

A  
Project Report  
on  
“**Matricsv**”  
At  
Sushilaai Web Solutions, Dhule

Submitted By:  
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**Institute of Management Research and  
Development, Shirpur**  
KBC North Maharashtra University, Jalgaon

Guided By:  
**Prof. Sapana Yeshi.**

In the partial fulfillment of the requirement for the award of  
the degree of ‘ Integrated Master of Computer Application’

**2024-25**



R. C. Patel Educational Trust's

## R. C. Patel Institute of Management Research & Development

Shirpur, Dist-Dhule 425405

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### **CERTIFICATE**

*This is to certify that Mr. Hemanshu Sanjay Mahajan, a final year student of 'Integrated Master of Computer Application' from Institute of Management Research & Development, Shirpur has successfully completed the project entitled "**Matrixsv**" as a part of academic six month industrial training which is approved for degree of Master of Computer Application a post graduate course of '**KBC North Maharashtra University, Jalgaon**' during acadmic year 2024-25.*

Director  
RCPET'S IMRD,  
Shirpur

Examiner



## *Acknowledgment*

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I take this opportunity to express my sincere thanks to **Sushilaaai web solutions, Dhule** for providing me an opportunity to work in the organization. I also express my gratitude to **Mr.Digambar Shinde (Project Manager and Team Leader)** Sushilaaai Web Solutions, Dhule who gave me the opportunity to work in Sushilaaai Web Solutions. His prudent ideas of work, keen interest in developing the system and constant effort were a great source of inspiration for us me. He not only guided us on the technical aspect but his acknowledgement of marketing strategies helped us in broadening our perspective.

I express my thanks to **Mr.Digambar Shinde (Project Manager and Team Leader)**. for their valuable guidance and experienced suggestion, encouragement and support extended by them helped me in various stages where I needed help and suggestions.

I am thankful to **Dr. Vaishali Patil. (Director), Prof. M. N. Behere (Head Dept. of MCA), and Prof. Sapana Yeshi. (Project Guide)**, R. C. Patel Institute of Management Research and Development, Shirpur, for giving me his valuable guidance and encouragement during our course. I am thankful to the college staff for their constant encouragement.

Last but not least, I am thankful to all people who directly or indirectly contributed to make this project a success.

**Thanks & Regards**  
**Hemanshu S. Mahajan**

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# Chapter 1

## Introduction

### 1.1 Company Profile

Sushilaai Web Solutions, provides a comprehensive range of media services and solutions. The company operates in various sectors including web development, graphic designing, internet marketing, and more. We are committed to delivering high-quality and cost-effective software development solutions to our clients, ensuring timely delivery and exceeding customer expectations.

Our mission is to enhance customer satisfaction by offering reliable software development services through a team of experienced professionals who have earned the trust and confidence of our clients.

#### 1.1.1 Services Offered

##### **Web Development**

Sushilaai Web Solutions has been offering website development services for the past two years, building a solid presence in the digital industry. We specialize in creating custom websites using technologies like .NET, Java, and Python. Our mission is to deliver innovative, fast, and reliable web solutions that help businesses optimize their operations. Serving clients across India and abroad, we focus on delivering creative, high-performance websites tailored to meet unique business needs.

## **Web Hosting**

The important and most overlooked aspect of site development is hosting. We offer reliable, secure and super-fast hosting services. One of the most important things to consider when choosing a good Web hosting company is uptime, and we managed to get our hosting uptime at 99.9. We offer many hosting plans for small businesses. We offer all time support for web hosting.

## **Software Development**

Sushilaa Web Solutions believes that software development is more than just coding and project delivery. It begins with a clear understanding of client requirements and business objectives. Based on this understanding, we recommend cost-effective and impactful solutions that align with our clients' goals. By combining strategic insights with the right mix of technologies, Sushilaa ensures innovative, high-quality outcomes that drive long-term value and success.

## **Graphic Designing**

Graphic design is one of the key focus areas at Sushilaa Web Solutions. In today's digital world, people are naturally drawn to visually appealing content. Graphic design plays a crucial role in web design by enhancing the overall look and feel of a website. At Sushilaa, we blend creative graphic design with efficient web development to create engaging, user-friendly websites. Modern web development goes beyond code and speed—it demands visual impact, and graphic design is essential in capturing attention and building strong digital presence.



## 1.2 Introduction To MatricsV

The internship aimed to provide practical experience in the field of web development, with a focus on data visualization. The primary objective of the MatricsV project was to create an interactive, responsive dashboard that could interpret and display complex data through visually intuitive charts and graphs. This project was designed not just as a technical exercise but also as a real-world application of analytical thinking, user interface design, and performance optimization. Data visualization plays a crucial role in modern data analysis, allowing stakeholders to understand trends, patterns, and outliers in datasets. Throughout the project, I worked on various aspects of frontend development, including component-based architecture, charting libraries, data integration, responsive design, and state management.

### 1.2.1 Need And Motivation

In today's data-driven world, the ability to interpret complex data quickly and accurately is essential for effective decision-making. Organizations generate massive volumes of data daily, making data visualization a critical tool for identifying trends, patterns, and anomalies. However, raw data alone is often overwhelming and lacks clarity without proper visual representation.

The MatricsV project was initiated to address this need by building a responsive, interactive dashboard capable of transforming complex datasets into easily digestible visuals. The motivation behind the project was to bridge the gap between data and decision-making by applying modern frontend technologies to create intuitive user interfaces. This not only enhances user engagement but also supports faster, insight-driven actions in business and academic contexts. By combining performance, usability, and visual appeal, the project aimed to provide a practical, scalable solution to real-world data interpretation challenges.

### 1.2.2 Problem Definition

Many organizations struggle to extract meaningful insights from large, complex datasets. Traditional tools often lack interactivity and visual clarity, making analysis difficult. The MatricsV project addresses this issue by developing a responsive dashboard that transforms raw data into intuitive visualizations, enabling users to interpret trends, patterns, and outliers easily for better, faster decision-making.

### 1.2.3 Objective And Scope

This dashboard is designed to make data visualization simple, efficient, and interactive. The main goal is to convert complex datasets into user-friendly charts and graphs for better understanding and analysis.

1. To create an interactive and responsive web dashboard using modern frontend technologies.
2. To visualize data using dynamic charts such as bar, line, and pie charts.
3. To allow filtering and real-time updates based on user inputs.
4. To ensure the system is responsive and accessible across devices.
5. To help users identify trends, patterns, and outliers easily.
6. To integrate external data sources using APIs for dynamic data handling.
7. To optimize performance for smooth interaction, even with large datasets.
8. To provide a scalable structure for potential future expansion in different domains.

### 1.2.4 Features of Proposed System

Information needs only to be entered once and is available wherever you need it. More importantly, it all works together in the way you would expect, providing a natural workflow to everything you do.

1. Display of interactive dashboards and data visualization
2. Create separate dynamic components for each data category (charts, filters, etc.)
3. Provide real-time updates based on user interactions (filters, dropdowns, date-pickers)
4. Maintain user-friendly and responsive layouts for seamless access across devices

**Features:**

- **Graphical User Interface:** The MatricsV system is built with a simple, interactive, and user-friendly interface, allowing users to perform tasks easily.
- **Web Based:** The system is entirely web-based, making it platform-independent and accessible from any location.
- **Multi User:** Multiple users can access and interact with the dashboard, with a structure in place for managing and restricting user roles (using future extensions).
- **Dynamic Reports:** MatricsV provides dynamic visualization through different types of charts (bar, line, pie) for easy understanding and faster decision-making.
- **Flexible Reports (Daily, Monthly, Quarterly, Half-Yearly, Yearly):** Different visual reports and data breakdowns can be generated based on user-selected time periods and filters.

# Chapter 2

## System Requirement Analysis

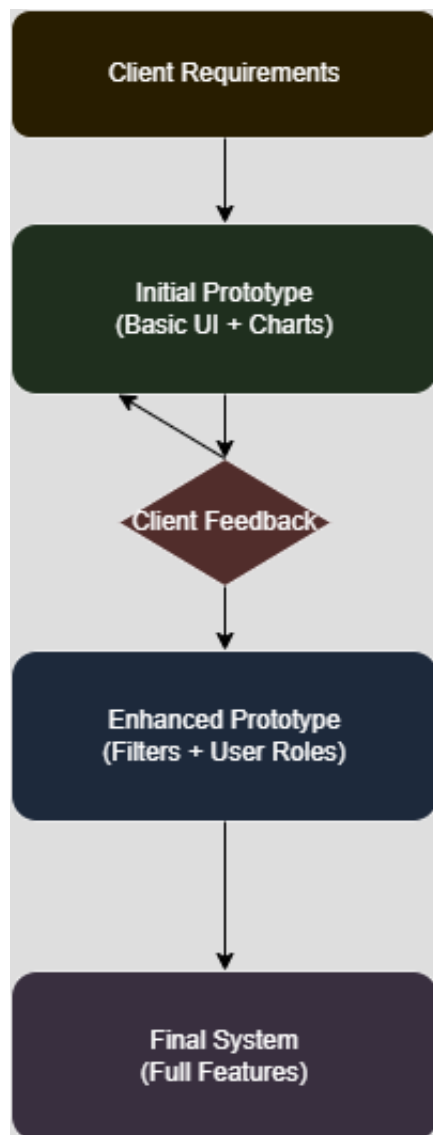
### 2.1 System Requirement Analysis

At the System Requirement Analysis stage, the information gathering process is identified as a critical step to understand user needs, system expectations, and project constraints. This involves engaging with stakeholders through interviews, questionnaires, observations, and document analysis to collect detailed insights. The goal is to define clear functional and non-functional requirements, ensuring that the system is designed to meet real-world use cases effectively. Accurate information gathering lays the foundation for a successful and user-centric system design.

### 2.2 Software Process and Development

The set of general objectives for “Matrixsv” development were defined by the various **Prototype model**

The prototyping paradigm begins with requirements gathering. Together with Planning of those aspects of the software that will be visible to the customer/user (e.g. input approaches and output formats).



## 2.3 Scope of Proposed System

While in this phase, the scope of em was defined first and then what needs to be done was finalized. Lot of brainstorming ws were very clearly noted down. We never came back to revise or change the requirement defined earlier.....

### Advantages of Proposed System

## 2.4 Technical Specification

- **Hardware Specification**

Processor : Intel(R) Core(TM) i3-7020U CPU @ 2.30GHz 2.30 GHz

RAM : Min. 2GB

Hard Disk : Min. 20 GB free

- **Software Specification**

Platform : Windows 11

Front End : React.js, Redux (state management).

Back End : Node.js, Express.js.

Database : MYSQL

Web Browser: Google Chrome etc.

### 2.4.1 Technology Stack Explained

- **React.js:** A JavaScript library for building dynamic, component-based user interfaces.
- **Redux:** State management tool to centralize and manage application data.
- **Chart.js:** Lightweight library for rendering responsive, interactive charts.
- **D3.js:** Powerful library for custom data visualizations using SVG/Canvas.
- **MongoDB:** NoSQL database for flexible, JSON-like data storage.
- **Styled-components:** CSS-in-JS library for scoped styling and theme support.
- **Node.js:** JavaScript runtime for scalable server-side execution.
- **Express.js:** Minimalist framework for building RESTful APIs and routing.

# Chapter 3

## Feasibility Study

### 3.1 Introduction

After doing the project MatricsV System, study and analysing all the existing or required functionalities of the system, the next task is to do the feasibility study for the project. All projects are feasible-given unlimited resources and infinite time. Feasibility study includes consideration of all the possible ways to provide a solution to the given problem. The proposed solution should satisfy all the user requirements and should be flexible enough so that future changes can be easily done based on the future upcoming requirements. There are many different types of feasibility. Such as Economical Feasibility, Technical Feasibility, Operational Feasibility, Schedule Feasibility and Legal Feasibility

### 3.2 Economical Feasibility

It is a very important aspect to be considered while developing a project. We decided the technology based on minimum possible cost factor. All hardware and software cost has to be borne by the organization. Overall we have estimated that the benefits the organization is going to receive from the proposed system will surely overcome the initial costs and the later on running cost for system.

### **3.3 Operational Feasibility**

Here the training cost of the system users also considered. The cost of the training program as well as space required for implementation of system is also available and the basic computer knowledge favorable atmosphere also found and utilization of software like menu driven system , will make the system more user friendly.

### **3.4 Technical Feasibility**

It include the study of function, performance and constraints that may affect the ability to achieve an acceptable system. For this feasibility study, we studied complete functionality to be provided in the system, as described in the system Requirement specification, and checked if everything was possible using different type of frontend and backend platforms.



# Chapter 4

## Proposed System

### 4.1 Proposed System

The proposed system, MatricsV, is designed to provide a modern solution for visualizing complex data through an interactive dashboard. It is user-friendly, scalable, and helps stakeholders easily understand trends and insights. With responsive design, dynamic charts, and real-time filtering, the system meets the needs of both developers and end-users. MatricsV not only enhances data representation but also ensures better performance and usability. The aim of the proposed system is to improve data interpretation and decision-making. It reduces manual effort, ensures efficient data handling, and overcomes the limitations of traditional static dashboards, making data analysis smarter and more accessible.

### 4.2 User Privileges

#### User Privileges

The proposed system defines clear user privileges to ensure secure and efficient access control within the dashboard environment. Each user role is granted specific rights based on their level of interaction with the system.

- **Admin:**

- Full access to all dashboard features
- Manage data sources and chart configurations
- Control user access and roles
- Perform system-level configurations and updates

- **Regular User:**

- View and interact with charts and visualizations
- Apply filters and export data
- Access assigned datasets and reports

- **Guest User (Optional):**

- Limited access to publicly available data views
- Read-only access without personalization features

These roles ensure data integrity, streamline operations, and maintain security by restricting sensitive functions to authorized users only.

## 4.3 Objective of the System

The main objective of the system is to develop an interactive and responsive data visualization dashboard that simplifies complex data interpretation. The system aims to provide users with real-time insights through visually intuitive charts and graphs. It is designed to enhance decision-making by presenting data in an organized and accessible manner. Additionally, the system focuses on delivering a seamless user experience across devices, reducing manual effort, and ensuring performance and scalability. Overall, the goal is to bridge the gap between raw data and actionable insights using modern web technologies

# Chapter 5

## Preliminary Design

### 5.1 Tools of data flow strategy

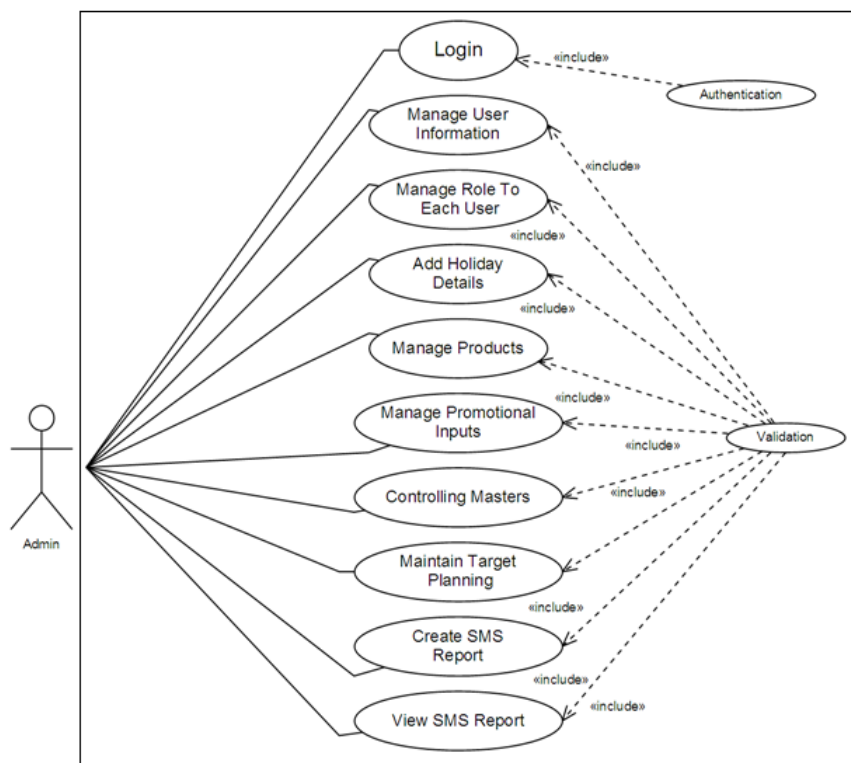
Data flow strategy shows the use of data in the system pictorially. The tools use in following this strategy show all the essential features of the system and how they fit together. It can be difficult to fully understand a business process through a verbal description alone; data flow tools help by illustrating the essential components of a system and their interactions.

**Data flow analysis makes use of the following tools:**

- **Use Case Diagram:**  
Illustrates the interactions between users (actors) and the system, showcasing the functional requirements and major processes.
- **Data Flow Diagrams (DFD):**  
Represent the flow of data within the system. DFDs help visualize how information moves between processes, data stores, and external entities.
- **Entity Relationship Diagram (ER-Diagram):**  
Displays the logical structure of the database, showing entities, attributes, and the relationships among them. It is crucial for designing a consistent and efficient database schema.

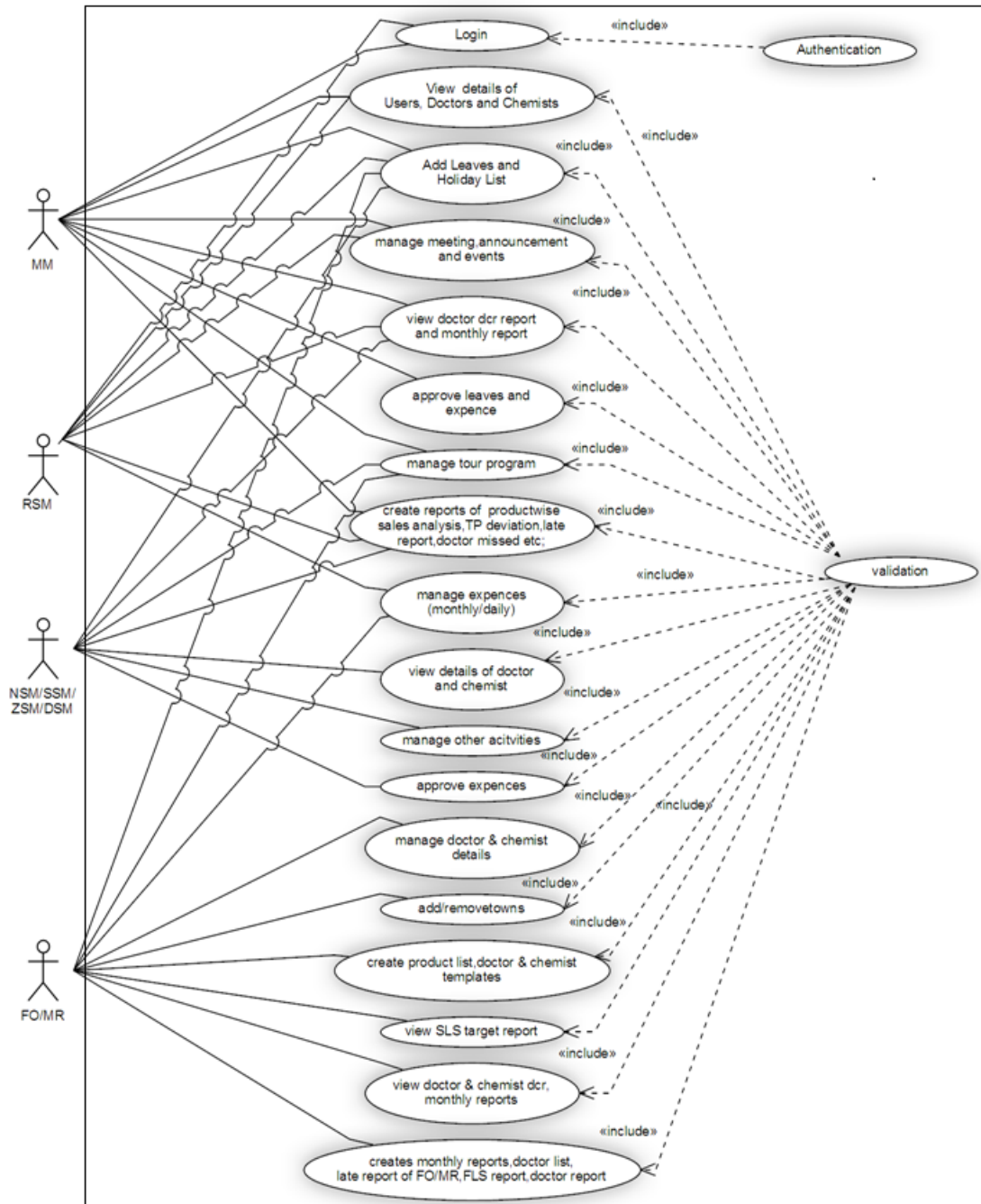
## 5.2 Use Case Diagram

### Usecase Diagram For Admin



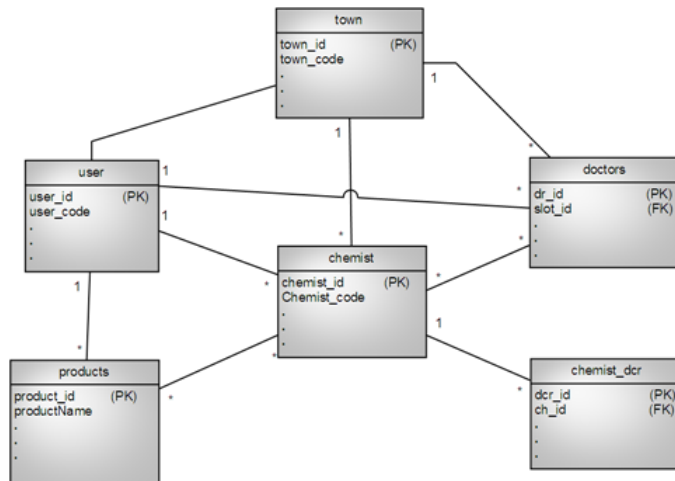
Usecase Diagram For Admin

## Usecase Diagram For Other Users.

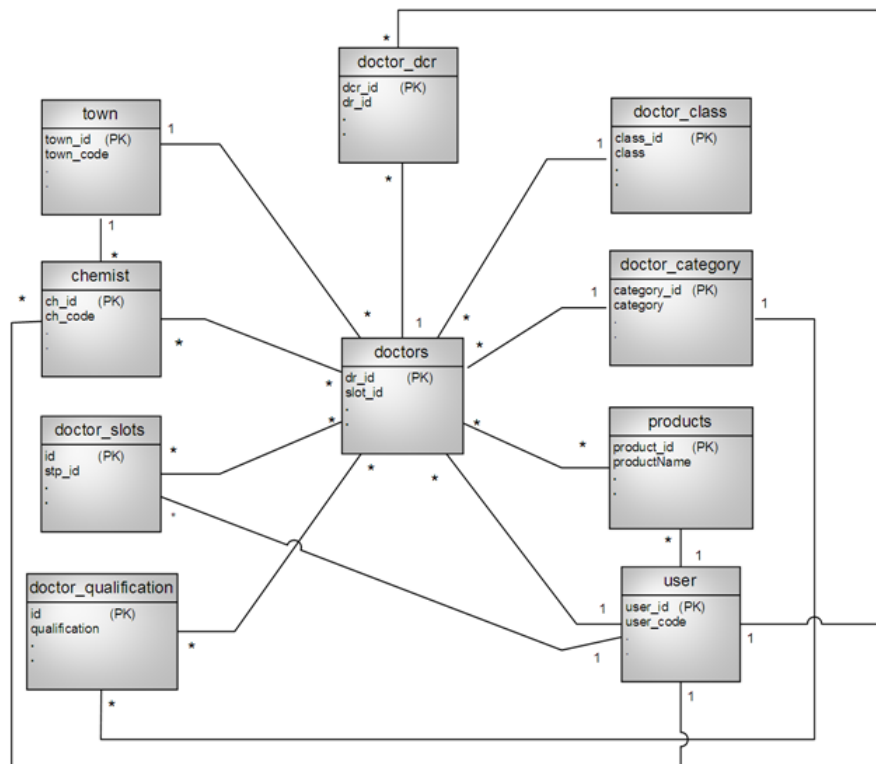


## 5.3 Entity Relationship Diagram

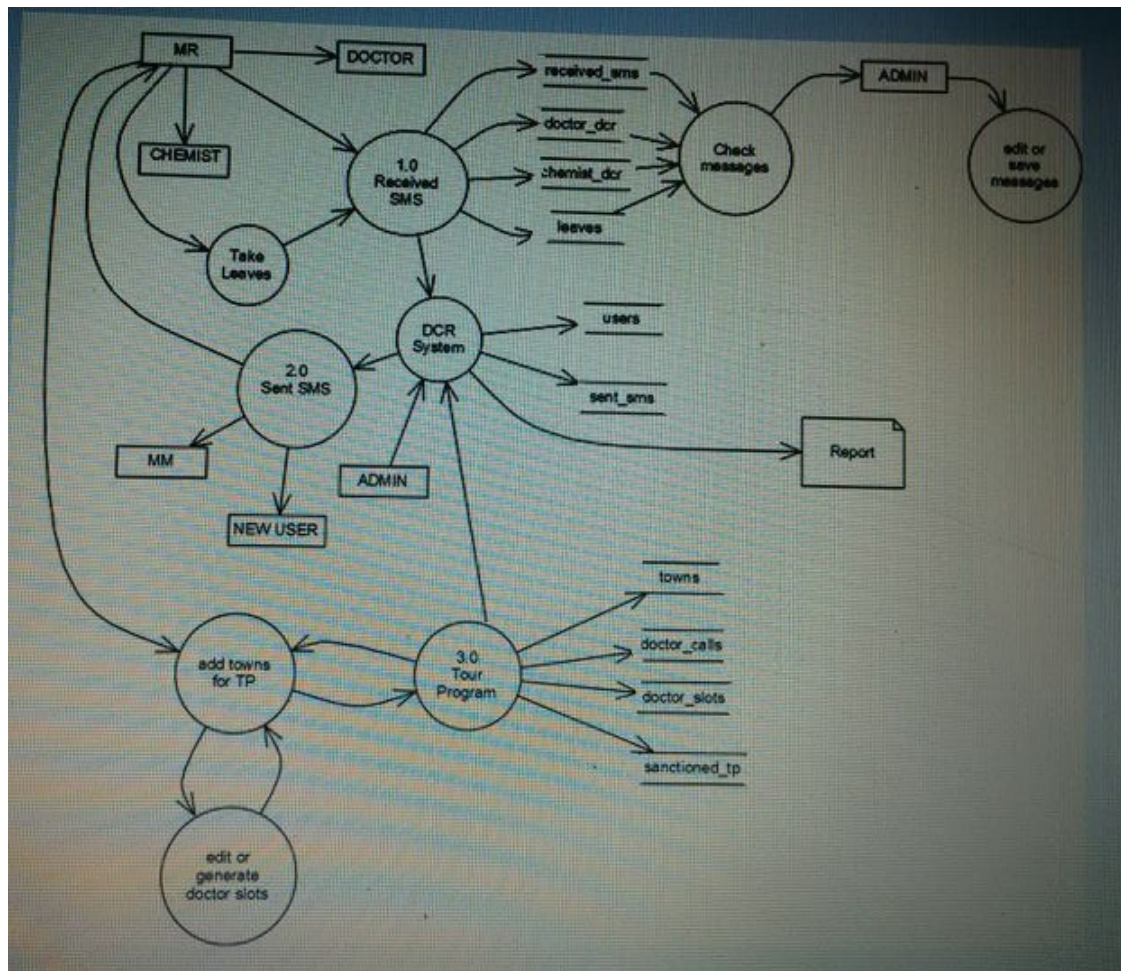
ERD For Chemist.



ERD For doctor.



## 5.4 Data Flow Diagram



# Chapter 6

## Detailed Design

Detailed design is the phase where the design is refined and plans, specifications and estimates are created. Detailed design will include outputs such as 2D and 3D models, cost build up estimates, procurement plans etc. This phase is where the full cost of the project is identified.

### 6.1 Data Dictionary

Data dictionary is only collection of data element definition. Entries in a data dictionary include the name of the data item and attributes. A data dictionary is a file or a set of files that contains a databases metadata. In a relational database, the metadata in the data dictionary includes the following: Names of all tables in the database and their owners. Names of all indexes and the columns to which the tables in those indexes relate. Constraints defined on tables, including primary keys, foreign-key relationships to other tables, and not-null constraints.

### 6.2 Input and Output Design

#### **Input Design**

Input design is the process of converting user inputs into a computer-based format. This project requires specific information from users to generate detailed reports. To achieve this, well-organized input data is essential. During the system design phase, the expanded Data Flow Diagram (DFD) identifies logical data flows, data stores, and destinations. Input data is collected and grouped based on similarity, facilitating easier processing. The primary objective of input design is to simplify data entry while minimizing logical errors. In the current system, input is minimal,



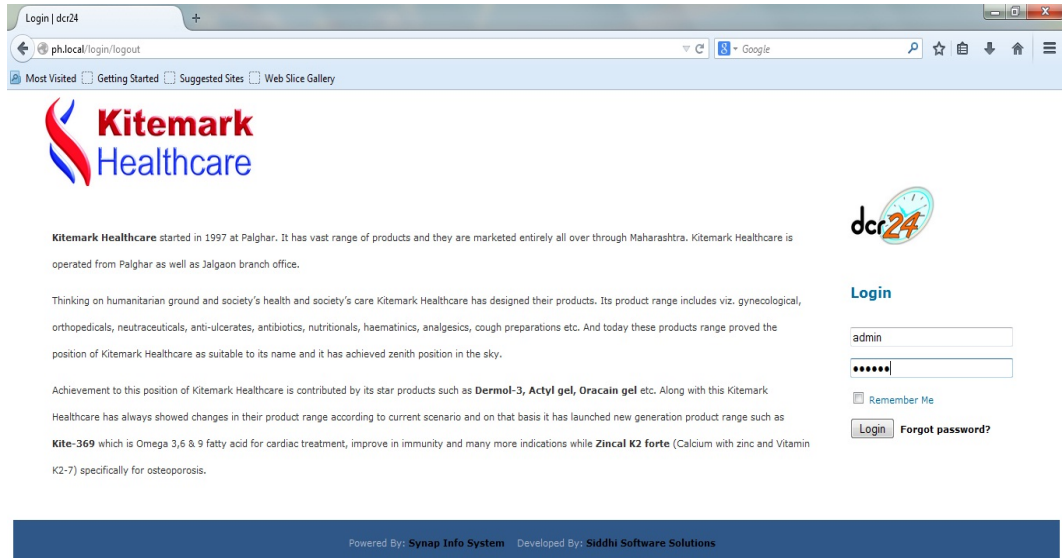
requiring only a **username** and **password** from all types of clients. If these credentials are valid, the client is granted access to the software.

### **Output Design**

Output design plays a crucial role in enhancing the system's interaction with users and supporting decision-making processes. Effective output design involves identifying the information needs of users and presenting it in a clear, accessible format. Computer output in this system involves both digital and hard-copy formats. The design considers the selection of output devices based on factors such as response time and printing efficiency.

#### **6.2.1 Admin**

## login



ph.local/login/logout

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**Kitemark Healthcare**

Kitemark Healthcare started in 1997 at Palghar. It has vast range of products and they are marketed entirely all over through Maharashtra. Kitemark Healthcare is operated from Palghar as well as Jalgaon branch office.

Thinking on humanitarian ground and society's health and society's care Kitemark Healthcare has designed their products. Its product range includes viz. gynecological, orthopedicals, nutraceuticals, anti-ulcerates, antibiotics, nutritionals, haematinics, analgesics, cough preparations etc. And today these products range proved the position of Kitemark Healthcare as suitable to its name and it has achieved zenith position in the sky.

Achievement to this position of Kitemark Healthcare is contributed by its star products such as **Dermol-3**, **Actyl gel**, **Oracain gel** etc. Along with this Kitemark Healthcare has always showed changes in their product range according to current scenario and on that basis it has launched new generation product range such as **Kite-369** which is Omega 3,6 & 9 fatty acid for cardiac treatment, improve in immunity and many more indications while **Zincal K2 forte** (Calcium with zinc and Vitamin K2-7) specifically for osteoporosis.

**dcr24**

**Login**

admin

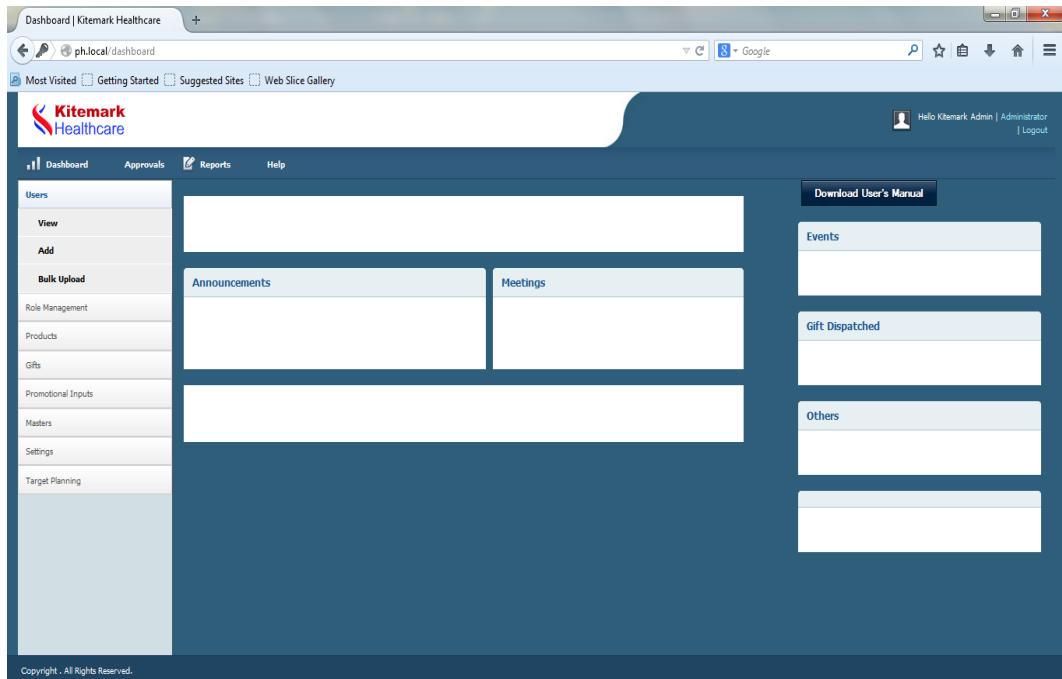
\*\*\*\*\*

☐ Remember Me

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Powered By: Synap Info System Developed By: Siddhi Software Solutions

## Admin Dashboard



Dashboard | Kitemark Healthcare

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**Kitemark Healthcare**

Hello Kitemark Admin | Administrator | Logout

**Dashboard** Approvals Reports Help

**Users**

View

Add

Bulk Upload

Role Management

Products

Gifts

Promotional Inputs

Masters

Settings

Target Planning

**Announcements**

**Meetings**

**Download User's Manual**

**Events**

**Gift Dispatched**

**Others**

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## View Users

Dashboard | Kitemark Healthcare

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Users

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Role Management Products Gifts Promotional Inputs Masters Settings Target Planning

Users

Show 10 entries

Search:

Username	Full Name	Designation	Location	MobileNo	Actions
KM1341	G P PAGARE	Marketing Manager	-	9049995254	Edit   View   In-Activate   ResetPassword   Delete
KM1342	NARESH TAXNE	Regional Sales Manager	JALGAON	9049995273	Edit   View   In-Activate   ResetPassword   Delete
KM1343	MADAN MORANKAR	Medical Representative	JALGAON	9049995263	Edit   View   In-Activate   ResetPassword   Delete
KM1344	SAMIR DESHPANDE	Regional Sales Manager	AMRAVATI	9049995264	Edit   View   In-Activate   ResetPassword   Delete
KM1345	SANTOSH PAWAR	Regional Sales Manager	AHMEDNAGAR	9049995279	Edit   View   In-Activate   ResetPassword   Delete
KM1346	VISHAL B KSHIRSAGAR	Medical Representative	SANGAMNER	888878778	Edit   View   In-Activate   ResetPassword   Delete
KM1347	DATTATRAY S GADADE	Medical Representative	A NAGAR	9049995266	Edit   View   In-Activate   ResetPassword   Delete
KM1348	SUNIL P PAGARE	Field Officer	DHULE	9049995259	Edit   View   In-Activate   ResetPassword   Delete
KM1349	RAJENDRA N DHERE	Medical Representative	A NAGAR I	9763634041	Edit   View   In-Activate   ResetPassword   Delete
KM1350	AMOL DEOKATE	Medical Representative	BARAMATI	9657385500	Edit   View   In-Activate   ResetPassword   Delete

Showing 1 to 10 of 19 entries

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## Add User

Dashboard | Kitemark Healthcare

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Kitemark Healthcare

Hello Kitemark Admin | Administrator | Logout

Dashboard Approvals Reports Help

Users

View Add Bulk Upload

Role Management Products Gifts Promotional Inputs Masters Settings Target Planning

Add User

Full Name :\* Baliram Patil

Designation :\* Marketing Manager

Address :\* Akhmed Jal Jambur Dist- Jalgaon

Phone : 02580220669

Mobile :\* 8007431475

E-Mail :\* balirampatil1688@gmail.com

Allowances :\*

In-Station 100 Out-Station 150 Ex-Station 200

Add

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## 6.3 Database structure

**announcement:** This table stores announcement added by Admin and useful to display announcement to other users.

Field Name	Data Type	size	Constraints
announceid	int	20	Primary Key,auto_increment
title	varchar	200	NOT NULL.
description	varchar	255	NOT NULL.
addedBy	int	11	NOT NULL
addedon	datetime	-	NOT NULL.
updatedon	datetime	-	NOT NULL.
expiry_date	date	20	NOT NULL.
status	varchar	-	NOT NULL.

Table 6.1: announcement

**area:** This table stores area details with region of that area.

Field Name	Data Type	size	Constraints
area_id	bigint	20	Primary Key,auto_increment
area	varchar	25	NOT NULL
region_id	bigint	20	NOT NULL
isActive	int	11	NOTNULL
addedon	datetime	-	NOT NULL
updatedon	datetime	-	NOT NULL

Table 6.2: area

**chemist:** This table stores all chemist details added by Medical Representative or Field Officer.

Field Name	Data Type	size	Constraints
chemist_id	bigint	20	Primary Key,auto_increment
chemist_code	bigint	20	NOT NULL
store_name	varchar	100	NOT NULL
store_address	Text	-	NOT NULL
town_id	bigint	20	NOT NULL
contact_person	varchar	100	NOT NULL
mobile	varchar	12	NOT NULL
email	varchar	100	NOT NULL
dob	date	-	NOT NULL
date_of_marriage	date	-	NOT NULL
is_hospital_attached	tinyint	2	NOT NULL
hospital_name	varchar	100	NOT NULL
dr_of_hospital	varchar	100	NOT NULL
near_by_dr	varchar	100	NOT NULL
available_products	varchar	150	NOT NULL
monthly_purchase	bigint	20	NOT NULL
status	varchar	20	NOT NULL
approved_by	varchar	25	NOT NULL
reject_reason	varchar	200	NOT NULL
added_by	bigint	20	NOT NULL
added_on	datetime	-	NOT NULL
updated_by	bigint	20	NOT NULL
updated_on	datetime	-	NOT NULL
isActive	tinyint	2	NOT NULL

Table 6.3: chemist

**target\_product\_sale** This table stores the target of product sales .

**target\_prod\_calculations** This table stores the product wise target calculation.

**target\_sls** This table stores the target of sls.

Field Name	Data Type	size	Constraints
id	bigint	20	Primary Key,auto_increment
year	int	11	NOT NULL
hq_id	int	11	NOT NULL
prod_id	bigint	20	NOT NULL
sale	double	-	NOT NULL
added_by	bigint	20	NOT NULL
added_on	datetime	-	NOT NULL
updated_by	bigint	20	NOT NULL
updated_on	datetime	-	NOT NULL

Table 6.4: target\_product\_sale

Field Name	Data Type	size	Constraints
id	bigint	20	Primary Key,auto_increment
year	int	11	NOT NULL
prod_id	bigint	20	NOT NULL
packing	varchar	100	NOT NULL
calc_value	double	-	NOT NULL
expected_growth	double	-	NOT NULL
min1	double	-	NOT NULL
min2	double	-	NOT NULL
min3	double	-	NOT NULL
added_by	bigint	20	NOT NULL
added_on	datetime	-	NOT NULL
updated_by	bigint	20	NOT NULL
updated_on	datetime	-	NOT NULL

Table 6.5: target\_prod\_calculations

Field Name	Data Type	size	Constraints
id	int	11	Primary Key,auto_increment
month	text		NOT NULL
hq_id	int	11	NOT NULL
product_id	int	11	NOT NULL
sls	bigint	20	NOT NULL
closing_stock	bigint	20	NOT NULL
added_by	bigint	20	NOT NULL
added_on	datetime	-	NOT NULL
updated_by	bigint	20	NOT NULL
updated_on	datetime	-	NOT NULL
monthno	int	11	NOT NULL
year	int	11	NOT NULL

Table 6.6: target\_sls

**target\_yearly** This table stores the yearly target.

Field Name	Data Type	size	Constraints
id	int	11	Primary Key,auto_increment
year	text		NOT NULL
hq_id	int	11	NOT NULL
product_id	int	11	NOT NULL
annual_target	bigint	20	NOT NULL
target_value	bigint	20	NOT NULL
intro_month	text	-	NOT NULL
added_by	bigint	20	NOT NULL
added_on	datetime	-	NOT NULL
updated_by	bigint	20	NOT NULL
updated_on	datetime	-	NOT NULL

Table 6.7: target\_yearly

**town** This table stores the town details.

Field Name	Data Type	size	Constraints
town_id	bigint	20	Primary Key,auto_increment
town_code	bigint	20	NOT NULL
town	varchar	25	NOT NULL
hq_id	bigint	20	NOT NULL
isActive	tinyint	11	NOT NULL
status	varchar	20	NOT NULL
approved_by	varchar	25	NOT NULL
reject_reason	varchar	200	NOT NULL
added_by	bigint	20	NOT NULL
added_on	datetime	-	NOT NULL
updated_by	bigint	20	NOT NULL
updated_on	datetime	-	NOT NULL

Table 6.8: town

**users** This table stores the users details.

**users\_leave** This table stores the userwise leave details.

**users\_profile** This table stores the user profiles details.

Field Name	Data Type	size	Constraints
id	int	11	Primary Key,auto_increment
company_code	varchar	3	NOT NULL
username	varchar	25	NOT NULL
password	varchar	25	NOT NULL
fullname	varchar	50	NOT NULL
role_id	int	11	NOT NULL
reports_to	int	11	NOT NULL
address	varchar	50	NOT NULL
phone	varchar	25	NOT NULL
mobile	varchar	10	NOT NULL
email	varchar	50	NOT NULL
nation_id	int	20	NOT NULL
zone_id	bigint	20	NOT NULL
state_id	bigint	20	NOT NULL
division_id	bigint	20	NOT NULL
region_id	bigint	20	NOT NULL
area_id	bigint	20	NOT NULL
headQuarter_id	bigint	20	NOT NULL
based_on	varchar	50	NOT NULL
addedBy	bigint	20	NOT NULL
addedOn	datetime	-	NOT NULL
updatedOn	datetime	-	NOT NULL
isActive	tinyint	1	NOT NULL
instation	int	11	NOT NULL
outstation	int	11	NOT NULL
exstation	int	11	NOT NULL

Table 6.9: users

Field Name	Data Type	size	Constraints
user_id	int	11	Primary Key,auto_increment
holiday_id	int	11	NOT NULL
date	date	-	NOT NULL

Table 6.10: users\_leaves

Field Name	Data Type	size	Constraints
profile_id	int	11	Primary Key,auto_increment
profile_name	varchar	50	NOT NULL
discription	varchar	200	NOT NULL

Table 6.11: users\_profile



**user\_roles** This table stores the user roles details.

Field Name	Data Type	size	Constraints
role_id	int	11	Primary Key,auto_increment
profile_id	varchar	3	NOT NULL
parent_id	varchar	25	NOT NULL
designation	varchar	25	NOT NULL
permission	varchar	50	NOT NULL
isActive	int	11	NOT NULL
added_by	bigint	20	NOT NULL
added_on	datetime	-	NOT NULL
updated_by	bigint	20	NOT NULL
updated_on	datetime	-	NOT NULL

Table 6.12: users\_roles

**zones** This table stores the zones details.

Field Name	Data Type	size	Constraints
zone_id	bigint	20	Primary Key,auto_increment
title	varchar	25	NOT NULL
nation_id	int	11	NOT NULL
isActive	int	11	NOT NULL
addedOn	datetime	-	NOT NULL

Table 6.13: zones

# Chapter 7

## Testing

### 7.1 Introduction

Testing is a process of executing error. It is an important and critical stage in software development. It plays an important role in determining the quality and reliability of the application. With this process, several test cases are devised. A test case means a set of data that the system will process as the normal input. Testing also adds value to the product by conforming the user requirements. Testing verifies that this software deliverable conforms precisely to the functional and design specification that have been compiled during analysis and design phases. A good test case is one that has a high portability of finding an undiscovered error. Testing involves a series of operation of a system or application under controlled conditions and subsequently evaluating results. The controller conditions should include both normal and abnormal conditions. It is planned and monitors for each testing level.

### 7.2 White Box Testing

This testing reveals the internal working of the code i.e. each of the programming elements is exercised properly. The white box testing for the proposed system focus on the program control structure and it is also called clear box testing. Test cases for the proposed system are designed to ensure that all statements in the program have executed at least once during testing and that all logical conditions have been exercised. White box testing is small implying that this test is typically applied to small program components.

## 7.3 Black Box Testing

Black Box Testing was conducted to ensure the MatricsV dashboard met functional requirements without examining internal code. The testing focused on input-output validation, such as verifying that charts updated correctly with filters, views rendered properly, and the interface was responsive across devices. Key scenarios included testing chart behavior, data filtering, error handling, and navigation. For example, applying a date filter correctly updated all relevant charts, while mobile view tests ensured proper layout adjustments. Issues like stale chart props and overflow bugs were identified and resolved. This testing approach ensured a smooth, user-focused experience and reliable functionality across different environments.

## 7.4 Validation Testing

Validation Testing was performed to ensure the MatricsV dashboard met all specified requirements and user expectations. Each feature, including data visualization, filtering, responsiveness, and navigation, was verified against the original project scope. Charts were tested with dynamic datasets to confirm accurate rendering, and filters were validated for correct interaction. Responsive design was checked across devices to ensure consistent usability. The final product successfully passed all validation checks, confirming it aligned with the intended functionality and design. This process guaranteed that the application not only worked correctly but also delivered a user-centric and purpose-driven experience.

## 7.5 GUI Testing

GUI Testing was conducted to ensure the visual elements of the MatricsV dashboard functioned correctly and provided a seamless user experience. All user interface components—charts, filters, dropdowns, date pickers, and navigation tabs—were tested for proper alignment, styling, responsiveness, and interactivity. Tailwind CSS utilities were verified across screen sizes to confirm consistent design. Focus was placed on color schemes, font consistency, hover effects, and button functionality. Interactive elements responded accurately to user actions without layout shifts or overlap issues. The testing confirmed that the dashboard maintained both aesthetic quality and usability across different browsers and devices.

# Chapter 8

## Concluding Remarks

### 8.1 Strengths of System

The MatricsV dashboard is designed to be easy to use, featuring a clean and user-friendly graphical interface. Users can quickly navigate through the system and easily locate menu items, reducing time and effort. The intuitive design enhances user satisfaction by allowing them to generate a variety of reports tailored to their needs. Fast data access and responsive charts make information retrieval efficient and effective. Overall, the system supports seamless interaction, faster decision-making, and an improved user experience, making it a valuable tool for visual data analysis.

### 8.2 Limitations of system

- 1. The only limitation of the system is that the system is not fully automated....
- 2. The limited scope of current System doesn't fully encompass the current system.....

### 8.3 Scope for future development

In future development, we can add a printer integration feature for easy record printing. More advanced software for Octaculus Learning can be introduced, offering additional facilities. Hosting the platform on online servers will make it accessible

worldwide. A backup mechanism can be implemented to regularly secure the code-base and database on different servers. We can also expand the project to maintain assignment and student records efficiently. Considering the growing versatility of learners, a dedicated module to manage Octaculus Learning activities can be developed. These enhancements will increase the applicability, usability, and overall value of the platform.

## **8.4 Conclusion**

The Data Visualization project was a rewarding experience that provided a solid foundation in both frontend development and data representation techniques. The project's real-world relevance and practical application strengthened my confidence in designing and implementing modern web applications. It was an excellent opportunity to transition from theoretical learning to practical execution. I believe this project will serve as a stepping stone toward more advanced analytics applications, and I look forward to building even more sophisticated systems that merge data and design effectively.

# Appendix

# References

- [1] Books Referred,  
Following books proved to be very helpful during the development of the system.
  - CodeIgnitor for Rapid PHP Application Developement
  - David Upton
  - Software Engineering: A Practitioner's Approach, Seventh Edition Roger S. Pressman
  
- [2] WebSites Visited :-  
Following websites proved to be very helpful during the development of the system.
  - [www.msdn.microsoft.com](http://www.msdn.microsoft.com)
  - [www.w3schools.com](http://www.w3schools.com)
  - [www.codeproject.com](http://www.codeproject.com)
  
- [3] Software Used for Diagrams
  - Pacestar UML Diagrammer 6
  
- [4] Software Engineering a Practitioner's Approach. (McGraw Hill Publication)  
Roger S. Pressman.