

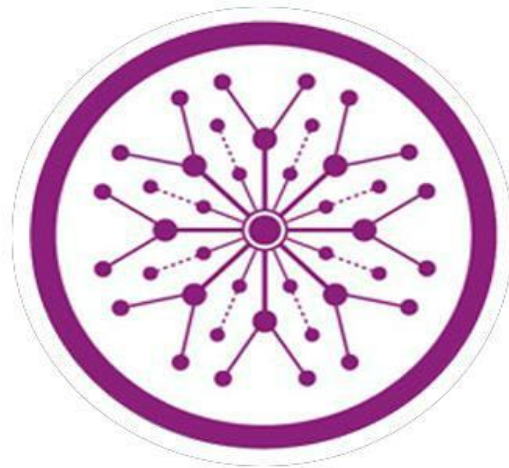
# **Inventory Management System for LTR OFAN Network**

**Final Year Project**

**Session: 2018-2022**

**A project submitted in partial fulfillment of the degree of**

**BS in Computer Science**



**Department of Computer Science**  
**Faculty of Computer Science & Information Technology**  
**The Superior University Lahore**  
**Spring 2022**

# THE SUPERIOR University LAHORE



**Faculty of Computer Science & IT**

**FINAL YEAR PROJECT**

## **Inventory Management System for LTR OFAN Network**

**Project ID: FYP-BCSM-F21-004**

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The candidates confirm that the work submitted is their own and appropriate credit has been given where reference has been made to work of others

**Plagiarism Free Certificate**

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# APPROVAL

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## **Project Manager**

Comments:

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## **HEAD OF THE DEPARTMENT Comments:**

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Date: \_\_\_\_\_

Signature: \_\_\_\_\_

## **Dedication**

*This work is dedicated to our families, who spend their time and money for our education and for developing professional skills, so we can compete people, as accepting challenges coming in our educational career and after that. They would happy to see us serving easy and good life. So now, it is to us that we do work hard to make our dreams come into reality and make our parents proud of us.*

*Secondly, we can't forget to thank our Supervisors, Professors, Instructors, for their guidance because without their right guidance we are like blank paper, they always teach us the right way. We pray for my family members and Teacher that they will bless a lot in life.*

## **Acknowledgements**

*We are really thankful to our supervisor who has always helped us to achieve our milestones and guide us with best knowledge he has.*

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# Inventory Management System LTR OFAN Network

## Change Record

Table 0-Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
	1.0		Original Draft	
			Changes Based on Feedback from Supervisor	
			Changes Based on Feedback from Faculty	
			Added Project Plan	
			Changes Based on Feedback from Supervisor	

## **Executive Summary**

Our proposed project is an implementation of an inventory control system for an on-site LTR OFAN Network company. One such company is PTCL ([www.ptcl.com](http://www.ptcl.com)) which want to keep records of their inventories. This project is specific in that it applies to the dining domain of store management. The scope of this project will primarily focus on PTCL LTR OFAN Network inventory located at the Lahore Office. Currently at PTCL LTR OFAN Network staff and managers are forced to keep track of inventory by hand. This means that they must count what they have received and what they have left at the end of each day.

They must also fill out order forms to be sent to vendors so that they can restock their inventory in preparation for the next week. This wastes valuable man hours and is a rather simple task to automate using our Web-based application. We propose a solution to this issue by developing application that keeps track of inventory in the send, or received, and updates it daily bases.

These changes in inventory are kept track of through utilizing a database. We propose to keep track of each and every item by dynamically linking it to the product and as a result create a dependent relationship to that product. At a specific time period (typically the end of the week); if the inventory is below the threshold level, order forms to the specific vendors are generated in order to restock the required items for the next week. At the end of the week, the software takes into account all threshold levels, predictions, and other factors to generate an order form, which after being verified by the manager is sent out to the vendors.

# **Chapter 1**

# **Introduction**

## **1.1. Introduction**

The inventory management system is a web-based system for LTR OFAN Network which will provide a simple and easy user interface to operate, which can be managed by any user without having prior in-depth knowledge of the computer system. In the manual system, the inventory management system is quite time-consuming. The system will allow to the management of LTR OFAN Network assets inventories like all outgoing, incoming and received products; and also perform reporting activities, in a very simple way, using Web-based application.

## **1.2. Existing System / Competitive Analysis**

The computerized Inventory Management System for the PTCL LTR OFAN Network store will be helpful for the smooth operation of the department. It will help to keep records of items efficiently, reduce time to search records; will keep the record of the items of the store thus simplifying the process of updating records. The GUI features provides good user-friendly tools. This system will help Maintaining a wide assortment of stock—but not spreading the rapidly moving ones too thin and increasing inventory turnover—but not sacrificing the service level.

## **1.3. Problem Statement**

The manual system employed by organizations involves the physical movement of their audit staff from office to office manually counts the assets residing in each office before entering them into the spreadsheet. This method wastes time is characterized by errors and it is difficult to keep inventory records.

## **1.4. Proposed Solution**

Recording data manually in the register is slow and inefficient process. Also, searching information about a particular product from thousands of records can be a very hard job. So, one of the best solutions to this problem is keeping record of the products in computerized Database Management System. The computerized Database Management is made using combined features of MySQL and Web Page designing. This can help to keep the record of each and every product in computer which is far more efficient than keeping

record manually. In this system the employees will also be able to view the information about product available in the store which will help to increase the efficiency of work. This system will also help to maintain a proper merchandise assortment while receiving, sending and related quantity is kept in check.

### **1.5. Scope of the Project**

The scope of an inventory system can cover many needs, including valuing the inventory, measuring the change in inventory and planning for future inventory levels. The value of the inventory at the end of each period provides reporting on the balance sheet. Measuring the change in inventory allows the company to determine the quantity of inventory received and replaced during the period. This allows the company to plan for future inventory needs.

### **1.6. Project Plan**

This web application is developed in Visual studio code 2019 on Windows 10 operating system and is a good candidate to use on the current operating systems and the platforms. However, if there are some changes are made by the windows and platforms then it's suffered.

#### **Planning**

- Requirement gathering
- Finding functional and non-functional requirement
- Choosing tools and techniques
- Choosing architecture
- People
  1. Project manager
  2. Project team
  3. End user
  4. Others

✓ Designing

- Architecture
- Front end
- Back end

✓ Implementation

- Coding front end
- Coding back end

✓ Testing

- Black box testing
- White box testing
- Gray box testing
- Website testing

## 1.7. Work Breakdown Structure

### 1. Project Management

#### 1.1. Work Breakdown Structure (WBS)

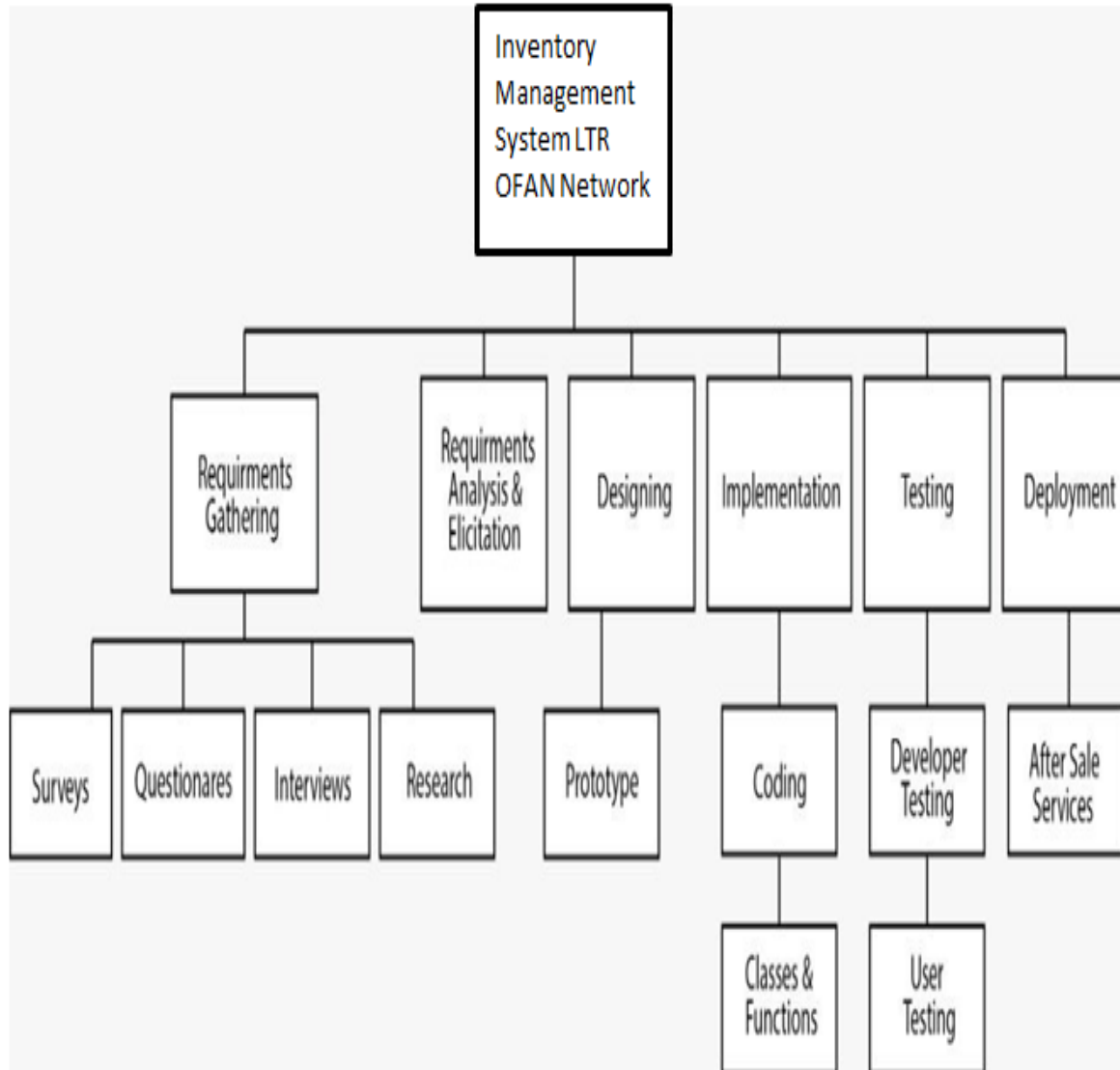


Figure1.1.Work Breakdown Structure (WBS)

## 1.7.1. Roles & Responsibility Matrix

Table 1.1-Roles & Responsibility Matrix

2. WBS #	WBS Deliverable	Activity #	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Team Member(s) & Role(s)
1	System proposal			1	Junaid Akram
2	Project contract	1.1	System proposal	3	Junaid Akram
3	Scope statement	1.2 & 1.1	Project contract, System proposal	3	M. Rizwan
4	Project schedules	1.1	System proposal	3	Junaid Akram
5	Risk plan	1.1	Project proposal	6	
6	Monitoring			4	M. Rizwan
7	SRS	1.1	Project proposal	6	
8	Feasibility report	2.1	SRS	3	Junaid Akram
9	Use case model	2.1	SRS	2	Shahzaib Iqbal
10	Logical database Design	2.1	SRS	5	M. Rizwan
11	DFD	2.1 & 2.3	SRS ,Use case model	3	Sahzaib Iqbal
12	Program login flow Diagram	2.5	DFD	3	M. Rizwan
13	Physical database Design			3	M. Rizwan
14	Web pages design	3.2	Physical database Design	6	Shahzaib Iqbal
15	Create database	3.2	Physical database Design	4	M. Rizwan
16	Link web pages with database	4.1 & 3.2	Web page design, Create database	6	Shahzaib Iqbal
18	UAT	5.1	Unit testing	2	M.Rizwan
19	Training			3	Junaid Akram
20	Create internet sub Domains	4.3	Likened web page with Database	3	M.Rizwan

## 2.1.1. Gantt chart

Inventory Management System LTR OFAN Network



Figure 1.2.Gantt chart

## 2.2. Report Outline

- Introduction
- Background
- Motivations and challenges
- Goals and Objectives
- Literature Review/Existing Solutions
- Gap Analysis
- Proposed Solution
- Project Plan

### 1. Planning

- Requirement gathering
- Finding functional and non-functional requirement

- Choosing tools and techniques
- Choosing architecture
- Project sponsor
- Project manager
- Project team
- End user

## **2. Designing**

- Architecture
- Front end
- Back end

## **3. Implementation**

- Coding front end
- Coding back end

## **4. Testing**

- Black box testing
- White box testing
- Gray box testing
- Website testing

## **5. Maintenance**

- Work Breakdown Structure
- Roles & Responsibility Matrix
- Gantt chart

# **Chapter 2**

## **Software**

### **Requirement**

### **Specifications**

## **Chapter 2: Software Requirement Specifications**

### **2.1. Introduction**

In this section the documentation of this report is specified. It specifies the purpose, document convention, document scope and also provides a suggestion for the readers of the document.

#### **2.1.1. Purpose**

The main goal or purpose of this document is to define the functionality and purpose of our website. This SRS (Software Requirement Specification) include all the specifications like design, interface. There requirements and components. The main purpose of this SRS is to provide a complete understanding that what we are building and achieving in this website.

#### **2.1.2. Document Conventions**

The whole document is written in MLA format. Topics introduced in section and subsection headings in a bold text. Highlighting is to point out words in the glossary and italicized text and includes various diagrams like UML, ERD, and DFD etc.

#### **2.1.3. Intended Audience and Reading Suggestions**

Our project document has been done under the guidance of our supervisor and can be useful for any web development team. Students who want to write document related to this project. After reading this project developer and project managers completely understand with SRS of this website. This SRS document ensures the website's adherence of project manager to our original vision.

#### **2.1.4. Product Scope**

The scope of an inventory system can cover many needs, including valuing the inventory, measuring the change in inventory and planning for future inventory levels. The value of the inventory at the end of each period provides reporting on the balance sheet. Measuring the change in inventory allows the company to determine the quantity of inventory received and replaced during the period. This allows the company to plan for future inventory needs.

### **2.1.5. References**

List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document. Provide enough information so that the reader could access a copy of each reference, including title, author, version number, date, and source or location.

## **2.2. Requirement Gathering**

### **2.2.1. Technique selected**

The techniques used in requirement gathering are questionnaire, observation

### **2.2.2. Reason of Selection**

It's an industrial project or over university assigns this project.

### **2.2.3. Operating Environment**

These are the operating environments and software's for our website "Inventory Management System for LTR OFAN Network".

Firstly we use two operating environments.

1. Chrome (window 10)
2. Opera mini (Window 10)

## **2.3. External Interface Requirements**

### **2.3.1. User Interfaces**

The user interface requirements are concerned with the user interface and how information is presented to the user. This application is basically for peoples from business class and background. So, interface will be very simple and easy to use or have support system for users to help them.

### **2.3.2. Hardware Interfaces**

Only the recommended configuration (basic requirements of a computer system) no other specific hardware is required to run the software. The hardware configuration includes.

- RAM: 4 GB,

### **2.3.3. Software Interfaces**

- Latest Internet Browser.
- Operating System that supports latest Software.

### **2.3.4. Communications Interfaces**

The communication between the different parts of the system is important since they depend on each other. However, in what way the communication is achieved is not important for the system. We will use email services to send emails to different users.

## **2.4. System Features**

Following are few features of our system

### **2.4.1.1. Description and Priority**

The system shall facilitate the owner to configure and control access to different features of the system. The system shall ensure that users shall access the features what they are authorized to use.

### **2.4.1.2. Stimulus/Response Sequences**

TBD

### **2.4.1.3. Functional Requirements**

The main purpose of functional requirements within the requirement specification document is to define all the activities or operations that take place in the system. These are derived through interactions with the users of the system.

- Issue card and battery
- received card and battery
- Show card and battery tables
- Insert IPS of card
- Show IPS table
- Generate report

#### **2.4.1.4. Non-Functional Requirements**

Typical non-functional requirements include:

- Performance – for example: response time, throughput, utilization.
- Scalability.
- Capacity.
- Availability.
- Reliability.
- Recoverability.
- Maintainability.

#### **Safety Requirements**

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

#### **Security Requirements**

- System will use secured database.
- Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
- System will have different types of users and every user has access constraints.

#### **Usability Requirements**

Use divisions of roles to make it more useable.

#### **Reliability Requirements**

Data shown in the form of charts which is trustworthy because it directly come from actual data and reviewing on daily basis.

#### **Maintainability/Supportability Requirements**

A team is set to see errors in this website and to solve them.

## **2.5. System Design**

### **2.5.1. Users:**

The major functionality of this product is divided into two categories.

1. Administrative User Functions
2. Normal User Functions

### **2.5.2. Administrative User Functions:**

Administrators can perform the following task

- Create new users
- Change the password
- Add the information about the card ,ips and battery
- Can view the information about the card
- Can view the information about the battery
- Can view the information about the Ips
- Can view/generate management reports

### **2.5.3. System Administrator Documentation**

Administrators can perform the following task

- Create new users
- Change the password
- Add the information about the card ,IPS and battery
- Can view the information about the card
- Can view the information about the battery
- Can view the information about the IPS

# **Chapter 3**

## **Use Case**

### **Analysis**

# Chapter 3: Use Case Analysis

This chapter describes the system analysis and models of our website system. These models tell us how the user interacts with the system and what the sequence of activities that occur as the software is used.

## 3.1. Use Case Model

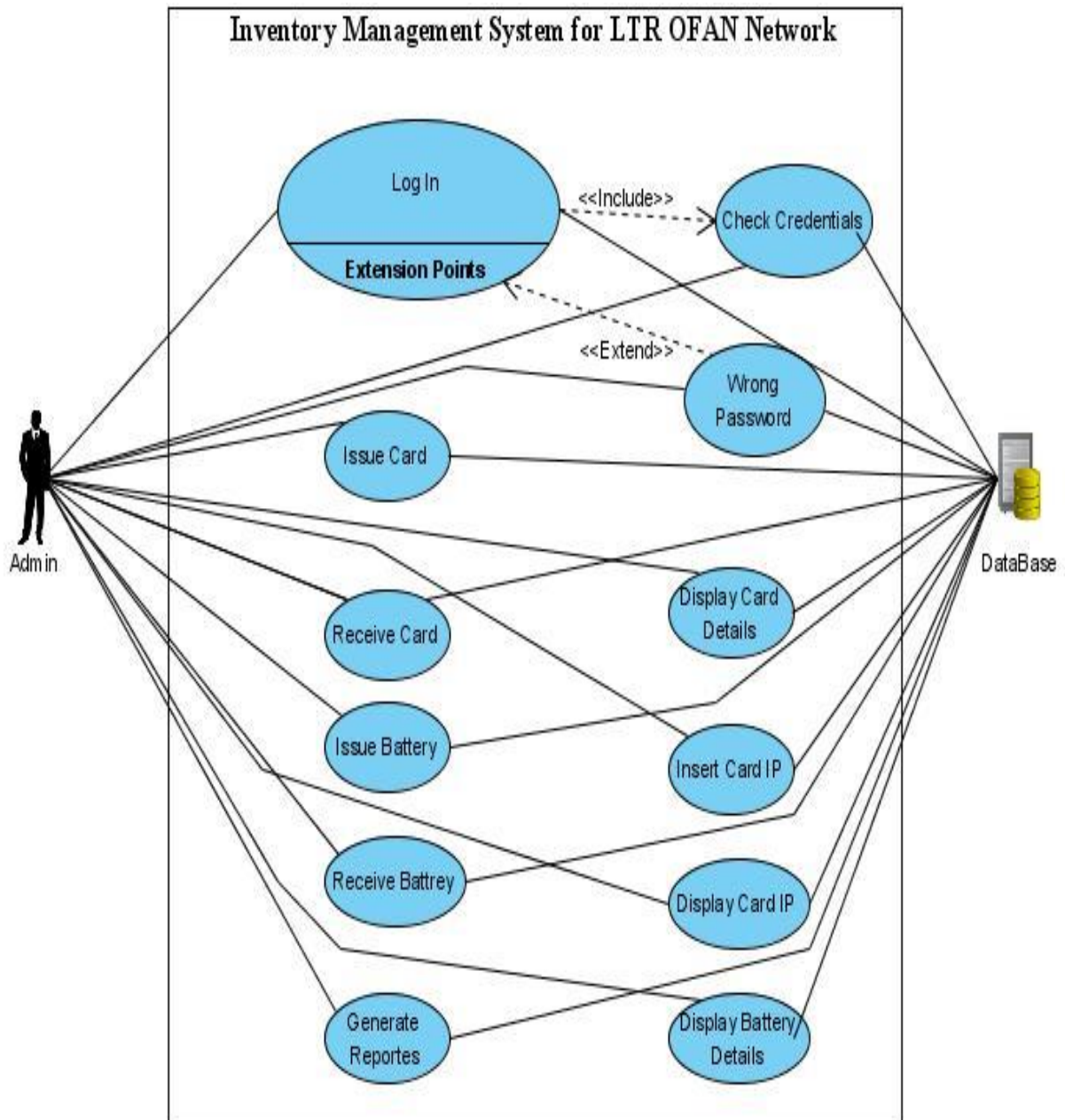


Figure 3.1- Use case

## 3.2. Fully Dressed Use Cases

### 3.2.1 Use Case: login

**Primary Actors:** Admin

**Goal in context:** To go on home page of the App and perform their actions

**Precondition:**

- Admin should have an account

**Triggers:** Admin needs to perform their actions

**Scenario:**

- Open app
- Click on login button placed at navigation bar
- Enter authentic user name and password
- Click on login

**Exception:** User name or password can be wrong or forgotten

### 3.2.2 Use Case: Sign up

**Primary Actors:** Admin

**Goal in context:** create an account successfully

**Precondition:**

- Click on app
- Click on join us button at navigation bar

**Triggers:** Admin needs to create an account on app

**Scenario:**

- Open app
- Click on join us button placed at navigation bar
- Fill complete sign up form
- Click on sign up

**Exception:** admin can enter wrong data in form fields

### 3.2.3 Use Case: Issue card

**Primary Actors:** Admin

**Precondition:**

- Logged in

**Scenario:**

- Admin login on the app
- Issue new card

### 3.2.4 Use Case: Display Card Detail

**Primary Actors:** Admin

**Goal in context:** Display card and his detail

**Precondition:**

- Admin can show card number
- Select size
- Add quantity

### 3.2.5 Use Case: Receive Card

**Primary Actors:** Admin

**Precondition:**

- Card Received already

**Scenario:**

- Click Received card
- Click card I'd and check the card is received

### 3.2.6 Use Case: Insert card IP

**Primary Actors:** Admin

**Precondition:**

- Logged in
- Chose card
- Click on insert now button
- Insert new card
- **Triggers:** card insert successfully

### 3.2.7 Use Case: Display Card

**Primary Actors:** Admin

**Precondition:**

- Logged in
- Designation admin
- Click on display card

**Scenario:**

- Open app
- Click on login button placed at navigation bar
- Enter authentic user name and password
- Click on login
- Click on display card

### 3.2.8 Use Case: Battery

**Primary Actors:** Admin

**Precondition:**

- Logged in
- Designation admin
- Click on display battery

**Scenario:**

- Open app
- Click on login button placed at navigation bar
- Enter authentic user name and password
- Click on login
- Click on display battery details

# **Chapter 4**

# **System Design**

# Chapter 4: System Design

This chapter describes about the system design of our website it will include the different types of diagrams. These are eleven different types of diagrams of software engineering which we are using for detailed design of our website project “Inventory Management System for LTR OFAN Network”

## 4.1. Architecture Diagram

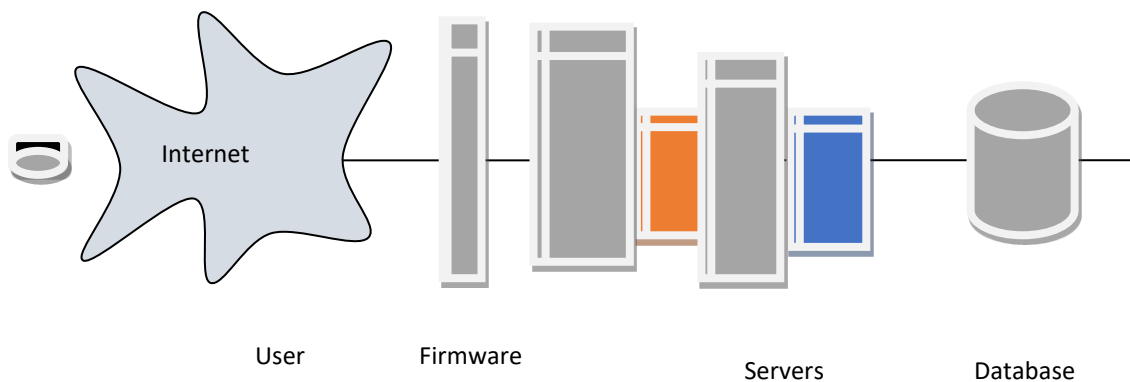


Figure 4.1. Architecture Diagram

## 4.2. Class Diagram

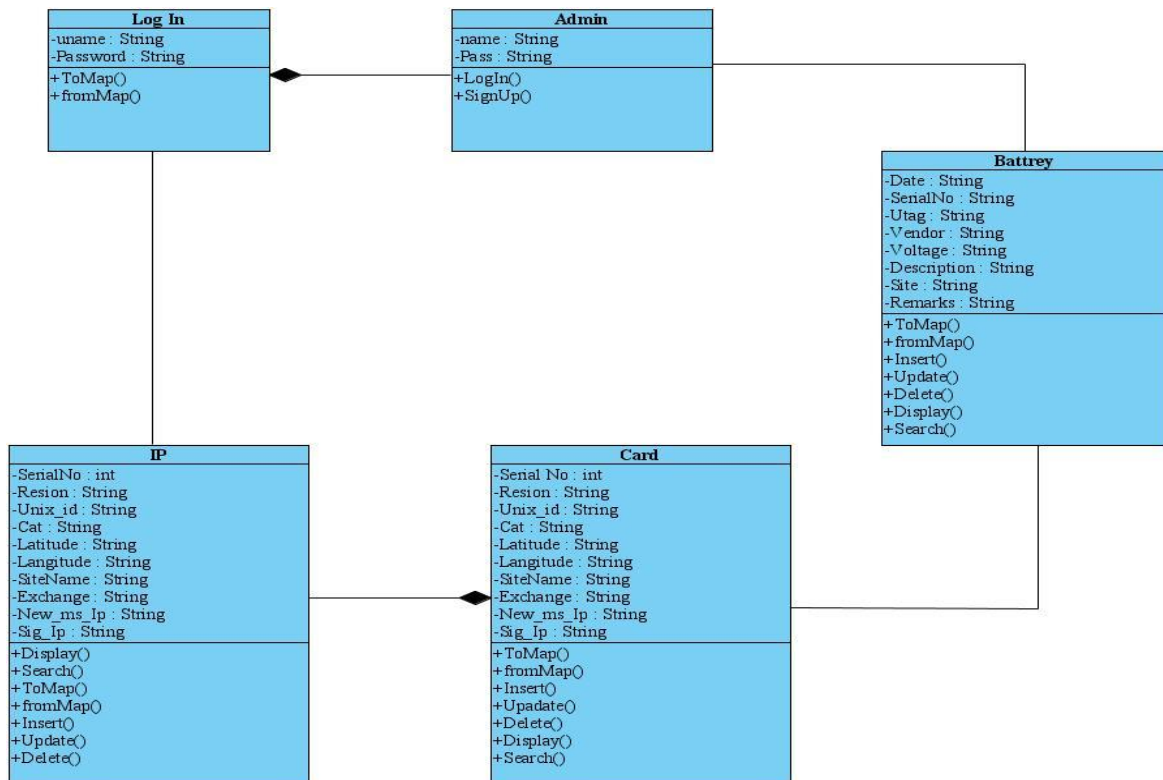


Figure 4.2. Class diagram

### 4.3. Activity Diagram

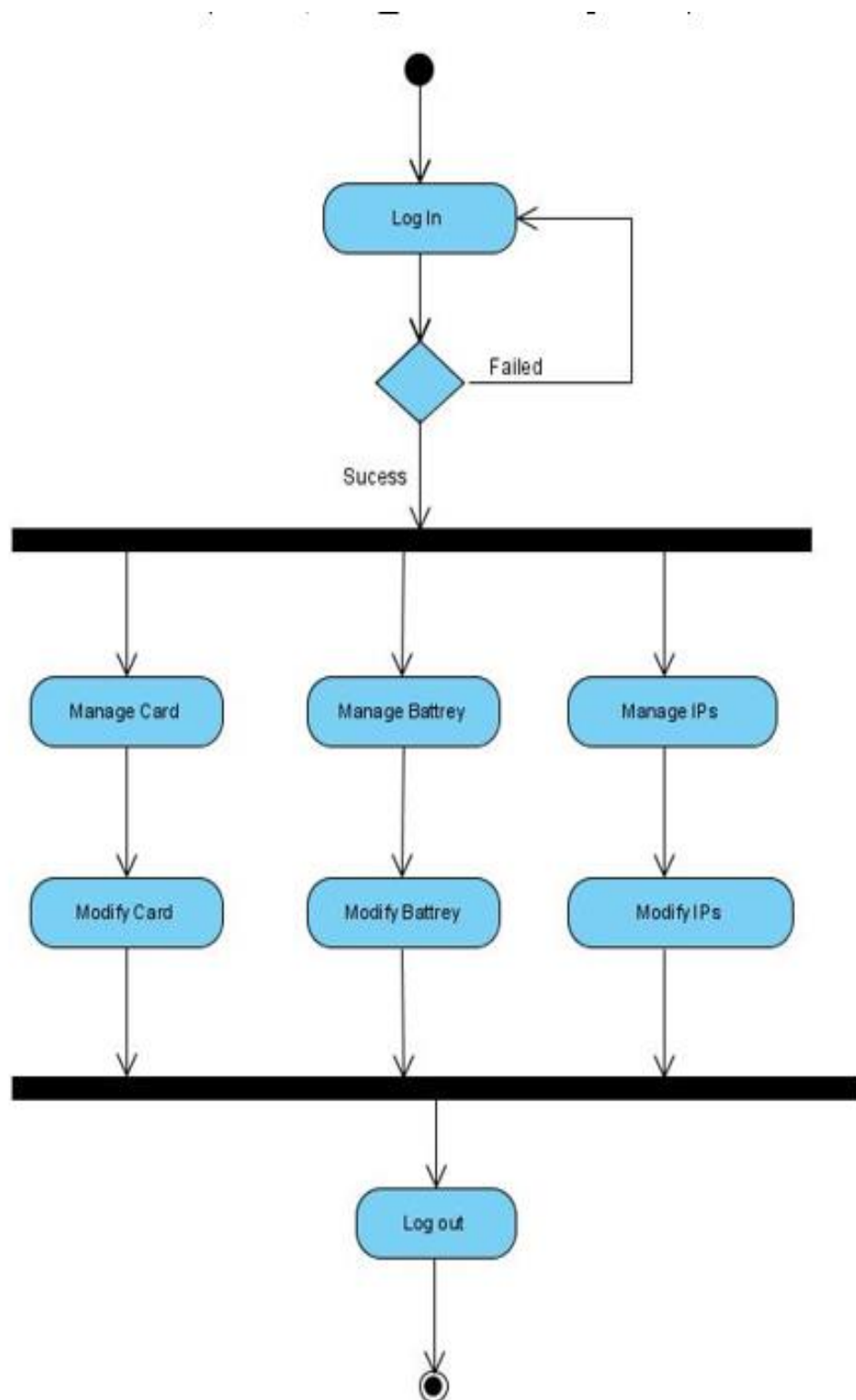


Figure 4.3. Activity Diagram

#### 4.4. Architecture Design

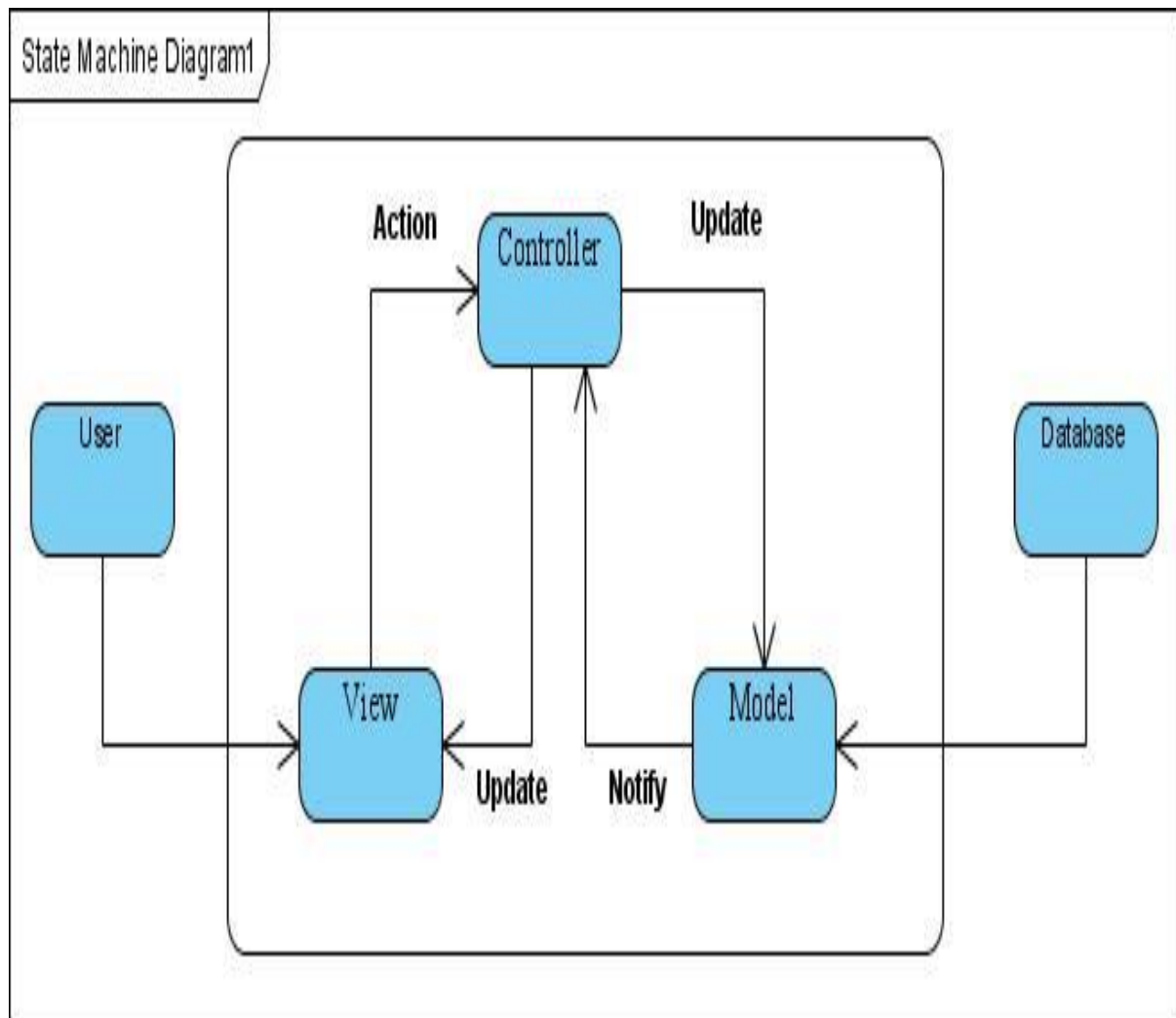


Figure 4.4. Architecture Design

## 4.5. Entity Relationship Diagram

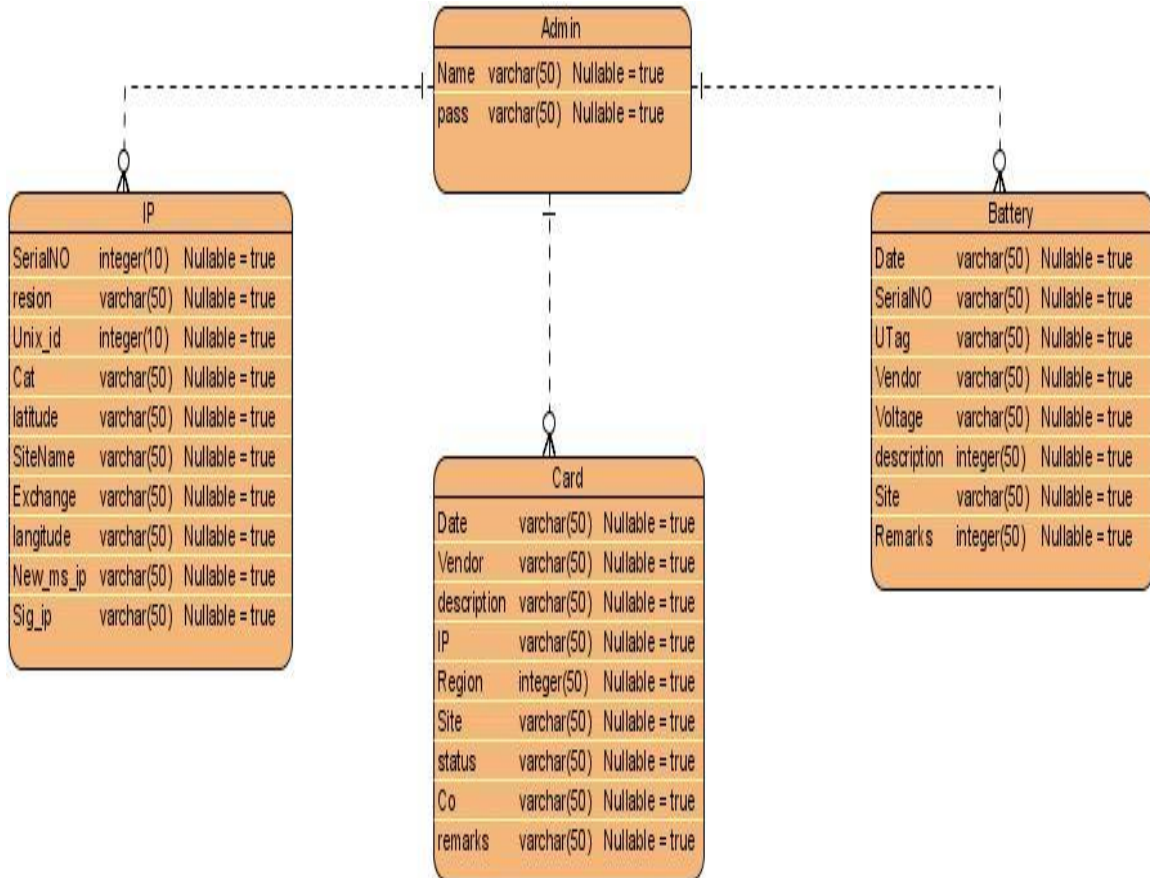


Figure 4.5.Entity Relationship Diagram

## 4.6. Sequence / Collaboration Diagram

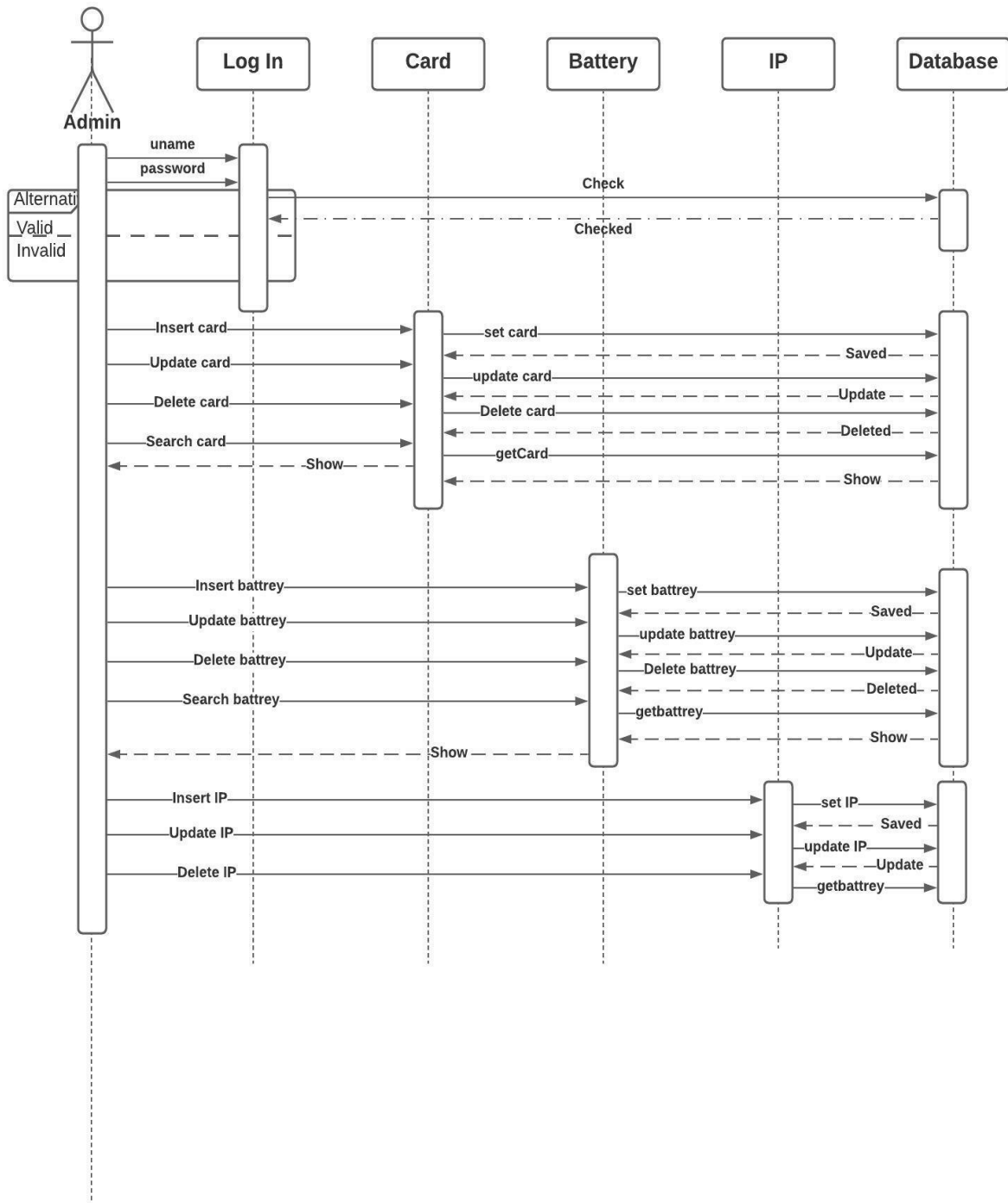


Figure 4.6. Sequence / Collaboration Diagram

#### 4.7. State Transition Diagram

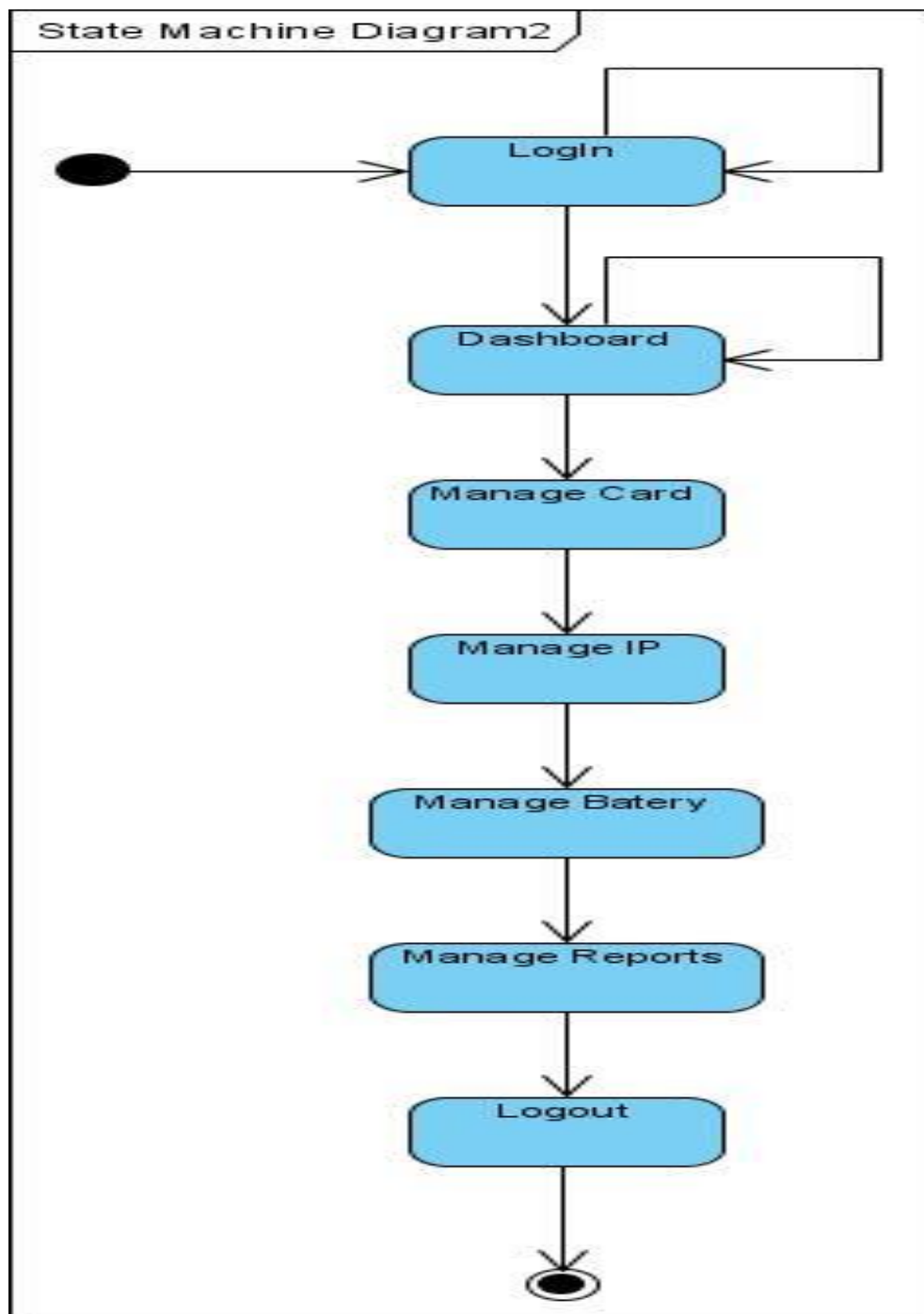


Figure 4.7. Transition Diagram

#### 4.8. Deployment Diagram

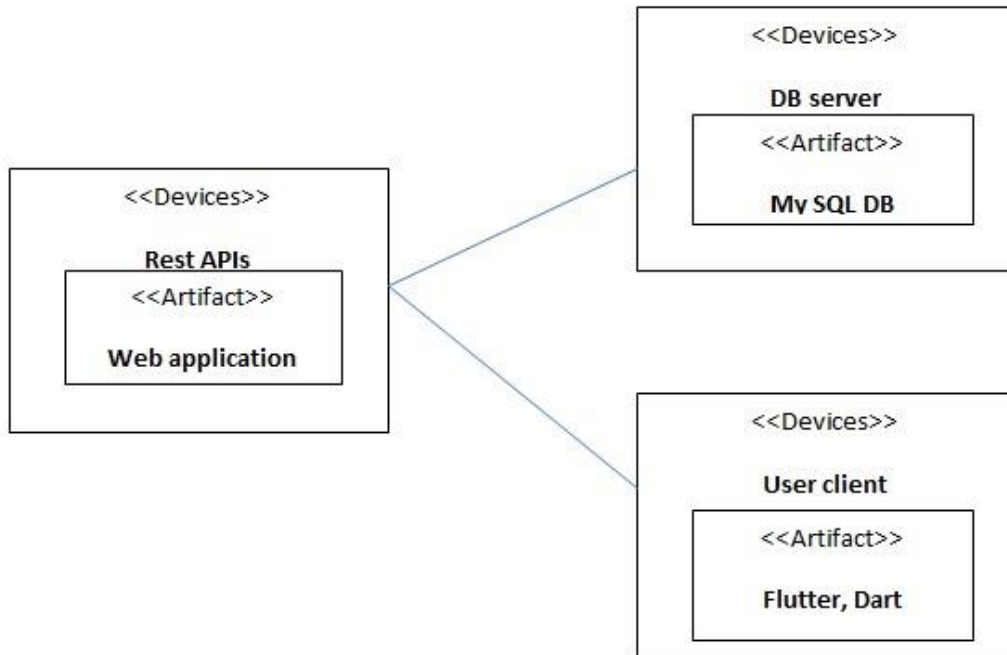


Figure 4.8 Deployment diagram

#### 3.2.9 Data Flow diagram

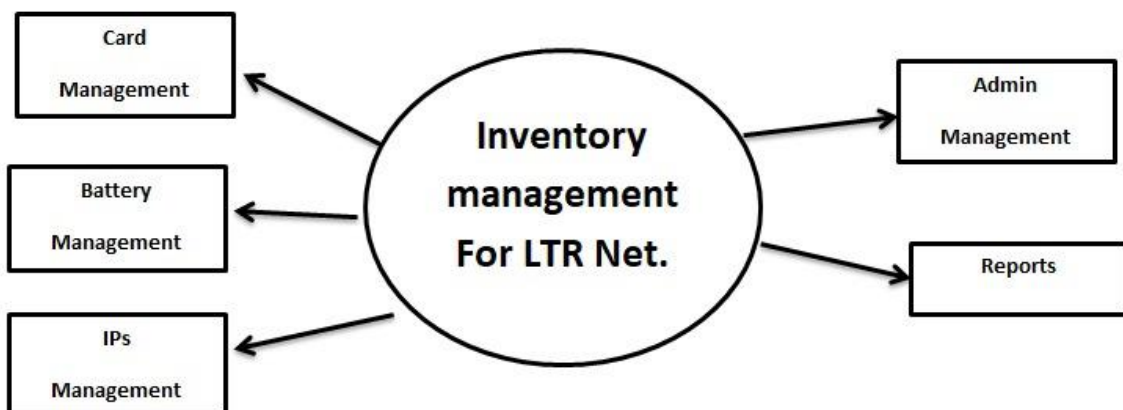


Figure 4.9.Data flow diagram level 0

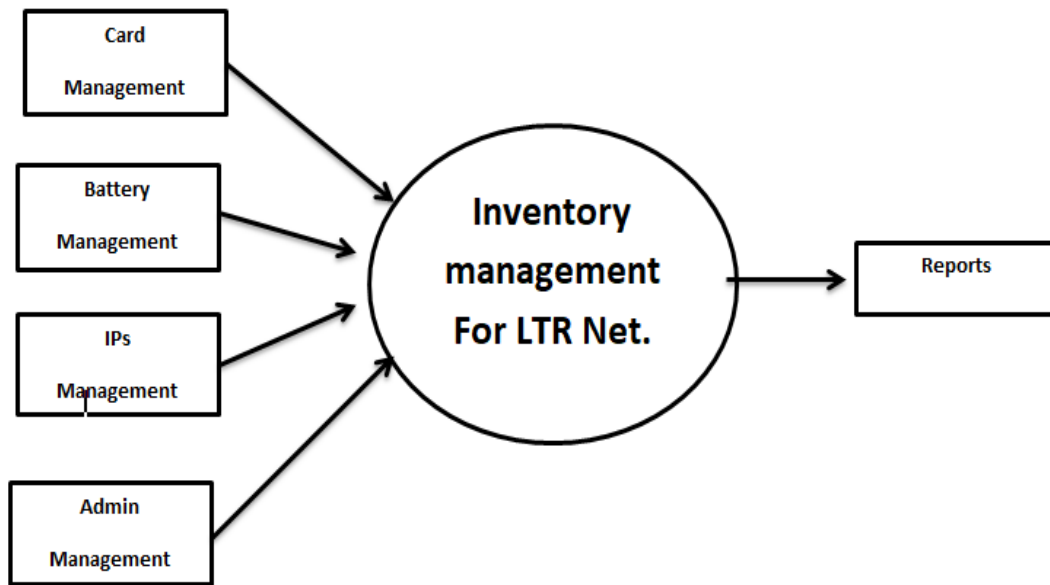


Figure 4.10 Data flow diagram level 1

# Chapter 5

# Implementation

## **Chapter 5: Implementation**

Implementing an inventory management system starts with having good inventory management practices in place such as consistent stock locations and a set procedure for counting and verifying PTCL inventory system. Once you have those practices, you can work with a vendor to implement its chosen solution. To have the system implementation become successful, training for every employee that will have to work with your system is crucial to increase their buy-in and to reduce the risk of errors.

### **5.1. Important Flow Control/Pseudo codes**

Pseudo codes mean how over project will work its complete flow we have described it in diagrams like UML diagram sequence diagrams etc. Pseudo code is simple. You just write out the steps to be taken to perform any task. Admin registered on the dashboard and manage all the data. When admin login the website page two option shows on the interface you want to manage battery or hardware after this option show you want to insert data, edit data, remove data or update data.

### **5.2. Components, Libraries, Web Services and stubs**

- Text
- Images
- Button
- Input field
- MySQL Database
- XAMPP server

### **5.3. Deployment Environment**

This web system doesn't require any heavy system to develop, it just requires hard work and friendly team mates to develop.

## 5.4. Implementation Tools and Techniques

### Frontend Technologies:

1. Flutter

### Backend Technologies:

1. PHP.

2. SQL.

3. Dart.

### Tools

- Visual Studio Code
- XAMPP
- Chrome
- Android studio

# **Chapter 6**

# **Testing and**

# **Evaluation**

## Chapter 6: Testing and Evaluation

In this chapter we will briefly describe all the phases of system testing and in the end we will evaluate the developed system according to the result obtained from the testing that will determine how much the system is useable and what are the faults and bugs that needs to be fixing before the deployment of the system.

### 6.1. Use Case Testing

Table 6.1-Use Case Testing

<b>Test Case Name:</b>	User Can Sign in	<b>Use Case Reference:</b>	UC 1
<b>Test Case ID:</b>	TC-1	<b>QA Test Engineer</b>	M. Junaid
<b>Version</b>	1.0	<b>Code Developer</b>	M.Rizwan
<b>Test Date</b>	10 May 2021	<b>Reviewed By</b>	M.Shazaib
<b>Revision History</b>	None		
<b>Objective</b>	Admin can Sign in		
<b>Environment</b>	Website Chrome Browser		
<b>Assumptions</b>	User have stable internet and User will Enter valid details		
<b>Pre-requisites</b>	User should connect to Internet		
<b>S. #</b>	<b>Execution Description</b>	<b>Expected Output</b>	<b>Procedure Result</b>
1.	User Start the Application	System will display the Sign in Screen	Displayed
2.	User enter valid details and press enter	System will validate the detailsand Sign In the account.	Account Signedin
<b>Comments:</b>			
<b>Status</b>		✓ Pass    ○ Fail    ○ Not Executed	
<b>Test Case Name:</b>	Admin can view all user	<b>Use Case Reference:</b>	UC 2
<b>Test Case ID:</b>	TC-2	<b>QA Test Engineer</b>	M. Junaid
<b>Version</b>	1.0	<b>Code Developer</b>	M. Rizwan
<b>Test Date</b>	10 May 2021	<b>Reviewed By</b>	M. Shazaib

<b>Revision History</b>	None		
<b>Objective</b>	Admin can view all data		
<b>Environment</b>	Website Chrome Browser		
<b>Assumptions</b>	Admin have stable internet		
<b>Pre-requisites</b>	Admin should connect to Internet Admin should login the System		
<b>S. #</b>	<b>Execution Description</b>	<b>Expected Output</b>	<b>Procedure Result</b>
1.	Admin will login with its credentials	System will display the main Dashboard	Displayed
2.	Admin will click on all users button	System will fetch and display all user list	Displayed
<b>Comments:</b>			
<b>Status</b>	<input checked="" type="radio"/> <b>Pass</b> <input type="radio"/> <b>Fail</b> <input type="radio"/> <b>Not Executed</b>		

<b>Test Case Name:</b>	Admin can delete users	<b>Use Case Reference:</b>	UC 3
<b>Test Case ID:</b>	TC-3	<b>QA Test Engineer</b>	M. Junaid
<b>Version</b>	1.0	<b>Code Developer</b>	M. Rizwan
<b>Test Date</b>	10 May 2021	<b>Reviewed By</b>	M. Shazaib
<b>Revision History</b>	None		
<b>Objective</b>	Admin can add card		
<b>Environment</b>	Website Chrome Browser		
<b>Assumptions</b>	Admin have stable internet		

<b>Pre-requisites</b>	Admin should connect to Internet Admin should login the System		
<b>S. #</b>	<b>Execution Description</b>	<b>Expected Output</b>	<b>Procedure Result</b>
1.	Admin will click on particular user	System will display the profile of that user	Displayed
2.	Admin will click on delete user button	System will delete that user.	System updated

<b>Comments:</b>	
<b>Status</b>	✓ <b>Pass</b> <input type="radio"/> <b>Fail</b> <input type="radio"/> <b>Not Executed</b>

<b>Test Case Name:</b>	Admin can view reports	<b>Use Case Reference:</b>	UC 4
<b>Test Case ID:</b>	TC-4	<b>QA Test Engineer</b>	M. Junaid
<b>Version</b>	1.0	<b>Code Developer</b>	M. Rizwan
<b>Test Date</b>	10 May 2021	<b>Reviewed By</b>	M. Shazaib
<b>Revision History</b>	None		
<b>Objective</b>	Admin can generate reports.		
<b>Environment</b>	Website Chrome Browser		
<b>Assumptions</b>	Admin have stable internet		
<b>Pre-requisites</b>	Admin should connect to Internet Admin should login the System		
<b>S. #</b>	<b>Execution Description</b>	<b>Expected Output</b>	<b>Procedure Result</b>
1.	Admin will click on view reports button	System will display the reports.	Displayed
2.	Admin will click on view reports button	System will display the reports.	System updated
<b>Comments:</b>			
<b>Status</b>	✓ <b>Pass</b> <input type="radio"/> <b>Fail</b> <input type="radio"/> <b>Not Executed</b>		

<b>Test Case Name:</b>	Admin can add Products	<b>Use Case Reference:</b>	UC 5
<b>Test Case ID:</b>	TC-5	<b>QA Test Engineer</b>	M. Junaid
<b>Version</b>	1.0	<b>Code Developer</b>	M. Rizwan
<b>Test Date</b>	10 May 2021	<b>Reviewed By</b>	M. Shazaib
<b>Revision History</b>	None		
<b>Objective</b>	Admin can add battery		

<b>Environment</b>	Website Chrome Browser		
<b>Assumptions</b>	Admin have stable internet		
<b>Pre-requisites</b>	Admin should connect to Internet Admin should login the System		
<b>S. #</b>	<b>Execution Description</b>	<b>Expected Output</b>	<b>Procedure Result</b>
1.	Admin will click on add product Button.	System will display available products list.	Displayed
2.	Admin will click on add product Button.	System will add new product.	System updated
<b>Comments:</b>			
<b>Status</b>	<input checked="" type="radio"/> <b>Pass</b> <input type="radio"/> <b>Fail</b> <input type="radio"/> <b>Not Executed</b>		

<b>Test Case Name:</b>	Admin can delete Products	<b>Use Case Reference:</b>	UC 6
<b>Test Case ID:</b>	TC-6	<b>QA Test Engineer</b>	M. Junaid
<b>Version</b>	1.0	<b>Code Developer</b>	M. Rizwan
<b>Test Date</b>	10 May 2021	<b>Reviewed By</b>	M. Shazaib
<b>Revision History</b>	None		

<b>Objective</b>	<i>Admin can update battery</i>		
<b>Environment</b>	Website Chrome Browser		
<b>Assumptions</b>	Admin have stable internet		
<b>Pre-requisites</b>	<i>Admin should connect to Internet</i> <i>Admin should login the System</i>		
<b>S. #</b>	<b>Execution Description</b>	<b>Expected Output</b>	<b>Procedure Result</b>

1.	Admin will select particular product and will click on delete product button.	System will display available products list.	Displayed
2.	Admin will click on delete product button.	System will delete selected product.	System updated
<b>Comments:</b>			
<b>Status</b>		✓ <b>Pass</b> <input type="radio"/> <b>Fail</b> <input type="radio"/> <b>Not Executed</b>	

<b>Test Case Name:</b>	Admin can search Products	<b>Use Case Reference:</b>	UC 7
<b>Test Case ID:</b>	TC-7	<b>QA Test Engineer</b>	M. Junaid
<b>Version</b>	1.0	<b>Code Developer</b>	M. Rizwan
<b>Test Date</b>	10 May 2021	<b>Reviewed By</b>	M. Shazaib
<b>Revision History</b>	None		
<b>Objective</b>	Admin can search data		
<b>Environment</b>	Website Chrome Browser		
<b>Assumptions</b>	Admin have stable internet		
<b>Pre-requisites</b>	Admin should connect to Internet Admin should login the System		
<b>S. #</b>	<b>Execution Description</b>	<b>Expected Output</b>	<b>Procedure Result</b>

1.	Admin will click on search product button.	System will display specified product.	Displayed
2.	Admin will click on search product button.	System will display searched product.	System updated
<b>Comments:</b>			
<b>Status</b>		✓ <b>Pass</b> <input type="radio"/> <b>Fail</b> <input type="radio"/> <b>Not Executed</b>	

<b>Test Case Name:</b>	Admin can update Products	<b>Use Case Reference:</b>	UC 8
<b>Test Case ID:</b>	TC-8	<b>QA Test Engineer</b>	M. Junaid
<b>Version</b>	1.0	<b>Code Developer</b>	M. Rizwan
<b>Test Date</b>	10 May 2021	<b>Reviewed By</b>	M. Shazaib
<b>Revision History</b>	None		
<b>Objective</b>	Admin can update data		
<b>Environment</b>	Website Chrome Browser		
<b>Assumptions</b>	Admin have stable internet		
<b>Pre-requisites</b>	Admin should connect to Internet Admin should login the System		
<b>S. #</b>	<b>Execution Description</b>	<b>Expected Output</b>	<b>Procedure Result</b>
1.	Admin will click on update Product button.	System will display available products list.	Displayed
2.	Admin will click on update product button.	System will update specified product.	System updated
<b>Comments:</b>			
<b>Status</b>	<input checked="" type="radio"/> <b>Pass</b> <input type="radio"/> <b>Fail</b> <input type="radio"/> <b>Not Executed</b>		

## 6.2. Boundary value analysis

Boundary value analysis (BVA) is based on testing the boundary values of valid and invalid partitions. The Behavior at the edge of each equivalence partition is more likely to be incorrect than the behavior within the partition, so boundaries are an area where testing is likely to yield defects. Every partition has its maximum and minimum values, and these maximum and minimum values are the boundary values of a partition. A boundary value for a valid partition is a valid boundary value. Similarly, a boundary value for an invalid partition is an invalid boundary value. Tests can be designed to cover both valid and invalid boundary values. When designing test cases, a test for each boundary value is chosen.

## For user Sign-In

Table 6.2-For user Sign-In

<b>Attributes</b>	<b>Invalid partition</b>	<b>Valid partition</b>	<b>Invalid partition</b>
Username	Wrong username	Correct username	misspell
Password	Wrong password	Correct password	misspell

### 6.3. Data flow testing

Table 6.3-Data flow testing

Modules no:	Module's description	Expected result	Actual result	Status
01	Admin Sign in	Validate data from server	Data validate	Pass
02	Add Card	Data must be stored in data base	Data stored	Pass
03	Add Battery	Data must be stored in data base	Data stored	Pass
04	Search Card	Data fetch from the server	Data Fetched	Pass
05	Update Card	Data must be stored in data base	Data stored	Pass
06	Search battery	Data fetch from the server	Data Fetched	Pass
07	Update battery	Data must be stored in data base	Data stored	Pass
08	Add IP	Data must be stored in data base	Data stored	Pass
09	View IPs	Data fetch from the server	Data Fetched	Pass

10	View Battery	Data fetch from the server	Data Fetched	Pass
11	View Card	Data must be stored in data base	Data Fetched	Pass
12	Search Card	Data fetch from the server	Data Fetched	Pass
13	Search Battery	Data must be stored in data base	Data Fetched	Pass
14	Search IPs	Data fetch from the server	Data Fetched	Pass

## 6.4. Unit testing

Table 6.4-Unit testing

Test Case	Step Details	Test Data	Expected Result	Actual Result	Pass/Fail
Sign In	<ul style="list-style-type: none"> <li>Open application.</li> <li>Enter username and password</li> </ul>	Username: <a href="#">admin</a> Password: 1234	User will be logged in successfully	User logged in	Pass

<b>Admin can view card</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click on view card</li> </ul>	Card details	Card Data will be displayed Successfully.	Card Data Displayed.	Pass
<b>Admin can add card</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click on add cardbutton.</li> </ul>	Card added	Card Data will be added Successfully.	Card Data Added.	Pass
<b>Admin can update card</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click add card</li> <li>• Search by tag etc</li> <li>• Update data</li> <li>• Click update</li> </ul>	Card updated	Card will be deleted Successfully.	Card updated	Pass
<b>Admin can search card</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click View card</li> <li>• Search by ip etc</li> </ul>	Card details show	Card will be show successfully.	Card search	Pass
<b>Admin can generate Reports</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click on to excel button.</li> </ul>	Report Generated = "download"	Reports will be displayed.	Reports Displayed	Pass

<b>Admin can view battery</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click on view Battery</li> </ul>	Battery details	Battery Data will be displayed Successfully.	Battery Data Displayed.	Pass
<b>Admin can add battery</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click on add Battery button</li> </ul>	Battery added	Battery Data will be added Successfully.	Battery Data Added.	Pass
<b>Admin can update battery</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click add Battery</li> <li>• Search by tag etc</li> <li>• Update data</li> <li>• Click update</li> </ul>	Battery updated	Battery will be deleted Successfully.	Battery updated	Pass
<b>Admin can search battery</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click View Battery</li> <li>• Search by ip etc</li> </ul>	Battery details show	Battery will be show successfully.	Battery search	Pass
<b>Admin can view IP</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click on view IPs</li> </ul>	IPs details	IPs Data will be displayed Successfully.	IPs Data Displayed.	Pass
<b>Admin can add IP</b>	<ul style="list-style-type: none"> <li>• Open Application.</li> <li>• Login as Admin.</li> <li>• Click on IPs Battery button.</li> </ul>	IPs added	IPs Data will be added Successfully.	IPs Data Added.	Pass

## 6.5. Performance testing

- Maximum Response time is fewer 10 sec
- Average response time 5 sec
- Peak number of requests 10000

Table 6.5-Performance testing

<b>Constraints</b>	<b>Response Time</b>
Application Startup	Less than 5 sec (Sometimes depend on internet Speed)
Data fetching	Less than 2 sec (Sometimes depend on internet Speed)
Application state update	Less than 1 sec
Transition in application	0.5 sec
Redirecting between inner pages of app	Less than 3 sec

# **Chapter 7**

**Summary, Conclusion**

**&**

**Future Enhancements**

## **Chapter 7: Summary, Conclusion & Future Enhancements**

### **7.1. Project Summary**

Online Inventory System is a web-based inventory management system that allows businesses to manage their inventory. Admin update their stock information, make purchases and view sales information from anywhere anytime. Whether users are running a small business or a big enterprise it is the solution they need for managing their inventory, purchases and sales all in one application. It follows service-oriented architecture to make development, deployment and maintenance easy.

### **7.2. Achievements and Improvements**

We have achieved our goal that is to provide ease in business administration. We also achieve the experience of practical work by bringing this project to the industry. Improvements in this project would be by adding more enhanced modules in this project according to the increasing demand with the passage of time.

### **7.3. Critical Review**

In this project, we manage data transition according to the authorities/role of the user by using PHP language. To secure our user's data we have used SSL certificate and secure database connections in our code. We designed our user interfaces according to the standard of our users so you can say it is user-friendly.

### **7.4. Lessons Learnt**

The project has been a very good learning opportunity for all of us. We have gained experience on how to work on real time projects under the supervision of industry. We have learned the complexity of an inventory system with respect to new trend in market. We have completed Financial Accounts, Purchase Management, Sales Management and Sales Management. The overall learning experience was good as we collaborated with each other. Overall, all learning curve was easy, and we are used to with tools and technology.

### **7.5. Future Enhancements/Recommendations**

In future, more advanced and modified modules would be added to this portal. For future we have a customer relation manager (CRM) module in the queue. Which will be done on these after completing the modules mentioned in the project's scope?

# Appendices

## Appendix A: User Manual

This section provides application guideline for the convenient of our users.

### A1. Login Screen

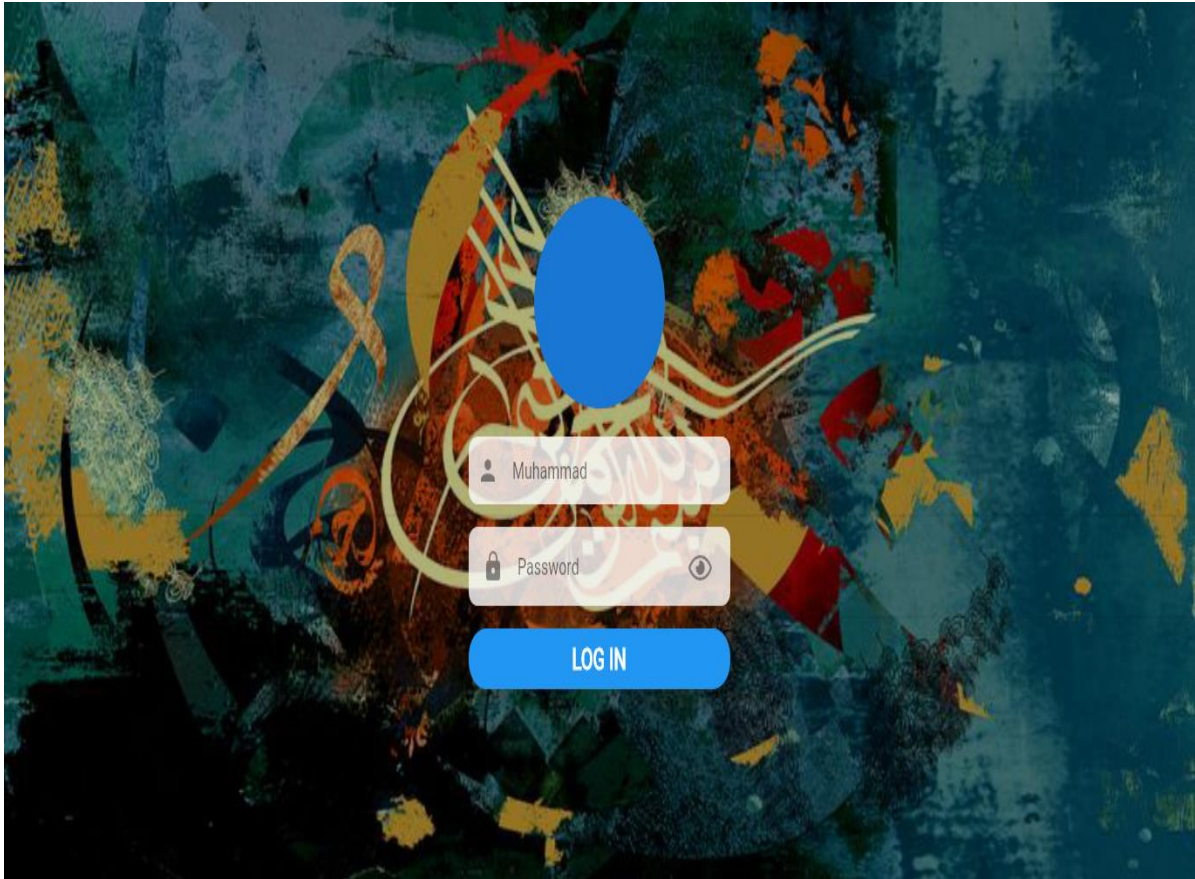


Figure A-1 login screen

## A2. Select Dashboard

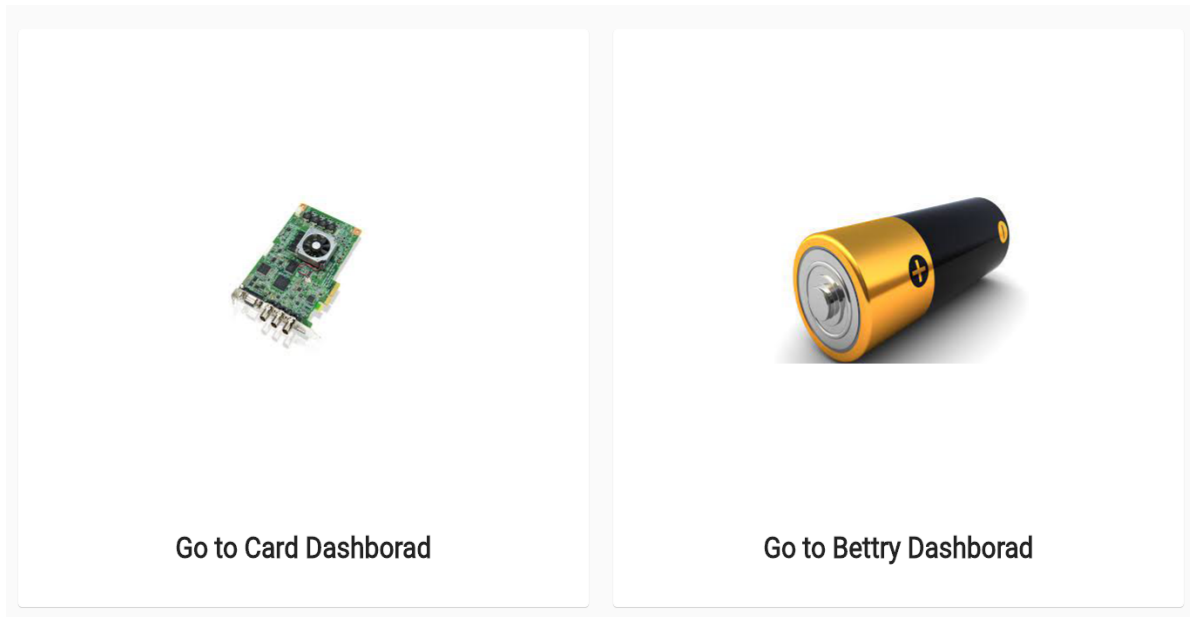


Figure A-2 Select dashboard

## A3. Dashboard

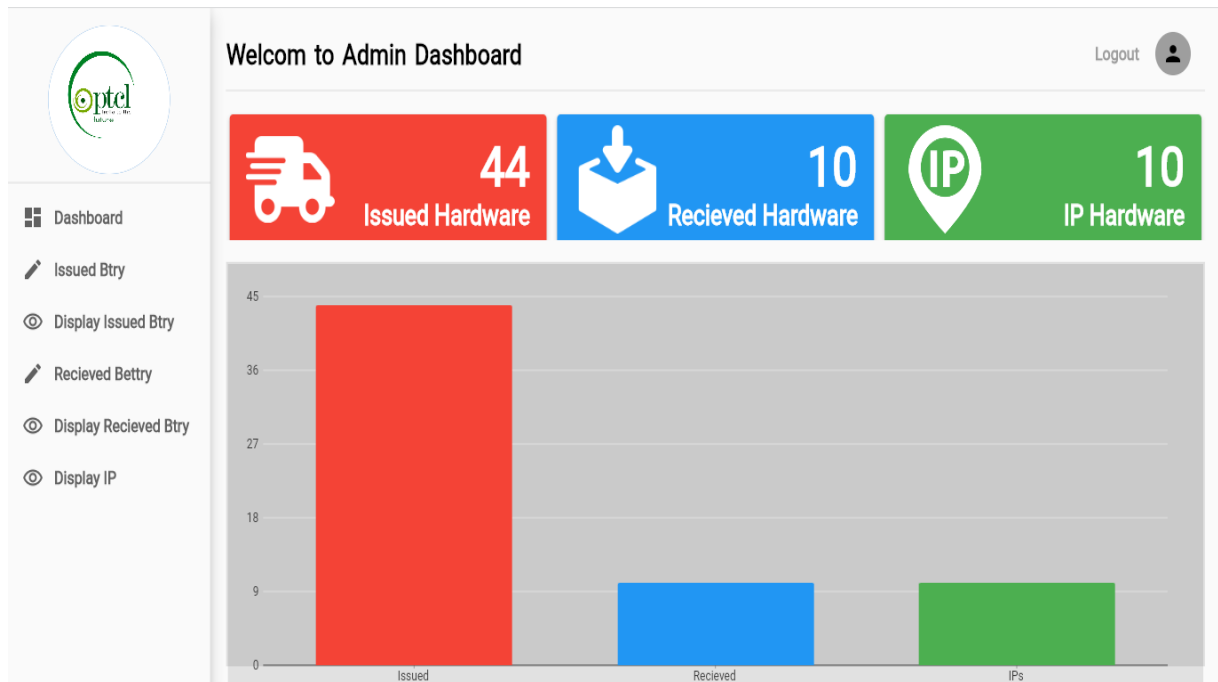


Figure A-3 Admin Dashboard

## A4. Search Date

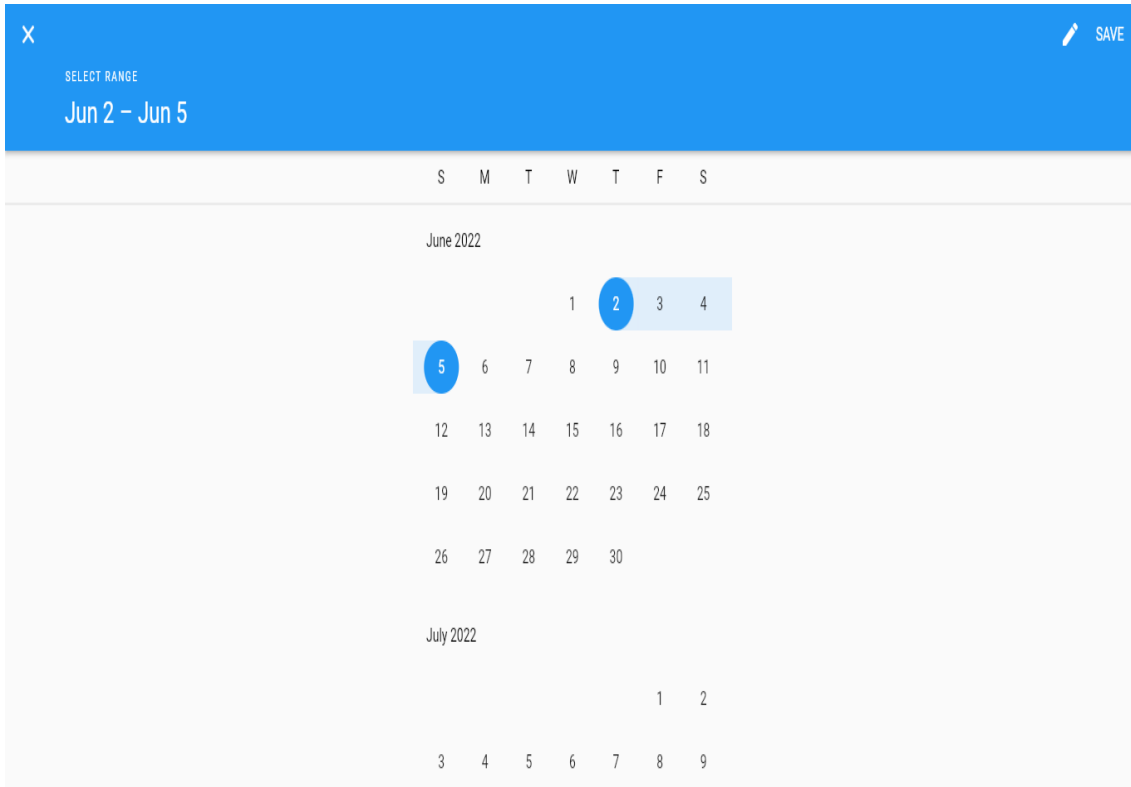


Figure A-4 Search Date

## A5. Add Battery

**Enter Issue Betry Details**

# Sr#

# UTAG# # ST0 #

# PO# # Made#

# Make # Capacity

# Quantity # Employee #

Employee name Site name

Status  New  Used  Faulty  Burnt  Scrap

**Save** **Update**

Figure A-5 Insert Form Battery

## A6. View Battery

**Table Of Issued Betry**

Export to Excel Today Date Range From → Until Search for ... New

Make by	Capacity	Qty	Employee#	Issued To
make	12	11	ma123	rizz
avc	6	7	8	asd
1212	21	0	3scs	vsv
11111	111	1111	1111	1111

Figure A-6 View battery

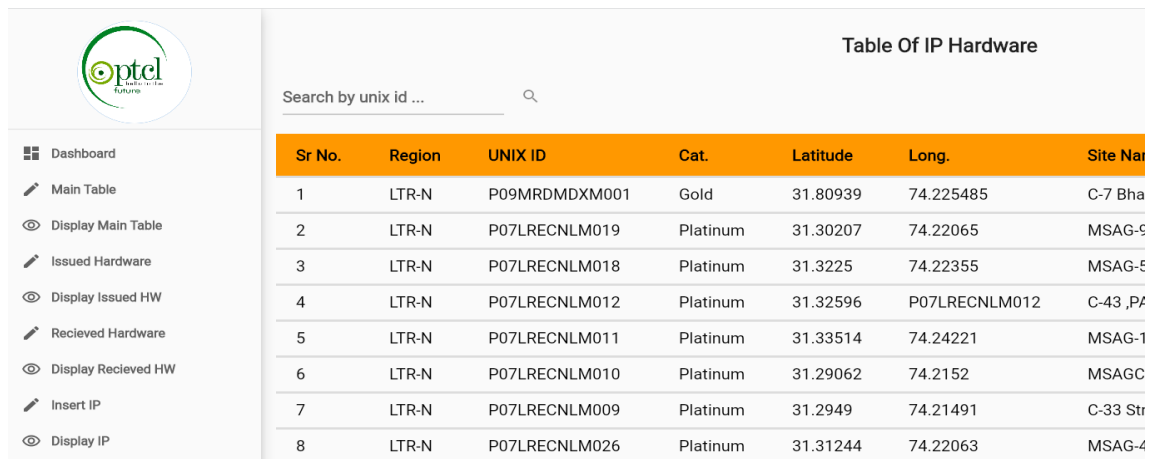
### 3.2.10 Add New IP

#### Enter IP Details

<input type="text" value="Region"/>	<input type="text" value="UNIX ID"/>
<input type="text" value="Cat."/>	<input type="text" value="Latitude"/>
<input type="text" value="Long."/>	<input type="text" value="Site Name &amp; Address"/>
<input type="text" value="Exchange"/>	<input type="text" value="NEW NMS IP"/>
<input type="text" value="Sig.IP"/>	

Figure A-7 Insert IP

### 3.2.11 View IPs




**Table Of IP Hardware**

Search by unix id ...

Sr No.	Region	UNIX ID	Cat.	Latitude	Long.	Site Name
1	LTR-N	P09MRDMDXM001	Gold	31.80939	74.225485	C-7 Bha
2	LTR-N	P07LRECNLM019	Platinum	31.30207	74.22065	MSAG-5
3	LTR-N	P07LRECNLM018	Platinum	31.3225	74.22355	MSAG-5
4	LTR-N	P07LRECNLM012	Platinum	31.32596	P07LRECNLM012	C-43 ,PA
5	LTR-N	P07LRECNLM011	Platinum	31.33514	74.24221	MSAG-1
6	LTR-N	P07LRECNLM010	Platinum	31.29062	74.2152	MSAGC
7	LTR-N	P07LRECNLM009	Platinum	31.2949	74.21491	C-33 Str
8	LTR-N	P07LRECNLM026	Platinum	31.31244	74.22063	MSAG-4

Figure A-8 View IPs

### 3.2.12 View Card



#### Table Of Issued Hardware

Export to Excel 
Today

Date Range  
 From  → Until

Search for ...

New

ItemDescription	ITEMCODE	Utag	ItemS#
Item Description	Item Code	Utag	Item S#
ZTE SFP 10G 10KM 1310nm	SM-10km-1310-10G-C 033030100154 33030100 EOLP-1396...		PG9J110207
ZTE SFP 10G 10KM 1310nm	SM-10km-1310-10G-C 033030100154 33030100 EOLP-1396-10		PG9J110279
ZTE SFP 10G 10KM 1310nm	SM-10km-1310-10G-C 033030100154 33030100 EOLP-1396-10		PG9U335239
ZTE SFP 10G 10KM 1310nm	SM-10km-1310-10G-C 033030100154 33030100 EOLP-1396-10		PG9U335540
ZTE SFP 10G 10KM 1310nm	SM-10km-1310-10G-C 033030100154 33030100 EOLP-1396-10		PG9U335564
ZTE SFP 10G 10KM 1310nm	SM-10km-1310-10G-C 033030100154 33030100 EOLP-1396-10		SG2J142925
ZTE SFP 10G 10KM 1310nm	SM-10km-1310-10G-C 033030100154 23003900 LTF1305-BC+		U6781000111

Figure A-9 View Hardware

# Reference and Bibliography

## References

1. Name: Asim Raza Zaidi  
Designation: SM Network Ops LTR-N  
Contact details: 03334726426, asim.zaidi@ptcl.net.pk
2. Name: Syed Yasir Hussain  
Designation: Manager Network Ops LTR-S  
Contact details: 03334065467, Yasir.hussain1@ptcl.net.pk

# List of Faculty Proposed Changes

## Inventory Management System LTR OFAN Network

Proposed Change	Proposed By	Supervisor's Decision
	Name of Faculty Member(s) who proposed this change	Approved/Disapproved and/or Comments

Date: \_\_\_\_\_

Supervisor's Signature: \_\_\_\_\_

---

ORIGINALITY REPORT

---

8%

SIMILARITY INDEX

7%

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2%

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---

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---

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Pakistan

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