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MUMBAI, 400042

DEPARTMENT OF INFORMATION TECHNOLOGY

A Project Report on

ONLINE MEDICAL STORE

Submitted in partial fulfilment of the requirements for the award of the Degree of

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

(Academic Year 2023-2024)

By

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CERTIFICATE

This is to certify that the project entitled, "ONLINE MEDICAL STORE", is Bonafede work of ROSHAN SANDEEP PRAJAPATI bearing Seat. No: 579 submitted in partial fulfilment of the requirements for the award of degree of BACHELOR OF SCIENCE in INFORMATION TECHNOLOGY from Ramanand Arya D.A.V. College, Autonomous University of Mumbai for academic year 2023.

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ABSTRACT

An online medicine ordering website is a platform that allows people to conveniently purchase medicines over the internet. This virtual pharmacy provides a user-friendly way to browse and select from a wide range of medications. Users start by registering or logging into their accounts. They can then explore the website's catalog , which showcases different medicines along with their descriptions, images, and prices.

To make a purchase, users can add desired medicines to their virtual "shopping cart." This cart accumulates selected items and calculates the total cost. Once satisfied with their choices, users proceed to the checkout process. Here, they provide delivery details and choose a preferred payment method, such as credit/debit cards or digital wallets.

For prescription medications, users often have the option to upload their doctor's prescription, which is reviewed by pharmacists before orders are fulfilled. After completing the purchase, users receive order confirmation and tracking information for delivery. The website may also offer customer support through which users can seek assistance or inquire about their orders.

ACKNOWLEDGMENT

We are at the outset on the completion of “ONLINE MEDICAL STORE” project, express our great regard to those who have offered their invaluable guidance in hour of needs.

We offer our special thanks to Dr. Ajay M. Bhamare Principal of Ramanand Arya D.A.V College for giving us opportunity to undergo this project. We would like to thank Mrs. Chandrakala Shrivastava (Head of I.T. Department) for providing all necessary facilities and privileges that enabled us to complete the project on time.

We sincerely express our profound gratitude to our project guide Mrs Vaishali Gawandi under whose guidance we can achieve a lot of things pertaining to our project.

We are heartily thankful to her for her unfailing inspiration to our project and encouragement during the course of our project. It is our earnest to express our sincere thanks to the faculty for their kind co-operation, help and unending support.

Finally, we wish to all our friends and entire IT department who directly or indirectly helped us in completion of this project and to our family without whose support, motivation, and encouragement this would not have been possible.

DECLERATION

I hereby declare that the project entitled, “ONLINE MEDICAL STORE” done at place where the project is done, has not been in any case duplicated to submit to any other university for the award of any degree. To the best of my knowledge other than me, no one has submitted to any other university. The project is done in partial fulfilment of the requirements for the award of degree of BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY) to be submitted as final semester project as part of our curriculum.

Roshan Prajapati

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CHAPTER 1: INTRODUCTION

An online medicine order website is a digital platform that lets people buy medicines through the internet. It's like an online shop for all kinds of medications that you might find at a regular pharmacy. Instead of going to a physical store, you can use this website to search for the medicines you need, put them in a virtual "cart," and then have them delivered to your doorstep. It's a handy way to get the medicines you require without leaving your home. Many of these websites also offer the option to upload a prescription from your doctor if you need prescription. This way, you can make sure you're getting the right medicines just like you would at a local pharmacy. Overall, it's a convenient and easy way to order the medicines you need online.

1.1 Background

An online medical store website serves as a digital platform where users can conveniently purchase a wide range of pharmaceutical and healthcare products. These websites typically offer a user-friendly interface, allowing customers to browse, search, and order medications, wellness products, and medical supplies from the comfort of their homes. Many online medical stores also provide essential information about medications, dosage guidelines, and potential side effects. Security measures such as encrypted transactions and user data protection are prioritized to ensure a safe and reliable shopping experience.

1.2 Objective

- Simplify the medicine ordering process for users.
- Ensure secure and reliable online transactions.
- Offer user-friendly browsing and searching of medicines.
- Facilitate efficient tracking and delivery of orders.
- Provide reliable customer support for inquiries and assistance.

1.3 Purpose Scope and Applicability

1.3.1 Purpose

An online medical store website aims to provide a convenient and accessible platform for individuals to purchase a wide range of pharmaceuticals, healthcare products, and medical supplies from the comfort of their homes. With a focus on user-friendly interfaces and reliable delivery services.

1.3.2 Scope

- Simplify the medicine ordering process for users.
- Ensure secure and reliable online transactions.
- Enable users to upload and verify prescriptions.
- Offer user-friendly browsing and searching of medicines.
- Facilitate efficient tracking and delivery of orders.
- Provide reliable customer support for inquiries and assistance.

1.3.3 Applicability

- This website facilitates convenient and secure access to a wide range of pharmaceutical products.
- Allowing users to browse ,purchase and receive medications from the comfort of their homes.

1.4 Organization Report

Chapter 1:

The main structure and the report of these project follows the introduction of the system. System design, requirement analysis, technology of this survey. However directly introducing my topic I have decide the overview section so that you can get some more picture of the discipline.

Chapter 2:

Introduces technology in the project we are using. Survey and comparative studies of technology used for the project development. Here I have been chosen HTML, CSS, JavaScript as front-end, React JS as framework, Node JS and Express.js as backend and using the MongoDB as a database.

Chapter 3:

Discussing about software and hardware requirements of the system and also include scheduling and planning of the project and also introduces conceptual model.

Chapter 4:

Continues with modulization of the system, data designing with schema. Creating the data structures, creating relational schemas, designing user interface, applying security mechanism and finally examine the result for accuracy.

Chapter 5:

This chapter is the part that puts a planned system into action and examine in details the analysis and design of the system. The present chapter discusses the implementation of the system, highlighting the testing exercise and describing some of the modification and improvements after testing system.

Chapter 6:

We'll create the different test cases for our system to check that the system is working properly or having any bugs. This test cases helps as to know that the system is have any issues or bugs on it. Continues with test reports and user documentation manual for system users.

Chapter 7:

Include final words of project developers i.e., conclusion of the project reports and system. Limitations of developed system. If any future development or any future scope of the project is mention in this.

CHAPTER 2: SURVEY OF TECHNOLOGIES

2.1 Frontend Technologies:

1. **HTML:** HTML is the standard markup language for creating Web pages. HTML stands for Hyper Text Markup language. It describes the structure of a Web page. Html consists of a series of elements. Html elements tell the browser how to display the content. Any website can't be structured without the knowledge of html. Html is a only structure your web page, for creating interactive web pages we need to use JavaScript along with html. For styling and giving users nice and clean User Interface we style our web page with CSS (Cascading Style Sheet). HTML has a lot of use cases, namely:

2. **CSS:** CSS stands for Cascading Style Sheet. CSS is the language we use to style a Web page. CSS described how html elements are to be displayed on screen, paper, or in other media. CSS saves a lot of work. It can be controlling the layout of multiple web pages all at once. External stylesheets are stored in CSS files.

   • CSS saves time: You can write CSS once and reuse the same sheet in multiple HTML pages.

   • Easy Maintenance: To make a global change simply change the style, and all elements in all the webpages will be updated automatically.

   • Search Engines: CSS is considered a clean coding technique, which means search engines won't have to struggle to "read" its content.

   • Superior styles to HTML: CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.

3. **JavaScript:** JavaScript is the most famous scripting languages of all time. JavaScript is a Scripting Language of World Wide Web. The main Usage of JavaScript is to add various Web function, validations, detections, a creation of cookies and so on. JavaScript is the best scripting language and that is why it is adopted by almost all browsers. It is used for the client-side web development. JavaScript is used to make pages more interactive. It is a light-weight programming language and it is embedded directly into the markup syntax.

   JavaScript can be added to your HTML file in two ways:

   • Internal JS: We can add JavaScript directly to our HTML file by writing the code inside the <script> tag. The <script> tag can either be placed inside the <head> or the <body> tag according to the requirement.

   • External JS: We can write JavaScript code in other file having an extension .js and then link this file inside the <head> tag of the HTML file in which we want to add this code.

2.2 Framework

1. React JS: React is JavaScript library for building user interfaces. React is used to build single-page applications. React allows us to create reusable UI components. It makes JavaScript coding easier. It is Excellent cross-platform support and Handles dependencies. It's easy to adopt. React is a library for building composable user interfaces. It encourages the creation of reusable UI components, which present data that changes over time. Lots of people use React as the V in MVC. React abstracts away the DOM from you, offering a simpler programming model and better performance. React can also render on the server using Node, and it can power native apps using React Native. React implements one-way reactive data flow, which reduces the boilerplate and is easier to reason about than traditional data binding.

React Features:

• JSX − JSX is JavaScript syntax extension. It isn't necessary to use JSX in React development, but it is recommended.

• Components − React is all about components. You need to think of everything as a component. This will help you maintain the code when working on larger scale projects.

• Unidirectional data flow and Flux − React implements one-way data flow which makes it easy to reason about your app. Flux is a pattern that helps keeping your data unidirectional.

• License − React is licensed under the Facebook Inc. Documentation is licensed under CC BY 4.0.

React Advantages:

• Uses virtual DOM which is a JavaScript object. This will improve apps performance, since JavaScript virtual DOM is faster than the regular DOM.

• Can be used on client and server side as well as with other frameworks.

• Component and data patterns improve readability, which helps to maintain larger apps.

2.3 Backend Technologies

1. **Node JS:** Node JS is an open-source and cross-platform JavaScript runtime environment. It is a popular tool for almost any kind of project. Nodejs runs the V8 JavaScript engine, the core of Google Chrome, Outside the browser. This allows NodeJS to be very performant. It is mostly used as backend language. Node.js is an open-source and cross-platform runtime environment for executing JavaScript code outside a browser. You need to remember that NodeJS is not a framework and it's not a programming language. Most people are confused and understand it's a framework or a programming language. We often use Node.js for building back-end services like APIs like Web App or Mobile App. It's used in production by large companies such as PayPal, Uber, Netflix, Walmart, and so on.

   Features of NodeJS:

   There are other programming languages also which we can use to build back-end services so what makes Node.js different I am going to explain.

   • It's easy to get started and can be used for prototyping and agile development.

• It provides fast and highly scalable services

• It uses JavaScript everywhere, so it's easy for a JavaScript programmer to build back-end services using Node.js

• Source code cleaner and consistent.

• Large ecosystem for open-source library.

• It has Asynchronous or Non-blocking nature.

Advantages of NodeJS:

Here are the benefits of using Node.js

• Easy Scalability: Developers prefer to use Node.js because it is easily scaling the application in both horizontal and vertical directions. We can also add extra resources during the scalability of the application.

• Real-time web apps: If you are building a web app you can also use PHP, and it will take the same amount of time when you use Node.js, But if I am talking about building chat apps or gaming apps Node.js is much more preferable because of faster synchronization. Also, the event loop avoids HTTP overloaded for Node.js development.

• Fast Suite: NodeJs runs on the V8 engine developed by Google. Event loop in NodeJs handles all asynchronous operation so NodeJs acts like a fast suite and all the operations can be done quickly like reading or writing in the database, network connection, or file system.

• Easy to learn and code: NodeJS is easy to learn and code because it uses JavaScript. If you are a front-end developer and have a good grasp of JavaScript you can easily learn and build the application on NodeJS

• Advantage of Caching: It provides the caching of a single module. Whenever there is any request for the first module, it gets cached in the application memory, so you don't need to re-execute the code.

• Data Streaming: In NodeJs HTTP request and response are considered as two

2.Express js

Express.js, often referred to simply as Express, is a minimal and flexible web application framework for Node.js. Designed to build robust and scalable web applications and APIs, Express simplifies the process of creating server-side applications with Node.js. It provides a lightweight, unopinionated structure that allows developers the freedom to choose components and libraries best suited for their projects.

Key Features:

1. Routing: Express simplifies URL routing, making it easy to define routes and handle HTTP requests. Developers can create modular and organized applications through the use of middleware functions and route handlers.

2. Middleware: Middleware functions in Express allow developers to execute code during the request-response cycle. This enables tasks such as authentication, logging, and error handling to be seamlessly integrated into the application flow.

3. Template Engines: While Express itself does not include a template engine, it integrates well with popular ones like EJS, Handlebars, and Pug. This flexibility allows developers to choose the template engine that aligns with their preferences and project requirements.

4. HTTP Utility Methods: Express simplifies common HTTP tasks with built-in utility methods. This includes handling HTTP verbs (GET, POST, PUT, DELETE), parsing request bodies, and setting response headers.

5. Middleware Ecosystem: The extensive middleware ecosystem is a significant strength of Express. Developers can leverage third-party middleware for functionalities like cookie parsing, session management, and security features.

6. Error Handling: Express provides a straightforward mechanism for handling errors, ensuring a graceful response to unexpected issues. Middleware functions dedicated to error handling can be defined to centralize error-related logic.

3. MongoDB: MongoDB is an open-source document database and leading NoSQL database. MongoDB is written in C++. This tutorial will give you great understanding on MongoDB concepts needed to create and deploy a highly scalable and performance-oriented database. MongoDB, the most popular NoSQL database, is an open-source document oriented database. The term 'NoSQL' means 'non-relational'. It means that MongoDB isn't based on the table-like relational database structure but provides an altogether different mechanism for storage and retrieval of data. This format of storage is called BSON (similar to JSON format).SQL databases store data in tabular format. This data is stored in a predefined data model which is not very much flexible for today's real-world highly growing applications. Modern applications are more networked, social and interactive than ever. Applications are storing more and more data and are accessing it at higher rates. Relational Database Management System(RDBMS) is not the correct choice when it comes to handling big data by the virtue of their design since they are not horizontally scalable. If the database runs on a single server, then it will reach a scaling limit.

Features of MongoDB:

• Document Oriented: MongoDB stores the main subject in the minimal number of documents and not by breaking it up into multiple relational structures like RDBMS. For example, it stores all the information of a computer in a single document called Computer and not in distinct relational structures like CPU, RAM, Hard disk, etc.

• Indexing: Without indexing, a database would have to scan every document of a collection to select those that match the query which would be inefficient. So, for efficient searching Indexing is a must and MongoDB uses it to process huge volumes of data in very less time.

• Scalability: MongoDB scales horizontally using sharing (partitioning data across various servers). Data is partitioned into data chunks using the shard key, and these data chunks are evenly distributed across shards that reside across many physical servers. Also, new machines can be added to a running database.

• Aggregation: Aggregation operations process data records and return the computed results. It is similar to the GROUPBY clause in SQL. A few aggregation expressions are sum, avg, min, max, etc

CHAPTER 3 : REQUIREMENT AND ANALYSIS

3.1 Project Definition

The Online Medical Store Website project aims to create a user-friendly and efficient platform for purchasing pharmaceutical and healthcare products online. The website will serve as a digital marketplace where users can browse, search, and purchase a wide range of medical supplies, medications, and healthcare-related products from the comfort of their homes. The project is driven by the need to provide a convenient and secure online solution for individuals to access essential healthcare products.

3.2 Requirements Specification

The following are the various types of requirements:

3.2.1 Functional Requirements:

- User Registration and Login: Allow users to create accounts with a valid email address and password, and log in securely.
- User Profiles: Enable users to manage personal information, view order history, and update account details.
- Product Catalog: Display a comprehensive catalog of medical products with details such as product name, description, price, availability, and images.
- Product Search and Filters: Implement a robust search functionality with filters, allowing users to easily find products based on category, brand, health condition, or other relevant criteria.
- Shopping Cart: Enable users to add products to a virtual shopping cart, view and modify the cart contents, and proceed to checkout.
- Checkout Process: Provide a secure and user-friendly checkout process, including options for users to review their orders, add or remove items, and choose a preferred payment method.
- User Authentication: Employ secure authentication methods, such as JWT, to ensure the confidentiality of user accounts and transactions.
- Payment Gateway Integration: Integrate a reliable and secure payment gateway to process online transactions, supporting various payment

methods such as credit/debit cards, digital wallets, and other relevant options.

- Product Availability: Keep track of product availability in real-time, updating stock levels as purchases are made.
- Restocking Alerts: Implement alerts for low-stock items to prompt timely restocking and prevent product unavailability.
- Real-Time Tracking: Enable users to track the status of their orders in real-time, providing information on order processing, shipment, and estimated delivery times.
- User Reviews: Allow users to leave reviews and ratings for products, contributing to an informed purchasing decision for other users.

3.2.2 Non-Functional Requirements

- The website should have a response time of no more than 3 seconds for loading pages and processing user requests.
- The system should be optimized for mobile devices to ensure a seamless user experience across various screen sizes.
- The website should be designed to scale horizontally to accommodate an increase in user traffic and product inventory.
- Regular backups of the database should be performed to prevent data loss in the event of system failures.
- The system should have measures in place to prevent unauthorized access, data breaches, and other security vulnerabilities.
- The system should maintain an audit trail of user activities, including logins, product purchases, and other critical transactions.

3.3 Planning and Scheduling

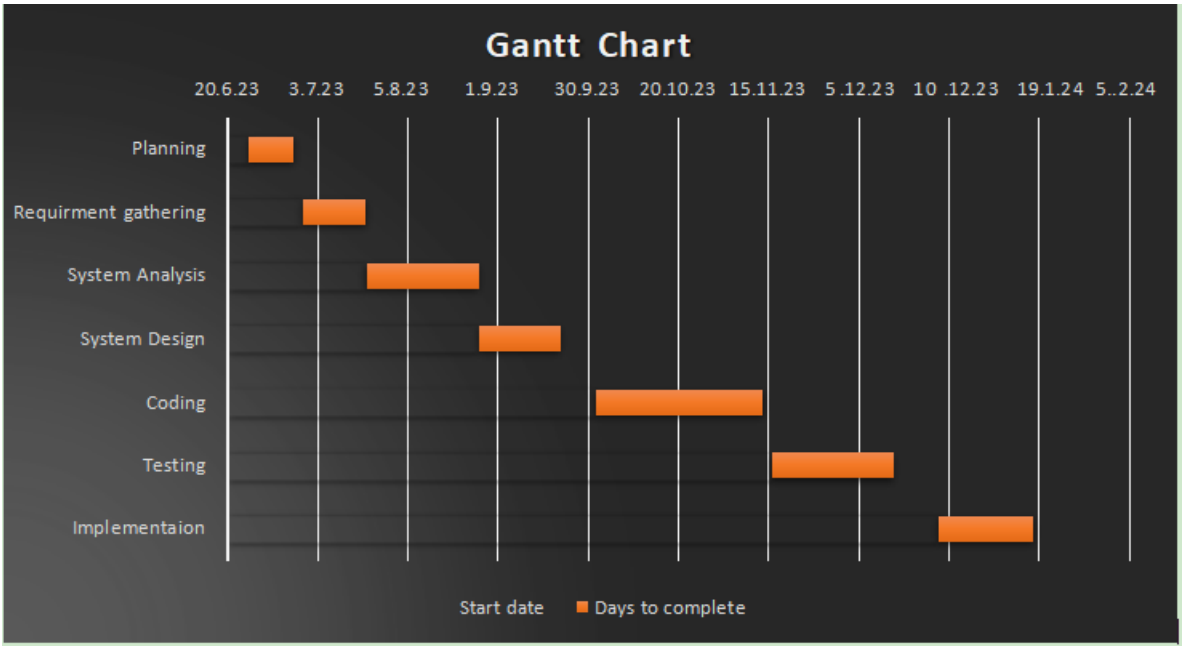
The planning and scheduling for the development of the online medical store website will span approximately two months, focusing on meticulous project analysis and design considerations.

The initial phase will involve defining the project scope, objectives, and features. Following this, a detailed project plan will be established, outlining key milestones, resource allocation, and the technology stack to be utilized.

Subsequently, the development phase is estimated to take around six months, incorporating iterative testing and quality assurance processes. The subsequent stages involve deployment, user training, and ongoing maintenance, ensuring a robust and user-friendly online platform for medical supplies and healthcare products.

GANTT CHART:

- GANTT charts display the tasks in a project as a box or line showing the calendar duration of the task on the horizontal axis. Tasks are normally arranged in date order on the vertical axis. The time relation of all tasks to each other is therefore clearly apparent in a GANTT chart. The project status can be easily determined at intermediate dates in the project, and progress of individual tasks can be shown by filling in the task boxes.
- A Gant chart is a horizontal bar chart developed as a production control tool in 1917 by Frequently used in project management, a Gantt chart provides a graphical illustration of a schedule that helps to plan, coordinate and track specific tasks in a project.
- A gantt chart is simply a timeline view of your project. The left hand side is a list of tasks for your project organized into groups. The image below is an example of a gantt chart that could be used to plan a concert.
- Gantt charts are especially useful for any project where you want to visualize how long your project will take. You can also link tasks together by creating dependencies between tasks. This ensures that tasks are done in the correct order. He was able to really get a grip on his project and keep it under control.
- The Gantt chart allows the project team, as well as the stakeholders, to visualize the schedule and to determine the completion date. During the project, the project manager can determine whether the project is on schedule at any point during the execution. If changes occur, the project team can utilize the Gantt chart to determine how the changes will affect the completion date. There are various software packages that can create Gantt charts, but one that is more widely used is Microsoft Project is a powerful tool that can create sophisticated Gantt charts as well as other planning diagrams.



3.4 Software and Hardware Requirements

3.4.1 Hardware Specification

1. **Processor:** 11th Gen Intel(R) Core(TM) i3-1115G4 @ 3.00GHz 3.00 GHz
2. **RAM:** 4.00 GB (Minimum)
3. **Physical Memory (HDD):** 1TB
4. **Input Peripherals:** Keyboard & Mouse

3.4.2 Software Specification

1. **Front End:** HTML, CSS, JavaScript
2. **Framework:** React JS
3. **Back End:** Node JS, Express JS, MongoDB
4. **Platform:** Windows 10 OR Higher OS

3.5 Preliminary Product Description

The first step in the system development life cycle is the preliminary investigation to determine the feasibility of the system. The purpose of the preliminary investigation is to evaluate project requests. It is not design study nor does it include the collection of details to describe the business system in all respect. Rather, it is the collecting of information that helps committee members to evaluate the merits of the project request and an information judgment about the feasibility of the proposed project.

Analysts working on the preliminary investigation should accomplish the following objective:

- Clarify and understand the project request.
- Determine the size of the project.
- Assess costs and benefits of alternative approaches.
- **Benefit to Organization**

  The organization will obviously be able to gain benefits such as savings in operational cost, reduction in paperwork, better utilization of human resource and more presentable image increasing goodwill.

- **The Initial Cost**

  The initial cost of setting up the system will include the cost of hardware software and labour. The same has to bear by the organization.

3.6 Modules Description

User Authentication and Management:

- Enables users to create accounts, log in securely, and manage their profiles, ensuring a personalized and secure experience.

Product Management:

- Organizes a comprehensive catalog of medical products with detailed descriptions, allowing users to easily browse and search for the items they need.

Shopping Cart and Checkout:

- Facilitates a smooth shopping experience by providing a virtual cart for users to add, review, and purchase selected items securely.

Order Management:

- Provides tools for users to track their orders, view order history, and receive confirmation and invoices for their purchases.

Payment Integration:

- Integrates a secure payment gateway to support various payment methods, ensuring a seamless and trustworthy transaction process.

Shipping and Delivery:

- Manages shipping details, address verification, and real-time tracking to keep users informed about the status of their deliveries.

User Reviews and Feedback:

- Allows users to leave reviews and ratings for products, promoting transparency and helping other customers make informed decisions.

Notification and Communication:

- Sends email and SMS notifications for order updates, subscriptions, and provides a customer support chat for real-time assistance.

Admin Dashboard:

- Empowers administrators to manage users, products, and orders efficiently, providing insights into the website's performance and facilitating overall control. Each module contributes to creating a user-friendly, secure, and efficient online medical store that meets the diverse needs of your customers while adhering to industry standards and regulations.

3.7 Feasibility Study

Feasibility:

- A measure of how beneficial or practical the development of information system
- would be to an organization can be termed as Project Feasibility.
- Feasibility analysis is the process by which feasibility is measured.
- Feasibility should be measured throughout the life cycle. The scope and complexity of an apparently feasible project can change after the initial problems and opportunities are fully analyze after the system has been designed. Thus, a project that is feasible at one point may become infeasible later.

Generally, there are following areas of risk for a new system that are Considered when confirming project feasibility:

1. Operational feasibility/Organizational and cultural feasibility: It is measure of how well the solution will work in the organization. It is also a measure of how people feel about the system or project. This project is well developed based on the customs and culture followed by the organization and it is easy to use. So it is operationally and culturally feasible.

2. Economic feasibility: It is a measure of cost-effectiveness of a project or solution. This is often called a cost-benefit analysis. This project is economically feasible because it is with minimal of cost.

3. Technical feasibility: It is a measure of how the practicality of a specific technical solution and the availability of technical resources and expertise. By using this software, it is easy to enter the details of Order as well as the details of master forms. In addition to this, calculation of salary and commission is also possible using this software.

4. Schedule feasibility: It is a measure of how responsible the project timetable is. According to the organization, this software they have to use commercially in the next economical year. So the schedule can be managed as they give enough time to build this software.

CHAPTER 4 : SYSTEM DESIGN

Design is the first step in the development phase for any techniques and principles for the purpose of defining a device, a process or system in sufficient detail to permit its physical realization.

Once the software requirements have been analyzed and specified the software design involves three technical activities - design, coding, implementation and testing that are required to build and verify the software.

The design activities are of main importance in this phase, because in this activity, decisions ultimately affecting the success of the software implementation and its ease of maintenance are made. These decisions have the final bearing upon reliability and maintainability of the system.

Design is the only way to accurately translate the customer’s requirements into finished software or a system. Design is the place where quality is fostered in development. Software design is a process through which requirements are translated into a representation of software. Software design is conducted in two steps. Preliminary design is concerned with the transformation of requirements into data.

4.1 UML Diagrams:

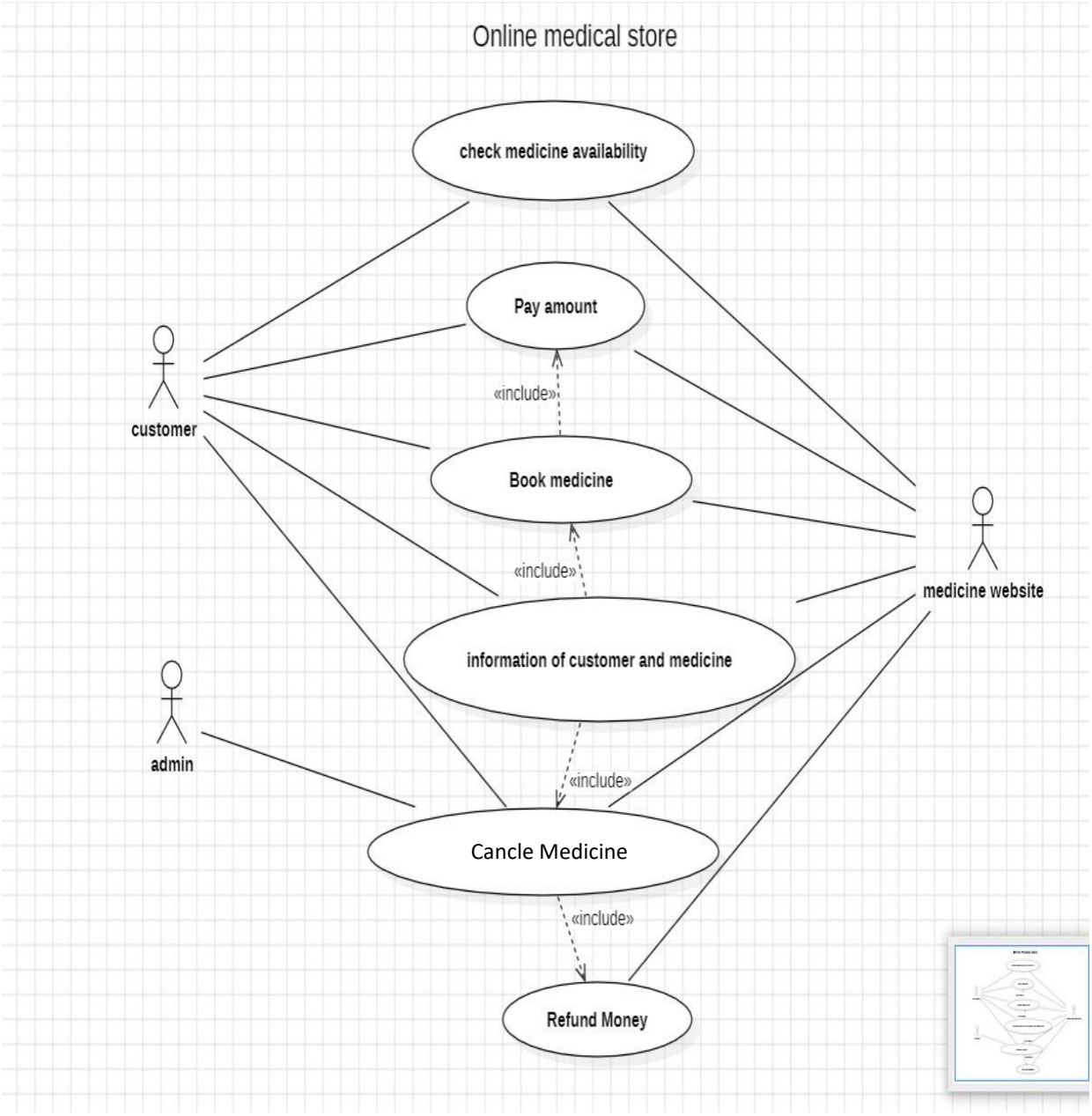
4.1.1 Use case Diagram:

The interactions between actors (such as users, administrators, and the system itself) and the various system functionalities. It showcases essential scenarios like user registration, product browsing, order placement, and administrator tasks, providing a high-level overview of the system's functionality and user interactions.

Use Case description:

Use case describes the behaviour of a system from user’s point of view. It provides functional description of a system and its major processes. It provides graphical description of users of system and what kind of interaction takes place within the system.

USECASE DIAGRAM- ONLINE MEDICAL STORE



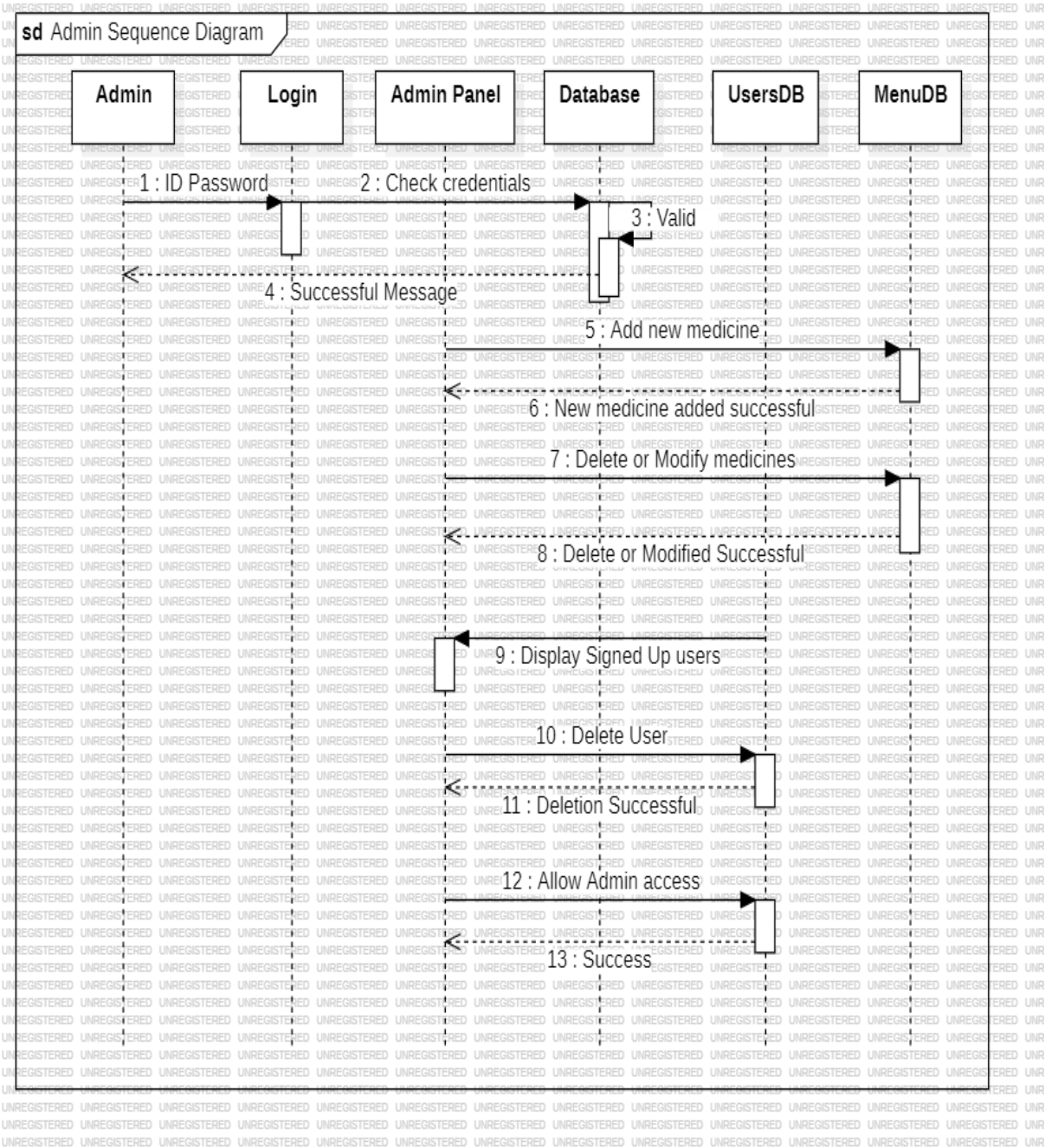
4.1.2 SEQUENCE DIAGRAM

A sequence diagram is a type of interaction diagram that depicts the interactions between different objects or components in a system over time. It illustrates the order of messages exchanged between these objects, representing the flow of interactions during a particular use case or scenario.

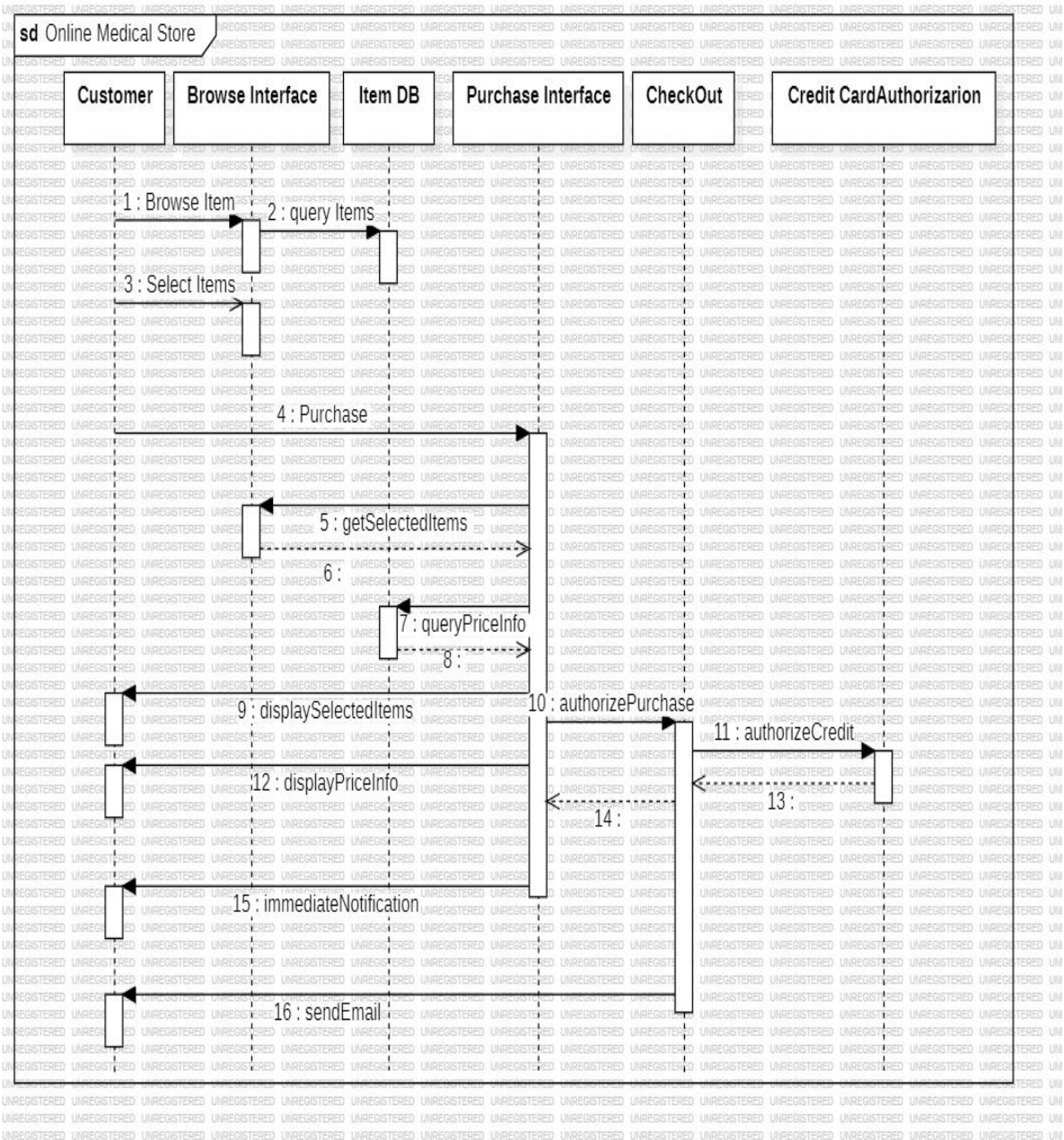
The vertical axis of the diagram typically represents time, and horizontal arrows indicate the messages passed between the objects. Sequence diagrams help visualize the dynamic behavior of a system and are particularly useful for understanding the timing and sequence of interactions between various elements in a system.

Sequence diagram are typically associated with use case realization in the Logical View of the system under development. Sequence diagram is an interaction diagram that details how operations are carried out, what messages are sent and when. Sequence diagram are organized according to time. Used to model and visualize the logic behind a sophisticated function, operation or procedure. Used to understand the detailed functionality of current or future systems.

ADMIN SEQUENCE DIAGRAM



USER SEQUENCE DIAGRAM- USERSEQUENCE DIAGRAM



4.1.3 DATA FLOW DIAGRAM

A Data Flow Diagram (DFD) is a graphical representation used in system analysis and design to depict the flow of data within a system. In UML (Unified Modeling Language), DFDs illustrate the processes, data stores, data flows, and external entities involved in a system.

The diagram consists of processes that transform data, data stores that hold and maintain information, data flows representing the movement of data between processes and stores, and external entities that interact with the system. Arrows denote the direction of data flow, emphasizing the input and output relationships between components.

DFDs are hierarchical, with multiple levels of abstraction, allowing for a systematic breakdown of complex systems into more manageable and comprehensible subsystems. They serve as powerful tools for visualizing the flow and transformation of data throughout a system, aiding in requirements analysis, system understanding, and communication between stakeholders during the software development lifecycle.

The three main components of a Data Flow Diagram (DFD) are:

1. Processes (Rectangles):

- Represent activities or functions that manipulate and transform data within the system.

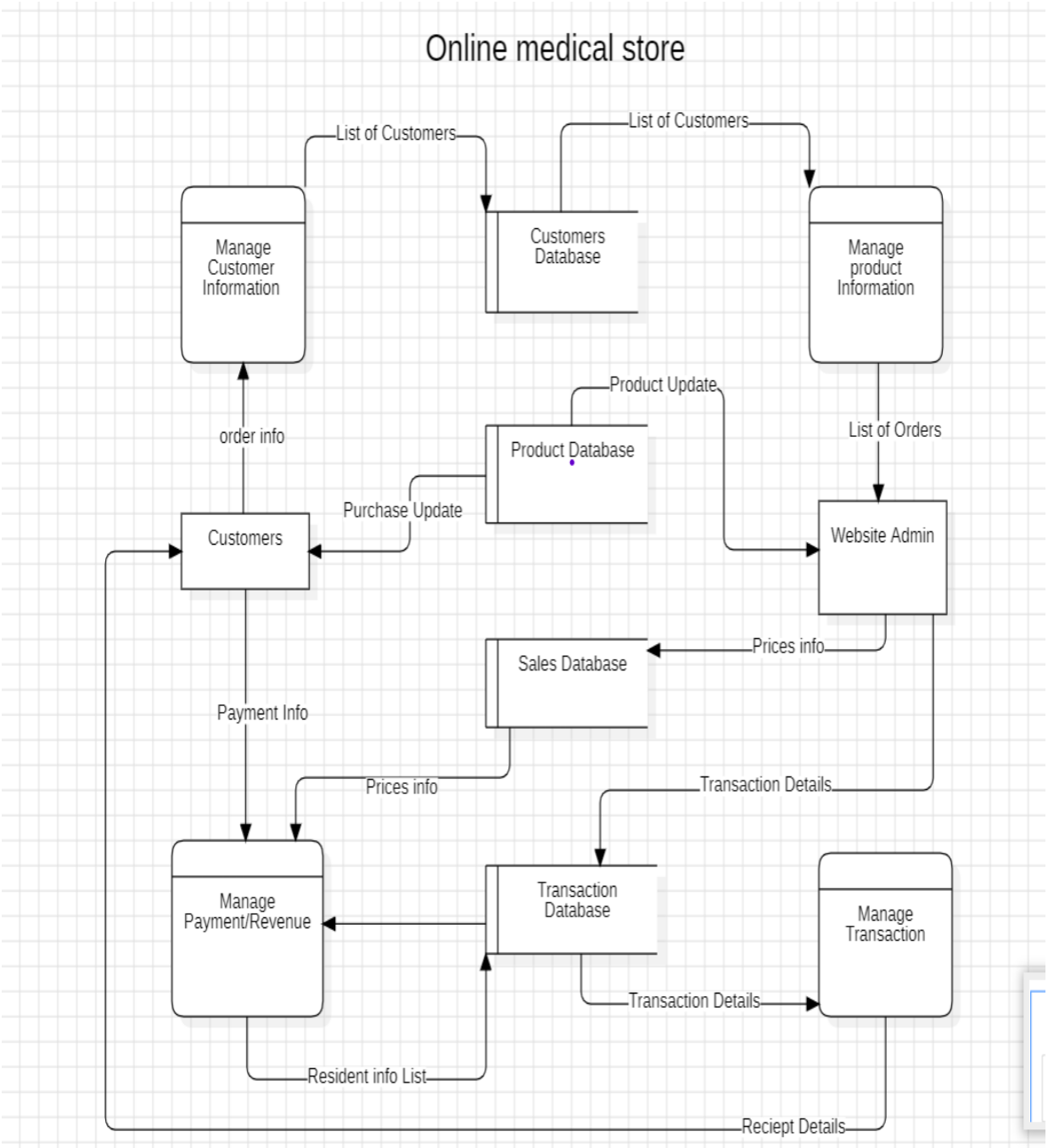
2. Data Flows (Arrows):

- Illustrate the movement of data between processes, data stores, and external entities, indicating the direction of data flow.

3. Data Stores (Parallel Lines):

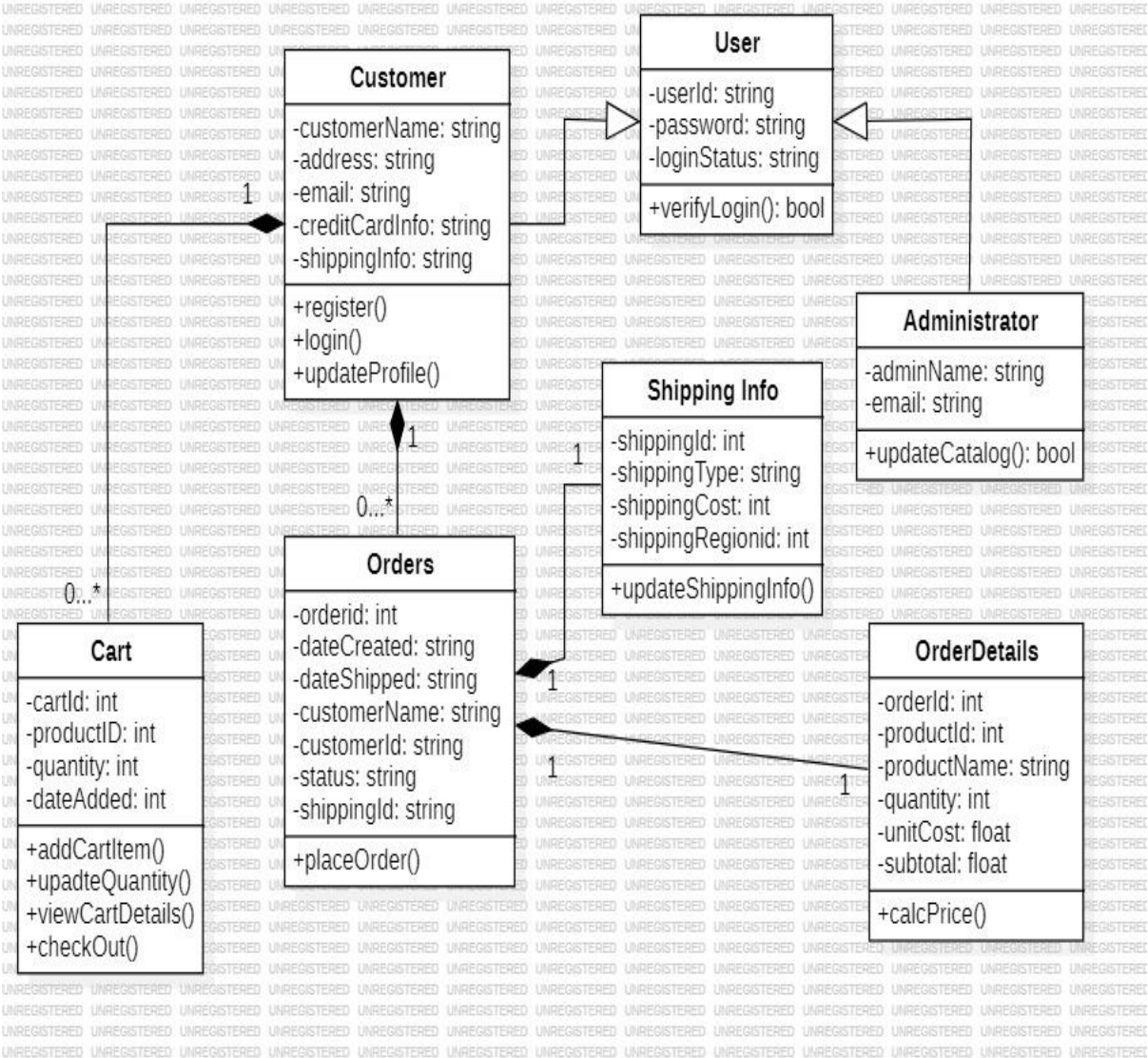
- Depict repositories where data is stored within the system, such as databases or file systems.

DATA FLOW DIAGRAM



4.1.4 CLASS DIAGRAM

A class diagram is a visual representation that depicts the static structure of a system by illustrating classes, their attributes, methods, and relationships. It provides a blueprint of the system's object-oriented design, showcasing how different classes are structured and interact with each other to form the foundation of the software architecture.



4.2 DATA DESIGN:

Data design is process of designing a database. the main output of a data design is a detailed logical data model of database. A logical data model is one of the main outputs of data design. The data model is usually represented as an entity relationship diagram or ER diagram. While a person can do both data design and database analysis, these are two different tasks. Database analysis takes that model and applies it to one or more database engines.

4.2.1. SCHEMA DESIGN:

Database descriptions are called database schemas that are specified during database design and are not expected to change frequently. Most Data models have specific conventions for presenting schemes such as diagrams. The schematic presented is called the schematic diagram. Database schema design organizes the data into separate entities, determines how to create relationships between organized entities, and how to apply the constraints on the data. The term “schema” refers to the organization of data as a blueprint of how the database is constructed (divided into database tables in the case of relational databases). In MongoDB we create schema in key value pairs.

Registration:

username	Email	Password	isAdmin

Login:

Email	Password

Product:

Id	Product name	Product Price	Product Image

Feedback:

username	email	suggestion

4.2.2 DATA INTEGRITY AND CONSTRAINTS:

Data integrity is the maintenance and the assurance of the accuracy and consistency of data over its entire lifecycle, and is a critical aspect to the design, implementation and usage of any system which stores, processes, or retrieves data.

Registration:

Keys	Data Types	Constraints
Username	String	Required
Email	String	Required
Passoword	String	Required
isAdmin	Boolean	

Login:

Keys	Data Types	Constraints
Email	String	Required
Password	String	Required

Product:

Keys	Data Types	Constraints
ID	String	Required
Product Name	String	Required
Product Image	String	Required
Product Price	String	Required

Feedback:

Keys	Data Types	Constraints
Username	String	Required
Email	String	Required
Suggestion	String	Required

4.2.3 ALGORITHM DESIGN:

Algorithm is a step-by-step procedure, which defines a set of instructions to be executed in a certain order to get the desired output. Algorithms are generally created independent of underlying languages, i.e., an algorithm can be implemented in more than one programming language.

Pseudocode:

Pseudocode is a plain language description of the steps in an algorithm or another system. Pseudocode often uses structural conventions of a normal programming language, but is intended for human reading rather than machine reading.

Pseudo-code for chat application:

Admin:

1.Start.

2.System authentication of admin.

3.Admin login.

4.Add/Update/Modify/Delete the medicine.

5.Can check how many people contacted using Contact Us page

6.Delete the user and provide admin privilege

7.Exit.

Users:

1.Start.

2.System login with credentials.

3.Order medicines from all medicines.

4.Add medicine to cart.

5.Make payments.

6.Can contact the customer care for any queries.

7.Exit

4.3 USER INTERFACE DESIGN:

The user interface (UI) is the point of human-computer interaction and communication in a device. This can include display screens, keyboards, a mouse and the appearance of a desktop. It is also the way through which a user interacts with an application or a website. UI stands for User Interface. UI is the part of the web application which a user interacts with. It simple terms, it is everything you see and touch, such as buttons, colours, fonts, navigation, etc.

4.4 TEST CASE DESIGN:

The Test Case is the sets of conditions or variables under which a tester will determine whether the system under test satisfies requirements or work correctly. The process of developing test cases can also help to find problems in the requirements or design of application. Test case design refers to how you set-up your test cases. It is important that your tests are designed well, or you could fail to identify bugs and defects in your software during testing. There are many different test case design techniques used to test the functionality and various features of your software.

Login test cases:

Tests case no.	Test case name	Test case description	Test case	
TC1	Validate email and password	To verify email	The email field is left empty is incorrect or email format is missing.	An error messages “Enter Email”
		To verify password	The password field is left empty or password is incorrect.	An error messages “Enter Password”

Registration test cases:

Tests case no.	Test case name	Test case description	Test case	
			Steps	Expected
TC2	Validate username	To verify username	The username field is empty	An error massage “Enter Username”
TC3	Validate email	To verify email	The email field is empty	An error message “Enter Email”
			The email should follow the format e.g. ,@, domain name ,etc.	An error message “Enter valid email address”
TC3	Validate password	To verify password	The password field is empty	An error message “Enter password”

Feedback test cases:

Tests case no.	Test case name	Test case description	Test case	
			Steps	Expected
TC4	Validate username	To verify username	The username field is empty	An error massage “Enter Username”
TC5	Validate email	To verify email	The email field is empty	An error message “Enter Email”
			The email should follow the format e.g. ,@, domain name ,etc.	An error message “Enter valid email address”
TC6	Validate suggestion	To verify suggestion	The suggestion field is empty	An error message “Suggestion length is too short”

CHAPTER 5 : IMPLEMENTATION AND TESTING

5.1 IMPLEMENTATION AND APPROCHES:

Project implementation (or project execution) is the phase where visions and plans become reality. This is the logical conclusion, after evaluating, deciding, visioning, planning, applying for funds and finding the financial resources of a project. Technical implementation is one part of executing a project.

An implementation plan for a project refers to a detailed description of actions that demonstrate how to implement an activity within the project in the context of achieving project objectives, addressing requirements, and meeting expectation.

5.2 CODING DETAILS AND EFFICIENCY:

5.2.1 CODE EFFICIENCY

Code efficiency is a broad term used to depict the reliability, speed and programming methodology used in developing codes for an application. Code efficiency is directly linked with algorithmic efficiency and the speed of runtime execution for software. It is the key element in ensuring high performance. The goal of code efficiency is to reduce resource consumption and completion time as much as possible with minimum risk to the business or operating environment. The software product quality can be accessed and evaluated with the help of the efficiency of the code used.

- To remove unnecessary code or code that goes to redundant processing.
- To make use of optimal memory and non-volatile storage.
- To ensure the best speed or run time for completing the algorithm.
- To make use of reusable components wherever possible.
- To make use of error and exception handling at all layers of software, such as the user interface, logic and data flow.
- To create programming code that ensures data integrity and consistency.
- To develop programming code that's compliant with the design logic and flow.
- To make use of coding practices applicable to the related software.

- To optimize the use of data access and data management practices.
- To use the best keywords, data types and variables, and other available programming concepts to implement the related algorithm

5.3 TESTING APPROACH:

Implementation of test strategy for a particular project is known as "test approach". The test approach is usually defined in all test plans and test designs, i.e., how testing would be carried out.

Test approach has two techniques: Proactive - an approach in which the test design process is initiated as early as possible in order to find and fix the defects before the build is created. Reactive - an approach in which the testing is not started until after design and coding are completed.

Functional Testing is defined as a type of testing which verifies that each function of the software application operates in conformance with the requirement specification. This testing mainly involves black box testing and it is not concerned about the source code of the application.

The prime objective of Functional testing is checking the functionalities of the software system. Examples of Functional testing are:

- Unit testing
- Integration Testing
- Beta Testing

5.3.1 UNIT TESTING:

Unit testing is a type of software testing that focuses on individual units or components of a software system. The purpose of unit testing is to validate that each unit of the software works as intended and meets the requirements. Unit testing is typically performed by developers, and it is performed early in the development process before the code is integrated and tested as a whole system.

Test case ID	Test field	Test scenario	Test data	Expected result	Actual result	Status (pass/fail)
TC 1	User Login	Multiple users login at the same	Email ID, Password	Each user can login separated according their Email and Password	Each user logged in seperatly according their Email and Password	Pass
TC 2	New User Registering	Multiple new users registering at the same	Full Username, Email ID, Password,	Each user can register separately according to their Full Username, Email ID, Password,	Each user registered separately according to their Full Name, Phone Number, Email ID, Password, Confirm Password	Pass

TC 3	Add to cart	Add the selected medicine to cart	<button type=”submit”> Add to cart</button>	After clicking button the selected medicine should be added to the cart and message box should appear for successfully added to cart	After clicking button the selected medicine was successfully added to cart and message appeared as “Successfully Added to Cart”	Pass

5.3.2 INTEGRATION TESTING:

Integration testing is a software testing technique that focuses on verifying the interactions and data exchange between different components or modules of a software application. The goal of integration testing is to identify any problems or bugs that arise when different components are combined and interact with each other. Integration testing is typically performed after unit testing and before system testing. It helps to identify and resolve integration issues early in the development cycle, reducing the risk of more severe and costly problems later on.

Test Case ID	Test Field	Test Scenario	Test Data	Expected Result	Actual Result	Status (pass/ fail)
TC1	Admin Panel (Admin)	Admin panel displays the signed up users till present, medicine data and user who have contacted via contact us page	Admin Email ID and Password	Admin login having feature for search user and delete users, update menu section and new medicines and see who contacted the customer care via contact us page	Admin login having feature for search user and delete users, update menu section and new medicines and see who contacted the customer care via contact us page	Pass
TC2	Online medical store Websit e (User)	User have only access to the medicine website for ordering medicine and	User Email ID and Password	User Email ID and Password	Only access the medicine website for ordering medicine and contacting page and payment	pass

Integration testing can be done by picking module by module. This can be done so that there should be proper sequence to be followed. And also, if you don't want to miss out on any integration scenarios then you have to follow the proper sequence. Exposing the defects is the major focus of the integration testing and the time of interaction between the integrated units.

5.3.3 BETA TESTING:

Beta Testing is performed by real users of the software application in a real environment. Beta testing is one of the types of User Acceptance Testing. A Beta version of the software, whose feedback is needed, is released to a limited number of end-users of the product to obtain feedback on the product quality. Beta testing helps in minimization of product failure risks and it provides increased quality of the product through customer validation. It is the last test before shipping a product to the customers. One of the major advantages of beta testing is direct feedback from customers.

Test Case ID	Test Scenario	Test Scenario	Expected Result	Actual Result	Status (pass/fail)
TC1	Check the internet should be connected on system	Internet services	Register/Login/ Payment Successful	Register/Login/ Payment Successful	Pass
TC2	New inquiry from user	Admin Contact display	Automatic display all the user who contacted	Automatic display all the user who contacted	Pass

The beta version of the software is delivered to a restricted number of users to accept their feedback and suggestions on quality improvement. Hence, there are two types of beta version:

- Closed beta version: Closed beta version, also known as a private beta, it is released to a group of selected and invited people. Those people will test the software and evaluate their features and specifications. This beta version represents the software which is capable of delivering value, but it is not ready to be used by everyone. Because it shows the issues like lack of documentation or missing vital features.

- Open beta version: Open beta is also known as a public beta. The open beta opened to the public. Any user as a tester can assess the beta version to provide the relevant feedback and reviews. Open beta version improves the quality of the final release. This version helps to find the various undetected errors and issues.

5.4 MODIFICATIONS AND IMPROVEMENTS:

Regression testing is a testing that is done to verify that a code change in the software does not impact the existing functionality of the product. Some issue occurs when checking user ID availability in the registration form and in order to fix the same, some code changes are done. In this case, not only the user ID need to be tested but Acceptance User ID also needs to be tested to ensure that the change in the code has not affected them.

5.5 TEST CASES:

Test Case ID	Test field	Test Scenario	Test Scenario	Expected Result	Actual Result	Status (pass/fail)
TC1	Admin Register	Admin enter name, email, phone, password & confirm password	Email ID and password	Pop-up or alert message “User created successfully”	Pop-up or alert message “User created successfully”	Pass
	User Register	User enter name, email, phone number, password &confirm password	Email ID and password			

	Admin Login	Admin enters Email ID and Password	Email id and password	Pop-up or alert message “User created successfully”	Pop-up or alert message “User created successfully”	Pass
	User Login	User enters Email ID and Password	Email id and password			

Test Case ID	Test Field	Test Scenario	Test Data	Expected Result	Actual Result	Status (pass/fail)
	Remove users	Admin remove the users	Email ID, Name,	Pop-up or alert message “User removed”	Pop-up or alert message “User removed”	Pass
	Adding new medicine	Admin adding new medicine	Id, image, name, price	Pop-up or alert message “New Dish added successfully”	Pop-up or alert message “New Dish added successfully”	

Test Case ID	Test Field	Test Scenario	Test Data	Expected Result	Actual Result	Status (pass/fail)
TC1	Add to cart	Add the selected dish to cart	<button type=”submit” >Add to cart</button>	After clicking button the selected dish should be added to the cart and message box should appear for successfully added to cart	After clicking button the selected dish successfully added to cart and message appeared as “Successfully Added to Cart”	Pass

CHAPTER 6 : RESULT AND DISCUSSION

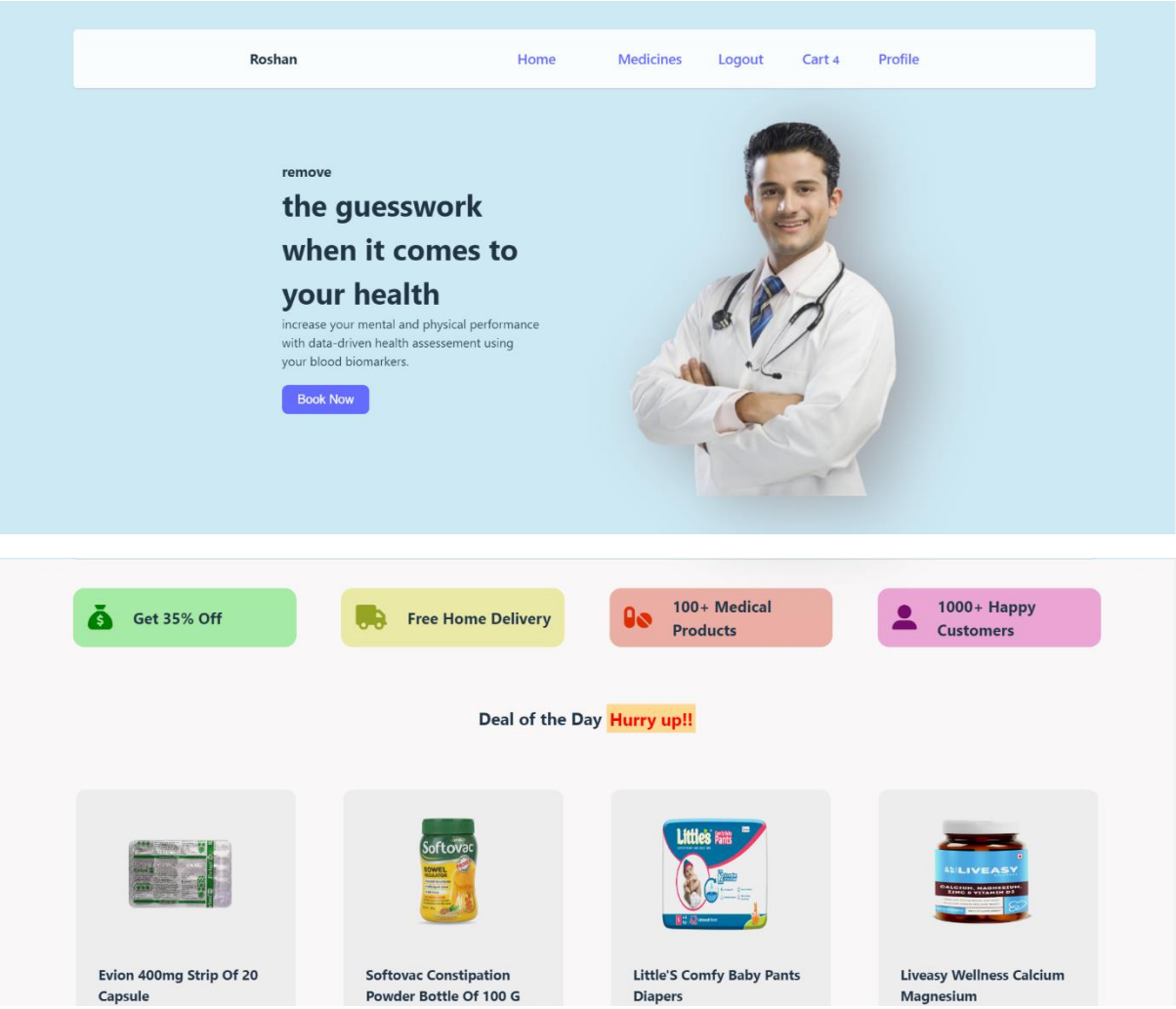
6.1 TEST REPORTS:

Test Report is an important deliverable which is prepared at the end of a Testing project, or rather after Testing is completed. The prime objective of this document is to explain various details and activities about the Testing performed for the Project, to the respective stakeholders like Senior Management, Client etc.

Test Report					
Passed		**Failed**			
Functions	**Description**	**% TCs Executed**	**% TCs Passed**	**TCs Pending**	**Priority**
Admin Registered / Login	Check admin registration and login	100%	100%	0	High
User accounts created and login	Check user account creation and login	100%	100%	0	High
User contact via contact form	Check contact response	100%	100%	0	High
Add to cart functionality	Check item is added to cart	100%	100%	0	High
Add/update medicines	Check medicines is updated	100%	100%	0	High
Delete user	Check user is deleted	100%	100%	0	High

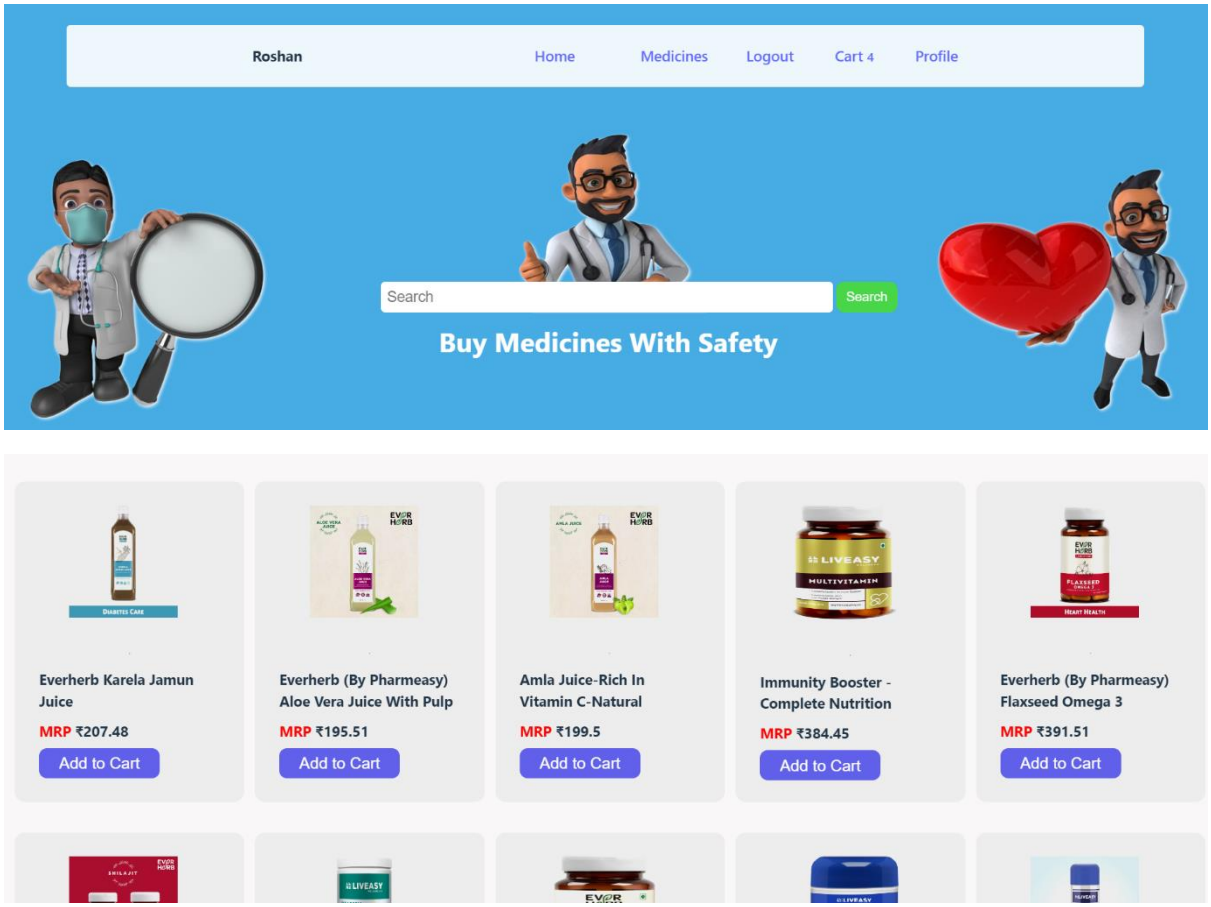
6.2 USER DOCUMENTATION:

User documentation is important in any development project. These documents help to explain our product to users by providing them with necessary information. The user manual is essential for every software product because it serves as the ultimate guide regarding our product.



This is the home page of my medical website. In this user can view out facilities and deals those are currently active. It is the user-friendly medicine website so easily find the right medicine those I want.

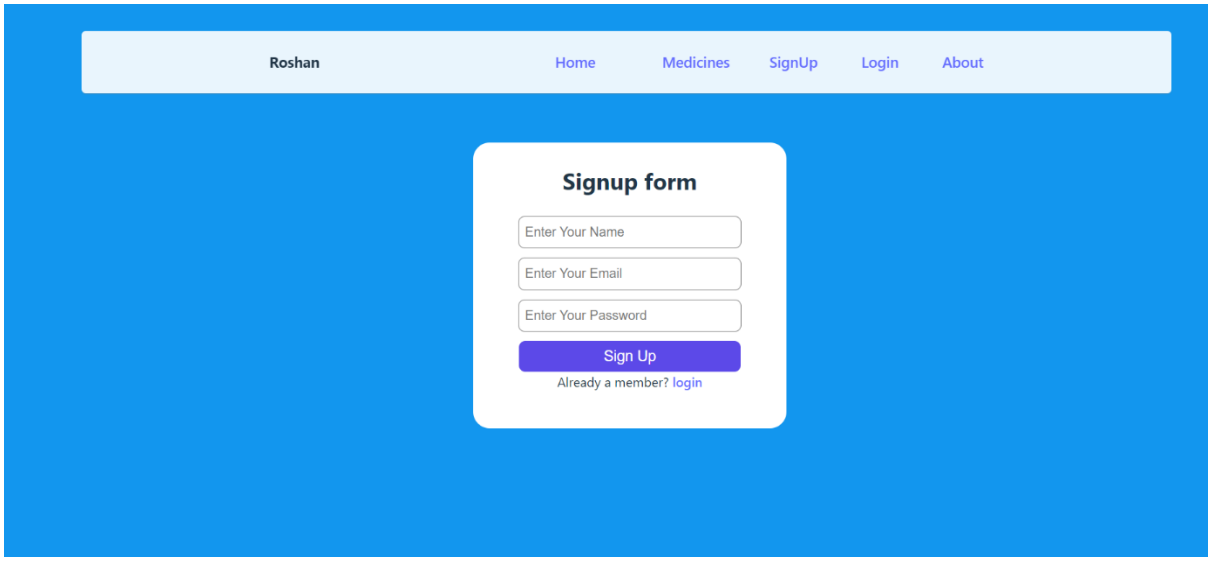
All medicine Products



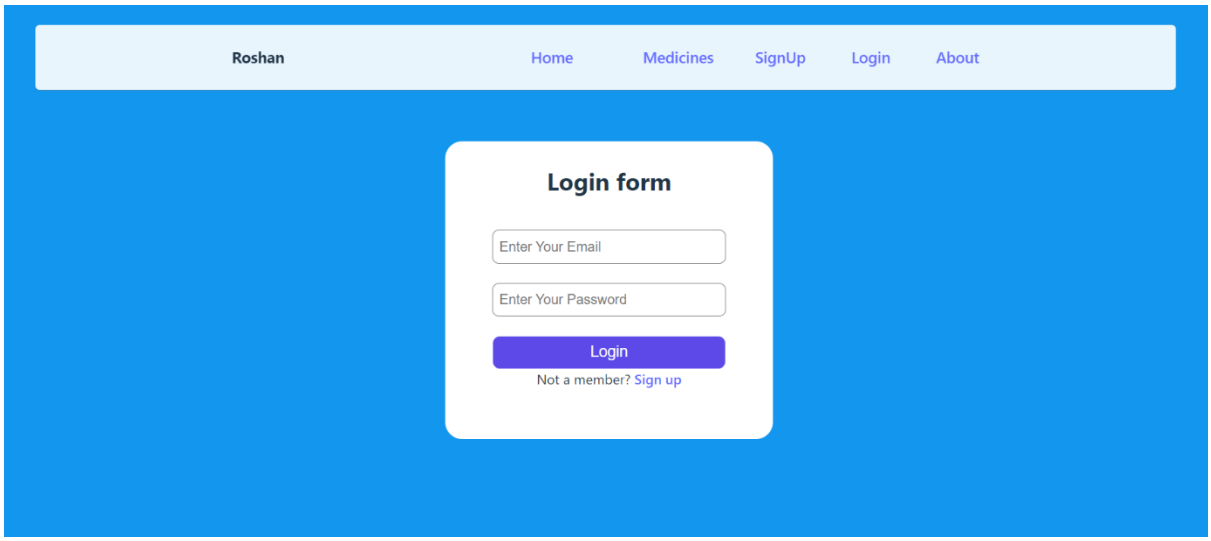
Explore our extensive selection of medicines on our user-friendly medicine page. Easily navigate through our search and filter options to find the right products for your needs. Each medicine listing includes clear images, detailed descriptions, ensuring you have the essential details at your fingertips. Trust us for comprehensive and reliable information on your medications, making your online shopping experience convenient and informed.

Sign Up and Login page

Sign Up

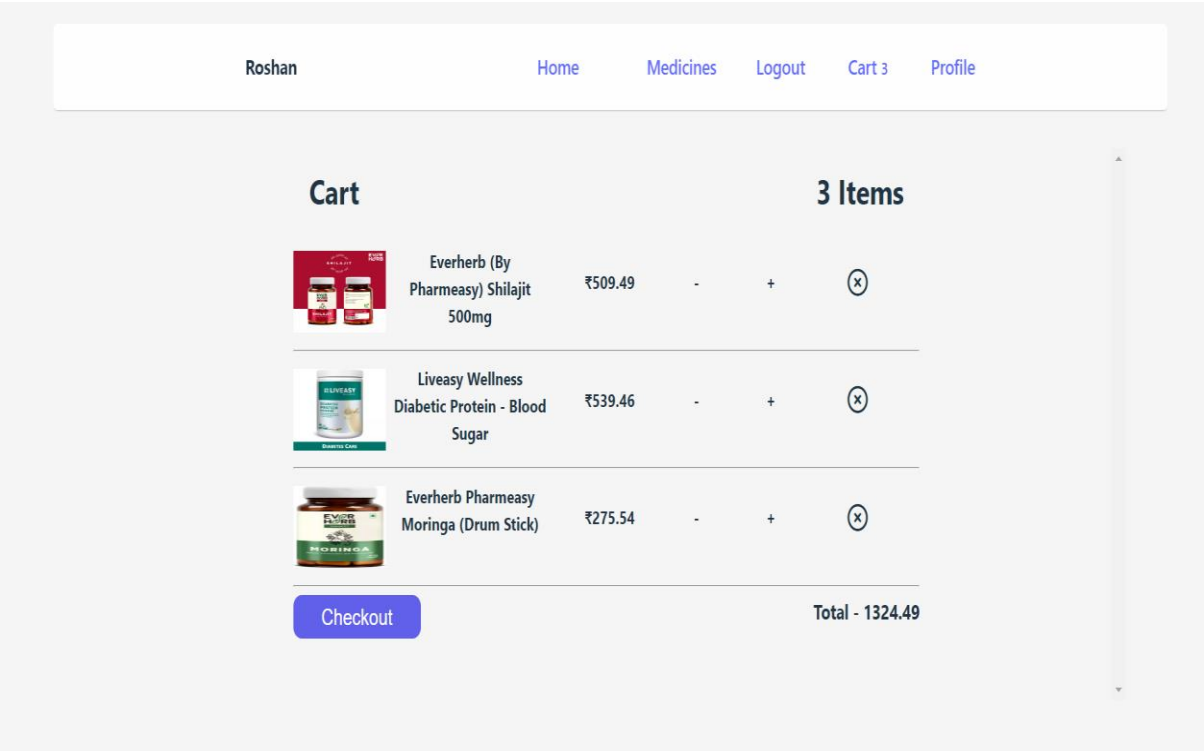


Login



This is the Sign Up and Login page. User can easily signup and login with own email and password with validation.

Cart Page



This is the Cart Page with user friendly . User can add required medicines in this cart after adding user can checkout after checkout medicine will be deliver in given address.

CHAPTER 7 : CONCLUSION

7.1 CONCLUSION:

"In conclusion, our online medical store is dedicated to providing a seamless and reliable healthcare shopping experience for our customers. With a user-friendly interface, a vast range of high-quality medical products, and efficient delivery services, we aim to be your trusted partner in health and wellness. Our commitment to customer satisfaction, competitive pricing, and a secure online environment sets us apart in the digital marketplace. Whether you're looking for prescription medications, over-the-counter products, or essential healthcare items, our platform is designed to meet your needs. Thank you for choosing [Your Medical Store Name] as your preferred destination for all your healthcare needs. We look forward to serving you and contributing to your well-being. Stay healthy and shop confidently with us!"

7.2 FUTURE SCOPE OF THE PROJECT:

- Telemedicine Integration:
  - Virtual consultations
  - Online prescription renewals

- AI-powered Health Assistance:
  - Personalized health recommendations
  - Chatbots for customer support

- Health Monitoring Devices:
  - Integration of fitness trackers
  - Syncing health data through the platform

- Mobile App Development:
  - iOS and Android applications
  - User-friendly features and secure transactions

REFERENCE

1.CSStutorial. (n.d.). W3Schools Online Web Tutorials.

https://www.w3schools.com/css/

2. DevDocs — JavaScript documentation. (n.d.). DevDocs API Documentation.

https://devdocs.io/javascript/

3. Getting started – React. (n.d.). React – A JavaScript library for building user interfaces. https://reactjs.org/docs/getting-started.html

4. (2020, January 1). Home https://html.com/

5. HTML tutorial. (n.d.). W3Schools Online Web Tutorials.

https://www.w3schools.com/html/

6. Introduction. (n.d.). Socket.IO. https://socket.io/docs/v4/

7. (n.d.). npm Docs. https://docs.npmjs.com/https://socket.io/docs/v4/

8. JavaScript. (2022, August 12). MDN Web Docs.

https://developer.mozilla.org/enUS/docs/Web/JavaScript

9. Installation. (n.d.). Chakra UI: Simple, Modular and Accessible UI Components for your React Applications. https://chakra-ui.com/getting-started

10. just a moment... (n.d.). Just a moment... https://www.softwaretestinghelp.com/testcase-template-examples/

11. MongoDB documentation. (n.d.). MongoDB: The Application Data Platform

MongoDB. https://www.mongodb.com/docs/

12. Node.js. (n.d.). Documentation. https://nodejs.org/en/docs/https://nodejs.org/en/docs/

13. Tutorial: Intro to react – React. (n.d.). React – A JavaScript library for building user interfaces. https://reactjs.org/tutorial/tutorial.html

14. React icons. (n.d.). Site not found · GitHub Pages. https://react-icons.github.io/reacticons/search