

# **Management Information System for DCS Enterprises Pvt Ltd**

**P C Denuwan  
2024**



# **Management Information System for DCS Enterprises Pvt Ltd**

**A dissertation submitted for the Degree of  
Master of Information Technology**

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**University of Colombo School of Computing  
2024**



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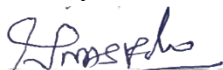


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# Abstract

The Information Management System for yard acts as a centralized platform for effectively managing data regarding the organization's yard activities. It provides real-time data access and collaborative features by utilizing web-based technologies, increasing overall productivity and decision-making.

For managing yard logistics, including inventory tracking, equipment allocation, and staff scheduling, the Information Management System offers a complete solution. Users can keep an eye on the location and status of assets inside the yard, ensuring effective resource allocation and reducing operational downtime. Security is of the top priority, and critical yard data is protected by strong authentication and authorization mechanisms. The system's online shopping platform enables businesses to establish a robust digital presence, providing customers with a user-friendly and convenient shopping experience. Shoppers can browse products, make their orders online. Simultaneously, the POS component streamlines in-store transactions. Sales associates can quickly process orders, manage inventory levels, and access customer data, enhancing the efficiency of brick-and-mortar operations. Real-time synchronization between the online and in-store systems ensures accurate inventory tracking and minimizes stock outs or overstock situations.

Additionally, the IMS supports secure payment processing, ensuring the confidentiality of sensitive financial information. The system is ideal for businesses of various sizes and industries in addition to being expandable and flexible to changing company needs. Users can make well-informed decisions, increase operational performance, and ultimately improve yard management business outcomes because to the system's user-friendly interface and data analytics tools.

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# Table of Contents

<b>Declaration .....</b>	<b>1</b>
<b>Abstract .....</b>	<b>2</b>
<b>Acknowledgement.....</b>	<b>3</b>
<b>Table of Contents .....</b>	<b>4</b>
<b>Table of Figures (TOF).....</b>	<b>7</b>
<b>List of Tables (LOT).....</b>	<b>10</b>
<b>List of Acronyms.....</b>	<b>11</b>
<b>Chapter 1- Introduction .....</b>	<b>12</b>
1.1 Project Overview.....	12
1.2 Motivation .....	13
1.3 Objectives .....	13
1.4 Background of the study .....	14
1.5 Scope of the study .....	15
1.5.1 Employee management.....	15
1.5.2 Vehicle/fleet Management.....	16
1.5.3 Inventory Management with point of sale .....	16
1.5.4 Online Shopping Management component for Retail Sales.....	17
1.6 Structure of the Dissertation.....	18
<b>Chapter 2- Background.....</b>	<b>19</b>
2.1 Introduction.....	19
2.2 Requirement Analysis.....	20
2.2.1 Functional Requirements .....	20
2.2.2 Non-Functional Requirements.....	22
2.3 Review of Similar Systems .....	23
2.4 Related Technologies .....	25
<b>Chapter 3- Design Architecture.....</b>	<b>26</b>
3.1 Introduction.....	26
3.2 Related design strategies .....	27
3.3 System Architecture .....	29
3.4 UML Diagrams .....	30
3.4.1 Use Case Diagrams .....	31
3.4.2 Use Case Scenarios.....	32

3.4.3 Activity Diagrams .....	34
3.4.4 Database Design .....	38
3.5 User Interface Design .....	39
3.6 Methodology – Implementation Details .....	42
<b>Chapter 4- Implementation.....</b>	<b>43</b>
4.1 Introduction.....	43
4.2 Implementation Environment .....	43
4.3 System Development Tools and Technologies .....	44
4.4 Major Code Segments .....	46
4.4.1 Database Connection .....	46
4.4.2 Login authenticate function .....	47
4.4.3 OTP generate function .....	48
4.4.4 OTP verify function.....	49
<b>Chapter 5- Testing and Evaluation .....</b>	<b>50</b>
5.1 Related Testing Types .....	50
5.1.1 Unit Testing .....	50
5.1.2 Regression Testing .....	50
5.1.3 Integrated Testing.....	51
5.1.4 User Acceptance Test.....	51
5.2 Test Cases .....	52
5.3 User Evaluation.....	55
5.4 Results of the Testing.....	56
<b>Chapter 6- Conclusion.....</b>	<b>57</b>
6.1 Introduction.....	57
6.2 Lesson Learnt.....	58
6.3 Critical Assessment of the project .....	58
6.4 System Weaknesses.....	58
6.5 Future Enhancement .....	59
<b>Current Progress/ Refined Project timeline .....</b>	<b>60</b>
<b>List of References.....</b>	<b>61</b>
<b>Appendix A – User Documentation.....</b>	<b>62</b>
User Manual for Information Management System.....	63
User Manual for Online Shopping Website .....	102
<b>Appendix B – MIS Reports.....</b>	<b>107</b>
Description of MIS Report Module.....	107

<b>Decision Making.....</b>	<b>107</b>
<b>Tracking records.....</b>	<b>107</b>
<b>Evidence of the reports.....</b>	<b>108</b>



# Table of Figures (TOF)

Figure 1: High level System Architecture Diagram .....	25
Figure 2: Object Oriented Design Strategy.....	28
Figure 3: Bottom-Up Design Approach.....	28
Figure 4: Model-View-Controller Architecture Pattern .....	29
Figure 5: Use Case Diagram.....	31
Figure 6: Customer Place an Online Order activity diagram.....	34
Figure 7: Stock Request/ Transfer Process Activity Diagram .....	35
Figure 8 : User Login Sequence Diagram .....	36
Figure 9 : Stock Transfer Sequence Diagram.....	37
Figure 10 : Entity Relationship Diagram.....	38
Figure 11: User Login Interface.....	39
Figure 12 : Sample Dashboard Interface .....	40
Figure 13 : Branch Create Interface.....	40
Figure 14 : Branch View Interface .....	41
Figure 15 : Item Category View Interface .....	41
Figure 16: Database Connection Code .....	46
Figure 17: login authenticate function. ....	47
Figure 18: OTP generate function. ....	48
Figure 19: OTP verify function. ....	49
Figure 20: Evaluation summary chart.....	56
Figure 21: Current Progress / Refined Project timeline.....	60
Figure 22: Login page.....	63
Figure 23: OTP verification page. ....	63
Figure 24: Password reset request page.....	64
Figure 25: Password reset page. ....	64
Figure 26: Dashboard page. ....	65
Figure 27: Employee details view. ....	66
Figure 28: Admin employee details create/ edit view. ....	66
Figure 29: Employee designation details view.....	67
Figure 30: Employee designation create/ edit view.....	67
Figure 31: Employee grade details view.....	67
Figure 32: Employee grade create/ edit view. ....	68
Figure 33: Employee group view.....	68
Figure 34: Employee group create edit.....	68
Figure 35: Employee driving license view. ....	69
Figure 36: Employee driving license create edit.....	69
Figure 37: Employee work schedule view.....	70
Figure 38: Employee work schedule create edit .....	70
Figure 39: Employee work contract view.....	70
Figure 40: Employee work contract create edit.....	71
Figure 41: Employee leave type view.....	71
Figure 42: Employee leave type create edit.....	71
Figure 43: Employee my leave create edit.....	72
Figure 44: Admin/ manager leave approve view.....	72

Figure 45: Manager employee my leave view .....	72
Figure 46: Manager employee my leave approve popup .....	73
Figure 47: Manager employee medical center view .....	73
Figure 48: Manager employee medical center create edit .....	74
Figure 49: Employee medical records view .....	74
Figure 50: Employee medical records create edit .....	74
Figure 51: Employee attendance view .....	75
Figure 52: Admin/ Manager employee attendance approve .....	75
Figure 53: Manager employee attendance upload .....	75
Figure 54: Employee task list view .....	76
Figure 55: Admin/ Manager employee task list create edit .....	76
Figure 56: Vehicle type view .....	76
Figure 57: Vehicle type create edit .....	77
Figure 58: Vehicle category view .....	77
Figure 59: Vehicle category create edit .....	77
Figure 60: Vehicle details view .....	78
Figure 61: Vehicle details create edit .....	78
Figure 62: Vehicle eco test view .....	79
Figure 63: Manager vehicle eco test create edit .....	79
Figure 64: Vehicle revenue license view .....	79
Figure 65: Vehicle revenue license create edit .....	80
Figure 66: Vehicle repair location view .....	80
Figure 67: Vehicle repair location create edit .....	80
Figure 68: Vehicle insurance company view .....	81
Figure 69: Vehicle insurance company create edit .....	81
Figure 70: Vehicle insurance details view .....	81
Figure 71: Vehicle insurance details create edit .....	82
Figure 72: Vehicle insurance claims view .....	82
Figure 73: Vehicle insurance claims create edit .....	82
Figure 74: Vehicle service center view .....	83
Figure 75: Vehicle service center create edit .....	83
Figure 76: Vehicle service details view .....	83
Figure 77: Vehicle service details create edit .....	84
Figure 78: Item details view .....	84
Figure 79: item details create edit .....	85
Figure 80: Item category view .....	85
Figure 81: Item category create edit .....	86
Figure 82: Stock purchase view .....	86
Figure 83: Stock purchase create edit .....	87
Figure 84: Rental stock allocation view .....	87
Figure 85: Rental stock allocation create edit .....	88
Figure 86: Rental stock details report .....	88
Figure 87: Retail stock allocation view .....	89
Figure 88: Retail stock allocation create edit .....	89
Figure 89: Retail stock details report .....	90
Figure 90: Stock transfer view .....	90
Figure 91: Stock transfer create edit .....	91

Figure 92: Stock transfer request accept.....	91
Figure 93: POS retail create.....	92
Figure 94: POS customer details enter view.....	92
Figure 95: Sample Invoice.....	93
Figure 96: Payment method view.....	93
Figure 97: POS rental create.....	94
Figure 98: System country view.....	94
Figure 99: System country create edit.....	95
Figure 100: System company view.....	95
Figure 101: System company create edit.....	95
Figure 102: System location view.....	96
Figure 103: System location create edit.....	96
Figure 104: System company branch view.....	96
Figure 105: System company branch create edit.....	97
Figure 106: System company bank view.....	97
Figure 107: System company bank create edit.....	97
Figure 108: System company bank branch view.....	98
Figure 109: System company bank branch create edit.....	98
Figure 110: System company bank account view.....	99
Figure 111: System company bank account create edit.....	99
Figure 112: System company customer view.....	99
Figure 113: System company customer create edit.....	100
Figure 114: System user group view.....	100
Figure 115: System user group create edit.....	100
Figure 116: System user details view.....	101
Figure 117: System user details create edit.....	101
Figure 118: Online shopping Home page.....	102
Figure 119: Online shopping login page.....	103
Figure 120: Online shopping customer registration page.....	103
Figure 121: Online shopping product page.....	104
Figure 122: Online shopping cart page.....	105
Figure 123: Online Shopping Checkout page.....	105
Figure 124: Qr or Bank details popup message.....	106
Figure 125: Rental stock details report.....	108
Figure 126: Employee details report.....	108
Figure 127: Stock transfer report.....	108
Figure 128: Export report data.....	109

## List of Tables (LOT)

Table 1: Review of similar systems .....	24
Table 2: Use Case Scenario 1 .....	32
Table 3: Use Case Scenario 2 .....	32
Table 4: Use Case Scenario 3 .....	33
Table 5: Use Case Scenario 4 .....	33
Table 6: Implementation Requirements.....	43
Table 7: Major test cases .....	52
Table 8: Summary of the User evaluation result .....	55

# List of Acronyms

UML - Unified Modeling Language

UI - User Interface

CSS - Cascading Style Sheets

MVC - Model View Controller

ER - Entity Relationship

POS - Point of Sale

MIS - Management Information System

QR - Quick response

GPS - Global Positioning System

CRUD - Create, Read, Update, Delete

HTML - Hypertext Markup Language

PHP - Hypertext Processor

SSD - Solid State Drive

OS - Operating System

OTP – One-time password

CBSL – Central bank of Ceylon

NIC – National Identity Card

# Chapter 1- Introduction

## 1.1 Project Overview

DCS Enterprise is a leading construction equipment supplying company in Sri Lanka and there are several branches (yards) around the country. It mainly imports construction equipment such as scaffolding, heavy duty machinery, and other tools from Japan and sells and rent them out locally. Also they provide hardware items and along with other products. Apart from those main activities they provide Scaffolding erecting and dismantling services as well. A single branch is responsible for handling product sales or rent, maintains stores, provide services nearby suburbs. With recent expansion of the company, the following problems have been raised.

- It is very difficult to maintain products and services details, employee details, and inventory details since still it is a manual process which updates on Excel sheets by the book keeper. Inaccurate and inefficient details can be found because of the current manual process.
- There is no proper way to track company owned vehicles/fleets details. Therefore, it is difficult to maintain records such as vehicle services, repairs or revenue license update about each vehicle.
- There are huge numbers of telephone calls receiving from customers. Therefore, the book keeper is not enough to provide better service to customers over the phone in a limited time of period and manage quotations and invoices for each customer.
- Use phone calls more often to remind and direct staff to their day to day assigned duties. This should be done by the book keeper and its much time consuming.
- Products, machinery and tools renting procedure is tedious because tracking of rented out item's time durations, manage deposited money and agreements for rentals, and check before and after conditions of the rented items and lastly send damaged rental items to repair locations.
- At present they are not creating any reports to monitor and analyze the current situation of the business for company decision making process.
- Since company has only one service team, there could be conflicts when handling scaffolding service requests because at the moment services booking handled by a book keeper and it's an error prone procedure.

## 1.2 Motivation

Mitigating errors and finding solutions to those problems and issues have motivated them to move to a central management system. Because they have identified benefits, importance and the potentiality of moving to digital management system, especially during situations like covid lockdown period.

## 1.3 Objectives

The proposed solution for the above mentioned problems is to develop Management Information System for the company. Main objectives of the proposed system can be summarized as follows.

- Improve accuracy of storing and maintaining products, services details and inventory details, track of company owned vehicles/fleets details and employee details.
- Provide proper procedure to equipment renting and retails selling.
- Reduce the number of calls receiving to book keeper from customers by introducing online shopping platform and Identify customer's purchase/ rental patterns.
- Reduce the amount of effort and workload of the book keeper putting on communicating and directing staff on assigned day duties by pre assigned and pre allocated duty list through the proposed system.
- Implement alert system to notify company staff about their day to day duty list, notify customers about their order status and details, notify low stock situations in advance and notify upcoming vehicle services/ repairs.
- Let customers know service team availability in advance on online shopping platform to avoid any conflicts.
- Control and monitor all operations of sub branches from a Central location (Main Branch) and generate reports to help company decision making process.

## 1.4 Background of the study

Since this is a client request, all requirements gathered from DCS Enterprise. Addition to that found some features of similar existing systems on internet. Comparing with other similar systems proposed system has many advantage able features like Point of sales, Online shopping Platform and billing and invoicing over the other systems.

- YardViewPro - a cloud-based, best-of-breed yard management software program that will help fix your yard quickly and it can be installed in weeks. Extensive features and functionality help every department manage the yard at the same time. It is highly customizable and easy to use.
- GPS Insight - GPS Insight helps customers engage their fleet by delivering innovative solutions and actionable insights. GPS Insight offers all-encompassing fleet software for organizations with fleets of vehicles, trailers, and other mobile assets.
- IntelliShift - IntelliShift connects people, processes, vehicles, equipment and data in an all-in-one fleet management solution.
- Verizon Connect - Reveal Field is a user-friendly field service management solution to help simplify job management, scheduling and dispatching.
- Samsara - Streamline operations and reduce costs with all-in-one platform for fleet management. Live-to-the-second GPS tracking shows your vehicles in real time and pairs with rich reports so you can plan better routes, dispatch drivers at the last minute, and share accurate ETAs with customers.



## **1.5 Scope of the study**

To mitigate aforesaid problems, proposed Management Information System consists of four modules. These four modules will handle all problems related to business process and ensure the business runs smoothly and efficiently and cover all project objectives.

- Employee management.
- Vehicle/fleet Management.
- Inventory Management with POS.
- Online Shopping Management component (with Online Shopping website) for Renting and Sales.

### **1.5.1 Employee management**

All employees related activities of the company are handled by this module and following functions are expected develop through this module.

- Maintain Employee personal, salary details and contract agreements.
- Manage Employee assigned duty list.
- Employee annual health checks notifications.
- Employee driving license renewal notifications.
- Manage Employee leave details.
- Employees rank system.
- Employee Evaluation reports.

## **1.5.2 Vehicle/fleet Management**

The main task of this module is to provide proper tracking of maintaining and repairing company owned vehicles which are used to daily operations, they will be able to see the condition of the vehicles through this system without peek into each vehicle file. Some of the main functions of this module can be listed as follows.

- Track vehicles condition with the help of vehicle repair/ service schedule and maintain vehicle history. Notify upcoming repair/ services.
- Vehicle annual insurance, revenue license update notifications.
- Generate vehicle maintenance report.

## **1.5.3 Inventory Management with point of sale**

Purpose of this module is to develop an automated procedure for stock management. There are customers whose rent products and there are some purchase products, but whatever the need end of the day stock levels should be updated without any conflict. Therefore, the following functions are expected to automate in the inventory management module.

- Maintain Product and services details up to date.
- Maintain and monitor stock levels and notify low stock levels in advance.
- Feed inventory details for online shopping platform.
- Track and notify product retails/ rental details and maintain rental agreements and deposit money.
- Generate invoices/receipts for each transaction regarding rent and retails.
- Prepare reminders for rental items yet to be received, and calculate late returning fee for rental items.
- Loss & Profit analyzer (shows cumulative loss and profits per individual branch).
- Customer feedback collector using QR Code Scanner.
- Manage Customers and Suppliers.

- Manage Service appointments.
- Manage payment methods and delivery methods.
- Inventory reports.

### **1.5.4 Online Shopping Management component for Retail Sales**

This component is specially requested by the company because they have got several huge projects and huge amount of calls even in the pandemic situation through the internet. So the main task of this component is to reduce huge amount of unnecessary calls receiving, reach out to potential customers and streamline the rent/ retail process through online.

- Grow company online presence in the market to reach more people.
- Direct and manage customer orders through online shopping platform.
- Collect customer details such as billing address and contact info.
- Identify customer's purchase/ rental patterns.
- Display system generated suggestions on product bundles/ kits in inventory based on customer patterns.
- Let customers know service team availability in advance.
- Attend to client inquiries very quickly by providing direct Whatsapp chat option on shopping website (using Whatsapp click to chat method).

## **1.6 Structure of the Dissertation**

- Chapter 1 is the Introduction chapter, which describes the problem, motivation, objectives, and scope of the project.
- Chapter 2 narrates the background study of the project and the actual procedures that follows by the company. Also includes similar system's feature review and how they are matched with the proposed system in useful manner.
- Chapter 3 is the Analysis and Design. This chapter consists of requirement gathering, functional and non-functional requirements and the design of the system.
- Chapter 4, which is the Implementation chapter, contains all software and hardware requirements, implementation methods used to develop the system.
- Chapter 5 is the Testing and Evaluation chapter, which conducts an evaluation of the system whether the project objectives are accomplished.
- Chapter 6 is the Conclusion chapter. It describes all inadequacies in developed final system and refinements of the project.

# **Chapter 2- Background**

## **2.1 Introduction**

The efficient operation of scaffolding equipment in the construction industry is vital for the completion of construction projects. Construction companies relies heavily on scaffolding rental and sales yards for their supply of scaffolding supplies, machinery and building raw materials. Implementation of a Management Information System specifically created for scaffolding rental and selling yards is crucial for enhancing the efficiency of the operations of these yards and overcoming the difficulties posed by manual procedures and manual inventory management. This chapter offers a thorough background analysis of MIS for scaffolding yards, emphasizing the importance of this technology in streamlining operations, increasing productivity, and enhancing customer service.

Because of the nature of their business, scaffolding yards encounter many challenges. Maintaining correct inventory records, monitoring equipment availability, managing orders and reservations, optimizing resource allocation, guaranteeing on time delivery and pickup, and adhering to safety requirements are some of these problems. Manual procedures and paper-based solutions can result in inefficiencies, mistakes, and delays, raising costs and displeasing customers. This system specifically designed for scaffolding yards is necessary to address these issues.

The Management Information System is planned to address the unique requirements and difficulties of yard operations. This system makes use of innovative technologies to enable precise inventory management, vehicle management, monitoring equipment availability, resource planning and online shopping functionalities. It acts as a central place for all yard-related data, allowing for easy coordination and management of yard operations.

Customers, administrative personnel, and yard employees can all gain many benefits from the implementation of a management information system. These advantages include increased inventory accuracy, improved equipment allocation, quicker order processing, greater customer service via real-time availability information, less equipment downtime, effective maintenance scheduling, increased safety compliance, and overall cost savings.

## **2.2 Requirement Analysis**

A comprehensive Management Information System for Yard with Employee Management, Vehicle/Fleet Management, Inventory Management with POS, and Online Shopping Management modules will significantly enhance operational efficiency and customer satisfaction in the yard. The successful implementation of these modules will require careful planning, development, and integration to create a seamless and user-friendly system for all stakeholders.

It is essential in today's fast-paced company climate for maximizing operations, cutting expenses, and raising customer satisfaction. The primary features and functionalities of a Yard Management Information System, which consists of four main modules, Employee Management, Vehicle/Fleet Management, Inventory Management with Point of Sale, and Online Shopping Management are outlined in this requirement study.

### **2.2.1 Functional Requirements**

#### **Employee Management Module**

- **Employee Information:** The system should allow the creation and management of user profiles for employees, including their personal details, health details, contact information, and roles within the organization.
- **Attendance and Time Tracking: Clock-In/Clock-Out:** Provide a feature for employees to clock in and clock out, recording their working hours.
- **Leave Management:** Implement a leave request and approval system with options for various types of leave (e.g., vacation, sick leave). **Shift Scheduling:** Allow manager/ book-keeper to create and assign shifts to employees and provide notifications for upcoming shifts.
- **Performance Evaluation:** Rank employees based on performance.

## **Vehicle/Fleet Management Module**

- **Vehicle Profiles:** Maintain detailed records of all fleet vehicles, including make, model, registration information, and maintenance history.
- **Maintenance Schedule:** Schedule and track routine vehicle repairs and maintenance as needed.
- **Vehicle annual insurance, revenue license update reminders.**

## **Inventory Management with POS Module**

- **Inventory Control/Tracking:** Track the movement of products within the yard, including receiving, storage, and dispatch.
- **Stock Alerts:** Generate alerts for low stock levels.
- **Point of Sale (POS): Sales Transactions:** Process sales transactions efficiently at the yard's POS, integrating with inventory for real-time stock updates.
- **Payment Integration:** Support various payment methods, including cash, credit cards, and mobile payments.
- **Reporting and Analytics: Sales Reports:** Provide detailed sales reports, including product performance, sales trends, and revenue analysis.
- **Inventory Reports:** Generate inventory-related reports.

## **Online Shopping Management Module**

- **Online Store with Shopping Cart:** Develop and maintain a user-friendly online shopping platform with product listings, descriptions, and pricing. And implement a shopping cart system for customers to add and manage their purchases.
- **Order Management:** Track online orders from placement to delivery or pickup.
- **Inventory Integration:** Ensure real-time inventory updates to prevent overselling.
- **Customer Engagement through customer Accounts and Whatsapp chat:** Enable customers to create accounts, view order history, manage their profiles, and live chat.
- **Customer feedback and Reviews:** Allow customers to provide their feedback about order by scanning QR Code.

### 2.2.2 Non-Functional Requirements

- **Effectiveness** – The system should exactly affect the current mechanism of handling all required tasks such as managing employees, vehicles, inventory and customer orders.
- **Performance** – The system should not take a long time do main tasks, create master data, Inventory allocation, etc. Also, the shopping website should load very smoothly and quickly, if not the users get annoyed.
- **Reliability** – The system's information must be accurate to process stocks and orders.
- **User Friendliness** – Users should have less trouble using the system and the interface of the system should not confuse any user.
- **Availability** – The system and shopping website needs to be accessible whenever a user wants it.
- **Quality** – The system should maintain the quality of the services at all phases.



## 2.3 Review of Similar Systems

A comprehensive review and comparison of key Yard management systems: YardViewPro, Samsara, Verizon Connect, IntelliShift, GPS Insight, and proposed Management Information System (MIS). This analysis highlights features offered by each system and identifies the factors that set the MIS apart as a standout solution.

The major features offered by YardViewPro include alerts and notifications, task scheduling, analytics and reporting, automation of crucial tasks, inventory management, and employee management capabilities. However, it is deficient in capabilities like GPS tracking, route optimization, and fuel management, which restricts its ability to fully optimize fleet operations. (Yard management software by YardView, 2023, p. 61)

The extensive feature set of Samsara sets it apart from competitors. These features include task scheduling, analytics and reporting, automation of crucial tasks, GPS monitoring, fleet management, employee management, route optimization, fuel management, and dispatch management. It provides a wide variety of tools that are essential for fleet efficiency and optimization. (Operate at a whole new level, 2023, p. 61)

In addition to notifications and alerts, task scheduling, analytics and reporting, automation of crucial processes, inventory management, fleet management, billing & invoicing, staff administration, and dispatch management are just a few of the capabilities offered by Verizon Connect. It differs from other fleet operations in terms of financial management thanks to the addition of billing and invoicing. (Fleet management software to help, 2023, p. 61)

Among the capabilities offered by IntelliShift are facilities for work scheduling, analytics and reporting, automation of crucial tasks, GPS tracking, personnel management, route optimization, and dispatch management. It provides a strong framework for monitoring and maximizing fleet activities and excels at workforce management and vehicle tracking. (McNeil, 2023, p. 61)

The features of GPS Insight include task scheduling, analytics and reporting, automation of crucial tasks, GPS tracking, personnel management, route optimization, fuel management, and dispatch management. It is a good option for corporations trying to improve fuel efficiency and navigation because of its strong focus on fuel management and GPS tracking. (GPS tracking: Fleet & Field, 2019, p. 61)

The proposed Management Information System (MIS) is exceptional because it includes a wide range of features, such as notifications and alerts, task scheduling, analytics and reporting, automation of crucial tasks, online shopping platform, inventory management, point of sale, fleet management, billing and invoicing, and employee management. The MIS stands out because to its distinctive combination of an online shopping platform and point of sale system, which expands its range of potential applications and makes it a flexible solution appropriate for firms, engaged in retail or e-commerce. Following Table 1 displays the comparison between existing systems and proposed system as a summary.

Table 1: Review of similar systems

FEATURES	YardViewPro	Samsara	Verizon Connect	IntelliShift	GPS Insight	Management Information System (proposed system)
<i>notifications and alerts</i>	✓		✓			✓
<i>task scheduling</i>	✓	✓	✓	✓	✓	✓
<i>analytics and reporting</i>	✓	✓	✓	✓	✓	✓
<i>automation key task</i>	✓	✓	✓	✓	✓	✓
<i>online shopping platform</i>						☆
<i>inventory management</i>	✓		✓			✓
<i>GPS tracking</i>		✓		✓	✓	
<i>point of sale</i>						☆
<i>fleet management</i>		✓	✓			✓
<i>billing &amp; invoicing</i>			✓			✓
<i>employee management</i>	✓	✓	✓	✓	✓	✓
<i>route optimization</i>		✓		✓	✓	
<i>fuel management</i>		✓			✓	
<i>dispatch management</i>		✓	✓	✓	✓	

## 2.4 Related Technologies

At the beginning of the project, it's impossible to gather all the requirements. But with the help of end users, it is expected to develop the system in phases to fulfill all most every requirement. It is planned to use agile software development methodology. Because agile methodology is combination of an incremental and iterative approach and it helps to develop versions of same system with ongoing cycle then tested and improved at each iteration. Since this is a client request there could be changes in the requirements while developing the system time to time as per client's need. So agile methodology is very suitable throughout this development. Management Information System is a low cost web-based project which is expected to use client-server architecture. PHP is the server side coding language and use Codeigniter 3 MVC framework. MySQL 8 is the database and Bootstrap 4 is used for interface designs with the help of JavaScript, JQuery 3 and Ajax. To reduce the cost of the technologies it is decided to use Reliable Open Source technologies as follows. Following Figure 1 illustrates the High level System Architecture.

- Codeigniter 3 – Is a Simple lightweight PHP framework that helps to develop full-featured web applications (PHP Version 8).
- MySQL 8 – Is an Open source relational database which emphasis SQL standards.
- Bootstrap 4 - Is an Open source front-end development framework for create responsive web apps.
- JQuery 3 – Is an Open source lightweight JavaScript library that helps to build user friendly and dynamic front ends.

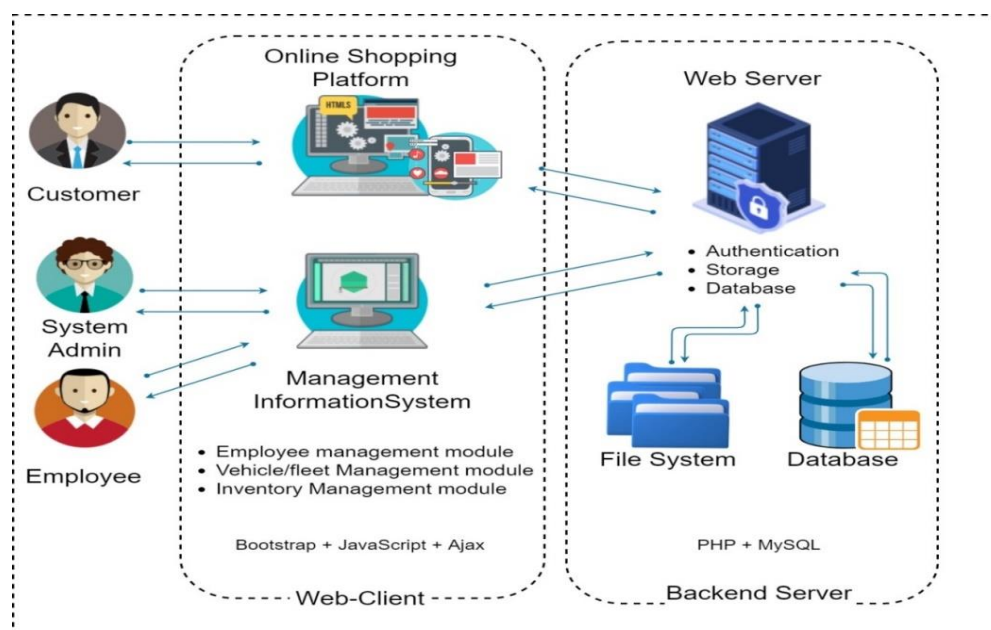


Figure 1: High level System Architecture Diagram

# **Chapter 3- Design Architecture**

## **3.1 Introduction**

The necessity for advanced MIS solutions is becoming more and more obvious as businesses struggle with increasingly complex supply chain networks. The importance of a well-designed MIS cannot be emphasized, whether it is for managing sales and rentals of scaffolding and construction equipment, processing deliveries or providing scaffolding services at remote sites, or managing human and non-human resources. Through this chapter, we seek to present a thorough understanding of the architectural aspects, design ideologies, and strategic choices that affect the creation and application of MIS, ensuring that they not only satisfy present operational needs but also evolve to meet new opportunities and challenges.

System scalability, data integration, user interface design, real-time monitoring, and the vital link between technology and logistical processes will all be explored as part of the MIS design architecture. In-depth examination of these elements will enable business to choose, adapt, or improve their yard management information systems with greater knowledge.

The information and ideas offered in this chapter will be a valuable asset for experts and decision-makers looking to maximize the efficiency of their yard operations in a period where digital transformation is changing the face of supply chain management.

## 3.2 Related design strategies

An effective approach for designing and structuring software systems is object-oriented design strategy (OOD). Low coupling and high cohesion in information management systems can be maintained when combined with a Bottom-Up approach. Let's examine these ideas in more detail and discuss how to use them:

### 1. Object-Oriented Design (OOD):

- OOD is a software design paradigm that models a system as a collection of interacting objects, each encapsulating data and behavior.
- Key principles of OOD include encapsulation, inheritance, polymorphism, and abstraction.
- Objects are instances of classes, which define the structure and behavior of objects.
- OOD promotes modularity, reusability, and maintainability by breaking down a system into smaller, manageable components.

### 2. Bottom-Up Approach:

- The Bottom-Up approach to software development starts with the implementation of low-level components or modules and gradually builds up to higher-level modules or the complete system.
- Developers focus on creating individual, smaller-scale objects or functions before integrating them into larger structures.

Application of these principles to Information Management systems using a Bottom-Up approach:

- **Identify and Define Objects:** Start by identifying the key objects in the information management system. These objects could represent entities like "User," "Employee," "Vehicle," "Query," etc.
- **Encapsulate Data and Behavior:** For each identified object, encapsulate its data (attributes) and behavior (methods) within a class. Ensure that each class has a well-defined purpose and represents a specific aspect of information management.
- **Define Abstractions and Interfaces:** Create interfaces or abstract classes to define contracts between objects. This helps in achieving low coupling by ensuring that objects interact through well-defined interfaces rather than direct dependencies.

- **Minimize Dependencies:** Keep the dependencies between classes and modules to a minimum. Use techniques like dependency injection to provide necessary dependencies to objects, promoting low coupling.
- **Refactor and Iterate:** Continuously refactor and improve the design of the system from the bottom. Ensure that each class/module remains highly cohesive and loosely coupled with others.

Combining Object-Oriented Design strategy with a Bottom-Up approach, helps to create an Information Management system that is modular, maintainable, and scalable while keeping coupling low and cohesion high. This approach allows for easier modifications and updates as the system evolves. Following Figure 2 illustrates the Object Oriented design concept and Figure 3 illustrates the Bottom-Up approach, how to acquire the Object oriented design in the system.

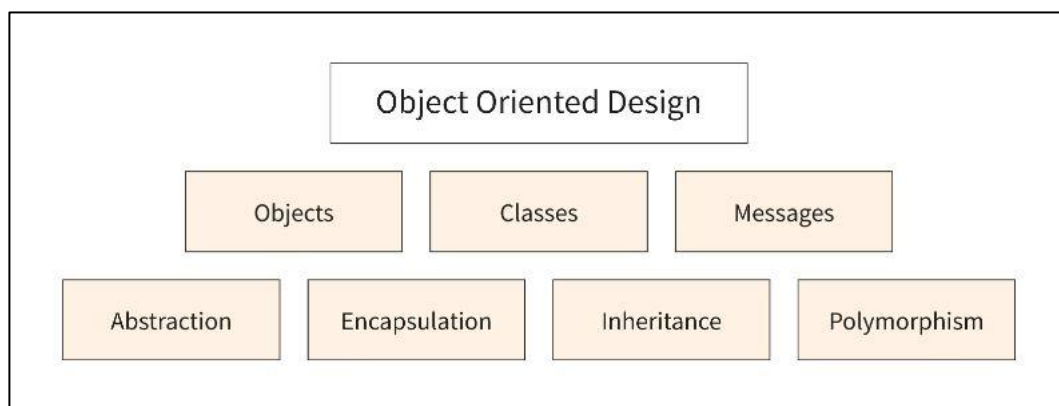


Figure 2: Object Oriented Design Strategy

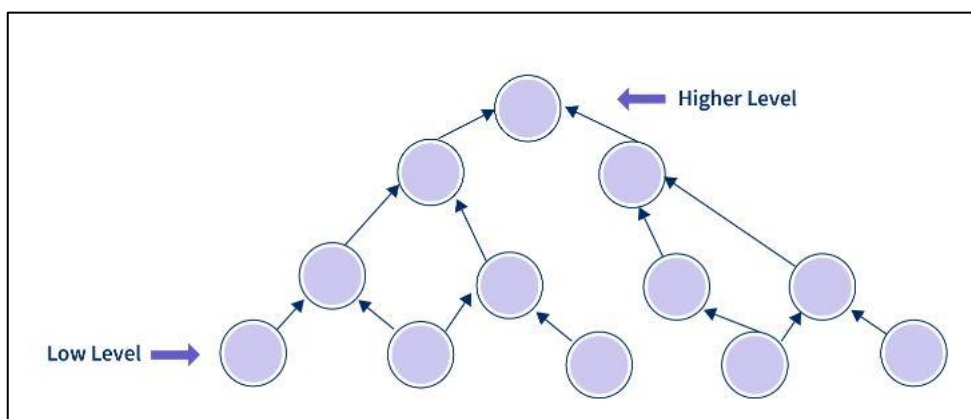


Figure 3: Bottom-Up Design Approach

### 3.3 System Architecture

MVC (Model-View-Controller) is a software architectural pattern commonly used in web development to organize and structure code in a way that, offer benefits like code reusability, scalability, testability, and improved collaboration, all of which contribute to better code quality and maintainability.

1. Model (M): The Model represents the application's data and business logic. It interacts with the database and performs CRUD operations.

IMS for the yard, models could represent data entities such as employees, inventory items, shipments, etc.

2. View (V): The View is responsible for presenting data to the user and handling user input.

Views are typically HTML templates mixed with PHP and JQuery to display dynamic data.

Create view files for different parts of application, like listing yard data, adding/editing yard data, and reporting.

3. Controller (C): The Controller acts as an intermediary between the Model and the View. It handles user requests, processes data, and updates the View accordingly.

Each page or section of application has a corresponding controller. For instance, Employee controllers for managing employees, Inventory Controller for managing inventory, etc. Following Figure 4 illustrates the MVC architectural flow in the system.

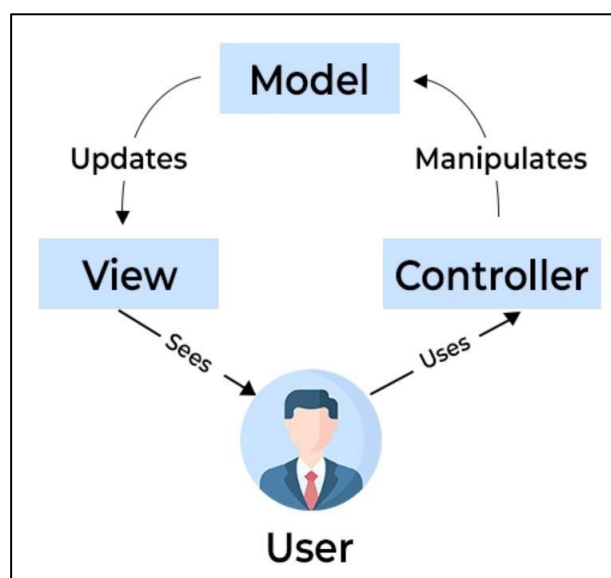


Figure 4: Model-View-Controller Architecture Pattern

### **3.4 UML Diagrams**

UML (Unified Modeling Language) diagrams are valuable tools for designing a Management Information System for a yard. They provide a visual representation of the system's structure and behavior, facilitating communication among stakeholders and improving the overall design process.

Firstly, UML use case diagrams can help identify and define the various interactions and functionalities of the MIS. This involves identifying actors (e.g., Owner, Staff) and their respective use cases (e.g., inventory management, employee management). By modeling these interactions, helps to ensure that the system meets the needs of its users effectively.

Secondly, UML class diagrams can be used to define the data entities and their relationships within the MIS. This includes modeling entities like employees, inventory items, orders, and their attributes, as well as how they relate to each other. Class diagrams provide a clear blueprint for the database schema and guide the development of the underlying data structures, ensuring data consistency and integrity in the MIS.



### 3.4.1 Use Case Diagrams

Use Case Diagram is a crucial initial step in designing an MIS for a yard. It aids in visualizing user interactions and system functionalities, which is essential for effective communication, requirement analysis, and system development. Following Figure 5 Use Case Diagram illustrates the user interactions and system functionalities in the system.

Actors:

- Owner: The owner of the yard management system.
- Yard Manager: The manager responsible for overseeing yard operations.
- Employee: The employees working within the yard.
- Customer: Individuals or businesses using the online shopping website or connect with point of sale system.

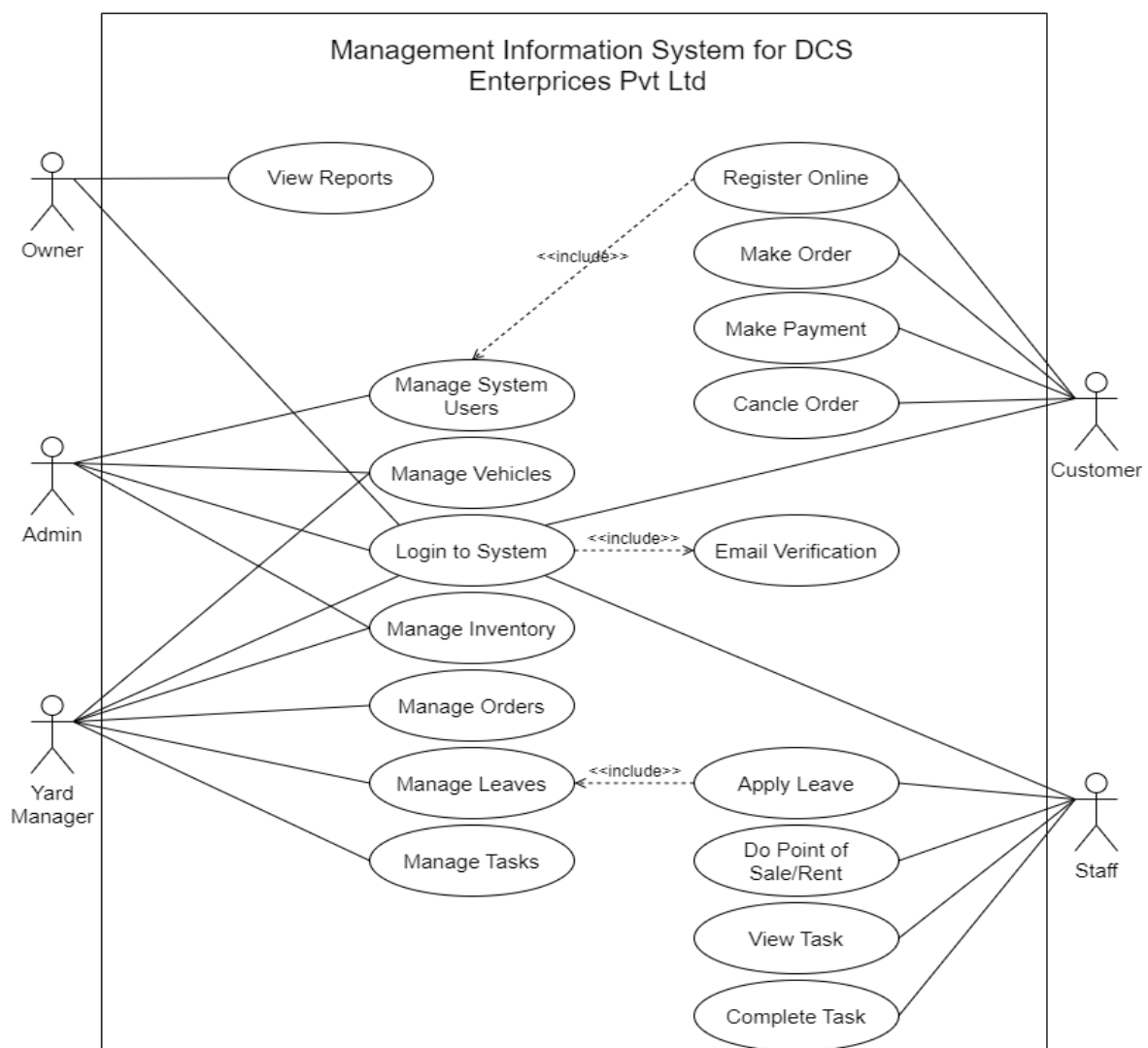


Figure 5: Use Case Diagram

### 3.4.2 Use Case Scenarios

Use case scenarios are very useful to understand and get a clear idea about actor wise functionalities in the system. These scenarios used in various situations such as requirement analysis, system designing, maintenance, and more.

Following Table 2 Use Case Scenario 1 describes the MIS report generate function and steps to achieve its outcome.

*Table 2: Use Case Scenario 1*

Use case	Description
Name	Owner view reports
Description	Owner access various reports related to yard performance, employee productivity, and financial data.
Actors	Owner
Scenario	<ol style="list-style-type: none"><li>1. Owner logs in to the system.</li><li>2. Go to relevant report view page.</li><li>3. Generate report by selecting relevant filters.</li></ol>
Alternative flow	Visit another report view and generate new report.

Following Table 3 Use Case Scenario 2 describes the MIS employee management function and steps to achieve its outcome.

*Table 3: Use Case Scenario 2*

Use case	Description
Name	Yard Manager manage employees
Description	Yard Manager add, edit, or remove employees from the system.
Actors	Yard Manager
Scenario	<ol style="list-style-type: none"><li>1. Yard Manager logs in to the system.</li><li>2. Go to employee details view page.</li><li>3. Modify details and save.</li></ol>
Alternative flow	

Following Table 4 Use Case Scenario 3 describes the MIS employee management function and steps to achieve its outcome.

*Table 4: Use Case Scenario 3*

<b>Use case</b>	<b>Description</b>
Name	Employee view Assigned Tasks
Description	Employee access tasks assigned by the yard manager, such as loading/unloading vehicles, inventory management, or maintenance
Actors	Employee
Scenario	<ol style="list-style-type: none"> <li>4. Employee logs in to the system.</li> <li>5. Go to assigned task list view page.</li> </ol>
Alternative flow	

Following Table 5 Use Case Scenario 4 describes the customer shopping cart add function on online shopping module and steps to achieve its outcome.

*Table 5: Use Case Scenario 4*

<b>Use case</b>	<b>Description</b>
Name	Customer Add to Cart
Description	Customer select products, add them to the shopping cart, and adjust quantities.
Actors	Customer
Scenario	<ol style="list-style-type: none"> <li>1. Customer logs in to the online shopping website.</li> <li>2. Visit to products page.</li> <li>3. Add products to cart.</li> </ol>
Alternative flow	

### 3.4.3 Activity Diagrams

These activity diagrams provide a visual representation of the steps involved in the online product ordering process for customers using Online Shopping Website module and Stock Transfer Process in Inventory module. Please note that these diagrams are simplified for illustration purposes, and the actual implementation may include additional steps and interactions. Following Figure 6 diagram illustrates the process of online order placement by customer and Figure 7 diagram illustrates the process of Stock Request/ Transfer between two branches.

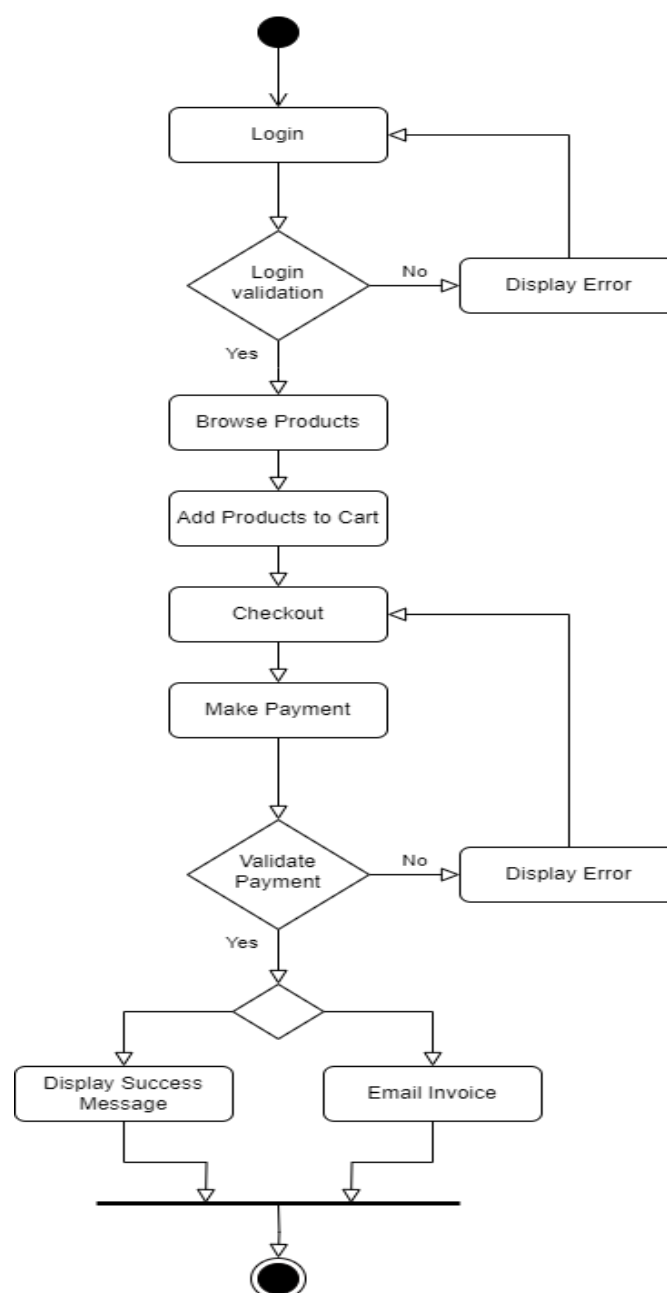


Figure 6: Customer Place an Online Order activity diagram

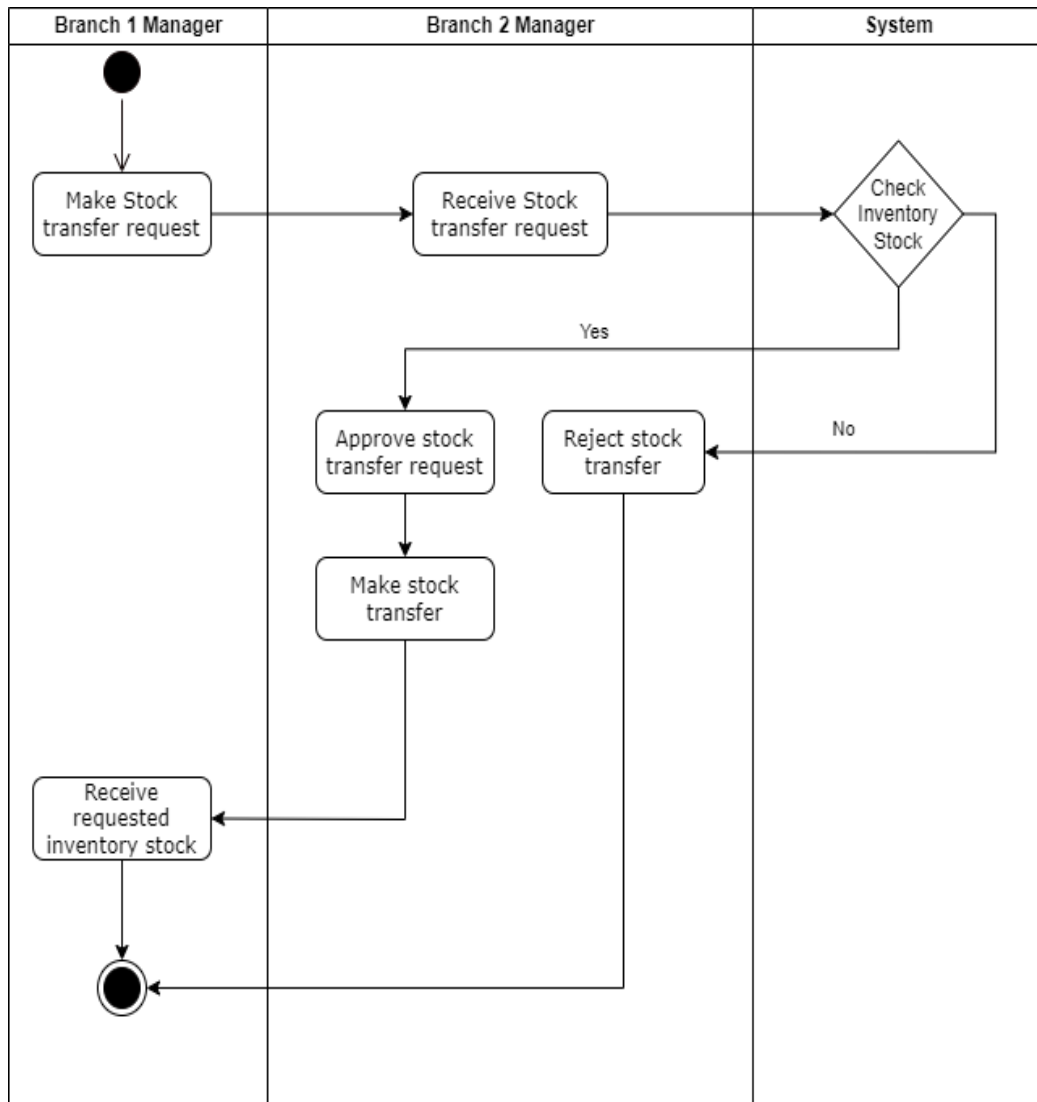


Figure 7: Stock Request/ Transfer Process Activity Diagram

## Sequence Diagram

Sequence diagrams can be used to design a Management Information System (MIS) for a yard by illustrating the interactions and flow of information between different components and actors within the system. These diagrams help in visualizing the order of events and communication between elements, such as users, databases, and software modules, allowing for a clear understanding of how the system operates and how data is processed and managed. By using sequence diagrams, designers can map out the logical steps and interactions involved in the MIS, aiding in the development and implementation of an efficient yard management solution. Below Figure 8 diagram illustrates User login process and Figure 9 diagram illustrates the process of Stock Request/ Transfer between two branches.

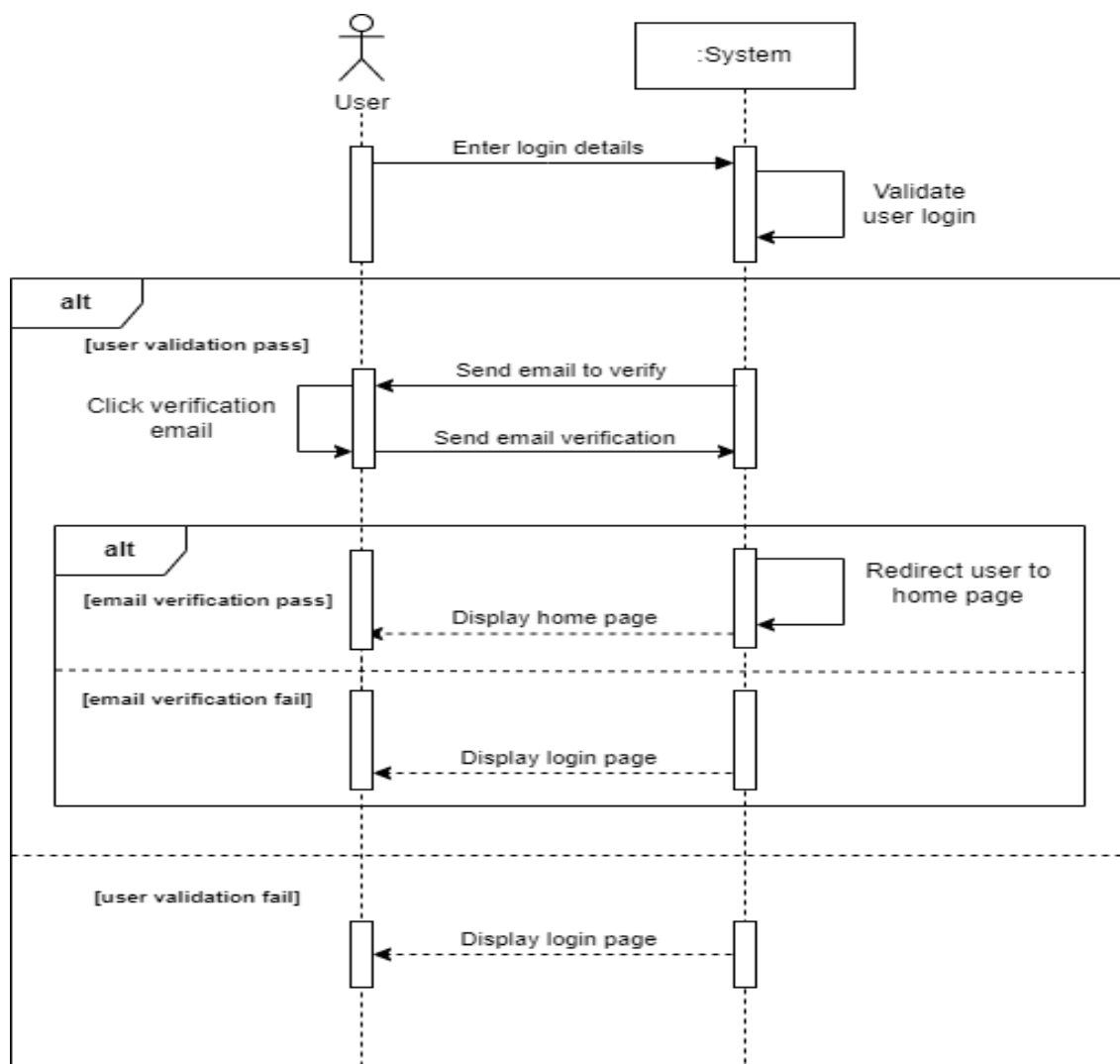


Figure 8 : User Login Sequence Diagram

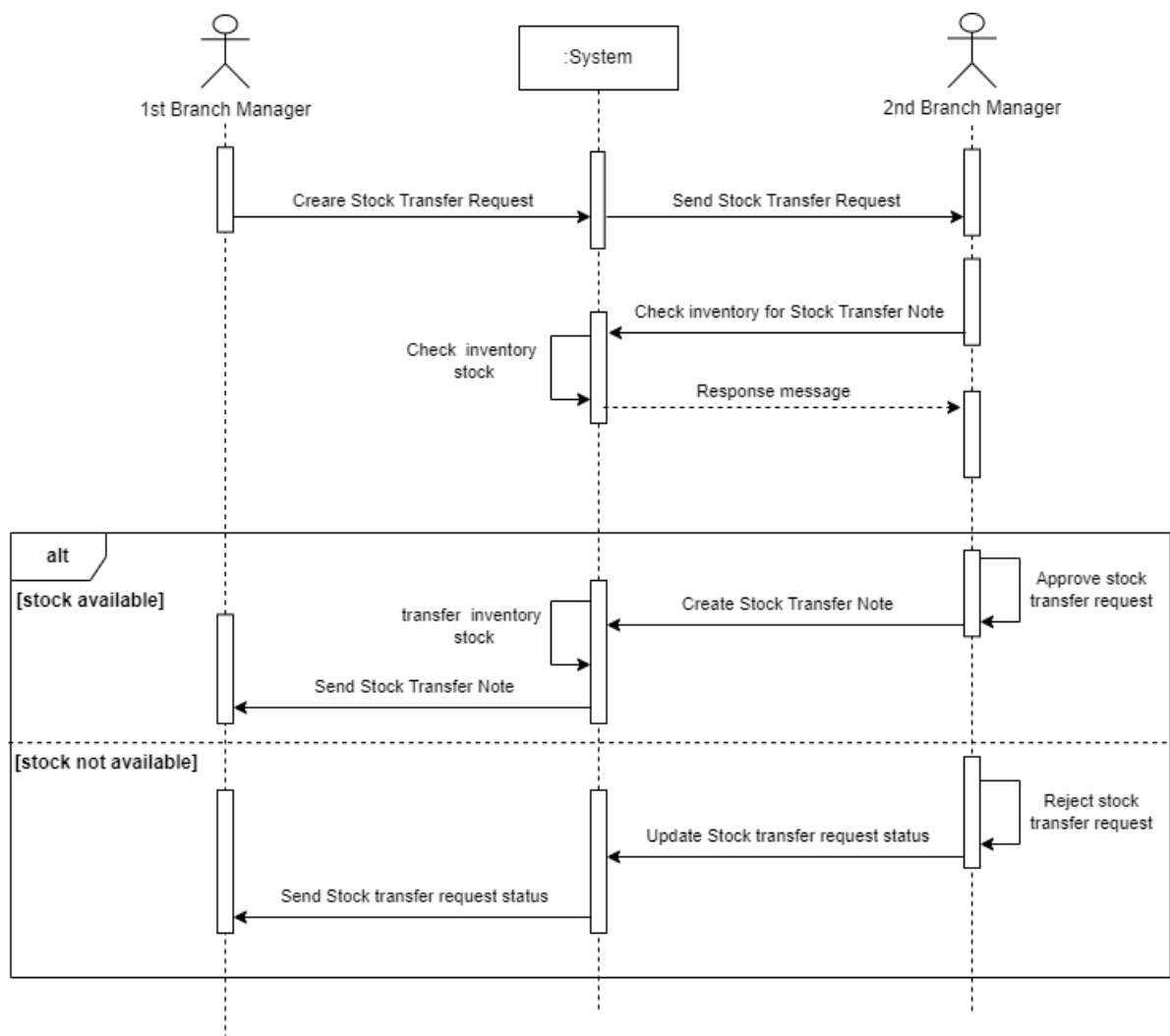


Figure 9 : Stock Transfer Sequence Diagram

### 3.4.4 Database Design

An Entity-Relationship (ER) diagram plays a crucial role in designing a Management Information System (MIS) for a yard. ER diagrams provide a visual representation of the data structure and relationships within the system, aiding in the design and organization of information. In the context of yard management, an ER diagram helps identify and define the key entities (such as vehicles, inventory, employees, and orders) and their attributes. This visual representation aids in making informed design choices, optimizing data management, and ensuring the system functions efficiently and effectively in supporting yard management operations. Following Figure 10 ER diagram illustrates the relationships between key entities in the system.

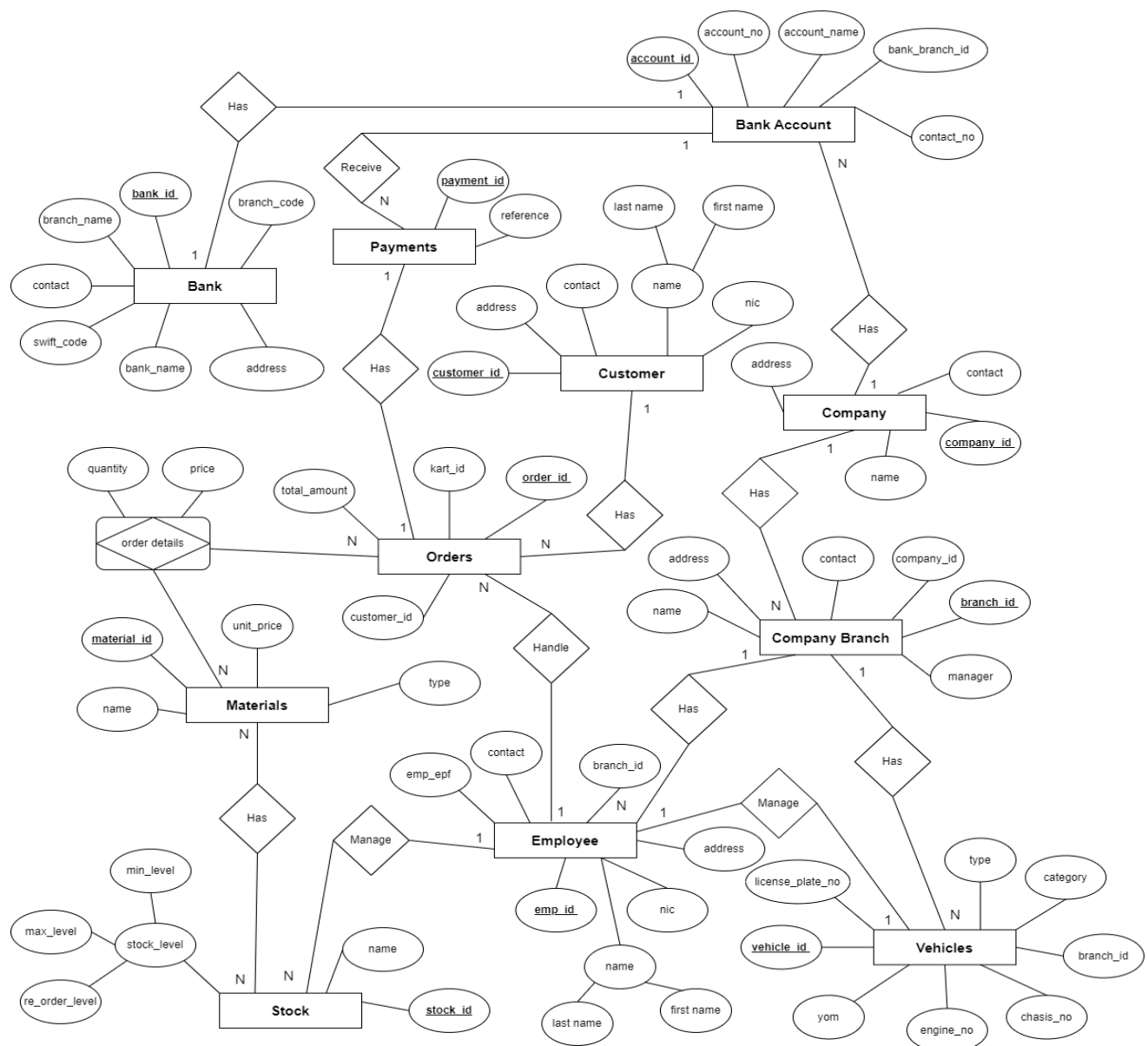


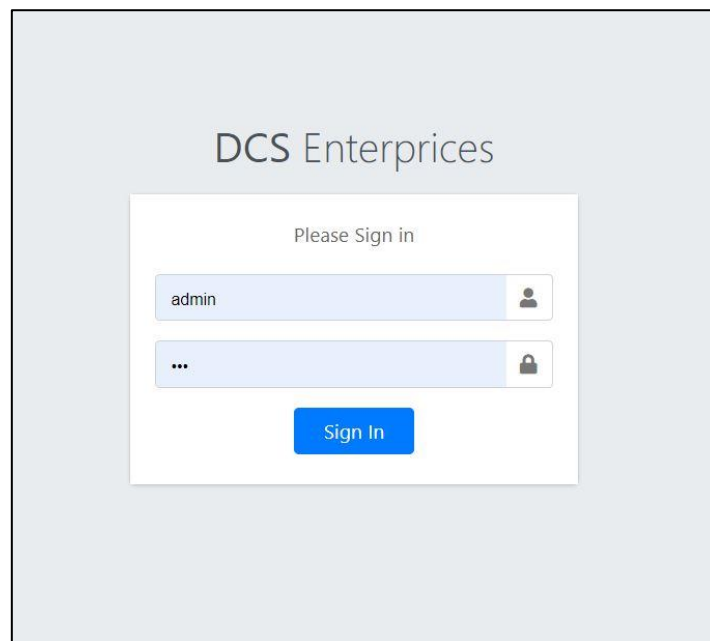
Figure 10 : Entity Relationship Diagram



### 3.5 User Interface Design

The usability, effectiveness, and productivity of a Management Information System (MIS) for a yard are all directly impacted by the user interface design. A user-friendly interface makes it possible for yard staff to quickly access essential information, complete activities, and navigate the system, minimizing errors and increasing efficiency. A simple and user-friendly interface helps simplify data entry, retrieval, and analysis procedures for all user roles within a yard environment, enabling fast decision-making and efficient management of yard operations. Additionally, a user-friendly and adaptable design encourages user pleasure, encourages adoption, and eventually adds to the success of the MIS as a whole. Here, I have created some major interfaces for the project. Following Figures from 11 to 15 are to illustrate how the system UI's are designed to make it more user-friendly to users.

Following Figure 11 illustrates the User login interface design in the system.



*Figure 11: User Login Interface*

Following Figure 12 illustrates the User dashboard interface design in the system.

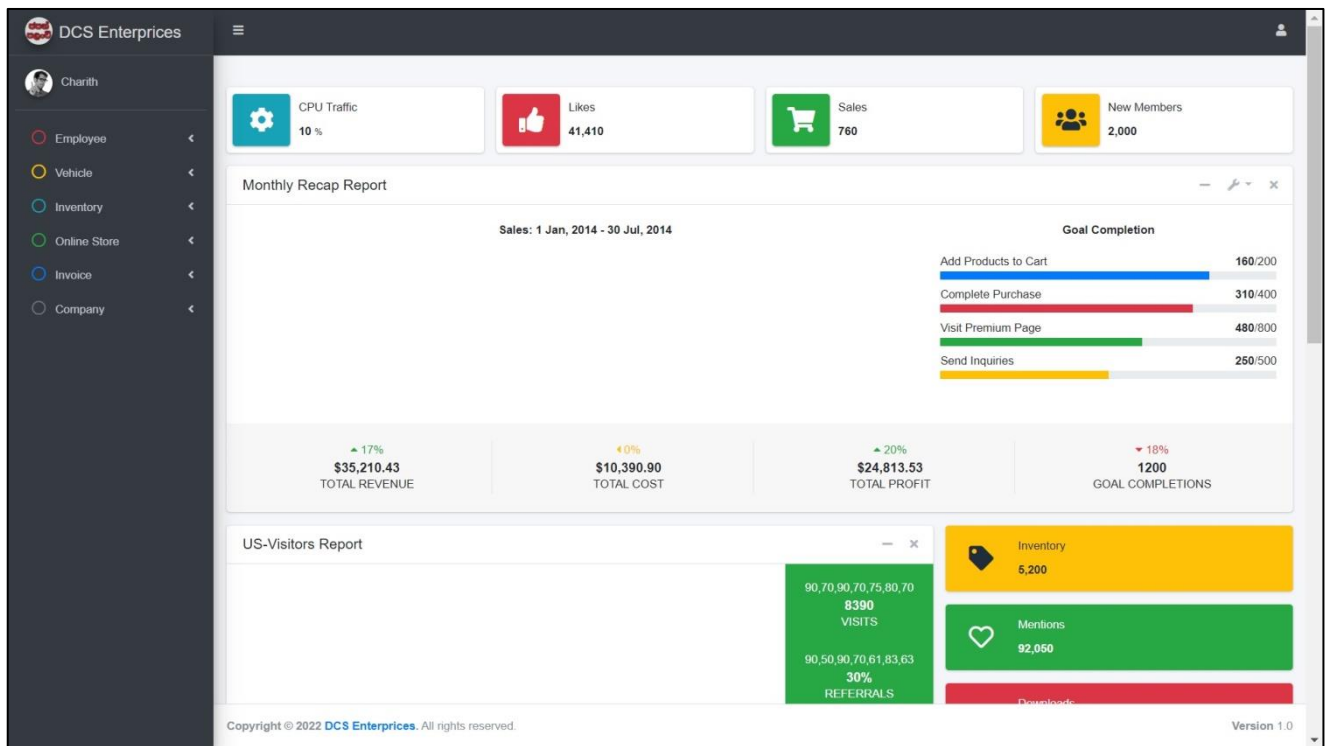


Figure 12 : Sample Dashboard Interface

Following Figure 13 illustrates the Branch create interface design in the system.

Figure 13 : Branch Create Interface

Following Figure 14 illustrates the Branch list view interface design in the system.

id	Name	Company	Location	Contact	Manager	Address	Status	Option
1	Wattala2	xxxxxxxxxxxx	Kadawata	2147483611	17534-Charith	120/36A, Nahena, Hunupitiya, Wattala2	Inactive	
2	Kadawata	DCS	Kadawata	712917184	17534-Charith	21, Polhena, Madapatha	Active	
3	Nittambuwa	xxxxxxxxxxxx	Nittambuwa	712917184	17533-Sachith	Kandy Rd, Nittambuwa	Inactive	
4	Nittambuwa 2	DCS	Nittambuwa	21212121	17533-Sachith	Nittambuwa	Active	

Showing 1 to 4 of 4 entries

Previous 1 Next

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Figure 14 : Branch View Interface

Following Figure 15 illustrates the Item category list view interface design in the system.

id	Category Name	Description	Status	Option
1	Material	Materials	Active	
2	Vehicles	Vehicles	Active	
3	Power Tools	Power Tools	Active	
4	Scaffolding	Scaffolding desc	Active	

Showing 1 to 4 of 4 entries

Previous 1 Next

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Figure 15 : Item Category View Interface

### **3.6 Methodology – Implementation Details**

Iterative and incremental methodologies are highly effective for developing a web based Management Information System (MIS). In this approach, the development process is divided into small, manageable iterations, with each iteration building upon the previous one. Initially, study and go thorough analysis of the yard's requirements, identifying key functionalities and data needs. Then, in each iteration, small components of these requirements is implemented and tested. This allows for quick feedback and adjustments based on changing business needs or unforeseen challenges.

The implementation phase of a MIS for a yard's web-based system involves several key steps. Initially, translate the system's design and requirements into action by developing the web application and database structures. Then write the necessary code, considering security measures and scalability. During this phase, rigorous testing is conducted to ensure the system functions correctly, identifying and fixing any bugs or issues. Once the system is stable, data migration may occur, transferring existing yard data into the new system. Training programs are often executed to familiarize users with the system's functionality. Finally, deployment takes place, making the MIS accessible to yard personnel, and ongoing maintenance and support procedures are established to ensure the system's optimal performance and reliability.

Software Requirements for the system as follows,

- PHP version 5.6 or newer is recommended.
- MySQL version 5.1 or newer is recommended.
- Apache Server.
- Windows 10 or newer OS is recommended.

Hardware Requirements for the system as follows,

- 8GB Ram.
- 256GB or larger SSD.
- Any processor equivalent or higher to Intel i5 processor.

# Chapter 4- Implementation

## 4.1 Introduction

Once the design phase is successfully done, the next step is the implementation phase. This is where the design plan put into action using the right tools and techniques. It's a crucial part of creating software. The result of this phase is a working system that can execute tasks. To begin with, the system is split into separate functional modules. These modules are then brought together to form the complete system. This chapter mainly focused on the key code segments, tools, and techniques used in the implementation environment.

## 4.2 Implementation Environment

The implementation environment has two main parts: the minimum hardware and the software needed. The table below shows what your computer should have in terms of both hardware and software.

*Table 6: Implementation Requirements*

Hardware Environment	Software Environment
Intel(R) Core(TM) i5 5 <sup>th</sup> generation or newer	Microsoft Windows 7 or newer
8GB RAM	PHP Version 5.6 or newer
256GB or Larger SSD	Apache 2.4.4 or newer
	MySQL 5.1 or newer

## 4.3 System Development Tools and Technologies

System Development Tools and Technologies are very helpful to the person who makes or works on computer systems. These tools let them design, implement or test application programs against desired outcomes. Following tools and techniques used when creating the system.

- **Draw.io**

This online tool helps draw diagrams for the system. It works well with almost all UML diagrams and makes it easy to create even complex ones.

- **Codeigniter 3**

The aim is to help you create projects more quickly than if you started coding everything from the beginning. It does this by offering a bunch of helpful tools for common tasks and an easy way to use them through a simple interface and organized structure.

- **Adobe Photoshop CS6**

This software used for create and modify graphical content for system.

- **PHP**

This language is used to build the system's back end, because it makes the system load fast, it's easy to work with, and there are helpful documents for learning.

- **MySQL**

This software manages the system's database. When it comes to security and cost, MySQL is the best choice for web based systems.

- **HTML**

This language is essential for creating the basic structure of a webpage.

- **Bootstrap CSS framework**

This is used to style the system. Since many users connect to this system using their portable devices Bootstrap's responsive feature is great for them. It ensures the system is loading on portable devices easily and use the system without any trouble.

- **JavaScript**

JavaScript enables dynamic manipulation of system display components and load system data via get and post methods.

- **jQuery**

This is a library in JavaScript that helps create functions and dynamic content with less code.

- **JSON**

JSON is capable of serialization data format for any programming language to provide a high level of interoperability.

- **AJAX**

With AJAX, developers can exchange data with the server without needing to reload the entire page. It makes things happen smoothly in the background.

- **Notepad++**

It's a simple lightweight text editor with helpful features like automatic code suggestions.

- **Apache**

This is used as software for a web server.

- **DataTables**

DataTables is an add-on for the jQuery JavaScript library. It's a highly flexible tool for create data tables and charts.

- **GitHub**

GitHub Desktop is a user-friendly desktop application that simplifies the version control process by providing a graphical interface for managing Git repositories.

## 4.4 Major Code Segments

A significant part of the code relies on reusable modules. These modules are like building blocks that can be used repeatedly. They make the code more efficient and easier to manage by breaking it down into smaller, reusable pieces. This approach helps in creating a flexible and understandable system.

### 4.4.1 Database Connection

In Codeigniter 3, the framework uses a file called "database.php" to store the connection details, like the username, password, and database name. When your web application needs data, it calls on this file to establish a connection to the database.

Once connected, system can send requests to the database to fetch or store information. It's like asking for specific data or telling the database to remember new information. This connection is handy because it helps your web application interact with the database smoothly, ensuring that the right data is fetched or stored when needed. It's like having a conversation between your web app and the database to make sure everything runs smoothly behind the scenes.

```
71 | the query builder class.
72 */
73 $active_group = 'default';
74 $query_builder = TRUE;
75
76 $db['default'] = array(
77     'dsn' => '',
78     'hostname' => 'localhost',
79     'username' => 'user',
80     'password' => 'password',
81     'database' => 'dcs_db',
82     'dbdriver' => 'mysqli',
83     'dbprefix' => '',
84     'pconnect' => FALSE,
85     'db_debug' => (ENVIRONMENT !== 'production'),
86     'cache_on' => FALSE,
87     'cachedir' => '',
88     'char_set' => 'utf8',
89     'dbcollat' => 'utf8_general_ci',
90     'swap_pre' => '',
91     'encrypt' => FALSE,
92     'compress' => FALSE,
93     'stricton' => FALSE,
94     'failover' => array(),
95     'save_queries' => TRUE
96 );
97
```

Figure 16: Database Connection Code



## 4.4.2 Login authenticate function

The below code segment will verify the user is valid and redirect the user to next screen accordingly. If successful, it proceeds with the next steps; otherwise, it displays error msg on the screen.

```
function authenticate()
{
    $data = json_decode(file_get_contents('php://input'), true);
    if($data){
        if($data['username'] && $data['password'])
        {
            //check sys user table
            $username = $data['username'];
            $password = $data['password'];
            $emp_id = '';
            $customer_id = '';
            $username = preg_replace('/[^\a-zA-Z0-9-\_\.]/','',$username);//remove spaces and special characters
            $password = preg_replace('/\s/','',$password);//remove spaces
            $hash = hash('sha256', $password);
            $user_data = $this->Sys_user_model->validate_user_join($username, $hash);

            if($user_data){

                $data = array(
                    'token' => "",
                    'otp_code'=> ""
                );

                $this->Sys_user_model->update_single($user_data[0]['user_id'], $data);

                if($user_data[0]['sys_user_group_name'] != "Customer"){
                    $emp_id = $user_data[0]['emp_cust_id'];
                    $emp_data_result = $this->Emp_model->fetch_single($emp_id);
                    $user_data_result = $this->Sys_user_model->fetch_single_by_emp_id($emp_id);
                    $sys_user_group = $this->Sys_user_group_model->fetch_single($user_data_result[0]['sys_user_group_id']);

                    $userdata = array(
                        'user_id' => $user_data[0]['user_id'],
                        'sys_user_group_id' => $sys_user_group[0]['sys_user_group_id'],
                        'sys_user_group_name' => $sys_user_group[0]['sys_user_group_name'],
                        'emp_id' => $emp_data_result[0]['emp_id'],
                        'emp_epf' => $emp_data_result[0]['emp_epf'],
                        'emp_first_name' => $emp_data_result[0]['emp_first_name'],
                        'emp_email' => $emp_data_result[0]['emp_email'],
                        'emp_last_name' => $emp_data_result[0]['emp_last_name'],
                        'emp_company_id' => $emp_data_result[0]['emp_company_id'],
                        'emp_branch_id' => $emp_data_result[0]['emp_branch_id'],
                        'is_active_emp' => $emp_data_result[0]['is_active_emp'],
                        'token' => $user_data_result[0]['token'],
                        'otp_code_gen_time' => $user_data_result[0]['otp_code_gen_time'],
                        'otp_verify' => FALSE,
                        'logged_in' => FALSE,
                        'error' => false,
                        'message' => "Valid User"
                    );
                }
            }
            else{
                $customer_id = $user_data[0]['emp_cust_id'];
                $customer_data_result = $this->Customer_model->fetch_single($customer_id);
                $user_data_result = $this->Sys_user_model->fetch_single_join_by_cust_id($customer_id);

                $userdata = array(
                    'user_id' => $user_data[0]['user_id'],
                    'customer_id' => $customer_data_result[0]['customer_id'],
                    'customer_name' => $customer_data_result[0]['customer_name'],
                    'customer_nic_address' => $customer_data_result[0]['customer_nic_address'],
                    'customer_working_address' => $customer_data_result[0]['customer_working_address'],
                    'customer_shipping_address' => $customer_data_result[0]['customer_shipping_address'],
                    'customer_contact_no' => $customer_data_result[0]['customer_contact_no'],
                    'customer_email' => $customer_data_result[0]['customer_email'],
                    'is_active_customer' => $customer_data_result[0]['is_active_customer'],
                    'sys_user_group_name' => $user_data_result[0]['sys_user_group_name'],
                    'token' => $user_data_result[0]['token'],
                    'otp_code_gen_time' => $user_data_result[0]['otp_code_gen_time'],
                    'otp_verify' => FALSE,
                    'logged_in' => FALSE,
                    'error' => false,
                    'message' => "Valid User"
                );
            }

            $this->session->set_userdata($userdata);
            echo json_encode($userdata);
        }
        else{
            $data = array(
                'error' => true,
                'message' => "Invalid credentials"
            );
            echo json_encode($data);
        }
    }
    else{
        $data = array(
            'error' => true,
            'message' => "Invalid credentials"
        );
        echo json_encode($data);
    }
}
```

Figure 17: login authenticate function.

### 4.4.3 OTP generate function

Once you successfully logged in below code segment will generate OTP code and send to logged in user's mobile for 2 step verification.

```
function otpGen()
{
    $data = json_decode(file_get_contents('php://input'), true);

    if($data){
        $user_id = $data['user_id'];

        if($user_id){

            $otp_code = random_int(100000, 999999);

            $data = array(
                'otp_code' => $otp_code
            );

            $this->Sys_user_model->update_single($user_id, $data);

            $user_data = $this->Sys_user_model->fetch_single_join($user_id);
            /* var_dump($user_data);
            exit(); */

            $contact_no = "";

            if($user_data[0]['sys_user_group_name'] != "Customer"){
                $emp_data_result =
                $this->Emp_model->fetch_single($user_data[0]['emp_cust_id']);
                $contact_no = $emp_data_result[0]['emp_contact_no'];
            }
            else{
                $customer_id = $user_data[0]['emp_cust_id'];
                $customer_data_result =
                $this->Customer_model->fetch_single($customer_id);
                $contact_no = $customer_data_result[0]['customer_contact_no'];
            }

            $message = "Test: Your OTP Code is ".$otp_code;

            //sendSms($contact_no, $message);

            $data = array(
                'error' => false,
                'message' => "OTP Created"
            );
            echo json_encode($data);

        }
        else{
            $data = array(
                'error' => true,
                'message' => "Invalid credentials"
            );
            echo json_encode($data);
        }
    }
}
```

Figure 18: OTP generate function.

#### 4.4.4 OTP verify function.

After user entered the OTP code following function will verify it and redirect the user to next screen accordingly. If successful, it proceeds with the next steps; otherwise, it displays error and redirect user back to login page.

```
function verifyOtp()
{
    $data = json_decode(file_get_contents('php://input'), true);

    if($data){
        $user_id = $data['user id'];
        $otp_code = $data['otp_code'];

        if($user_id != "" && $otp_code != "")
        {
            $valid_otp = $this->Sys_user_model->validate_otp($user_id, $otp_code);

            if($valid_otp){
                //generate random token for user
                $token = bin2hex(random_bytes(10));

                $data = array(
                    'token' => $token
                );

                $this->Sys_user_model->update_single($user_id, $data);
                $userData =
                $this->Emp_model->fetch_single_join_employee($user_id);

                if($userData){
                    $data = array(
                        'user id' => $user_id,
                        'emp id' => $userData[0]['emp id'],
                        'emp epf' => $userData[0]['emp epf'],
                        'emp first name' => $userData[0]['emp first name'],
                        'emp email' => $userData[0]['emp email'],
                        'emp last name' => $userData[0]['emp last name'],
                        'emp branch id' => $userData[0]['emp branch id'],
                        'is active emp' => $userData[0]['is active emp'],
                        'sys user group name' =>
                        $userData[0]['sys_user_group_name'],
                        'error' => FALSE,
                        'message' => "OTP Verified",
                        'token' => $token,
                        'logged_in' => TRUE,
                        'otp_verify' => TRUE
                    );
                    echo json_encode($data);
                }
            }
            else{
                $data = array(
                    'error' => TRUE,
                    'message' => "OTP Verification Failed"
                );
                echo json_encode($data);
            }
        }
        else{
            $data = array(
                'error' => TRUE,
                'message' => "OTP Verification Failed"
            );
            echo json_encode($data);
        }
    }
}
```

Figure 19: OTP verify function.

# **Chapter 5- Testing and Evaluation**

## **5.1 Related Testing Types**

The success of any project relies on testing. Testing is done to make sure that what the supplier promised matches what the customer needs, and it's done in a structured way that is already planned. This chapter will explain how we confirm and check the system in a specific, predefined manner.

Testing has two parts: verification and validation. Verification happens throughout system development to make sure the system is being built correctly. Validation comes after the system is made to check if what the clients asked for initially matches what the final system has.

### **5.1.1 Unit Testing**

During the development (coding) of software programs, there is a phase called unit testing. The goal of unit testing is to focus on a particular piece of code and make sure it is correct. In the process of creating this system, each function and module's functionality was tested immediately after the coding was done. This method aided in finding and resolving issues before user testing, reducing significant problems and enhancing user satisfaction.

### **5.1.2 Regression Testing**

In During this testing phase, it's necessary to rerun both functional and non-functional testing methods to check if recent modifications caused any failures. The objective is to make sure the system doesn't have any issues because of these changes. This testing should be done several times, and automated testing techniques can help make it more efficient.

### **5.1.3 Integrated Testing**

In the last stage, an integrated testing technique will be applied. This method combines and tests modules using different approaches. The smallest testable part of the system, known as a unit, is crucial in this context. Integration testing is beneficial for spotting interface issues between various software components before they lead to problems during the program's actual execution.

### **5.1.4 User Acceptance Test**

User acceptance testing happens when the system is being put into action. At the same time as the initial setup, the actual end user does some testing through a manual process. This often leads to finding small changes that need to be made. By the end of this phase, most of the testing is finished.

## 5.2 Test Cases

This document has test data that includes pre-conditions, steps, and the actual and expected results. Each test case is carefully planned to examine particular functions of the system component. The system is constructed and tested one module at a time to simplify development and testing. Here are test cases for some key system modules. Following table 7 illustrates major test cases.

Table 7: Major test cases

ID	Description	Pre-condition	Steps	Expected Result	Actual Result
1	Validate user login.	1. The user should be on the login page.	1. The user should provide valid username and password.	Send the user to OTP validation page.	User directed to OTP validation page.
2	Validate user login with incorrect details.	1. The user should be on the login page.	1. Either enter wrong username or password.	Display error message on login page.	Displayed the error message on login page.
3	Validate OTP 2 factor authentication.	1. The user should be on the OTP verification page.	1. Enter OTP code received via SMS.	Send the user to dashboard.	User directed to dashboard.
4	Validate OTP 2 factor authentication with incorrect OTP code.	1. The user should be on the OTP verification page.	1. Enter wrong OTP code.	Display error message and send your to login page.	Displayed the error message and directed the user to login page.
5	Reset user password.	1. The user should be on the password reset page.	1. Either enter user email address or mobile number.	Display successful message and	Displayed successful message and directed the

			<p>2. Click request reset code button.</p> <p>3. On next page enter OTP code and new password and confirm password.</p> <p>4. Click change password button.</p>	send the user to login page	user to login page.
6	Reset user password with invalid user details.	1. The user should be on the password reset page.	1. Either enter wrong user email address or mobile number.	Display error message and send the user to login page.	Displayed error message and directed the user to login page.
7	Stock Purchase create.	<p>1. The user should have logged in to the system.</p> <p>2. The user should be on the stock purchase page.</p>	<p>1. Click add stock purchase button.</p> <p>2. Insert date and select relevant items for purchase.</p> <p>3. Click submit button.</p>	Display successful message and send the user to stock purchase view page.	Displayed successful message and directed the user to stock purchase view page.
8	Stock transfer create.	<p>1. The user should have logged in to the system.</p> <p>2. The user should be on the stock transfer page.</p>	<p>1. Click add stock transfer button.</p> <p>2. Insert date, transfer type, request to branch and inform person.</p> <p>3. Select relevant items for transfer.</p>	Display successful message and send the user to stock transfer view page.	Displayed successful message and directed the user to stock transfer view page.

			4. Click submit button.		
9	Apply employee leave.	1. The user should have logged in to the system. 2. The user should be on the employee leave page.	1. Click apply leave button. 2. Insert from date, to date, leave type and amount. 3. Click submit button.	Display successful message and send the user to employee leave view page.	Displayed successful message and directed the user to employee leave view page.
10	Upload employee attendance data.	1. The user should have logged in to the system. 2. The user should be on the employee attendance page.	1. Click upload attendance button. 2. Select branch and attendance csv file for upload. 3. Click submit button.	Display successful message and send the user to employee attendance view page.	Displayed successful message and directed the user to employee attendance view page.
11	Approve employee attendance data.	1. The user should have logged in to the system. 2. The user should be on the employee attendance page.	1. Click upload attendance button. 2. Select branch and attendance csv file for upload. 3. Click submit button.	Display successful message and send the user to employee attendance view page.	Displayed successful message and directed the user to employee attendance view page.



## 5.3 User Evaluation

The system goes through a test called user acceptance testing to make sure it does what users expect. This test, also called beta or end-user testing, comes after the system is set up. It's an important step where the system is checked in the user's environment.

To collect information for the assessment, a group of users is selected according to their levels in the system. The system is given to users from different user roles. These users carefully examine the prototype, noting both its strong points and areas that need improvement. Feedback is shared through a form distributed once the system is put into action. Refer to the table for specific information. Following table 8 illustrates User evaluation summary.

*Table 8: Summary of the User evaluation result*

No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
1.	This system serves as the Information Management Facility for the yard.	9	10	1		
2.	The system is easy for users to understand.	6	14			
3.	This system responds quickly.	8	9	3		
4.	Users find system interfaces appealing.	10	6	4		
5.	It's easy for users to move around in the system.	13	5	2		
6.	Pop-up messages from the system helping users understand the results.	12	8			
7.	Reports from the system assist in making fast decisions.	6	12	2		
8.	System increases overall yard's efficiency and productivity.	11	8	1		

## 5.4 Results of the Testing

Tests are conducted at various stages during the development of the system. Initially, certain cases may not succeed in the early versions of prototypes. However, these issues are addressed in subsequent prototypes until all required test cases run smoothly without any errors. Below figure 20 depicts the current state of test case execution in the system.

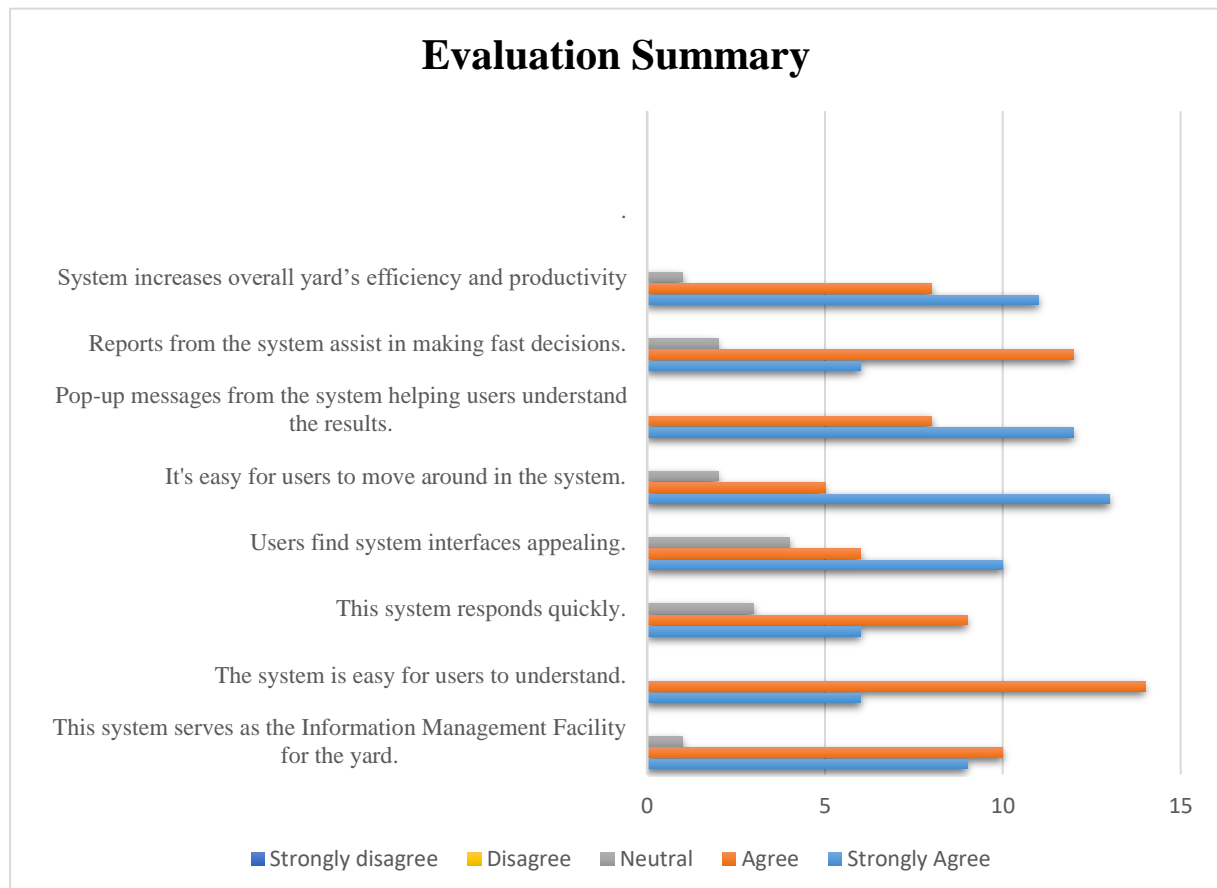


Figure 20: Evaluation summary chart.

## **Chapter 6- Conclusion**

In the conclusion chapter, there's a detailed look at the system that was built. It talks about what it achieved, where it fell short, and what its problems were. The author shares their thoughts on the whole project, giving an honest opinion about what worked well and what didn't. They discuss both the good parts and the not-so-good parts of how they approached the project and how the system was made.

### **6.1 Introduction**

In conclusion, the Information Management System for yard serves as a central hub for efficient organization and control of yard activities. By leveraging web-based technologies, it ensures real-time data access and collaboration, enhancing overall productivity and decision-making. The system's comprehensive solution for yard logistics, including inventory tracking, equipment allocation, and staff scheduling, optimizes resource utilization and minimizes operational downtime. Security remains paramount with robust authentication and authorization mechanisms safeguarding critical yard data.

Furthermore, the system's online shopping platform establishes a strong digital presence for businesses, offering customers a user-friendly experience. The integration of a Point of Sale (POS) component streamlines in-store transactions, empowering sales associates to process orders and manage inventory efficiently. Real-time synchronization between online and in-store systems ensures accurate inventory tracking, minimizing stock-related challenges.

With secure payment processing, the Information Management System prioritizes the confidentiality of financial information. Its adaptability caters to businesses of various sizes and industries, supporting scalability and flexibility to meet changing company needs. The user-friendly interface and data analytics tools enable users to make informed decisions, enhance operational performance, and ultimately achieve improved outcomes in yard management.

## 6.2 Lesson Learnt

Being in a master's program, I mostly learned theories. But this project was special; it allowed applying those theories in a real-world system. Finishing it within a set time frame made me better at it. This experience boosted confidence and improved coding, communication, and report-writing skills. I also gained more knowledge about web technologies like SMS gateways, PHP frameworks and Pdf, Mail libraries and integration with modern payment methods like QR payments. Now, I can use these technologies well and follow coding standards.

## 6.3 Critical Assessment of the project

The Information management system web application, which aimed to integrate an online payment gateway, but the cost is very high, so the client wanted a secure and low-cost payment method. To overcome this issue, the Lanka QR payment method was adopted. Lanka QR payment method supports over 90% QR payment apps in Sri Lanka and it is a CBSL certified payment method.

## 6.4 System Weaknesses

The term "System Weaknesses" refers to the problems or shortcomings in how an information management system works. These issues can include errors, inefficiencies, or areas where the system doesn't perform well. Identifying and understanding these weaknesses helps in finding ways to improve the system for better functioning.

- **Online order confirmation is done manually.**

The system has not provided Internet Payment Gateway service for online customers to do their payment transaction, so the automatic payment acknowledgement is not receiving from bank to system for update order confirmation automatically. Therefore, designated system user must check the Online shopping website order list for relevant payment details and cross check it with Lanka QR payment app so there could be some delays in confirming the order after customer payment.

## 6.5 Future Enhancement

The main goal is to improve the system's capability to handle a larger volume of data seamlessly. Additionally, plan to introduce new features and functionalities that will cater to the evolving needs of our users. This will involve continuous updates and improvements to ensure a better overall experience for everyone using the application.

- **Adopt 3 tier architecture for system to implement as an API.**

Plan to adopt the current system by implementing a three-tier architecture, dividing it into three main layers: API, Database, and Interface. The API layer handles communication with external services and manages data processing. The Database layer is responsible for storing and retrieving data efficiently. Finally, the Interface layer focuses on presenting information to users in a clear and user-friendly manner. This restructuring enhances the system's scalability, maintainability, and overall performance. We believe that this three-tier approach will streamline development and ensure a robust foundation for future enhancements.

- **Create a Mobile app interface to connect with API.**

Plan to develop a mobile app that links smoothly with the PHP API. This app helps users to communicate easily with our online services. The PHP API works in the background, managing data requests and responses. By connecting the mobile app with the PHP API, we want to offer a quick and easy way for users to access and use our services wherever they are.

- **Integrate with Google login.**

Once the system integrated with Google's authentication service, users can sign in to our website using their Google account credentials. This adds an extra layer of convenience and security for our users. It also simplifies the login process, as users don't need to create and remember a separate username and password for our website. This integration enhances user experience and boosts the overall usability of our web system.

# Current Progress/ Refined Project timeline

Current progress of the project illustrated in following figure 21. Green colored bars indicate completed task now and red colored bars indicates tasks not completed yet.

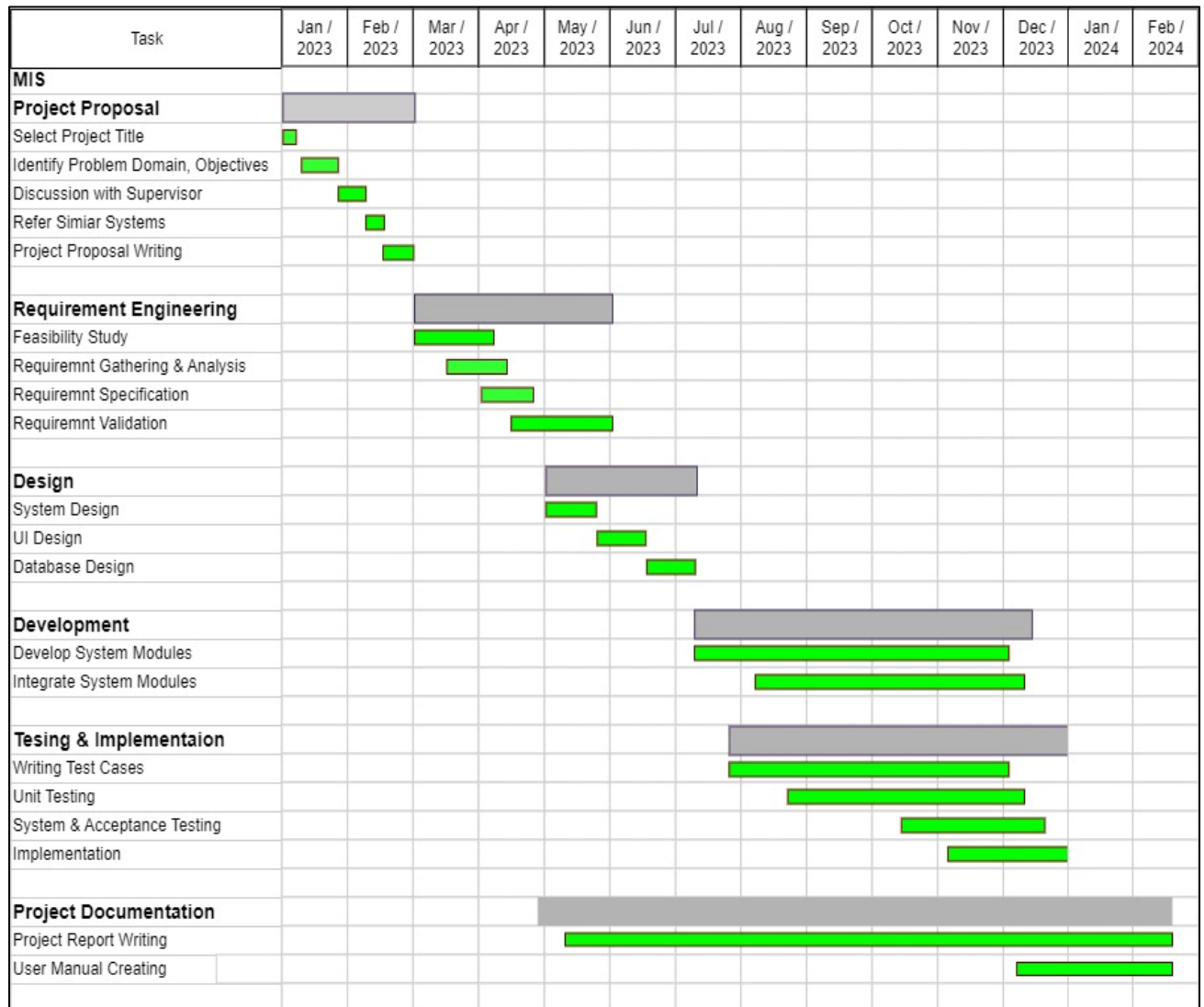


Figure 21: Current Progress / Refined Project timeline

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## Appendix A – User Documentation

This guide provides information on using our web application. It explains how to navigate through different features and perform tasks efficiently. Learn about the various tools available and discover tips for a smoother experience. The documentation aims to make your interaction with the web application straightforward, helping you make the most of its capabilities. Find step-by-step instructions and helpful insights to enhance your usage of the platform.

### Localhost Configuration steps.

- Download and Install xampp control panel v.3.30.
- Copy all project files to “C:\xampp\htdocs” path.
- Open database.php file inside “C:\xampp\htdocs\API.zip\API\application\config” path and update database details.
- Run xampp control panel and click “Start” button for Apache and MySQL services.
- Now open web browser and go to “http://localhost/phpmyadmin/” and create new database named “dcs\_db” and import database backup file named “dcs\_db.sql” to dcs\_db database.
- Now open web browser and go to <http://localhost/dcs/> for Information Management system, or <http://localhost/web/> for online shopping website.



## User Manual for Information Management System

### User Login

- Enter username and password.
- Click Sign in button.
- Successful login will direct you to OTP verification page. Otherwise, error message will popup.

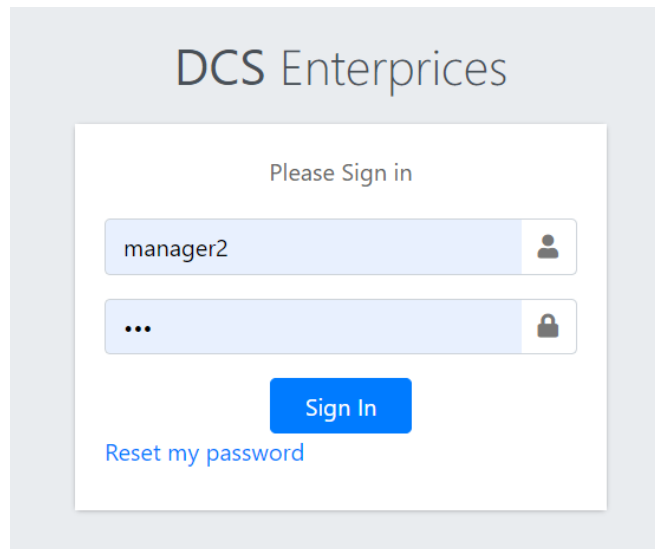
The screenshot shows a login interface for 'DCS Enterprises'. At the top, the text 'DCS Enterprises' is displayed in a large, dark font. Below this, the instruction 'Please Sign in' is centered. There are two input fields: the first contains the username 'manager2' and has a user icon on the right; the second contains three dots '...' and has a lock icon on the right. Below the password field is a blue 'Sign In' button. At the bottom left of the form area, there is a link that says 'Reset my password'.

Figure 22: Login page.

### OTP Verification

- Enter the OTP code received to your mobile device.
- Click Submit button.
- If OTP validation is fine you will direct to Dashboard page. Otherwise, error message will popup.

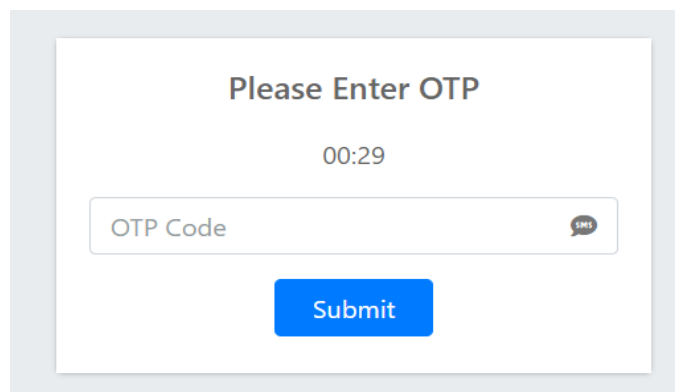
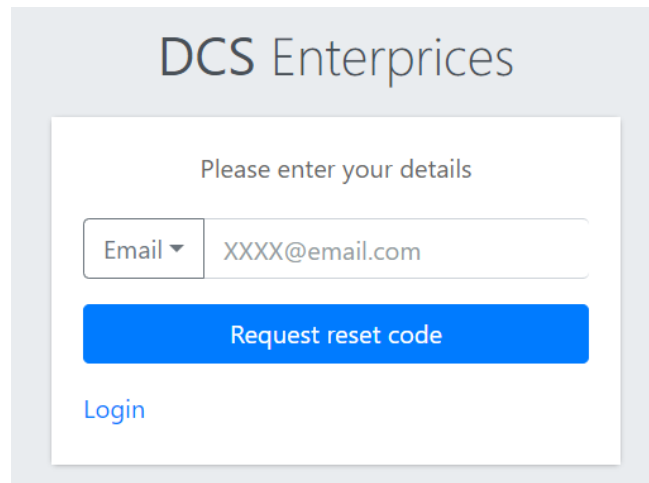
The screenshot shows an OTP verification interface. At the top, the text 'Please Enter OTP' is centered. Below it, a timer displays '00:29'. There is a single input field labeled 'OTP Code' with a speech bubble icon on the right. Below the input field is a blue 'Submit' button.

Figure 23: OTP verification page.

## Password reset.

- This page will appear when you clicked Reset my password on Login page.
- Here you can either request your password reset code using email or mobile number.
- Click request rest code button.
- You will be directed to password reset page.

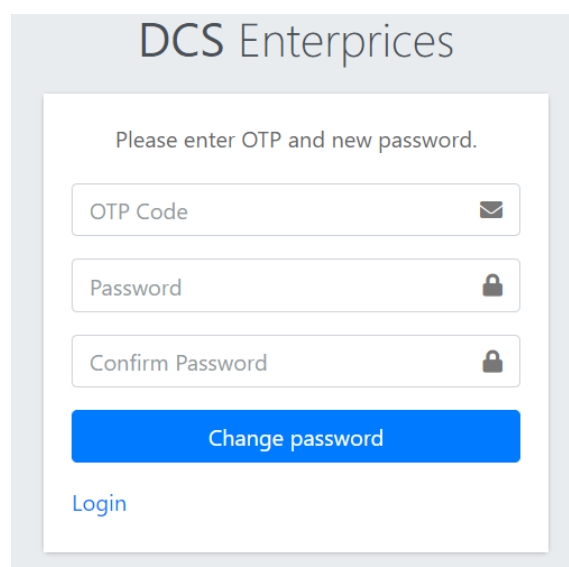


The screenshot shows a web form titled "DCS Enterprices" with the heading "Please enter your details". It features a dropdown menu labeled "Email" with a downward arrow, followed by a text input field containing "XXXX@email.com". Below the input field is a prominent blue button labeled "Request reset code". At the bottom left of the form, there is a blue link labeled "Login".

Figure 24: Password reset request page.

## Update New Password

- Enter valid OTP code and password and confirm password.
- Click change password button.
- If entered details are valid Success message will popup.



The screenshot shows a web form titled "DCS Enterprices" with the heading "Please enter OTP and new password.". It contains three input fields: "OTP Code" with an envelope icon, "Password" with a lock icon, and "Confirm Password" with a lock icon. Below these fields is a prominent blue button labeled "Change password". At the bottom left of the form, there is a blue link labeled "Login".

Figure 25: Password reset page.

## Dashboard

- Dashboard will display summarized set of data according to user.

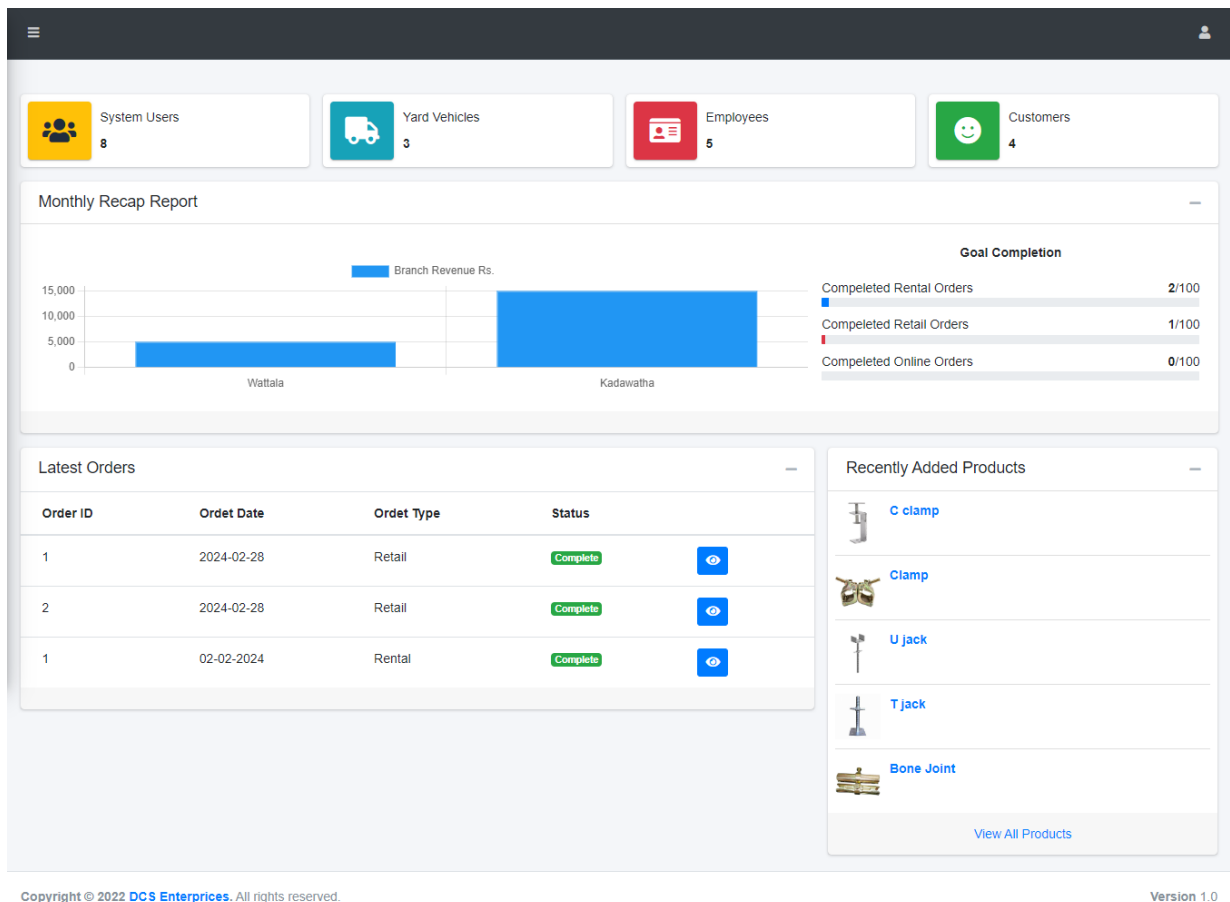
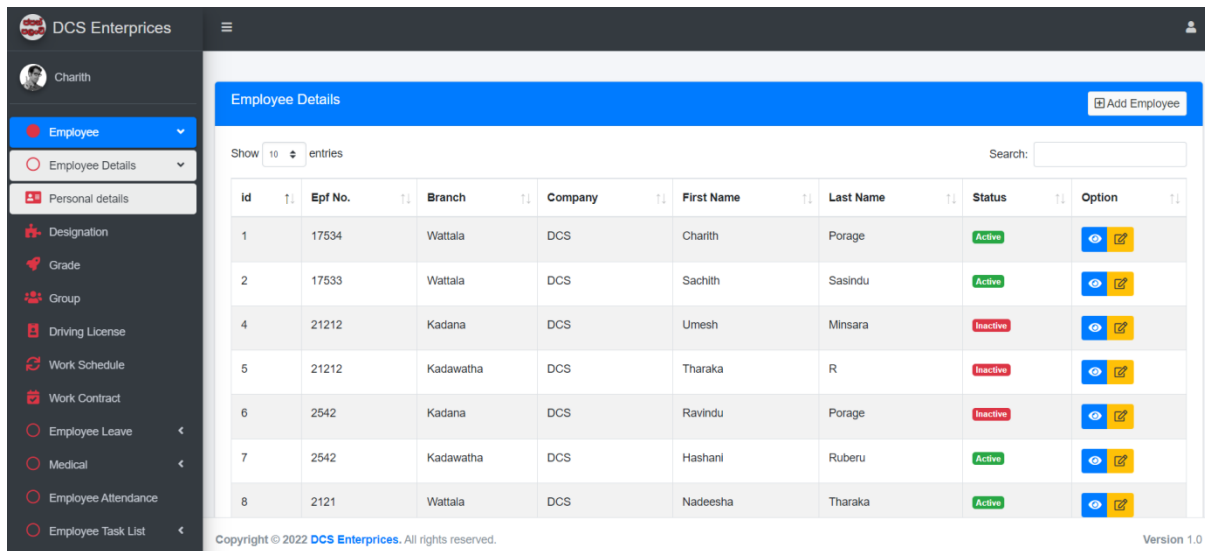
















Figure 26: Dashboard page.

## Employee details view.

- Click Personal Details menu item to view list of employees details.



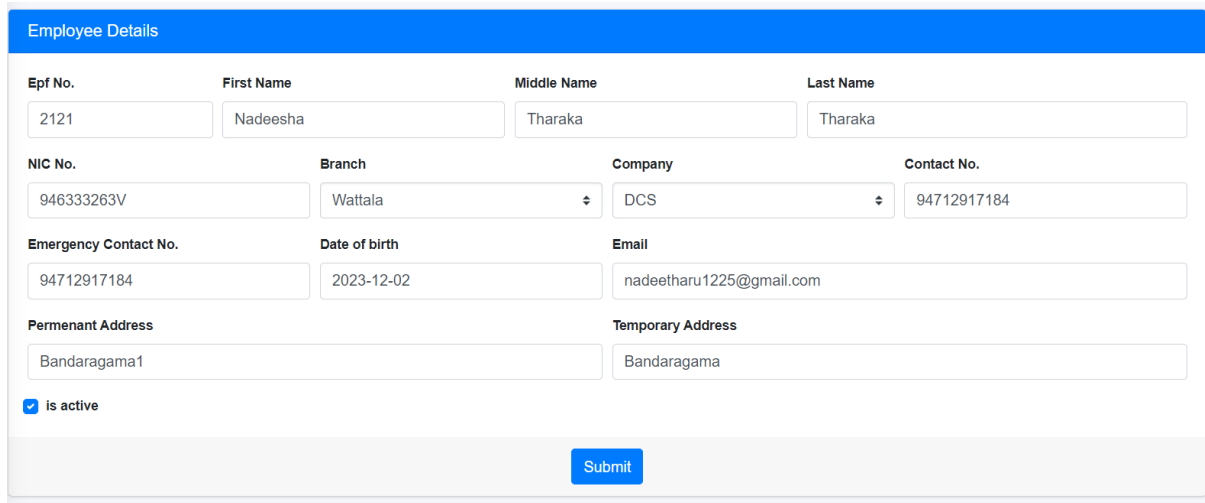
id	Epf No.	Branch	Company	First Name	Last Name	Status	Option
1	17534	Wattala	DCS	Charith	Porage	Active	 
2	17533	Wattala	DCS	Sachith	Sasindu	Active	 
4	21212	Kadana	DCS	Umesh	Minsara	Inactive	 
5	21212	Kadawatha	DCS	Tharaka	R	Inactive	 
6	2542	Kadana	DCS	Ravindu	Porage	Inactive	 
7	2542	Kadawatha	DCS	Hashani	Ruberu	Active	 
8	2121	Wattala	DCS	Nadeesha	Tharaka	Active	 

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Figure 27: Employee details view.

## Admin employee details create/ edit view.

- Click Add Employee button for create new employee and fill relevant details and click Submit button.
- Click Edit button on List view for edit employee details and click Submit button.



Employee Details

Epf No. First Name Middle Name Last Name

2121 Nadeesha Tharaka Tharaka

NIC No. Branch Company Contact No.

946333263V Wattala DCS 94712917184

Emergency Contact No. Date of birth Email

94712917184 2023-12-02 nadeetharu1225@gmail.com

Permanent Address Temporary Address

Bandaragama1 Bandaragama

☒ is active

Submit

Figure 28: Admin employee details create/ edit view.

## Employee designation details view.

- Click Designation menu item to view list of employee's designation details.

Employee Designation Details

Add Employee Designation

Show

10

entries

Search:

id	Designation Name	Description	Status	Option
1	Yard Manager	Overall manage yard	Active	<div><div></div><div></div></div>
2	Driver	Lorry driver	Active	<div><div></div><div></div></div>
3	Staff	General Staff	Active	<div><div></div><div></div></div>

Showing 1 to 3 of 3 entries

Previous

1

Next

Figure 29: Employee designation details view.

## Employee designation create/ edit view.

- Click Add Designation button for create new designation and fill relevant details and click Submit button.
- Click Edit button on List view for edit designation details and click Submit button.

Employee Designation Details	
Designation Name	Description
<input type="text" value="Staff"/>	<input type="text" value="General Staff"/>
<input checked="" type="checkbox"/> is active	
<a href="#">Submit</a>	

Figure 30: Employee designation create/ edit view.

## Employee grade details view.

- Click Grade menu item to view list of employees grade details.

Employee Grade

Add Grade

Show

10

entries

Search:

id	Grade	Description	Status	Option
1	Grade A	Highest Salary Grade	Active	<div><div></div><div></div></div>
2	Grade B	Second Highest Salary Grade	Active	<div><div></div><div></div></div>
3	Grade C	Third Highest Salary Grade	Active	<div><div></div><div></div></div>

Showing 1 to 3 of 3 entries

Previous

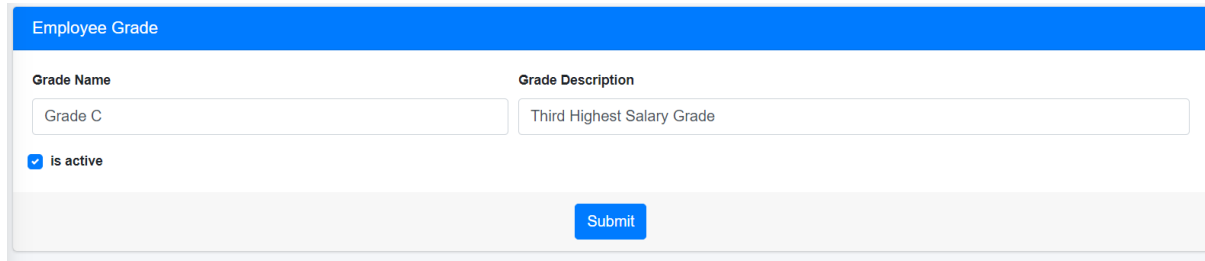
1

Next

Figure 31: Employee grade details view.

### Employee grade create/ edit view.

- Click Add grade button for create new grade and fill relevant details and click Submit button.
- Click Edit button on List view for edit grade details and click Submit button.

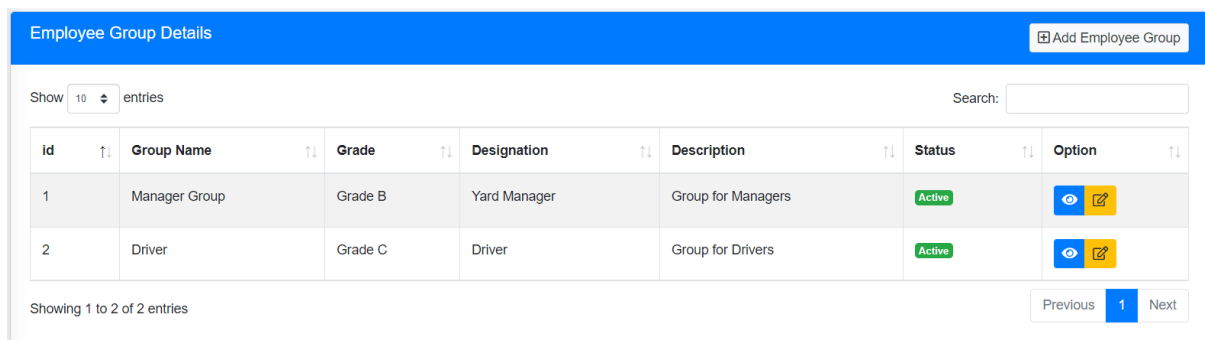


The form is titled "Employee Grade" and contains two input fields: "Grade Name" with the value "Grade C" and "Grade Description" with the value "Third Highest Salary Grade". There is a checkbox labeled "Is active" which is checked. A blue "Submit" button is located at the bottom right of the form.

Figure 32: Employee grade create/ edit view.

### Employee group view

- Click Employee group menu item to view list of employees group details.



The table is titled "Employee Group Details" and has a search bar and a dropdown for "Show 10 entries". It contains two rows of data. Each row has columns for id, Group Name, Grade, Designation, Description, Status, and Option. The first row is for "Manager Group" with Grade B and Designation "Yard Manager". The second row is for "Driver" with Grade C and Designation "Driver". Both groups are marked as "Active".





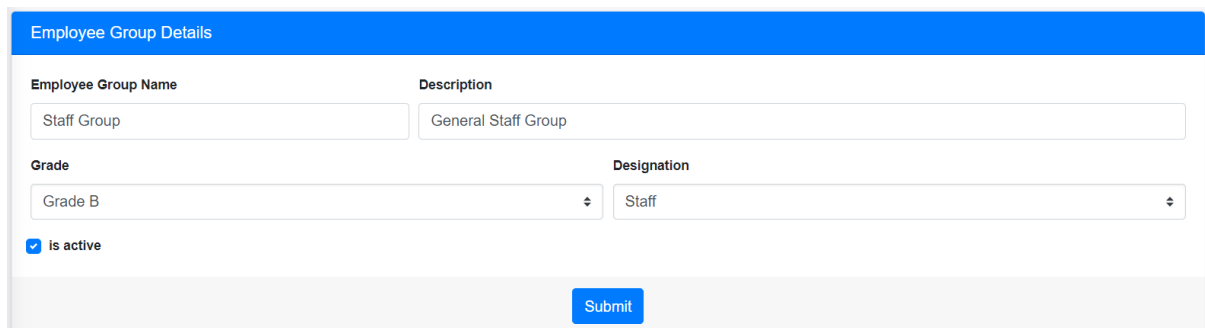
id	Group Name	Grade	Designation	Description	Status	Option
1	Manager Group	Grade B	Yard Manager	Group for Managers	Active	 
2	Driver	Grade C	Driver	Group for Drivers	Active	 

Figure 33: Employee group view.

### Employee group create/ edit view.

- Click Add group button for create new group and fill relevant details and click Submit button.
- Click Edit button on List view for edit group details and click Submit button.



The form is titled "Employee Group Details" and contains four input fields: "Employee Group Name" with the value "Staff Group", "Description" with the value "General Staff Group", "Grade" with the value "Grade B", and "Designation" with the value "Staff". There is a checkbox labeled "is active" which is checked. A blue "Submit" button is located at the bottom right of the form.

Figure 34: Employee group create edit.

## Employee driving license view

- Click Employee driving license menu item to view list of employees driving license details.







Driving License Details								Add License
Show	10	entries	Search:					
Id	Employee	License No.	Valid from	Valid to	Vehicle Category	Status	Option	
1	17533 - Sachith	B1447703	01-01-2020	01.01.2027	Light	Active	 	
2	3212 - Madushanka	B2383231	2023-12-27	2023-12-28	Heavy	Active	 	
3	21212 - Umesh	C43434	2023-11-01	2024-05-01	Heavy	Active	 	
Showing 1 to 3 of 3 entries								Previous 1 Next

Figure 35: Employee driving license view.

## Employee driving license create/ edit view

- Click Add driving license button for create new driving license and fill relevant details and click Submit button.
- Click Edit button on List view for edit driving license details and click Submit button.

Driving License Details			
Employee	License No.	Vehicle Category	Valid from
17533 - Sachith	B1447703	Light vehicle	01-01-2020
Valid to	<input checked="" type="checkbox"/> is active		
01.01.2027			
Submit			

Figure 36: Employee driving license create edit.

## Employee work schedule view

- Click Employee work schedule menu item to view list of employees work schedule details.

Work Schedule Details								<a href="#">Add Work Schedule</a>
Show	10	entries	Search:					
Id	Name	Working Hrs	In Time	Out Time	Flexible	Status	Option	
1	Day 7a.m to 7p.m	12	07:00	19:00	No	Active	<a href="#">View</a> <a href="#">Edit</a>	
2	Day 10a.m to 10p.m	24	12:00	00:00	No	Active	<a href="#">View</a> <a href="#">Edit</a>	
3	Day Flexible 12hrs	12	07:00	19:00	Yes	Active	<a href="#">View</a> <a href="#">Edit</a>	
Showing 1 to 3 of 3 entries								<a href="#">Previous</a> <a href="#">1</a> <a href="#">Next</a>

Figure 37: Employee work schedule view

## Employee work schedule create/ edit view

- Click Add work schedule button for create new work schedule and fill relevant details and click Submit button.
- Click Edit button on List view for edit work schedule details and click Submit button.

Work Schedule Details			
Name	Working Hrs	In Time	Out Time
<input type="text" value="Day Flexible 12hrs"/>	<input type="text" value="12 hrs"/>	<input type="text" value="7 A.M"/>	<input type="text" value="7 P.M"/>
<input checked="" type="checkbox"/> is flexible	<input checked="" type="checkbox"/> is active		
<input type="button" value="Submit"/>			

Figure 38: Employee work schedule create edit

## Employee work contract view

- Click Employee work contract menu item to view list of employees work contract details.

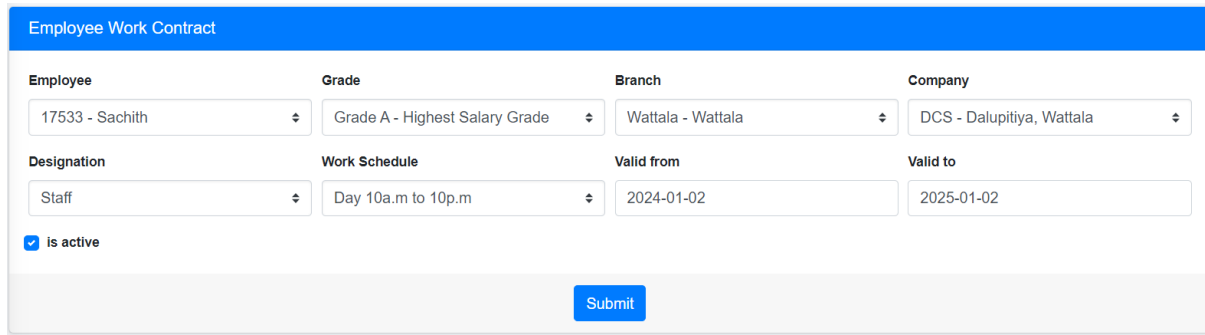
Employee Work Contract Details									<a href="#">Add Work Contract</a>
Show	10	entries	Search:						
Id	Epf	Name	Grade	Branch	Company	Designation	Work Schedule	Status	Option
1	17533	Sachith	Grade A	Kadana		Yard Manager	Day 10a.m to 10p.m	Inactive	<a href="#">View</a> <a href="#">Edit</a>
2	21212	Tharaka	Grade A	Kadawatha	DCS	Yard Manager	Day 7a.m to 7p.m	Active	<a href="#">View</a> <a href="#">Edit</a>
3	3212	Madushanka	Grade C	Kadawatha	DCS	Driver	Day 7a.m to 7p.m	Active	<a href="#">View</a> <a href="#">Edit</a>
Showing 1 to 3 of 3 entries									<a href="#">Previous</a> <a href="#">1</a> <a href="#">Next</a>

Figure 39: Employee work contract view



## Employee work contract create/ edit view

- Click Add work contract button for create new work contract and fill relevant details and click Submit button.
- Click Edit button on List view for edit work contract details and click Submit button.



The form is titled "Employee Work Contract" and contains several input fields for creating or editing a contract. The fields are organized into four columns: Employee, Grade, Branch, and Company. Below these are Designation, Work Schedule, Valid from, and Valid to. There is also a checkbox for "is active" and a "Submit" button at the bottom.

Employee	Grade	Branch	Company
17533 - Sachith	Grade A - Highest Salary Grade	Wattala - Wattala	DCS - Dalupitiya, Wattala

Designation	Work Schedule	Valid from	Valid to
Staff	Day 10a.m to 10p.m	2024-01-02	2025-01-02

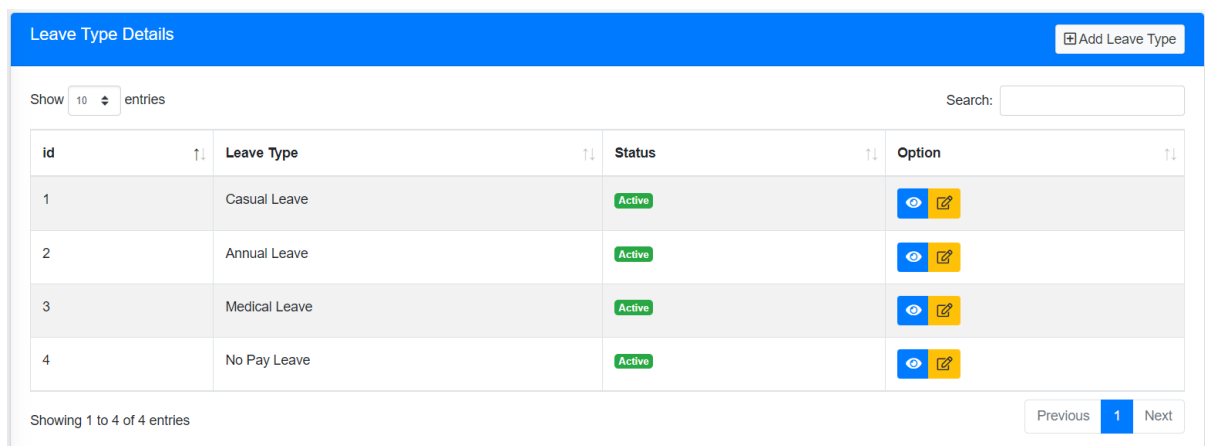
☒ is active

Submit









Figure 40: Employee work contract create edit

## Employee leave type view

- Click Employee leave type menu item to view list of employees leave type details.



The table displays a list of leave types with columns for id, Leave Type, Status, and Option. There are 4 entries shown. The status for all entries is "Active". The options column contains icons for viewing and editing each entry.

id	Leave Type	Status	Option
1	Casual Leave	Active	 
2	Annual Leave	Active	 
3	Medical Leave	Active	 
4	No Pay Leave	Active	 

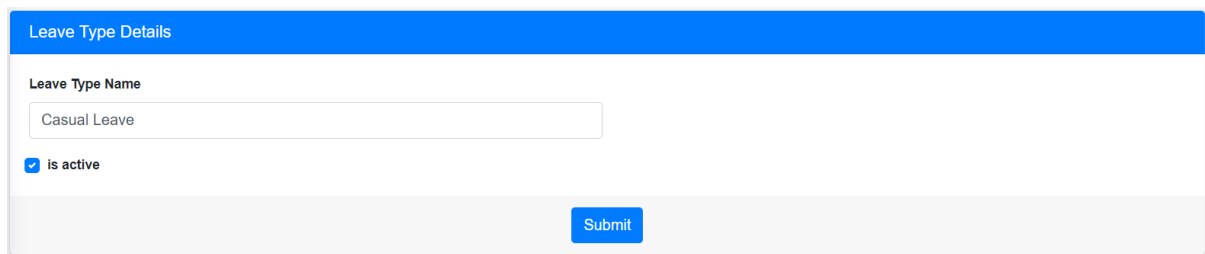
Showing 1 to 4 of 4 entries

Previous 1 Next

Figure 41: Employee leave type view

## Employee leave type create/ edit view

- Click Add leave type button for create new leave type and fill relevant details and click Submit button.
- Click Edit button on List view for edit leave type details and click Submit button.



The form is titled "Leave Type Details" and contains a text input field for "Leave Type Name". Below the input field is a checkbox for "is active" and a "Submit" button at the bottom.

Leave Type Name
Casual Leave

☒ is active

Submit

Figure 42: Employee leave type create edit

## Employee my leave create/ edit view

- Click apply leave button for create new apply leave and fill relevant details and click Submit button.
- Click Edit button on List view for edit apply leave details and click Submit button.

Employee Leave Details

From Date

2024-02-26

To Date

2024-02-26

Employee

2121 - Nadeesha

Leave type

Casual Leave - 7 remaining

Amount

2

☒ is active

Submit

Figure 43: Employee my leave create edit

## Admin/ manager leave approve view

- Click Leave approve menu item to view list of employees leave approve details.

Leave Approve Details

Show 10 entries

Search:

Id	Leave Type	From Date	To Date	Amount	Employee	Approved	Rejected	Status	Option
5	Casual Leave	2024-03-01	2024-03-01	1	17533 - Sachith	No	Yes	Active	
6	Casual Leave	2024-03-02	2024-03-02	1	17533 - Sachith	Yes	No	Active	
7	Casual Leave	2024-03-06	2024-03-07	2	17533 - Sachith	No	No	Active	

Showing 1 to 3 of 3 entries

Previous 1 Next

Figure 44: Admin/ manager leave approve view

## Manager employee my leave view

- Click My leave menu item to view list of leaves.

Leave Details

Show 10 entries

Search:

Id	Leave Type	From Date	To Date	Amount	Employee	Approved	Rejected	Status	Option
1	Casual Leave	2024-02-01	2024-02-01	1	2121 - Nadeesha	No	No	Active	
2	Casual Leave	2024-02-26	2024-02-26	2	2121 - Nadeesha	No	No	Active	

Showing 1 to 2 of 2 entries

Previous 1 Next

Figure 45: Manager employee my leave view

## Manager employee my leave approve popup

- This is leave approve reject view. Click accept or reject on employee requested leaves.

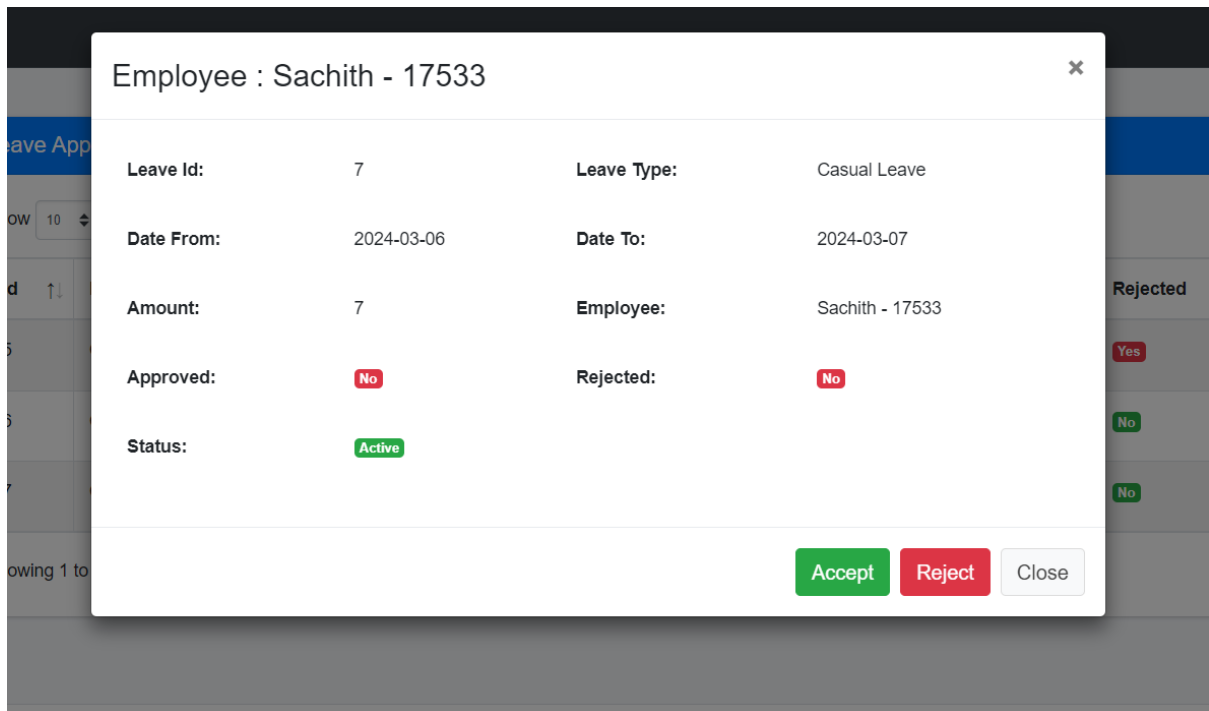


Figure 46: Manager employee my leave approve popup

## Manager employee medical center view

- Click Medical center menu item to view list of Medical center details.

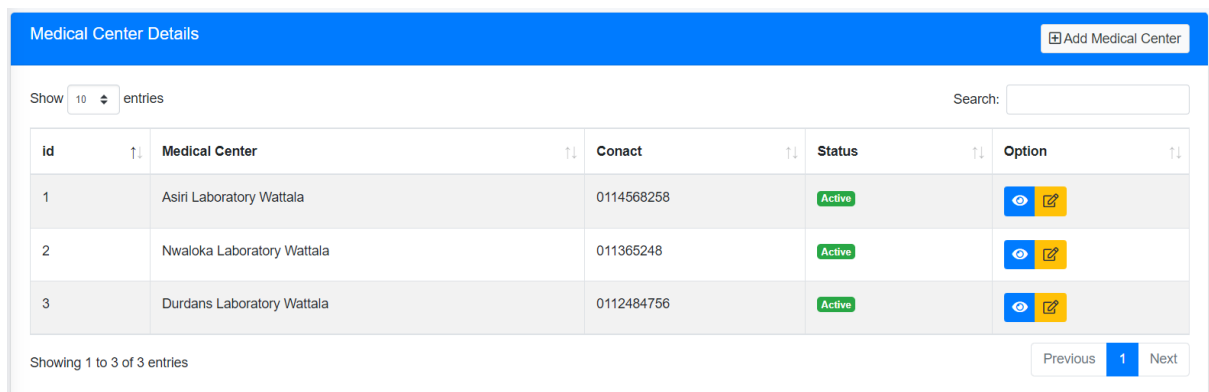
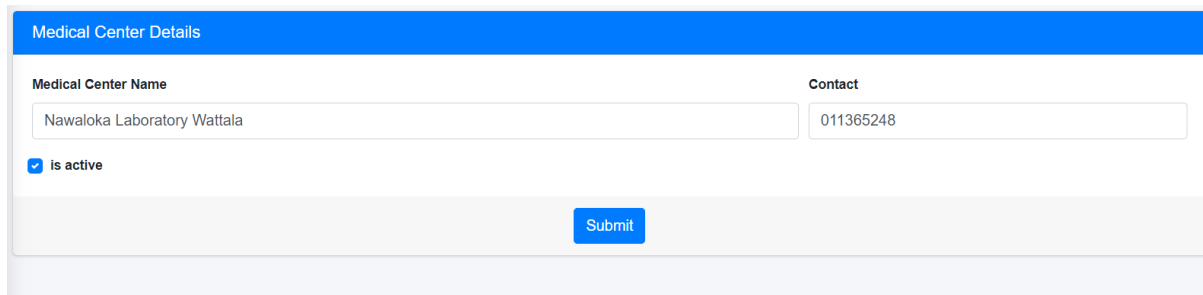


Figure 47: Manager employee medical center view

## Manager employee medical center create/ edit view

- Click Add Medical center for create new apply Medical center details and click Submit button.

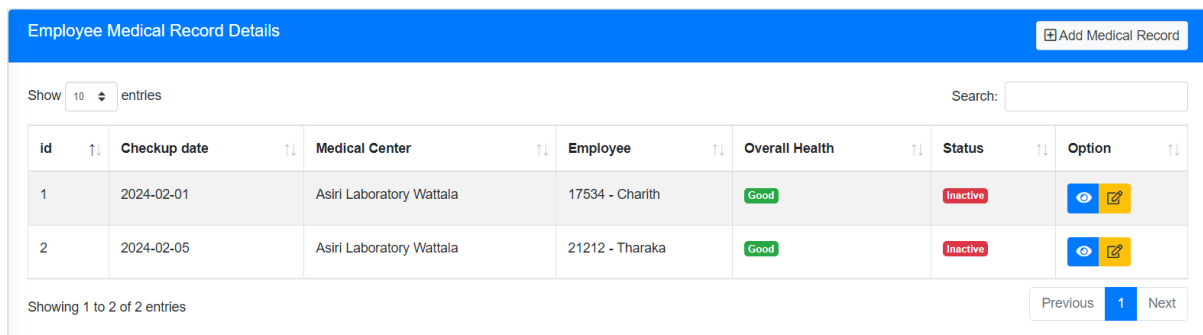


The form is titled "Medical Center Details" in a blue header. It contains two input fields: "Medical Center Name" with the value "Nawaloka Laboratory Wattala" and "Contact" with the value "011365248". Below these is a checkbox labeled "Is active" which is checked. A blue "Submit" button is at the bottom right.

Figure 48: Manager employee medical center create edit

## Employee medical records view

- Click Employee Medical records menu item to view list of Medical records details.
- Click Add Medical records to create new medical record detail.



The table is titled "Employee Medical Record Details" in a blue header. It includes a search bar and a "Show 10 entries" dropdown. The table has 7 columns: id, Checkup date, Medical Center, Employee, Overall Health, Status, and Option. There are 2 entries shown. At the bottom, it says "Showing 1 to 2 of 2 entries" and has "Previous", "1", and "Next" navigation buttons.





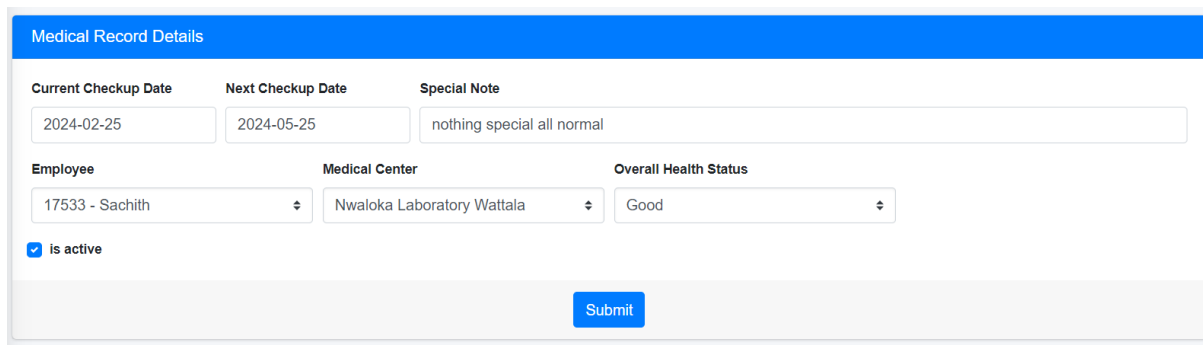
id	Checkup date	Medical Center	Employee	Overall Health	Status	Option
1	2024-02-01	Asiri Laboratory Wattala	17534 - Charith	Good	Inactive	 
2	2024-02-05	Asiri Laboratory Wattala	21212 - Tharaka	Good	Inactive	 

Figure 49: Employee medical records view

## Employee medical records create/ edit view

- Enter relevant medical record details and click Submit button.

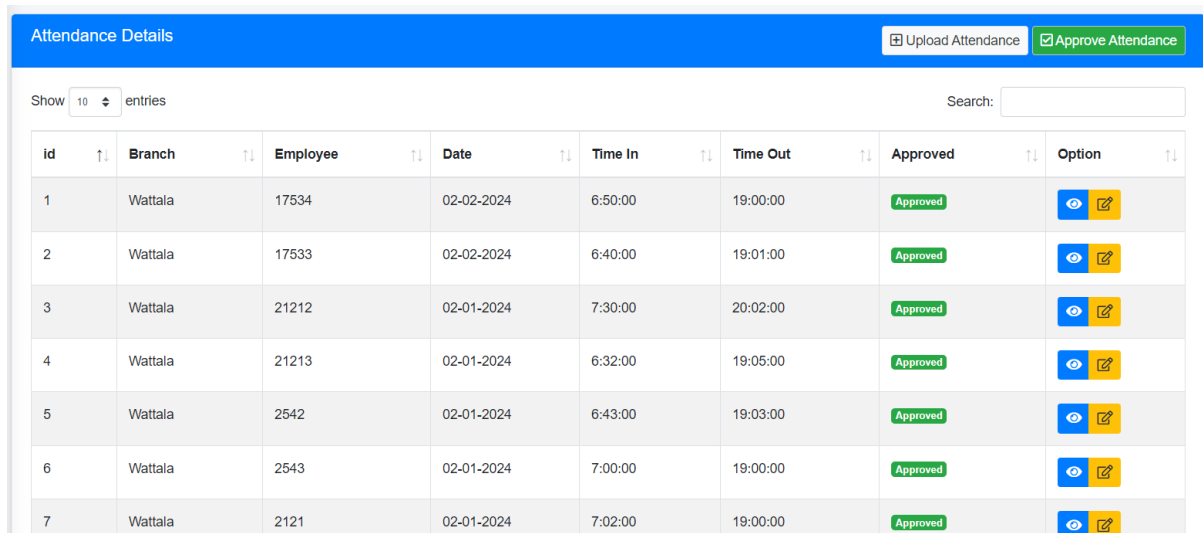


The form is titled "Medical Record Details" in a blue header. It contains three input fields: "Current Checkup Date" (2024-02-25), "Next Checkup Date" (2024-05-25), and "Special Note" (nothing special all normal). Below these are three dropdown menus: "Employee" (17533 - Sachith), "Medical Center" (Nwaloka Laboratory Wattala), and "Overall Health Status" (Good). There is a checked "Is active" checkbox and a blue "Submit" button at the bottom.

Figure 50: Employee medical records create edit

## Employee attendance view

- Click Employee Attendance details menu item to view list of Employee Attendance details.
- Click Upload attendance button to upload daily attendance csv to system.
- Click Approve attendance for leave approval.

















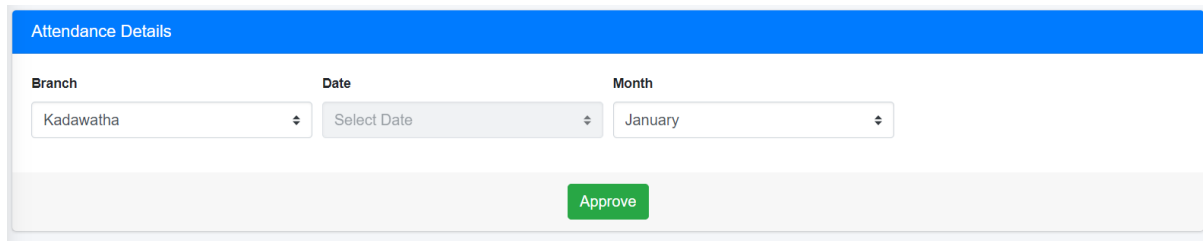
id	Branch	Employee	Date	Time In	Time Out	Approved	Option
1	Wattala	17534	02-02-2024	6:50:00	19:00:00	Approved	 
2	Wattala	17533	02-02-2024	6:40:00	19:01:00	Approved	 
3	Wattala	21212	02-01-2024	7:30:00	20:02:00	Approved	 
4	Wattala	21213	02-01-2024	6:32:00	19:05:00	Approved	 
5	Wattala	2542	02-01-2024	6:43:00	19:03:00	Approved	 
6	Wattala	2543	02-01-2024	7:00:00	19:00:00	Approved	 
7	Wattala	2121	02-01-2024	7:02:00	19:00:00	Approved	 

Figure 51: Employee attendance view

## Admin/ Manager employee attendance approve view

- This Employee attendance approve view will display after clicking approve attendance button.
- Select relevant time period and click Approve button for attendance approval.



Attendance Details

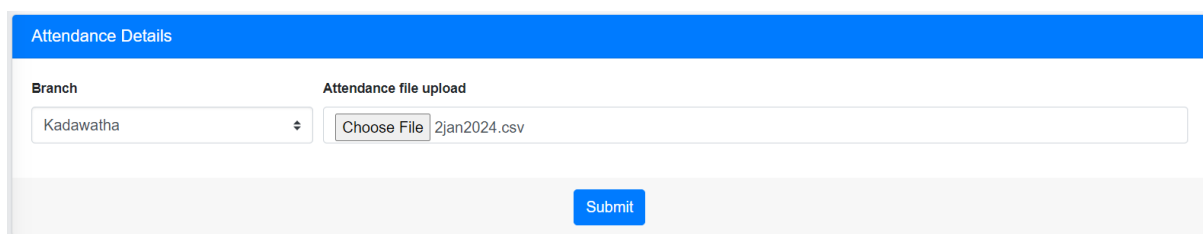
Branch: Kadawatha | Date: Select Date | Month: January

Approve

Figure 52: Admin/ Manager employee attendance approve

## Manager employee attendance upload view

- This Attendance upload view will display after clicking Upload attendance button.
- Select relevant csv file and click submit button.



Attendance Details

Branch: Kadawatha | Attendance file upload: Choose File 2jan2024.csv

Submit

Figure 53: Manager employee attendance upload

## Employee task list view

- Click Employee task list menu item to list of employee tasks view.
- Click Add Special task to create new task.

Task Details

Add Special Task

Show

10

entries

Search:

id	Task Name	Type	Status	Option
1	General Yard Work	General Work	Active	<div><div></div><div></div></div>
2	Scaffolding Project	Scaffolding	Active	<div><div></div><div></div></div>
3	Heavy Vehicle Operation	Heavy Vehicle Operation	Active	<div><div></div><div></div></div>

Showing 1 to 3 of 3 entries

Previous

1

Next

Figure 54: Employee task list view

## Admin/ Manager employee task list create/ edit view

- After clicking add special task button this view will display.
- Enter relevant name and select task type then click Task list for create new Task details and click Submit button.

Task Details	
Task Name	Task Type
<input type="text" value="Scaffolding Project"/>	<input type="text" value="Scaffolding"/>
<input checked="" type="checkbox"/> is active	
<input type="button" value="Submit"/>	

Figure 55: Admin/ Manager employee task list create edit

## Vehicle type view

- Click vehicle type details menu item to view list of vehicle type details.
- Click Add vehicle type button to add new vehicle type.



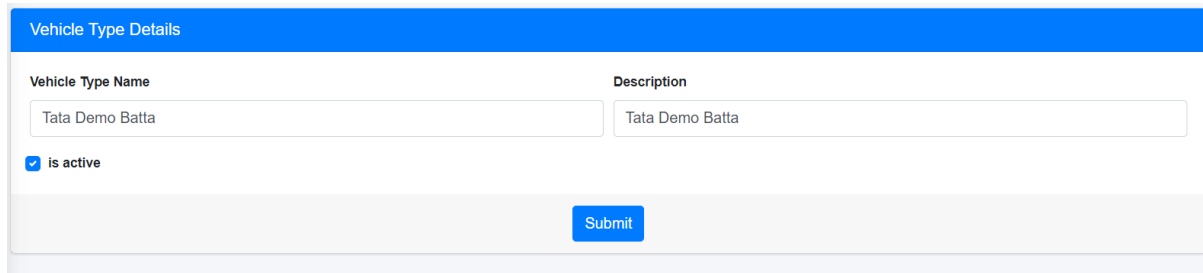
Vehicle Type Details					Add Vehicle Type
Show 10 entries		Search:			
id	Type Name	Type description	Status	Option	
1	Car	Sedan, Hatchback Car 1	Active		
6	Bike	Motor Bike	Active		
Showing 1 to 2 of 2 entries					Previous 1 Next

Figure 56: Vehicle type view

## Vehicle type create/ edit view

- Enter relevant vehicle type name and description then click Submit button.

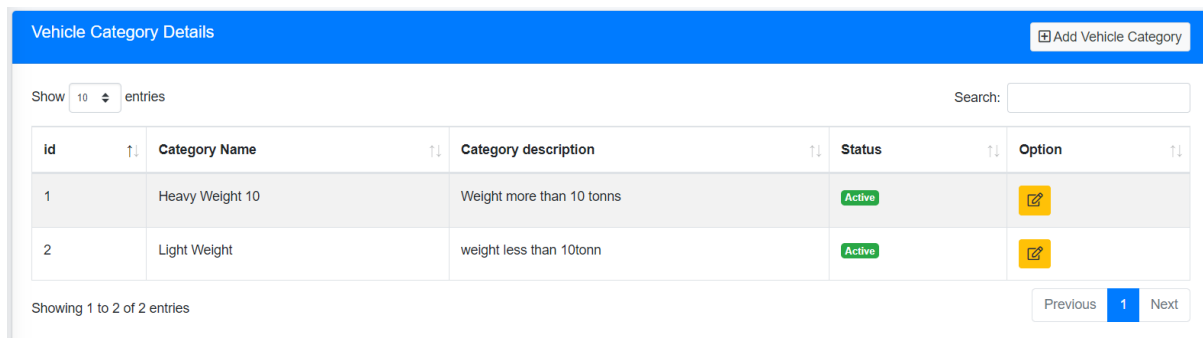


The form is titled "Vehicle Type Details" in a blue header. It contains two input fields: "Vehicle Type Name" with the value "Tata Demo Batta" and "Description" with the value "Tata Demo Batta". Below these fields is a checkbox labeled "is active" which is checked. At the bottom right is a blue "Submit" button.



Figure 57: Vehicle type create edit

## Vehicle category view

- Click vehicle category details menu item to view list of vehicle category details.
- Click Add Vehicle category button to create new vehicle category.



The view is titled "Vehicle Category Details" in a blue header. In the top right corner of the header is a button labeled "Add Vehicle Category". Below the header, there is a "Show 10 entries" dropdown and a "Search:" input field. The main content is a table with 5 columns: "id", "Category Name", "Category description", "Status", and "Option".

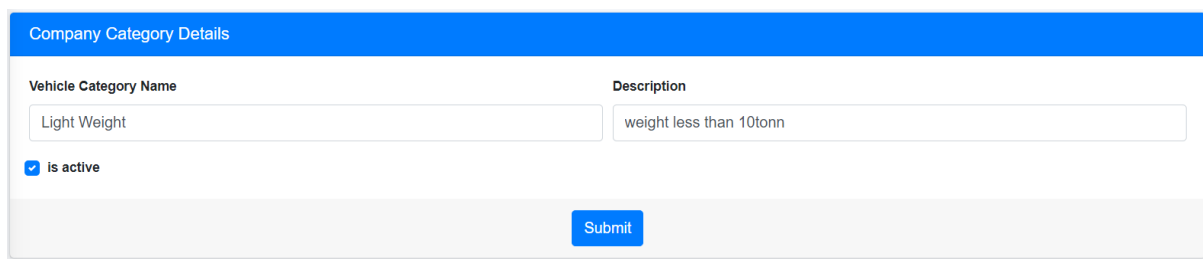
id	Category Name	Category description	Status	Option
1	Heavy Weight 10	Weight more than 10 tonns	Active	
2	Light Weight	weight less than 10tonn	Active	

Below the table, it says "Showing 1 to 2 of 2 entries". At the bottom right are "Previous", "1" (highlighted), and "Next" buttons.

Figure 58: Vehicle category view

## Vehicle category create/ edit view

- Enter relevant details and click Submit button.



The form is titled "Company Category Details" in a blue header. It contains two input fields: "Vehicle Category Name" with the value "Light Weight" and "Description" with the value "weight less than 10tonn". Below these fields is a checkbox labeled "is active" which is checked. At the bottom right is a blue "Submit" button.

Figure 59: Vehicle category create edit

## Vehicle details view







- Click vehicle details menu item to view list of vehicle details.
- Click Add vehicle button to create new vehicle.

Vehicle Details

Add Vehicle

Show 10 entries

Search:

id	Registered No.	YOM	Type	Category	Status	Option
1	CAI 2079	2015	Car	Heavy Weight 10	Active	 
2	BBB 7077	2019	Bike	Heavy Weight 10	Active	 
3	CBB 34561	2019	Bike	Heavy Weight 10	Active	 

Showing 1 to 3 of 3 entries

Previous1Next

Figure 60: Vehicle details view

## Vehicle details create/ edit view

- Enter relevant vehicle details and click Submit button.

Vehicle Details		
License Plate No.	Branch	YOM
CAI 2079	Kadawatha	2015
Chasis No.	Vehicle Type	Vehicle Category
DSE35445BKL	Car	Heavy Weight 10
Engine No.	No. of Passengers	Max Load (Kg)
DSE35445454	4	1000.00
<input checked="" type="checkbox"/> is active		
Submit		

Figure 61: Vehicle details create edit



## Vehicle eco test view

- Click vehicle eco test details menu item to view list of vehicle eco test details.
- Click Add Eco test button to create new eco test detail for a vehicle.

Eco Test Details

Add Vehicle

Show10entries

Search:

id	Eco Test No.	Vehicle No.	Valid From	Valid To	Status	Option
1	CL19-194206	BBB 7077	2022-10-10	2023-10-10	Active	<div><div></div><div></div></div>
2	CL20-1942501	BBB 7077	2023-10-22	2023-10-22	Active	<div><div></div><div></div></div>
3	CL20-194206	CAI 2079	2023-10-22	2024-10-22	Active	<div><div></div><div></div></div>

Showing 1 to 3 of 3 entries

Previous

1

Next

Figure 62: Vehicle eco test view

## Vehicle eco test create/ edit view

- Enter vehicle eco test details and click Submit button.

Eco Test Details			
Eco Test No.	Vehicle	Date from	Date to
<input type="text" value="CL20-194206"/>	<input type="text" value="CAI 2079"/>	<input type="text" value="2023-10-22"/>	<input type="text" value="2024-10-22"/>
<input checked="" type="checkbox"/> is active			
<input type="button" value="Submit"/>			

Figure 63: Manager vehicle eco test create edit

## Vehicle Revenue license view

- Click vehicle revenue license menu item to view list of vehicle revenue license details.
- Click Add license to create new revenue license.

Revenue License Details

Add License

Show10entries

Search:

id	License No.	Vehicle No.	Valid From	Valid To	Status	Option
1	7834651	CAI 2079	2022-10-08	2023-10-08	Active	<div><div></div><div></div></div>
2	9999999999	BBB 7077	2023-10-02	2023-10-02	Inactive	<div><div></div><div></div></div>

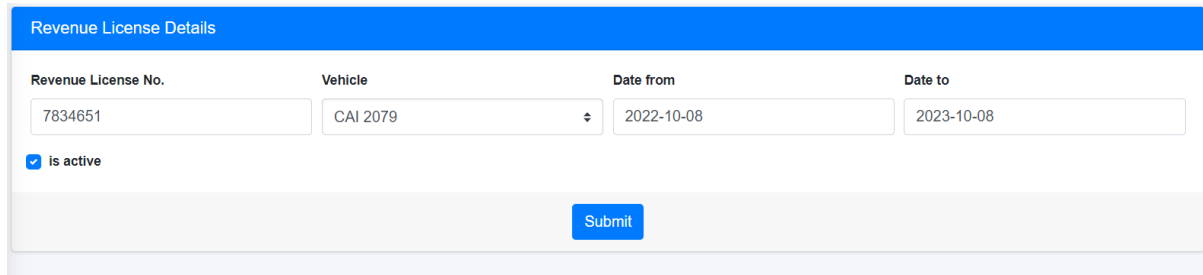
Showing 1 to 2 of 2 entries

Previous1Next

Figure 64: Vehicle revenue license view

## Vehicle revenue license create/ edit view

- Enter vehicle revenue license details click Submit button.

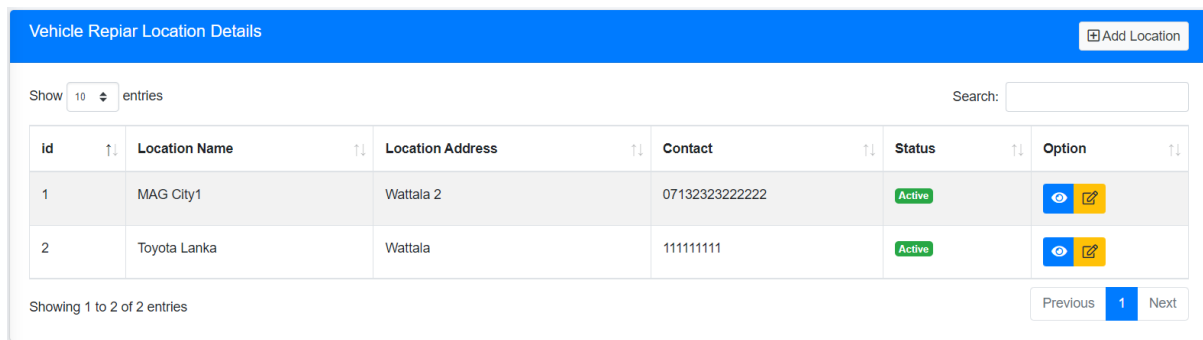


The screenshot shows a form titled "Revenue License Details". It contains four input fields: "Revenue License No." with the value "7834651", "Vehicle" with a dropdown menu showing "CAI 2079", "Date from" with the value "2022-10-08", and "Date to" with the value "2023-10-08". Below these fields is a checkbox labeled "is active" which is checked. At the bottom right of the form is a blue "Submit" button.

Figure 65: Vehicle revenue license create edit

## Vehicle repair location view

- Click vehicle repair location to view list of vehicle repair location details.
- Click Add location button to create new repair location.



The screenshot shows a table titled "Vehicle Repair Location Details" with a blue header bar containing an "Add Location" button. The table has columns: "id", "Location Name", "Location Address", "Contact", "Status", and "Option". There are two data rows. Below the table, it says "Showing 1 to 2 of 2 entries". At the bottom right, there are "Previous", "1", and "Next" navigation buttons.





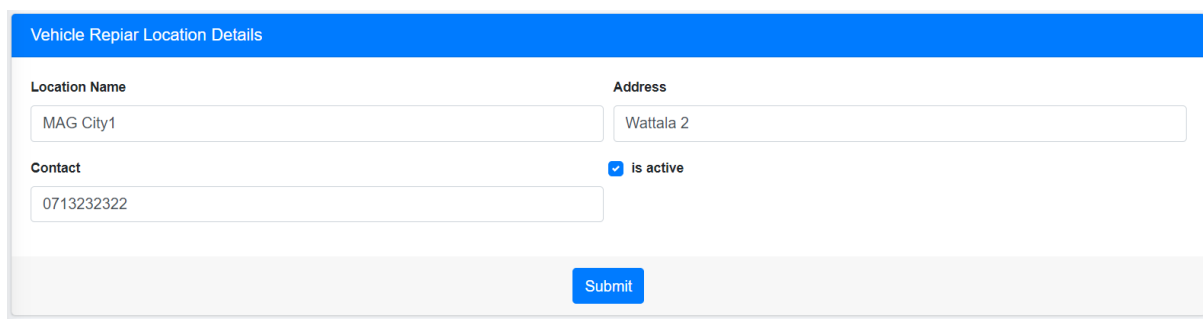
id	Location Name	Location Address	Contact	Status	Option
1	MAG City1	Wattala 2	0713232322222	Active	 
2	Toyota Lanka	Wattala	111111111	Active	 

Figure 66: Vehicle repair location view

## Vehicle repair location create/ edit view

- Enter vehicle repair location details and click Submit button.



The screenshot shows a form titled "Vehicle Repair Location Details". It contains three input fields: "Location Name" with the value "MAG City1", "Address" with the value "Wattala 2", and "Contact" with the value "0713232322". Below these fields is a checkbox labeled "is active" which is checked. At the bottom right of the form is a blue "Submit" button.

Figure 67: Vehicle repair location create edit

## Vehicle insurance company view

- Click Vehicle insurance company menu item to view list of vehicle insurance company details.
- Click Add insurance company button to create new insurance company.







Vehicle Insurance Company Details					Add Insurance Company
Show	10	entries	Search:		
id	Insurance Company	Status	Option		
1	Srilanka Insurance	Active	 		
2	Ceylinco	Active	 		
3	Co-op	Active	 		
Showing 1 to 3 of 3 entries					Previous 1 Next

Figure 68: Vehicle insurance company view

## Vehicle insurance company create/ edit view

- Enter new vehicle insurance company details and click Submit button.

Vehicle Insurance Company Details	
Company Name	
<input type="text" value="Srilanka Insurance"/>	
<input checked="" type="checkbox"/> is active	
<input type="button" value="Submit"/>	

Figure 69: Vehicle insurance company create edit

## Vehicle insurance details view

- Click vehicle insurance details menu item to view list of vehicle insurance details.
- Click Add vehicle insurance to create new insurance for a vehicle.



Vehicle Insurance Details									Add Vehicle Insurance
Show	10	entries	Search:						
id	Vehicle No.	Insurance Company	Insurance Type	Valid from	Valid to	Premium Amount	Status	Option	
1	CAI 2079	Srilanka Insurance	third party	2024-01-04	2025-01-04	65500.00	Yes	 	
Showing 1 to 1 of 1 entries									Previous 1 Next

Figure 70: Vehicle insurance details view

## Vehicle insurance details create/ edit view

- Enter new vehicle insurance details and click Submit button.

Vehicle Insurance Details

Insurance Company

Insurance/ Policy No.

Insurance Type

Vehicle

Srilanka Insurance

ZZ1212

Full Insurance

CAI 2079

Valid from

Valid to

Premium Amount

2024-01-04

2025-01-04

65500.00

☒ is active

Submit

Figure 71: Vehicle insurance details create edit

## Vehicle insurance claims view



- Click vehicle insurance claims to view list of vehicle insurance claims details.
- Click Add vehicle insurance claim to create new insurance claim.

Vehicle Insurance Claim Details

Add Vehicle Insurance Claim

Show 10 entries

Search:

id	Claim No.	Vehicle No.	Repair Cost	Claimed Amount	Status	Option
1	SLIC124	CAI 2079	100000.00	15000.00	Yes	 

Showing 1 to 1 of 1 entries

Previous 1 Next

Figure 72: Vehicle insurance claims view

## Vehicle insurance claims create/ edit view

- Enter new vehicle insurance claim details and click Submit button.

Vehicle Insurance Claim Details

Claim No.

Repair

Claimed Date

Claimed Amount

SLIC124

CAI 2079 - INV2121 - Front bumper and Right headlight replaced

2024-01-30

15000.00

☒ is active

Submit

Figure 73: Vehicle insurance claims create edit

## Vehicle service center view

- Click vehicle service center menu item to view list of vehicle service center details.
- Click Add service center button to create new service center.

Vehicle Service Center Details

Add Service Center

Show 10 entries

Search:

id	Name	Address	Contact	Status	Option
1	Auto Miraj Wattala	0112565454	Wattala	Active	<a href="#">View</a> <a href="#">Edit</a>
2	Car Care Wattala	0112141636	Wattala	Active	<a href="#">View</a> <a href="#">Edit</a>
3	Care Point Peliyagoda	0112365456	Peliyagoda	Active	<a href="#">View</a> <a href="#">Edit</a>

Showing 1 to 3 of 3 entries

Previous1Next

Figure 74: Vehicle service center view

## Vehicle service center create/ edit view

- Enter new vehicle service center details and click Submit button.

Vehicle Service Center Details	
Name	Address
<input type="text" value="Car Care Wattala"/>	<input type="text" value="Wattala"/>
Contact	<input checked="" type="checkbox"/> is active
<input type="text" value="0112141636"/>	
<input type="button" value="Submit"/>	

Figure 75: Vehicle service center create edit

## Vehicle service details view

- Click vehicle service details menu item to view list of vehicle service details.
- Click Add service details to create new service record for a vehicle.

Vehicle Service Details									<a href="#">Add Service Details</a>
Show	10	entries	Search:						
Id	Vehicle	Service Center	Date	Service Invoice	Cost	Complete	Status	Option	
1	CAI 2079	Auto Miraj Wattala	2024-02-07	INV4562	18000.00	Complete	Active	<a href="#">View</a> <a href="#">Edit</a>	
2	BBB 7077	Care Point Peliyagoda	2024-02-08	12123	5000.00	Complete	Inactive	<a href="#">View</a> <a href="#">Edit</a>	
3	CAI 2079	Auto Miraj Wattala	2024-02-10	215151111	200001.00	Complete	Active	<a href="#">View</a> <a href="#">Edit</a>	
4	CBB 34561	Care Point Peliyagoda	2024-02-08	2121	50000.00	Complete	Active	<a href="#">View</a> <a href="#">Edit</a>	
5	BBB 7077	Car Care Wattala	2024-02-10	232	12121.00	Not Complete	Inactive	<a href="#">View</a> <a href="#">Edit</a>	
Showing 1 to 5 of 5 entries									<a href="#">Previous</a> <a href="#">1</a> <a href="#">Next</a>

Figure 76: Vehicle service details view

Vehicle service details create/ edit view

- Enter new vehicle service details and click Submit button.

Vehicle Service Details

Service Center

Auto Miraj Wattala

Vehicle

CAI 2079

Next Service in Kms

65000

Next Service in Months

4

Service Date

2024-02-07

Service Invoice No.

INV4562

Cost

18000.00

Description

Full Service

☒ is active

☒ is complete

Submit

Figure 77: Vehicle service details create edit

Item details view

- Click Item details menu item to view list of Item details.
- Click Add item button to create new item.

Main item Details

Add Item

Show 10 entries

Search:

id	Name	Category	Status	Feature	Web Pattern	Option
1	Acro Jack / Pipe Support	Scaffolding	Active	No	No	
2	Column box 4ft	Power Tools	Active	No	No	
3	Column box 8ft	Power Tools	Active	No	No	
4	Scaffold frame 3ft	Scaffolding	Active	Yes	No	
5	Scaffold Plate	Scaffolding	Active	Yes	No	
6	Scaffold frame 2ft	Scaffolding	Active	No	No	
7	Scaffold Erecting	Scaffolding	Active	Yes	No	

Figure 78: Item details view

## Item details create/ edit view

- Enter new item details and click Submit button.

Main item Details

Name

Cross brace


Category

Scaffolding

Item Image

Choose file

Browse



☒ is active

☒ is feature

☐ is web pattern

Figure 79: item details create edit

## Item category view






- Click Item category menu item to view list of Item category details.
- Click Add item category to create new item category.

Item Category Details

Add Item Category

Show 10 entries

Search:

Id	Category Name	Description	Status	Option
1	Material	Materials	Active	
2	Vehicles	Vehicles	Active	
3	Power Tools	Power Tools	Active	
4	Scaffolding	Scaffolding desc	Active	
6	Services	Services	Active	

Showing 1 to 5 of 5 entries

Previous

1

Next

Figure 80: Item category view

## Item category create/ edit view

- Enter new Item category details and click Submit button.

Item Category Details

Category Name

Vehicles


Category Description

Vehicles

Item Image

Choose file

Browse



☒ is active

Submit

Figure 81: Item category create edit

## Stock purchase view


- Click stock purchase menu item to view list of stock purchase details.
- Click Add stock purchase to create new stock purchase.

Stock Purchase Details

Add Stock Purchase

Show 10 entries

Search:

Batch id	Purchase Date	Approved	Allocated	Active	Option
1	2024-02-18	Yes	No	Active	

Showing 1 to 1 of 1 entries

Previous

1

Next

Figure 82: Stock purchase view



## Stock purchase create/ edit view

- Select Items for purchase and enter date, then click Submit button.

Stock Purchase Details

Purchase Date

2024-02-22

Main Items

#	Main-Item	No.of Items	Item cost	<div>+ Add</div>
1.	<div>Metal chips</div>	<div>52</div>	<div>12000</div>	
2.	<div>Caster Wheel 6inch</div>	<div>41</div>	<div>3500</div>	<div>- Remove</div>

Submit

Figure 83: Stock purchase create edit

## Rental stock allocation view

- Click Rental stock allocation menu item to view list of Rental stock allocation details.
- Click Add rental stock to allocate stocks for rent.

Rental Stock Allocation Details

Add Rental Stock

Show 10 entries

Search:

Stock assigned id	Stock Batch No	Branch	Assigned date	Approved	Active	Option
1	1	Wattala	2024-02-19	Yes	Active	<div></div>
2	1	Kadawatha	2024-02-19	Yes	Active	<div></div>

Showing 1 to 2 of 2 entries

Previous

1

Next

Figure 84: Rental stock allocation view

## Rental stock allocation create/ edit view

- Select items for new Rental stock allocation and click Submit button.

Rental Stock Allocation Details

Date:

2024-02-25

Stock Batch No:

1 / 2024-02-18

Branch

Wattala

☒ is active

Main Items

#	Main Item Name	No.of Items	
1.	Acro Jack / Pipe Support	500	
2.	Column box 4ft	500	
3.	Column box 8ft	500	

Figure 85: Rental stock allocation create edit

## Rental stock details report

- Click Rental stock details report to view list of Rental stock report details.

Rental Stock Details										
<div>Show/hide columns ▾ Excel Copy CSV PDF</div> <div>Search: <input type="text"/></div>										
Id	Branch	Item	Item type	Max Price	Min Price	Reorder Level	Available stock	Status	Option	
1	Wattala	Acro Jack / Pipe Support	Main Item	0.00	0.00	0	100	Active		
2	Wattala	Column box 4ft	Main Item	0.00	0.00	0	100	Active		
3	Wattala	Column box 8ft	Main Item	0.00	0.00	0	100	Active		
4	Wattala	Scaffold frame 3ft	Main Item	0.00	0.00	0	100	Active		
5	Wattala	Scaffold Plate	Main Item	0.00	0.00	0	100	Active		

Figure 86: Rental stock details report

## Retail stock allocation view

- Click Retail stock allocation menu item to view list of Retail stock allocation details.
- Click Add Retail stock to allocate stock for retail sale.

Retail Stock Allocation Details						<a href="#">Add Retail Stock</a>
Show	10	entries	Search:			
Stock assigned id	Stock Batch No	Assigned date	Approved	Active	Option	
1	1	2024-02-19	Yes	Active	<a href="#">View</a>	
2	1	2024-02-19	Yes	Active	<a href="#">View</a>	
3	1	2024-02-19	Yes	Active	<a href="#">View</a>	
Showing 1 to 3 of 3 entries						<a href="#">Previous</a> <a href="#">1</a> <a href="#">Next</a>

Figure 87: Retail stock allocation view

## Retail stock allocation create/ edit view

- Select items for new Retail stock allocation and click Submit button.

Retail Stock Allocation					
Date:	Stock Batch No:	Branch			
<input type="text" value="2024-02-25"/>	<input type="text" value="1 / 2024-02-18"/>	<input type="text" value="Kadawatha"/>			
<input checked="" type="checkbox"/> is active					
Main Items					
#	Main Item Name	No.of Items			
1.	<input type="text" value="Acro Jack / Pipe Support"/>	<input type="text" value="500"/>	<input type="button" value="✖"/>		
2.	<input type="text" value="Column box 4ft"/>	<input type="text" value="500"/>	<input type="button" value="✖"/>		
3.	<input type="text" value="Column box 8ft"/>	<input type="text" value="500"/>	<input type="button" value="✖"/>		
4.	<input type="text" value="Scaffold frame 3ft"/>	<input type="text" value="500"/>	<input type="button" value="✖"/>		

Figure 88: Retail stock allocation create edit

## Retail stock details report

- Click Retail stock details menu item to view list of Retail stock details.
- Click Edit button for update Min and Max prices and click submit.

Retail Stock Details										
Show/hide columns ▾		Excel	Copy	CSV	PDF	Search: <input type="text"/>				
Id	Branch	Item	Item type	Max Price	Min Price	Reorder Level	Available stock	Status	Option	
1	Wattala	Acro Jack / Pipe Support	Main Item	9000.00	7000.00	10	200	Active		
2	Wattala	Column box 4ft	Main Item	6000.00	5000.00	10	200	Active		
3	Wattala	Column box 8ft	Main Item	7500.00	6000.00	10	200	Active		
4	Wattala	Scaffold frame 3ft	Main Item	5000.00	4500.00	10	200	Active		
5	Wattala	Scaffold Plate	Main Item	7000.00	6500.00	10	200	Active		
6	Wattala	Scaffold frame	Main Item	5000.00	4000.00	10	200	Active		

Figure 89: Retail stock details report

## Stock transfer view

- Click Stock transfer menu item to view list of Stock transfer details.
- Click Add Stock transfer button to create new stock transfer.

Stock Transfer Create								Add Stock Transfer
Show 10 entries		Search: <input type="text"/>						
Stock Transfer id	Date	Request From	Request To	Approved	Accepted	Active	Option	
1	2024-02-25	Kadawatha	Wattala	No	No	Active		
Showing 1 to 1 of 1 entries							Previous	1 Next

Figure 90: Stock transfer view

## Stock transfer create/ edit view

- Enter relevant details for stock transfer and select items for transfer and click Submit button.

Stock Transfer Details

Date

2024-02-25

Transfer Type

IN

Stock Type

Retail

Request From

Kadawatha

Request To

Wattala

Inform to

Wattala - Nadeesh

☒ Is active

☐ Is approve

Main Items

#	Main-Item	No.of Items	
1.	Acro Jack / Pipe Support	10	<div>Add</div>
2.	Scaffold Plate	5	<div>Remove</div>

Submit

Figure 91: Stock transfer create edit

## Stock transfer request accept

- Click Stock transfer accept/reject menu item to view list of Stock transfer details.

Stock Transfer Accept/ Reject

Show

10

entries

Search:

Stock Transfer id	Date	Request From	Request To	Approved	Accepted	Rejected	Active	Option
1	2024-02-25	Kadawatha	Wattala	No	No	No	Active	<div></div>

Showing 1 to 1 of 1 entries

Previous

1

Next

Figure 92: Stock transfer request accept

## POS Retail order create view

- Click POS retail menu item to go to Retail goods POS view.
- Click categories on top left corner, then related items will display below.
- Click Add button and select specific Items for checkout.
- To cancel the current order, click Cancel Button.
- To proceed to next step and generate invoice click Invoice button

The screenshot shows the POS Retail order create view. At the top, there are five category buttons: Services (blue), Scaffoldin (red), Power Tools (green), Vehicles (yellow), and Material (blue). To the right, the Order Status is 'Not Saved' and Payment Status is 'Not Paid'. Below the categories, there is a 'Scaffolding Products' section with four items: Acro Jack / Pipe Support, Scaffold frame 3ft, Scaffold Plate, and Scaffold frame 2ft. Each item has an 'Add' button. To the right of the products is a 'Checkout' table with columns: #, Name, Qty, and Price. The table contains one row: 1 Scaffold frame 2ft, Qty 1, Price 5000.00. Below the table, there is a 'Total' row showing 5000. At the bottom, there are three buttons: Cancel (red), Invoice (yellow), and Pay (green).

#	Name	Qty	Price
1	Scaffold frame 2ft	1	5000.00
Total			5000

Figure 93: POS retail create

- After clicking Invoice button this view will display
- Enter customer's NIC number on NIC input field, meanwhile system will search particular customer in database and fill out rest of the fields if customer exists, or else manually fill the form for new customer.
- Click download Invoice button to save order and download invoice pdf for print.

The screenshot shows the 'Customer Details' form. It has a title bar with a close button. The form contains several input fields: NIC (with a search icon), Mobile (with a search icon), Customer Name (with a search icon), E-mail (with a search icon), Billing Address, and Shipping Address. At the bottom, there is a red button labeled 'Download Invoice' with a download icon, and a 'Close' button in the bottom right corner.

Figure 94: POS customer details enter view



<b>From:</b> DCS Dalupitiya, Wattala Phone: 2121212121	<b>To:</b> Charith Porage 21, Polhena, Madapatha Phone: 0712917184 Email: denuwan0@gmail.com	<b>Invoice Id: 1</b> <b>Date: 2024-02-28</b> <b>Time: 11:11:49</b>
---	--	--

Item Name	Description	Qty	Price
Mobile toilet		1	120000
Chainblock Stonn		1	7000
Total			127000.00

\*Conditions Apply.

This is a system generated Document.  
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Figure 95: Sample Invoice

## Payment option view

- After generating the invoice, click Pay button to proceed next step.
- After clicking the Pay button below view will display.
- Enter payment reference and click relevant payment method of customer.

Payment Option

Customer

Charith Porage

Invoice Id

3

Payment Reference

124512

Paid by Cash

Paid by Lanka QR

Paid by Bank Transfer

Paid by Bank Card

Close

Figure 96: Payment method view

## POS Rental order create view.

- Follow the same step followed in POS retail order create view.

Order Status: **Not Saved**  
Payment Status: **Not Paid**

**Scaffolding Products**

Item	Image	Add
Acro Jack / Pipe Support		Add
Scaffold frame 3ft		Add
Scaffold Plate		Add
Scaffold frame 2ft		Add

**Checkout**

#	Name	Qty	Price
1	Scaffold frame 2ft	1	5000.00

**Total** 5000

**Buttons:** Cancel, Invoice, Pay

Figure 97: POS rental create

## System country view

- Click Company country menu item to view list of countries details.
- Click Add country button to create new country.

Country Details [Add Country](#)

Show 10 entries Search:

id	Name	Description	Status	Option
1	Sri Lanka	Sri Lanka	Active	
2	Japan	Japan	Active	
3	India	India	Inactive	
4	China	China	Active	
5	Russia	Russia	Active	
6	Dubai	Dubai	Active	

Showing 1 to 6 of 6 entries [Previous](#) [1](#) [Next](#)

Figure 98: System country view



## System country create/ edit view

- Enter new country details and click Submit button.

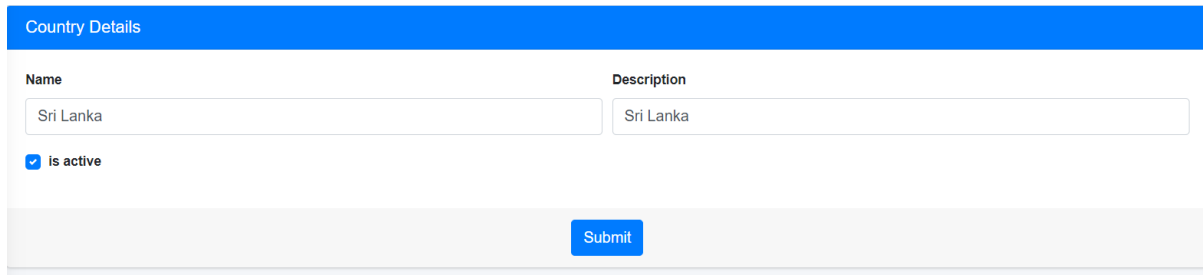
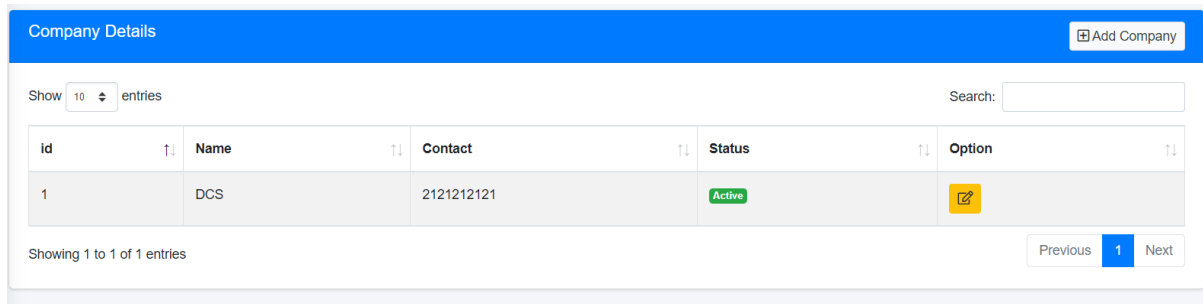


Figure 99: System country create edit

## System company view

- Click Company menu item to view list of active company details.
- Click Add Company button to create new company.




Id	Name	Contact	Status	Option
1	DCS	2121212121	Active	

Figure 100: System company view

## System Company create/ edit view

- Enter new Company details and click Submit button.

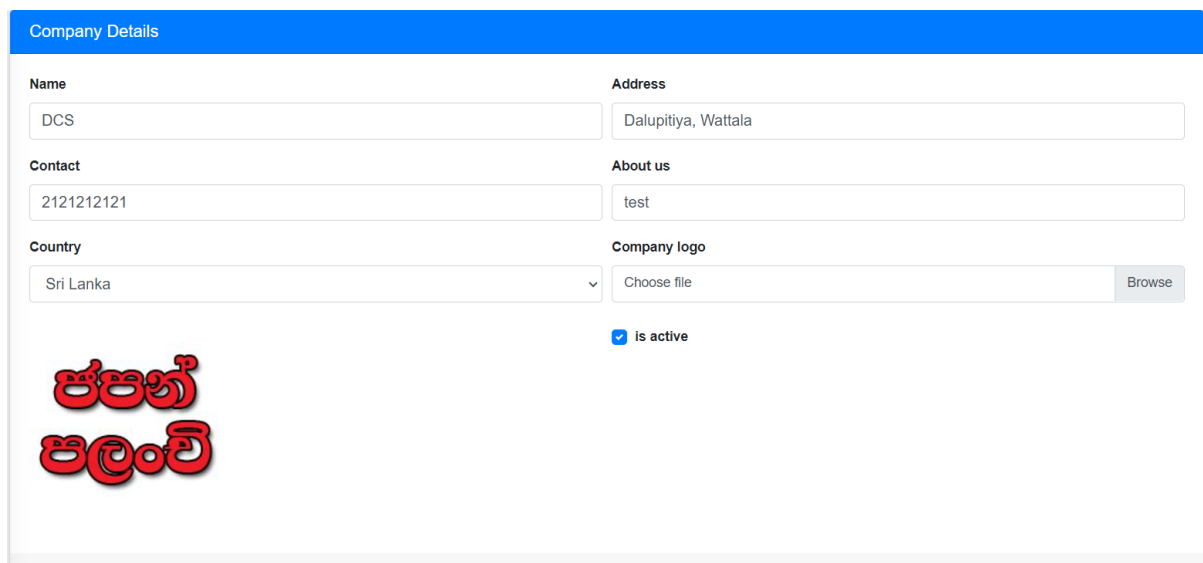


Figure 101: System company create edit

## System location view

- Click Company Location menu item to view list of location details.
- Click Add Location button to create new location.

Location Details

Add Location

Show 10 entries

Search:

id	Name	Description	Country	Status	Option
1	Kadawata	Kadawata	Sri Lanka	Active	
2	Wattala	Wattala	Sri Lanka	Active	
3	Ibaraki Prefetcher	Ibaraki Prefetcher Japan	Japan	Active	
4	Nittambuwa	Nittambuwa	Sri Lanka	Active	
5	Kadana	Kadana	Sri Lanka	Active	

Showing 1 to 5 of 5 entries

Previous

1

Next

Figure 102: System location view

## System location create/ edit view

- Enter new Location details and click Submit button.

Location Details	
Name	Description
<input type="text" value="Kadawata"/>	<input type="text" value="Kadawata"/>
Country	<input checked="" type="checkbox"/> is active
<input type="text" value="Sri Lanka"/>	
<input type="button" value="Submit"/>	

Figure 103: System location create edit

## System company branch view

- Click Company Branch menu item to view list of branch details.
- Click Add Branch button to create new branch.

Branch Details								<a href="#">Add Branch</a>
Show	10	entries	Search:					
Id	Name	Company	Location	Contact	Manager	Status	Option	
1	Wattala	DCS	Kadawata	2147483611	17534-Charith	Active		
2	Kadawatha	DCS	Kadawata	712917184	17533-Sachith	Active		
3	Nittambuwa	DCS	Nittambuwa	712917184	2542-Hashani	Active		

Figure 104: System company branch view

## System company branch create/ edit view

- Enter new Branch details and click Submit button.

Company Branch Details

Name: Wattala Location: Wattala Company: DCS Contact No.: 2147483611

Manager: 2121-Nadeesha Address: Wattala ☒ is active

Submit

Figure 105: System company branch create edit

## System company bank view

- Click Company Bank menu item to view list of bank details.
- Click Add Bank button to create new bank.

Bank Details [Add Bank](#)

Show 10 entries Search:

Id	Name	Status	Option
1	HNB	Active	
2	NDB	Active	
3	BOC	Active	
4	DFCC	Active	
5	HDFC	Active	
6	People's	Active	

Showing 1 to 6 of 6 entries Previous 1 Next

Figure 106: System company bank view

## System company bank create/ edit view

- Enter new Bank details and click Submit button.

Bank Details

Name: HNB ☒ is active

Submit

Figure 107: System company bank create edit

## System company bank branch view

- Click Company Bank Branch menu item to view list of bank branch details.
- Click Add Bank Branch button to create new bank branch.

Bank Branch Details

Add Bank Branch

Show10entries

Search:

id	Branch Code	Swift Code	Bank Name	Location	Address	Contact	Status	Option
1	HNBKD	sds121	HNB	Kadawata	Kadawata	121212121	Active	
2	BOCNIT	212121	BOC	Nittambuwa	Nittambuwa	21212121	Active	
3	NDBKD	vf32132	NDB	Kadawata	Kadawata	342322	Active	
4	DFCKKD	sdx213	DFCC	Kadawata	Kadawata	121654562	Active	

Showing 1 to 4 of 4 entries

Previous1Next

Figure 108: System company bank branch view

## System company bank branch create/ edit view

- Enter new Bank branch details and click Submit button.

Bank Branch Details	
<b>Branch Code</b>	<b>Swift Code</b>
<input type="text" value="HNBKD"/>	<input type="text" value="sds121"/>
<b>Bank</b>	<b>Location</b>
<input type="text" value="HNB"/>	<input type="text" value="Kadawata"/>
<b>Address</b>	<b>Contact</b>
<input type="text" value="Kadawata"/>	<input type="text" value="121212121"/>
<input checked="" type="checkbox"/> is active	
<input type="button" value="Submit"/>	

Figure 109: System company bank branch create edit

## System company bank account view

- Click Company Bank Account menu item to view list of bank account details.
- Click Add Bank account button to create new bank account.

Bank Account Details								Add Bank Account
Show	10	entries	Search:					
id	Account No.	Account Name	Bank Name	Branch Name	Contact	Status	Option	
1	12121212	DCS Pvt Ltd	HNB	HNBKD	211212	Active		
2	1111111111	saas	DFCC	DFCCKD	324343	Inactive		
Showing 1 to 2 of 2 entries								Previous 1 Next

Figure 110: System company bank account view

## System company bank account create/ edit view

- Enter new Bank account details and click Submit button.

Bank Account Details	
Account No.	Account Name
<input type="text" value="12121212"/>	<input type="text" value="DCS Pvt Ltd"/>
Bank Branch	Contact
<input type="text" value="HNBKD"/>	<input type="text" value="211212"/>
<input checked="" type="checkbox"/> is active	
<input type="button" value="Submit"/>	

Figure 111: System company bank account create edit

## System company customer view

- Click Customer menu item to view list of customer details.
- Click Add customer button to create new customer.

Customer Details								Add Customer
Show	10	entries	Search:					
id	Name	NIC	Contact No.	Email	Online Shopper	Status	Option	
1	Shanaka	961330456V	94757848081	nadeetharu1225@gmail.com	Yes	Active		
2	Sanjaya Hettiarachchi	901330456V	9428689591	cykatm@gmail.com	Yes	Active		
3	Pavithra Jayasundara	902345654V	9471895456	may12contact@gmail.com	Yes	Active		
Showing 1 to 3 of 3 entries								Previous 1 Next

Figure 112: System company customer view

## System company customer create/ edit view

- Enter new customer details and click Submit button.

**Customer Details**

**Name**

Sanjaya Hettiarachchi

**NIC**

901330456V

**Contact No.**

9428689591

**Email**

cykatm@gmail.com

**Working Address**

No.56, Dekatana, Dompe

**Shipping Address**

No.56, Dekatana, Dompe

☒ is Online Shopper

☒ is active

Submit

Figure 113: System company customer create edit

## System user group view

- Click User group menu item to view list of user group details.
- Click Add user group button to create new user group.

**User Group Details** [Add User Group](#)

Show 10 entries Search:

Id	User Group Name	Description	Status	Option
1	Admin	All privileges included	Active	
2	Manager	yard manager	Active	
3	Driver	Yard Driver	Active	
4	Staff	General staff	Active	
5	Customer	Customer	Active	

Showing 1 to 5 of 5 entries

Previous 1 Next

Figure 114: System user group view

## System user group create/ edit view

- Enter new user group details and click Submit button.

**Company Branch Details**

**User Group Name**

Manager

**Description**

yard manager

☒ is active

Submit

Figure 115: System user group create edit

## System user details view

















- Click User menu item to view list of user details.
- Click Add user button to create new user.

System User Details

Create User

Show 10 entries

Search:

Id	Username	User Group	Is Customer	Status	Option
1	admin	Admin	No	Active	 
2	customer	Customer	Yes	Active	 
3	manager1	Manager	No	Active	 
43	sanj123	Customer	Yes	Active	 
44	pavi1990	Customer	Yes	Active	 
53	manager2	Manager	No	Active	 
54	sachith	Staff	No	Active	 
55	madushanka	Staff	No	Active	 

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Version 1.0

Figure 116: System user details view

## System user details create edit

- Enter new user details and click Submit button.

System User Details

Sytem User Group

Employee/ Customer Id

Username

Staff

3212 - Madushanka

madushanka

☐ is customer

☒ is active

Submit

Figure 117: System user details create edit

# User Manual for Online Shopping Website

## Home page

- This is the Home page of Online Shopping website. Display brief description about company and display some retail items.
- Click Top Right My account to Sign in or Sign up.

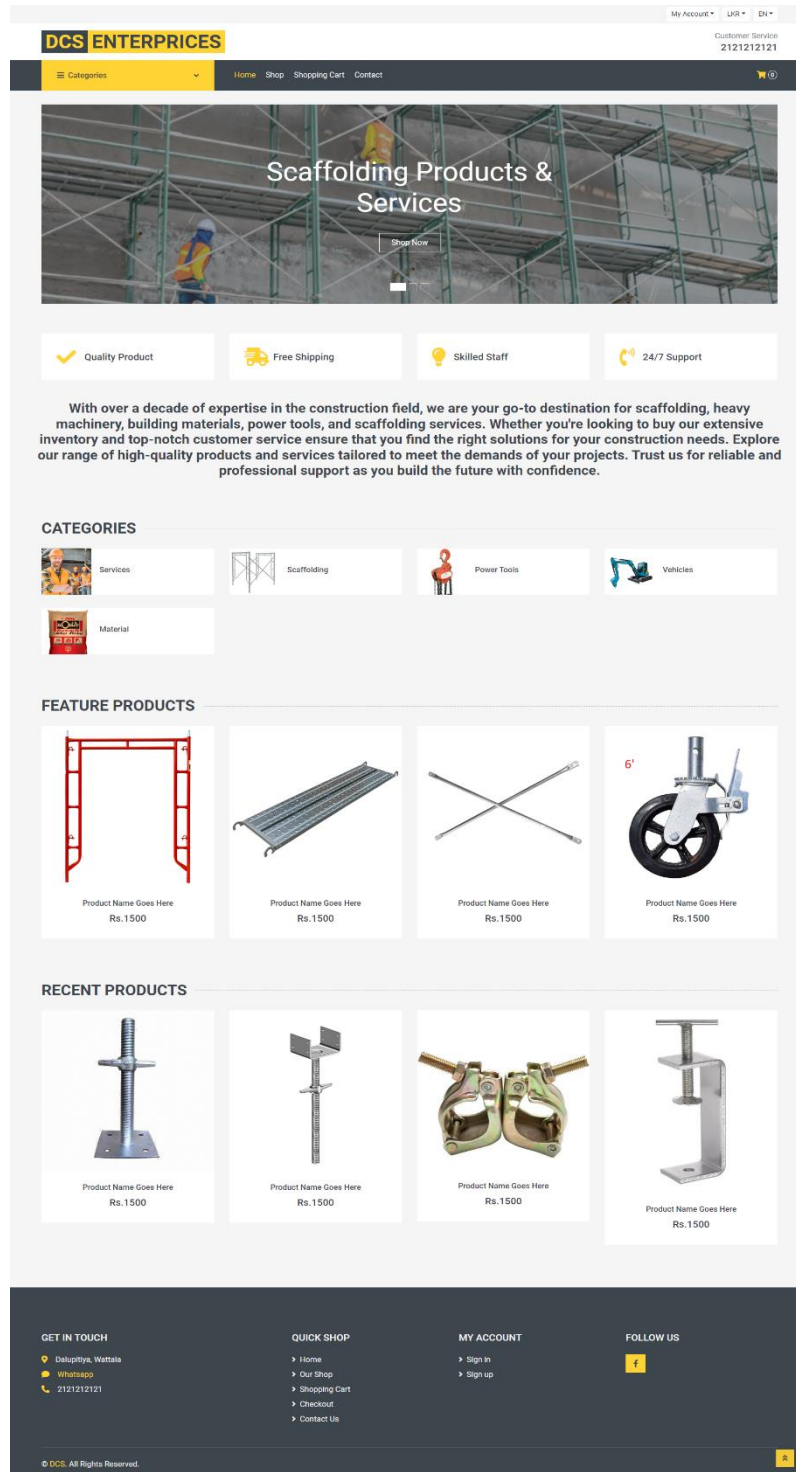


Figure 118: Online shopping Home page.



## Customer Login page

- Enter username and password.
- Click Sign in button.
- Successful login will direct you to OTP verification page. Otherwise, error message will popup.
- Click Reset Password if the password is forgotten.

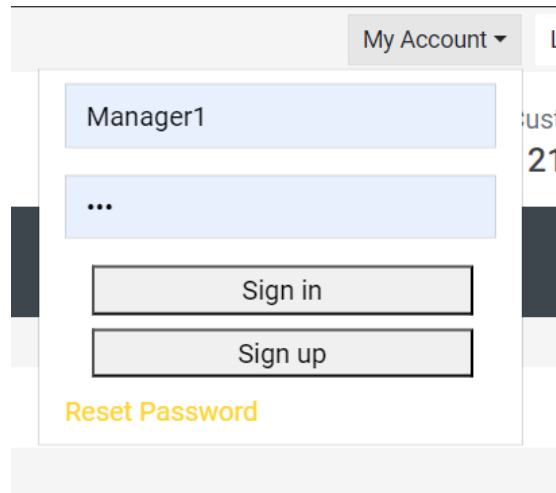


Figure 119: Online shopping login page.

## Customer Registration page

- Enter your details and click Register.

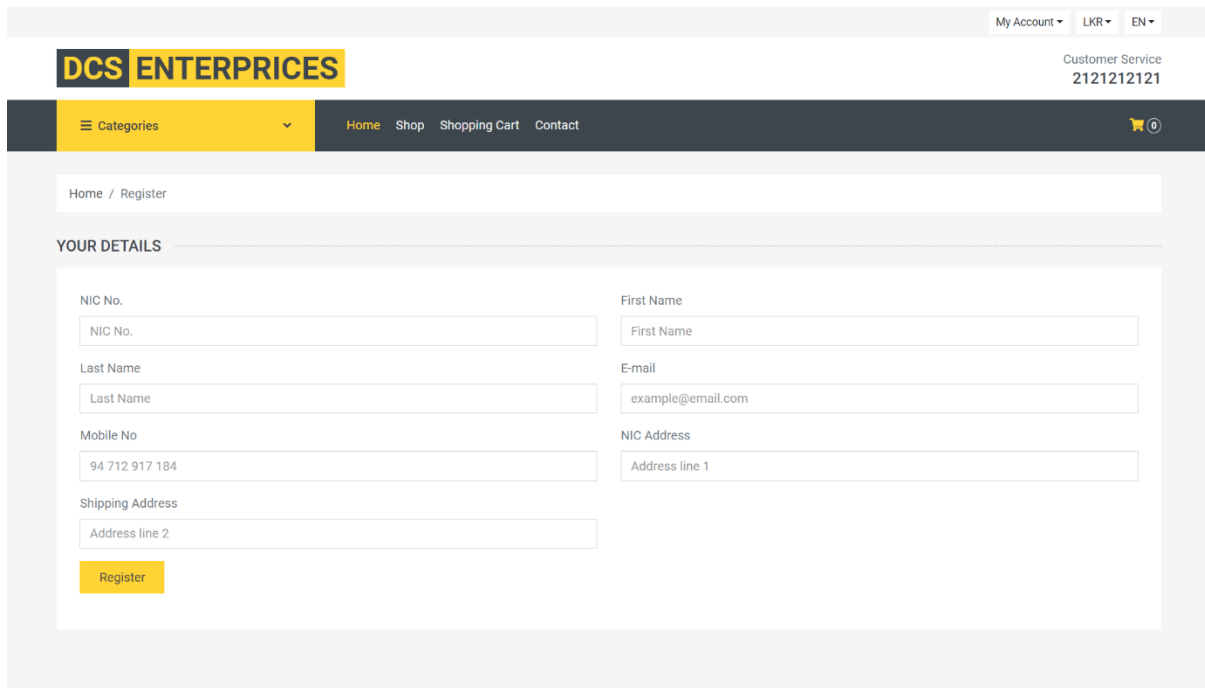


Figure 120: Online shopping customer registration page.

## Product page

- Filter by categories and find product.
- Click Add to cart button to add your product to cart.

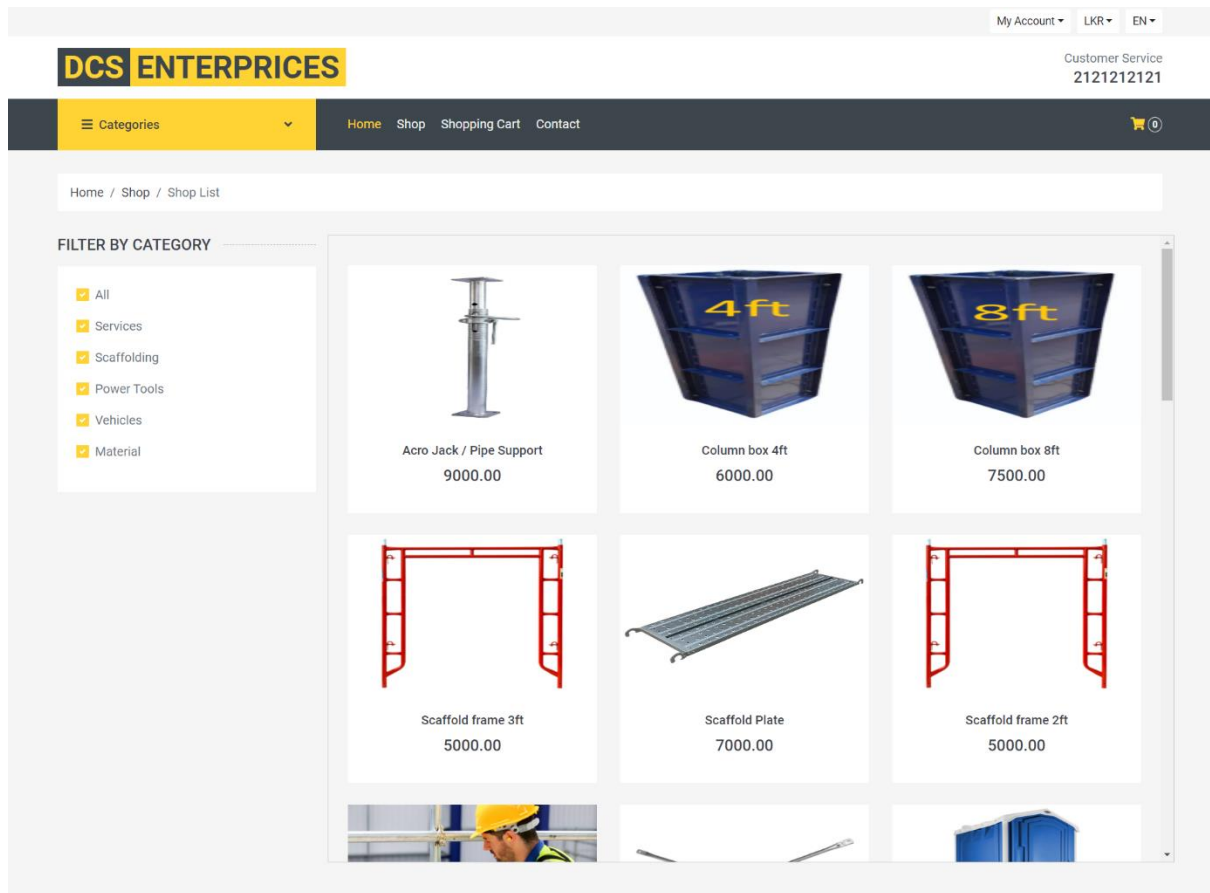




Figure 121: Online shopping product page.

## Cart page

- Added products will display in a list.
- Use Plus/ Minus buttons for adjust quantity and delete button to remove product from list then click Proceed to checkout button to proceed next step.

The screenshot shows the online shopping cart page for DCS ENTERPRICES. The header includes the company logo, a navigation menu with 'Categories', 'Home', 'Shop', 'Shopping Cart', and 'Contact', and user options like 'My Account', 'LKR', and 'EN'. The main content area displays a list of items in the cart:

Products	Price	Quantity	Total	Remove
 Acro Jack / Pipe Support	Rs. 7000.00	<input type="button" value="-"/> 5 <input data-bbox="710 694 729 721" type="button" value="+"/>	Rs. 35000.00	<input data-bbox="917 694 936 721" type="button" value="X"/>
 Column box 8ft	Rs. 7500.00	<input type="button" value="-"/> 4 <input data-bbox="710 784 729 810" type="button" value="+"/>	Rs. 30000.00	<input data-bbox="917 784 936 810" type="button" value="X"/>

To the right, the 'CART SUMMARY' section shows:

Subtotal	Rs. 65000.00
Shipping	FREE
<b>Total</b>	<b>Rs. 65000.00</b>

A yellow 'Proceed To Checkout' button is located below the summary.

Figure 122: Online shopping cart page.

## Checkout page

- Users can select payment method accordingly and click Pay now button.
- Use displayed bank account details or Scan QR for make the payment.
- Use NIC or Mobile Number as reference for your payment.
- Wait couple hours for order confirmation email.

The screenshot shows the online shopping checkout page for DCS ENTERPRICES. The header is identical to the cart page. The main content area is divided into two main sections: 'BILLING ADDRESS' and 'ORDER TOTAL'.

**BILLING ADDRESS**

NIC No.  First Name

Last Name  E-mail

Mobile No  NIC Address

Shipping Address

☐ Create an account  
☐ Ship to NIC address

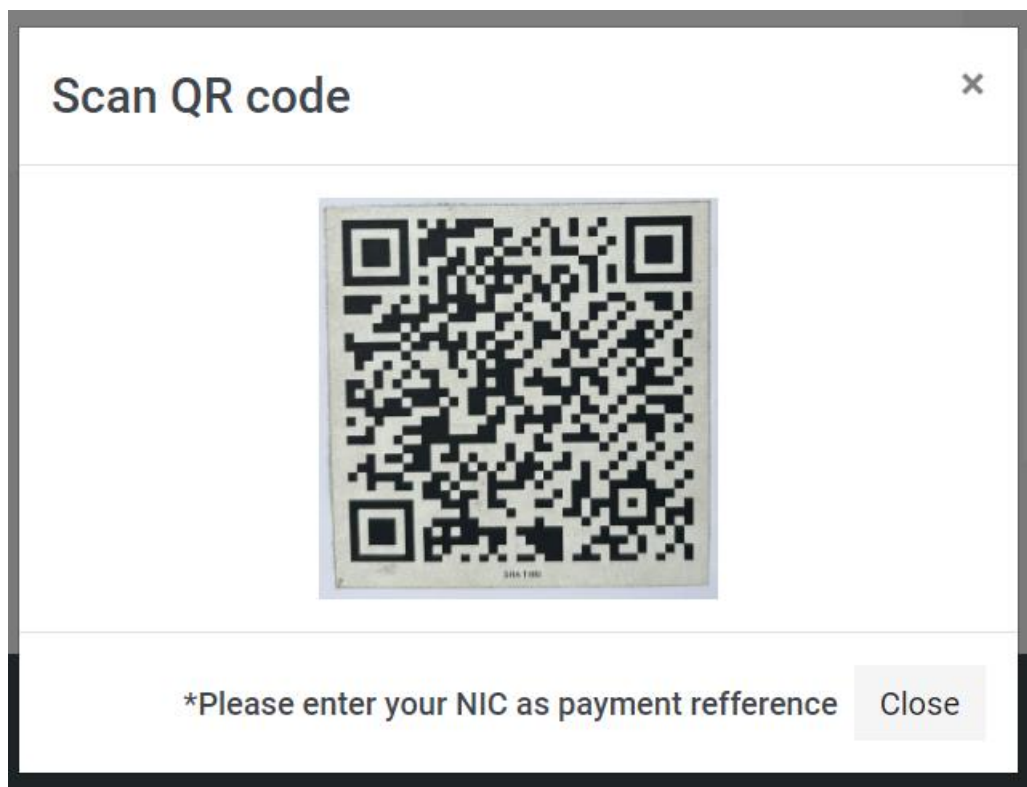
**ORDER TOTAL**

Products	
Acro Jack / Pipe Support	Rs. 35000.00
Column box 8ft	Rs. 30000.00
Subtotal	Rs. 65000.00
Shipping	FREE
<b>Total</b>	<b>Rs. 65000.00</b>

**PAYMENT**

☐ Bank Transfer  
☐ Lanka QR

Figure 123: Online Shopping Checkout page.



*Figure 124: Qr or Bank details popup message.*

## **Appendix B – MIS Reports**

### **Description of MIS Report Module**

To understand how well the organization is doing and make decisions quickly, the management uses MIS reports. These reports act as a useful tool for guiding decision-makers in selecting the best actions to expand their organization. Within this structured system, MIS reports play a vital role.

### **Decision Making**

People who make decisions require information to make good choices, and the MIS report assists in fulfilling this requirement. For example, before purchasing new stocks, management can make informed decisions. By analyzing existing stock movement data, they can figure out if a particular product is suitable for a specific region in the country.

### **Tracking records**

Using Management Information System is very important for keeping records. These systems provide a clear picture of all the transactions that happen in a business and serve as a guide for future activities. This is helpful for businesses to follow their progress and performance over time, which is necessary for making decisions.

# Evidence of the reports

## Branch wise reports

Users can search branch wise reports like Employee details, Stock details, Stock Transfer Details.

Rental Stock Details									
Show/hide columns ▾ Excel Copy CSV PDF									
Search: Kada									
Id	Branch	Item	Item type	Max Price	Min Price	Reorder Level	Available stock	Status	Option
		↑↓	↑↓	↑↓	↑↓	↑↓	↑↓	↑↓	↑↓
		Item	Item type	Max Price	Min Price	Reorder Level	Available stock	Status	Option
		Acro Jack / Pipe Support	Main Item	0.00	0.00	0	100	Active	
		Column box 4ft	Main Item	0.00	0.00	0	100	Active	
		Column box 8ft	Main Item	0.00	0.00	0	100	Active	
29	Kadawatha	Scaffold frame 3ft	Main Item	0.00	0.00	0	100	Active	
30	Kadawatha	Scaffold Plate	Main Item	0.00	0.00	0	100	Active	

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Figure 125: Rental stock details report

Employee Details								
Add Employee								
Show 10 entries Search: wattala								
Id	Epf No.	Branch	Company	First Name	Last Name	Status	Option	
2	17533	Wattala	DCS	Sachith	Sasindu	Active		
8	2121	Wattala	DCS	Nadeesha	Tharaka	Active		
Showing 1 to 2 of 2 entries (filtered from 8 total entries)								
Previous 1 Next								

Figure 126: Employee details report

Stock Transfer Create								
Add Stock Transfer								
Show 10 entries Search: kada								
Stock Transfer id	Date	Request From	Request To	Approved	Accepted	Active	Option	
1	2024-02-25	Kadawatha	Wattala	No	No	Active		
Showing 1 to 1 of 1 entries								
Previous 1 Next								

Figure 127: Stock transfer report

### Export report details as data.

Report details can be downloaded in formats such as Excel, PDF, and CSV. This lets you use the information for activities like data mining and decision-making.

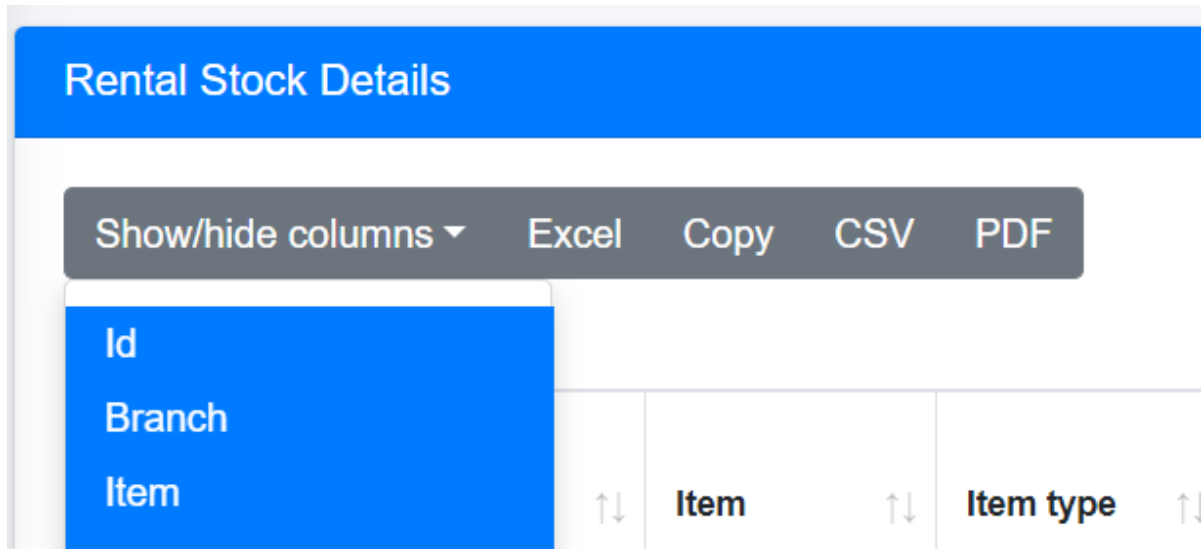


Figure 128: Export report data