	Email: armaghan@test Password: password CNIC: 131015 Contact: 0340 CNIC-Front-Pic: N/A CNIC-Back-Pic: .jpge/.png Shop Name: Armag Shop License No: 123654789 License-F-Pic: .jpge/.png License-B-Pic: .jpge/.png Payment Method: N/A Barcode Pic: .jpge/.png	“Enter the proper credentials after reading the help box.”	Pass

#### 6.1.2.4. Make a New Sale

Table 27.3 UT Make a New Sale

No.	Objective	Input Data	Expected Result	Result
4	Verifies if Retailer has entered the products and their quantity, then clicks “Checkout” button.	Item 1 10 Item 2 8 Item 3 1	“Sale Created”	Pass
	If Retailer does not enter the quantity.	Item 1 Item 2 Item 3	“Must Enter the Quantity”	Pass

#### 6.1.2.5. Online Store Cart

Table 27.4 UT Online Store

No.	Objective	Input Data	Expected Result	Result
5	Verifies if Retailer has entered the quantity, then clicks “Add to Cart” button.	Item 1 10	“Item added to cart”	Pass
	If Retailer does not enter the quantity.	Item 1	“Must Enter the Quantity”	Pass

#### 6.1.2.6. Add Item Inventory

Table 27.5 UT Add Item Inventory

No.	Objective	Input Data	Expected Result	Result
6	Verifies if Retailer and distributor has entered the product name, quantity, and their unit price, then clicks “Add Item” button.	Medicine: Ponstan Quantity: 10 Unit Price: 15	“Medicine added to Inventory”	Pass
	Does not add the medicine to inventory if any field is missing.	Medicine: Ponstan Quantity: Unit Price:	“The Medicine Fields are required”	Pass

#### 6.1.2.7. Update Item Inventory

Table 27.6 UT Update Item Inventory

No.	Objective	Input Data	Expected Result	Result
7	Verifies if Retailer and distributor has filled all the required fields, then clicks “Save” button.	Quantity: 10 Unit Price: 15	“Inventory Updated”	Pass
	Does not fill all the	Quantity:	“The Medicine	Pass

	required fields.	Unit Price:	Fields are required”	
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#### 6.1.2.8. Add Medicine Admin

Table 27.7 Ut Add Medicine Admin

No.	Objective	Input Data	Expected Result	Result
8	Correctly fills the required fields and click “Create Medicine”	Medicine Name: Ponstan Medicine Company: Abbott Medicine Type: Tablets Formula: xyzzy Medicine Pic: .jpge/.png Description: ABC	“Medicine added”	Pass
	Missed any field while adding medicine.	Medicine Name: Medicine Company: Abbott Medicine Type: Formula: xyzzy Medicine Pic: .jpge/.png Description: ABC	“The Medicine Fields are required”	Pass

#### 6.1.2.9. Edit Medicine Admin

Table 27.8 UT Edit Medicine Admin

No.	Objective	Input Data	Expected Result	Result
8	Correctly fills the required fields and click “Create Medicine”	Medicine Name: Ponstan Medicine Company: Abbott Medicine Type: Tablets Formula: xyzzy Medicine Pic: .jpge/.png Description: ABC	“Medicine added”	Pass
	Missed any field while adding medicine.	Medicine Name: Medicine Company: Abbott Medicine Type: Formula: xyzzy Medicine Pic: .jpge/.png Description: ABC	“The Medicine Fields are required”	Pass

#### 6.1.2.10. Add Subscription Package

Table 27.9 UT Add Subscription Package

No.	Objective	Input Data	Expected Result	Result
9	Correctly fills the required fields and click “Create Package”	Package Name: Premium Package Price: 1600 Package Duration: 3 Support API: True	“Package added”	Pass
	Missed any field while adding subscription package.	Package Name: Package Price: 1600 Package Duration: Support API: True	“The Package Fields are required”	Pass

#### 6.1.2.11. Medicine Shortage Notification

Table 27.10 UT Medicine Shortage Notification

No.	Objective	Input Data	Expected Result	Result
10	Correctly notifies the user if the medicine is less than 5.	Panadol: quantity 4	“Inventory Shortage”	Pass
	Correctly notifies the user if the medicine is not less than 5.	Panadol: quantity 10	“No shortage”	Pass

#### 6.1.2.12. Transaction Id Check

Table 27.11 UT Transaction Id Check

No.	Objective	Input Data	Expected Result	Result
11	To see if the transaction id is less than 11 or greater than 11.	Transaction Id: 12546954523	“Payment Paid”	Pass

#### 6.1.3. Integration Testing

Table 28 Integration Testing

TC No	Test Case	Attribute and Value	Expected Result	Status
1	Login as Retailer	email = <a href="mailto:retailer@test.com">retailer@test.com</a> password = testRetailer	User should be logged in	Pass
2	Login as Distributor	email = <a href="mailto:distributor@test.com">distributor@test.com</a> , password = testDistributor	User should be logged in	Pass
3	Login as Admin	email = <a href="mailto:admin@test.com">admin@test.com</a> , password = testAdmin	User should be logged in	Pass
<b>Retailer</b>				
4	Place an order	Item1 10, Item2 5 Item3 15	Order should be placed	Pass
5	Make a sale	Item1 10, Item2 2, Item3 20	New sale should be created	Pass

## **7. Conclusion and Future Work**

### **7.1. Conclusion**

MSDCN is the project which deals with all the work of the Medical Store and Medical Distributor, it helps in converting the paperwork into digital work. This project helps the Retailer to sell products to the customer, this also helps in buying the medicine from the distributor by online means. All the payment between the retailer and the distributor is online as well as we also provide the functionality of cash on delivery. This product also helps the distributor to sell his stock to the vast market by placing them online. MSDCN also notifies the retailer and distributor if the medicine in the inventory is about to finish.

### **7.2. Future Work**

Certain new modules that will be added in this project are:

- 1. Credit Card Payment**
- 2. Admin Roles**
- 3. Distributor Roles**
- 4. Retailer Roles**
- 5. Demo for Guest Users**

These are the few modules we are thinking about adding in the future.

## **8. References**

The references sites used for a helping purpose for this project on every phase of the project are:

1. Laravel Documentation, <https://laravel.com/docs/8.x>
2. Android Studio Documentation, <https://developer.android.com/guide>
3. StackOverFlow, <https://stackoverflow.com/>
4. W3school, <https://www.w3schools.com/>
5. Bootstrap, <https://getbootstrap.com/>