**Chapter – 1**

**SYNOPSIS**

* 1. **Title of the project:**

Title of the project is “RAIL ROUTE”.

* 1. **Objective of the project:**

The objective of the website is to provide a convenient and efficient way for users to book train tickets. It also aims to reduce manual ticketing processes, enhance seat availability and booking options, and improve ticketing efficiency.

**1.3 Features:**

* Train schedule information: Display of train schedules, routes, and availability.
* Online ticket booking: Ability to book train tickets online and select preferred seats.
* Payment gateway integration: Integration with payment gateways for secure payment processing.
* User account management: Option for users to create and manage their accounts, including viewing booking history and managing personal information.
* Cancellation and refund: Option for users to cancel tickets and apply for refunds, if necessary.
* Security: Implementation of security measures to protect user data and transactions.
* Promotions and discounts: Display of promotions and discounts for users to avail.
* User-friendly interface: A simple and easy-to-use interface for users to navigate and complete their bookings.

**1.4 Requirements:**

* XAMPP Server
* PHP, MySQL, HTML, CSS, and JavaScript
* Text Editor (e.g., Sublime Text, Visual Studio Code)

**1.5 Language used:**

* HTML (Hypertext Markup Language) - used for creating the structure and layout of the website.
* CSS (Cascading Style Sheets) - used for styling and formatting the website, including colours, fonts, and layout.
* JavaScript - used for adding interactivity and functionality to the website, such as form validation, dynamic content loading, and user input handling.
* PHP - a server-side scripting language that is widely used for web development, providing features such as database integration, form handling, and session management.

**1.6 Scope:**

* Online ticket booking: The system allows passengers to book train tickets online, select preferred seats, and make payments through various payment options.
* Train schedule information: The system provides information about train schedules, routes, and availability, allowing passengers to search for trains based on various parameters.
* User account management: The system allows users to create and manage their accounts, including viewing booking history and managing personal information.
* Cancellation and refund: The system provides an option for users to cancel tickets and apply for refunds, if necessary.
* Security: The system implements security measures to protect user data and transactions.
* Customer support: The system provides customer support through various channels such as email, phone, or chat.

**1.7 Benefits:**

The benefits of using the railway reservation website would include convenience, time-saving, and cost-saving. Users would be able to book tickets from the comfort of their homes or offices, without having to stand in long queues. The website would also provide real-time information on train schedules, seat availability, and fares, enabling users to make informed decisions.

**1.8 Modules:**

The system consists of two modules – Administrator module and End user module

* **Administrator module**: This module is for the management to manage system information, schedules, and reservations. The admin user can also update the content pages shown on the website.
* User management: Adding, editing, and deleting user accounts, as well as managing user roles and permissions.
* Train schedule management: Adding, editing, and deleting train schedules, routes, and stations.
* Ticket management: Viewing and managing ticket sales, refunds, and cancellations.
* Content management: Managing the content of the website, such as text, images, and videos.
* **End user/ Customer Management**: This module serves as the website that can be accessed by visitors or potential passengers. The visitors can view the station information, list the schedules, and make reservations for their selected schedule.
* Account creation: Creating a user account by providing personal information such as name, email address, and contact details.
* Password management: Setting, changing, and resetting the account password.
* Searching for trains: Searching for trains based on various parameters such as destination, date, and class.
* Viewing train schedules: Viewing the schedules, routes, and availability of trains.
* Booking tickets: Selecting seats and booking tickets online.
* Payment: Making payments for the booked tickets using various payment options such as credit/debit cards, net banking, or digital wallets.
* Cancellation: Cancelling tickets and applying for refunds, if necessary.
* Managing profile: Updating personal information, preferences, and settings in the user account.

**1.9 PROBLEM ANALYSIS:**

In Railway Reservation there are so many tasks which are tedious and time consuming. The person who maintains the reservation manually face so many problems like searching details of a booked tickets, security problem is the main problem which is faced by the person that they maintain registers and any one can change details easily to solve these styles of problems we design a computerised railway reservation system which is easy to operate and only authorised person can edit the information. Record entry and searching is not time consuming and fine is calculated automatically.

**1.10** **Limitations:**

* Limited availability: Some trains or classes may not be available for booking online, requiring users to visit a physical ticket counter.
* Limited integration with third-party services: Some railway reservation systems may not integrate with third-party services such as hotel booking or car rental, limiting the convenience for users.
* Limited real-time tracking: Some railway reservation systems may not provide real-time train tracking, limiting the information available to users.

CHAPTER-2

**LITERATURE SURVEY**

**2.1 HTML 5:**

* HTML stands for Hypertext mark-up language.
* A mark-up language is a set of mark-up tags.
* HTML mark-up tags usually called html tags.

**2.2** **JAVA SCRIPT:**

* Java script (JS) is a dynamic computer programming language. It is most commonly used as part of web browser whose implementation allow client-side script to interact with the user.
* It is also being used server-side programming, game development, and creation of desktop and mobile application.
* Java script syntax was inspired by javas and is relatively easy to learn compared to other popular languages like C++.

**2.3 CSS3:**

* External style sheet are stored in CSS files, CSS3 is the latest standard for CSS.
* CSS3 is completely backwards-compatible with earlier versions of CSS. The feedback engine project uses the css3 specification.
* It is most common application used to style web page written in html and any of XML language.
* CSS3 is style sheet language used to describe the presentation semantics of a document written in a mark-up language.

**2.4 PHP:**

* PHP stands for Hypertext Pre-Processor.
* PHP files can contain text, HTML tags scripts.
* PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language

**2.5 MYSQL:**

* MySQL is a database system used on a web.
* MySQL is a database system that runs on a server.
* MySQL is ideal for both small and large applications.
* MySQL is very fast, reliable, and easy to use.

**2.6 XAMPP:**

* XAMPP is a free and open sources cross-platform web server.
* XAMPP stands for cross-platform(x)Apache (A) MariaDB(M)PHP(P) and Perl(P).
* It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes.

**Chapter – 3**

**SOFTWARE REQUIREMENT SPECIFICATION**

* 1. **Introduction:**

Software Requirement Specification (SRS) is a document, which describes completely the external behaviour of the software. The first and foremost work of a software developer is to study the system to be developed and specify the user requirements before going for the designing phase. This document will let us know how this system behaves and responds. This document is also known by the SRS report or software document.

The requirement phase translates the ideas in the minds of the clients into a formal document. Software Requirements Specification (SRS) document is a document that will let us know how this system behaves and responds.

* 1. **Purpose:**
* The purpose of the SRS is to specify the requirement of the web-based software application, which is a railway reservation system.
* Another important purpose of the SRS is to bridge the gap between the client and the developer.
* This Software Requirements Specification provides a complete description of all the functions and specifications of modules.
* Another important purpose of developing the SRS is to help clients to understand their own needs.

**3.3 Scope:**

* The “RAILROUTE” about a web-based application which include user interaction.
* It’s going provide a communication environment between the user and the customer.
* This document contains complete description of the functioning of “RAILROUTE”
  1. **Overview:**

This project aims at development of a Railway Reservation System that facilitates the Railway customers to manage their reservations and the Railway administrators to modify the backend databases in a User-Friendly manner.

* 1. **Overall description:**

1. **Product perspective-**

* It enables us to maintain the railway train details like their timings, number of seat available, reservation billing and cancelling the tickets.

1. **Product function-**

* Reservations- After checking the number of seats available, the customers reserve the tickets.
* Billing- After reserving the required number of tickets, the customer paid the fare
* Cancellation- If the customer wants to cancel the ticket, he can cancel it using PNR number.
* Train details- Customers may view the train number, train name, train timing (arrival and departure), arrival and departure station of the train and number of seats requires.

1. **User characteristics-**

* Passengers: Regular travellers who use the system to book tickets for their journeys. Varied levels of technological proficiency, from novice users to experienced ones. Require an intuitive interface for easy booking and management of reservations. Need access to real-time information about train schedules, availability, and fares.
* Administrators: Railway staff responsible for managing the system. Require administrative privileges to maintain the system, manage user accounts, and handle bookings. Need access to tools for monitoring system performance, generating reports, and managing finances.
* Developers: Software engineers responsible for system maintenance and enhancements. Require access to system architecture, source code, and documentation. Need clear specifications and guidelines for implementing new features, fixing bugs, and maintaining the system's integrity.

1. **General Constraints-**

* There is no maintainability of back up so availability will get affected. Real-life credit card validation and Banking system is not implemented. No multilingual support.

1. **Assumption and Dependences-**

* Users have access to a stable internet connection and appropriate devices for making reservations.
* The system relies on a third-party payment gateway for processing transactions securely.
* The system depends on accurate and up-to-date information regarding schedules, seat availability, and fare details.
  1. **Specific requirements:**

1. **External interface requirements**

* User interfaces-

Each part of the user interface intends to be as user friendly as possible. The fonts and buttons used will be intended to be very fast and easy to load on web pages. The pages will be kept light in space so that it won’t take a long time for the page to load.

* Hardware interfaces-

RAM: 8GB

Processor: Intel i3

* Software interfaces-

Operating System: Windows 8

Development tool: PHP, JavaScript, MySQL, CSS

Database: SQL

* 1. **Functional requirements:**
     1. **Reservation of ticket:**
* Display available train table: Database displays time table to the customer.
* Search train for destination: Passenger requests train for particular destination.
* Input details: Customer is required to enter details for the reservation of ticket.
* Calculate fare: Calculates the total fare of the journey according to number of passengers and tells the customer.
* Reserve ticket: Ticket is reserved and customer pays the fare

**3.7.2 Cancellation of ticket:**

* Request to cancel ticket: Customer requests to cancel his/her ticket for which he/she has to give the PNR number.
* Cancel ticket: Once the PNR number is received, the ticket is cancelled
  + 1. **Registration of user:**
* Login: This module is for user authentication
* View: Module allows users to view and modify profile.
* Order placement: Users can place the order of the frames.
* View booking details: User can view his booking.
  1. **Design Constraints:**
* Both inputs should be reviewed for validation and messages should be issued for erroneous results. Invalid data should be skipped and error messages should be given.
* The information given during registration should be maintained in the database.
* While booking ticket, mandatory fields must be checked for validation whether the customer has filled appropriate data in these mandatory fields. If not, proper error message should be displayed or else the data is to be stored in database for later retrieval.
  1. **System attributes:**
* Debug Ability- The website will be monitored by the admin if any errors or technical glitches will be reported to the developer where it gets debugged within time.
* Extensibility- In future we can extend it to different cities and make the website more consistent by extending or updating it.
* Portability- It is portable in all browser such as Firefox, Google chrome etc.
* Understand ability- The website is simple and easily understandable for anyone. Everyone can use the website without having a user manual.
  1. **Performance requirement:**
* It’s available during all 24 hours.
* Variety of compartments based on comfort:

AC

Non-AC

General

* Can book cabs and hotels to make travel easy.
  1. **Software requirements:**
* Operating system: windows XP/windows 7/8
* Server: Apache Server 1.8.2
* Scripting language: HTML, CSS, PHP 5.4, windows JavaScript
* Database server: MySQL serve
  1. **Security requirement:**
* Developer and the customer have only the right to open the software.
* Outlines measures to ensure the confidentiality, integrity, and availability of sensitive data and system resources.
  1. **Software quality attributes:**
* RELIABILITY: It is tested for all the constraints at development stage.
* AVAILABILITY: This system will only available till the system on which it is installed is running.
* SECURITY: This system is provided with authentication without which no user can pass. So only the legitimate users can use the application. If the legitimate users share the authentication information, then the system is open to outsiders.
* MAINTAINABILITY: There will be no maintenance required for the website. The database is provided by the end-user and therefore is maintained by this user.
* PORTABILITY: The system works anywhere with the internet