Experiment-2

Aim:

Do requirement analysis and develop Software Requirement Specification Sheet (SRS) for suggested system.

SOFTWARE REQUIREMENTS SPECIFICATION

IRCTC 2.0
Version 1.0
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ONLINE RAILWAY RESERVATION SYSTEM

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1. Introduction

The purpose of this Software Requirements Specification (SRS) is to comprehensively define the requirements and specifications for the development of an advanced Online Railway Reservation System (IRCTC 2.0). This system will revolutionize the railway booking experience by allowing users to seamlessly book train tickets, check seat availability, and manage their reservations through an intuitive and feature-rich web-based interface.

1.1 Purpose

This SRS serves as a crucial document that outlines the External Interface, Performance, and Software System Attributes requirements of IRCTC 2.0. It plays a pivotal role in guiding the development team, railway management, documentation writers, and testers. Let's delve deeper into the roles of these stakeholders:

- *Developers*: This document will be the foundation upon which the development team will build the IRCTC 2.0 system. It will guide them in implementing the specified functionalities and meeting performance benchmarks.
- *Management of the Railway*: Railway authorities will rely on this SRS to ensure that the system aligns with their operational needs and adheres to security standards and regulations.
- *Documentation Writers*: The documentation team will use this SRS as a reference to create user manuals, help guides, and training materials for both passengers and railway staff.
- *Testers*: Testers will use this document to design test cases, ensuring that the developed system meets all specified requirements and functions flawlessly.

1.2 Scope

The Online Railway Reservation System, IRCTC 2.0, is an all-encompassing platform that will cater to the following functionalities, making train travel more accessible and convenient than ever before:

- *User Registration and Authentication*: Users will be able to effortlessly create accounts, ensuring personalized access to booking services. This includes robust security measures to protect user data.
- *Search and View*: Passengers can search and view available train routes, schedules, and seat availability. The system will provide real-time data to enhance the booking experience.
- *Booking and Reservations*: The heart of the system, users can select trains, seats, and classes for their journeys. It will support single and multiple passenger bookings,

catering to various travel needs.

- *Payment Options*: The system will offer diverse payment methods, including credit/debit cards, digital wallets, and net banking, ensuring a hassle-free payment process.
- *Administrative Functions*: Railway authorities will have access to administrative tools to manage train schedules, seat allocation, and user profiles. This will enhance operational efficiency.
- *Compliance*: IRCTC 2.0 will be developed with a strong focus on compliance with railway regulations and security standards, ensuring the safety and trust of passengers.

1.3 Definitions, Acronyms, and Abbreviations

In order to maintain clarity and consistency throughout this document, we have provided a list of essential definitions, acronyms, and abbreviations:

SRS	Software Requirements Specification
API	Application Programming Interface
UI	User Interface
DBMS	Database Management System
SSL	Secure Sockets Layer
HTTP	Hypertext Transfer Protocol
HTTPS	Secure Hypertext Transfer Protocol
XML	Extensible Markup Language
SQL	Structured Query Language

These definitions will be referenced throughout the document to ensure a clear understanding of key terms and concepts.

1.4 References

To maintain transparency and reliability, we have listed the key references for this SRS document:

i. www.google.co.in

ii. www.wikipedia.com

iii. IEEE. Software Requirements Specification Std. 830-1993.

iv. Payment Gateway Documentation

These references serve as external sources of information and standards that are relevant to the development and implementation of IRCTC 2.0.

1.5 Overview

This SRS report serves as a roadmap for the development of the Online Railway Reservation System (IRCTC 2.0). It outlines the project's scope, objectives, and constraints, providing a comprehensive understanding of the system's goals and functionalities. In the sections that follow, we will delve into the specifics of the system, including its overall description, user characteristics, constraints, and assumptions.

2. The Overall Description

2.1 Product Perspective

The Online Railway Booking Website, IRCTC 2.0, is a sophisticated web-based application with various functional components that work in harmony to provide a seamless booking experience for passengers. To gain a deeper understanding, let's explore these components further:

- ✓ *Functional Components*: IRCTC 2.0 comprises several functional components that interact to offer services such as ticket booking, seat availability checks, and payment processing. These components include the user interface, backend systems, payment gateways, and databases.
- ✓ *User Independence*: One of the system's defining features is its ability to empower users to independently access railway booking services without manual intervention. This autonomy significantly enhances the user experience and reduces dependency on railway personnel.
- ✓ *Auxiliary Services*: IRCTC 2.0 goes beyond ticket booking. It also offers auxiliary services like mobile ticketing and bill payments, providing a one-stop solution for passengers' travel-related needs.
- ✓ *Hardware Components*: The system relies on a robust hardware infrastructure that includes web servers, application servers, database servers, load balancers, content delivery networks (CDNs), firewall systems, and routers. These components ensure smooth system operation even during peak booking periods.
- ✓ *Secure Communication*: The website establishes secure and encrypted communication channels with railway databases and external payment gateways. This ensures the privacy and security of user data during transactions.

- ✓ *Scalability*: IRCTC 2.0 is designed to handle a significant load. With a memory allocation of at least 64GB, the system can accommodate a large number of concurrent users, making it suitable for peak booking hours.
- ✓ *Cross-Platform Compatibility*: The user interface is designed to be compatible with various web browsers and devices, guaranteeing a consistent and user-friendly experience for all passengers, regardless of their choice of technology.

2.2 Product Functions

IRCTC 2.0 offers a wide array of functions to cater to passengers' diverse needs. Let's explore these functions in more detail:

- ✓ *User Registration and Authentication*: The system allows users to create accounts by providing personal information and contact details. This registration process ensures secure and personalized access to booking services while safeguarding user data.
- ✓ *Browsing and Searching*: Passengers can search for trains based on criteria such as departure and arrival locations, dates, and class preferences. This intuitive search feature empowers users to find the most suitable train options.
- ✓ *Booking and Reservations*: Users can select specific trains, seats, and travel classes for their journeys. Whether it's a single passenger or a group, IRCTC 2.0 accommodates various booking scenarios with ease.
- ✓ *Ticketing and Payment*: The system simplifies the ticket issuance process and ensures secure payment processing. Users can choose from a variety of payment methods, including credit/debit cards, digital wallets, and net banking, making it convenient for passengers.
- ✓ *Seat Availability and Confirmation*: Before finalizing a booking, passengers can check real-time seat availability. Once booked, users receive comprehensive confirmation details, including seat numbers and PNR (Passenger Name Record) information.
- ✓ *Booking Modifications and Cancellations*: Flexibility is key. Users have the freedom to modify their bookings, whether it's changing travel dates, routes, or passenger details. The system also allows for easy ticket cancellations, with refund options following railway policies.
- ✓ *Passenger Services*: Passenger-centric services are at the heart of IRCTC 2.0. Passengers can request special services like meals, wheelchair assistance, or other amenities to enhance their travel experience.
- ✓ *Booking History and Records*: Users can access their booking history and travel records, providing them with the ability to review past journeys, print e-tickets, or obtain travel statements for reimbursement purposes.
- ✓ *Real-time Train Tracking*: The system offers real-time train tracking and status updates.

Passengers can monitor their train's location and estimated arrival times, ensuring they are well-informed throughout their journey.

- ✓ *Fare Calculations and Discounts*: The platform calculates fares based on factors such as travel distance, class, and passenger type. Additionally, it offers discounts, promotions, and loyalty programs, making it appealing to cost-conscious travelers.
- ✓ *Language Selection*: To cater to passengers from diverse linguistic backgrounds, users can select their preferred language from options like Hindi, Tamil, Bengali, and more, ensuring a user-friendly experience for all.
- ✓ *Customer Support and Assistance*: IRCTC 2.0 offers comprehensive customer support channels, including helplines, chat support, and FAQs. Passengers can seek assistance for booking issues, refunds, or general inquiries, enhancing their confidence in using the system.

2.3 User Characteristics

Understanding the user base is crucial for designing a system that meets their needs. Here are the primary user categories:

- ✓ *User A*: Novice passengers with limited experience in using electronic account management systems. They may not be frequent travelers and primarily use the system for searching, booking, and managing train reservations. Ensuring a user-friendly interface and clear instructions is essential for this group.
- ✓ *User B*: Administrators responsible for managing train schedules, seat allocations, and user accounts. They play a critical role in maintaining the system and ensuring its smooth operation. User B's tasks include uploading and preparing the train chart and keeping it updated on the website portal.
- ✓ *Maintenance Railway Staff*: Staff members responsible for the day-to-day maintenance of the system and ensuring its compliance with railway regulations. Their role is vital in ensuring the system's reliability and security.

2.4 Constraints

IRCTC 2.0 operates within specific constraints that shape its functionality and operation:

- ✓ *Single-User Sessions*: The system supports single-user sessions for booking and managing reservations, ensuring data privacy and security.
- ✓ *Regulatory Compliance*: IRCTC 2.0 adheres to stringent railway regulations and security standards to ensure the safety of both passengers and data.
- ✓ *Login Attempts*: Users are allowed a maximum of three login attempts before facing an account lockout, enhancing security measures.

- ✓ *Secure Communication*: The system enforces secure communication using HTTPS to protect sensitive data during transactions.
- ✓ *Database Management*: Database management is carried out using a specified DBMS, such as MySQL, ensuring data integrity and reliability.
- ✓ *XML Data Exchange*: The system supports XML-based data exchange with external railway services, streamlining data sharing and synchronization.

2.5 Assumptions and Dependencies

Several factors and assumptions influence the requirements stated in this SRS:

- ✓ *Availability of Railway Data*: The system's functionality relies on the availability of railway data through external APIs. Ensuring consistent access to this data is crucial for real-time information.
- ✓ *Payment Gateway Integration*: Reliable integration with payment gateways is essential for secure financial transactions.
- ✓ *Internet Connectivity*: Users accessing the system rely on internet connectivity to interact with the platform and make bookings.
- ✓ *Browser Compatibility*: The system assumes compatibility with modern web browsers to provide a consistent user experience.
- ✓ *Regular System Maintenance*: To maintain optimal performance and security, regular system maintenance and updates are assumed.
- ✓ *Scope Expansion*: It is anticipated that the scope of the package will expand considerably in the future, potentially incorporating new features and functionalities to meet evolving passenger needs.

3. External Interface Requirements

3.1 User Interface Requirements

The user interface (UI) of IRCTC 2.0 is meticulously designed to provide passengers with a user-friendly, efficient, and accessible experience. Here are the key UI elements and requirements:

- ✓ *User Registration and Login*: The UI facilitates user account creation with unique usernames and secure password creation. To access booking services, users must log in securely.
- ✓ *Browsing and Train Search*: The UI offers an intuitive search feature for passengers to find trains based on criteria like source and destination stations, travel dates, class preferences, and train types (e.g., express, superfast).

- ✓ *Booking and Seat Selection*: Passengers can effortlessly select specific trains, classes, and seat preferences. Real-time seat availability is displayed to assist in decision-making.
- ✓ *Passenger Details*: The UI allows users to input passenger details, including names, ages, and genders. For group bookings, multiple passenger details can be added with ease.
- ✓ *Ticket Booking and Payment*: The UI supports the seamless booking of e-tickets and provides various payment options, including debit/credit cards, net banking, digital wallets, and UPI, ensuring a convenient payment process.
- ✓ *PNR Generation*: After booking, the UI generates a unique Passenger Name Record (PNR) that serves as a reference for ticket status and travel-related inquiries.
- ✓ *Ticket Download and Printing*: Passengers can easily download e-tickets and print them for offline reference during travel.
- ✓ *Booking History*: The UI offers a user-friendly booking history section, allowing passengers to view past and upcoming journeys effortlessly.
- ✓ *Ticket Cancellation*: The system allows for online ticket cancellations, with refunds processed according to Indian Railways' cancellation policies.

3.2 Hardware Interface Requirements

The IRCTC 2.0 online railway reservation system interacts with various hardware components to facilitate ticket bookings and transactions. These hardware components include:

- ✓ *Servers*: High-capacity servers are responsible for hosting the IRCTC 2.0 platform, ensuring reliability and performance even during peak booking times.
- ✓ *Payment Gateway Integration*: Secure payment gateways are seamlessly integrated into the system to process financial transactions securely and efficiently.
- ✓ *Ticket Printers*: Ticket printers play a critical role at railway stations and authorized booking centers for printing reserved tickets, ensuring passengers have physical copies for their journeys.

3.3 Software Interface Requirements

IRCTC 2.0 interfaces with several software components and external systems to ensure smooth operations and data exchange. Key software interface requirements include:

- ✓ *Indian Railways Database*: The system interfaces with Indian Railways' central database to access essential information such as train schedules, seat availability, and fare details. This real-time data exchange ensures accurate and up-to-date information for passengers.

- ✓ *Payment Gateway Software*: Seamless integration with payment gateway APIs is essential to enable secure payment processing for users. The software interfaces with these gateways to facilitate financial transactions.
- ✓ *Authentication Services*: User authentication is supported through the IRCTC 2.0 website and mobile app, ensuring secure access to personal booking information and maintaining data privacy.

3.4 Communication Interface Requirements

Effective communication interfaces are integral to IRCTC 2.0 for data exchange with passengers, railway authorities, and payment processors:

- ✓ *Secure Socket Layer (SSL)*: SSL encryption ensures secure communication between users' browsers and the IRCTC 2.0 website, safeguarding sensitive data during transmission.
- ✓ *SMS and Email Services*: Passengers receive essential information such as booking confirmations, ticket details, and travel updates through SMS and email notifications. These services enhance communication and keep passengers informed.
- ✓ *IRCTC 2.0 Helpline*: The system integrates with customer support channels, including a dedicated helpline, to provide passengers with prompt assistance for booking-related issues and inquiries, fostering a sense of trust and reliability.

4. System Features

4.1 Real-Time Seat Availability

One of the standout features of IRCTC 2.0 is its provision of real-time seat availability information. This feature empowers passengers to make informed decisions by checking seat availability on their chosen trains. Whether it's planning a solo journey or booking seats for a group, passengers can rely on accurate and up-to-the-minute information to secure their preferred seats.

4.2 Flexible Ticket Cancellation

Flexibility is key to passenger satisfaction. IRCTC 2.0 offers passengers the convenience of online ticket cancellation with ease. Passengers can initiate ticket cancellations through the system, and refunds are processed in strict adherence to Indian Railways' cancellation policies. This feature ensures that passengers have the freedom to adjust their travel plans when needed.

4.3 User-Friendly Booking History

The booking history feature of IRCTC 2.0 is designed with the user in mind. It provides a user-friendly interface that allows passengers to effortlessly review their past and upcoming journeys. This feature is especially helpful for keeping track of travel history, accessing e-tickets, and obtaining travel statements for reimbursement purposes.

4.4 Secure Payment Options

IRCTC 2.0 places a strong emphasis on security during payment processing. The system offers passengers a variety of secure payment options, including debit/credit cards, net banking, digital wallets, and UPI. These options enhance the overall booking experience, allowing passengers to choose the method that suits them best while ensuring the safety of their financial transactions.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

In addition to the functional features, IRCTC 2.0 is subject to a set of performance requirements:

5.1.1 Capacity

The IRCTC 2.0 infrastructure boasts high scalability, ensuring it can handle a substantial volume of concurrent users. This capability enables simultaneous booking transactions for a significant user base, operating around the clock, 24 hours a day.

5.1.2 Dynamic Requirements

IRCTC 2.0 sets stringent response time thresholds for dynamic requirements:

- ✓ *Card Verification and User Authentication*: These processes must execute within a response time target of 0.8 seconds under normal load and 1 second during peak server load. Ensuring swift access to these critical functions enhances the overall user experience.
- ✓ *Fund Transfers and Booking*: Accessing account balances, executing fund transfers, and booking tickets require swift responsiveness, with response times not exceeding 2 seconds under normal load and 3 seconds during peak server load. These response time targets are vital to maintaining user satisfaction.
- ✓ *Peak Hour Responsiveness*: During peak hours, such as Tatkal ticket bookings, the system must maintain responsiveness, with response times not exceeding 4 seconds

under normal load and 5 seconds during peak server load. Meeting these targets ensures that passengers can make bookings efficiently even during high-demand periods.

5.1.3 Quality

The quality of the IRCTC 2.0 website is paramount, even though it can be challenging to measure it quantitatively. The following guidelines are used to evaluate the quality of the website:

- ✓ *Consistency*: The website is designed to maintain consistency across all its elements, including headers, footers, sidebars, and navigation bars. Consistency enhances the overall user experience, making navigation intuitive and user-friendly.
- ✓ *Test Cases*: Thorough testing of all functionality is a fundamental aspect of ensuring quality. Rigorous testing procedures, including unit testing, integration testing, and user acceptance testing, are carried out to identify and address issues and bugs.

5.2 Software System Attributes

5.2.1 Reliability

Reliability is a core attribute of IRCTC 2.0, ensuring that passengers can trust the system for their travel needs:

- ✓ *Data Encryption and Security*: IRCTC 2.0 employs robust data encryption and security measures to maintain high system reliability. Non-volatile memory systems are utilized to prevent data loss in the event of unexpected power failures, ensuring data integrity.
- ✓ *Mobile App Reliability*: The IRCTC 2.0 mobile app adheres to industry standards, assuring reliability for mobile ticket bookings and information retrieval. Passengers can rely on the app for a seamless booking experience.

5.2.2 Availability

Availability is a critical aspect of IRCTC 2.0, ensuring passengers can access booking and inquiry services around the clock:

- ✓ *Round-the-Clock Availability*: IRCTC 2.0 guarantees 24/7 availability, allowing users to initiate bookings and inquiries at their convenience, irrespective of time zones or schedules.
- ✓ *Redundancy and Backup*: To minimize service interruptions in unforeseen circumstances, the platform incorporates redundancy and backup servers. In the event of server failures, the backup infrastructure ensures continuous service availability.

- ✓ *Power Supply Backup*: Servers are equipped with backup power supplies to maintain continuous operation in the event of power failures, further enhancing availability.
- ✓ *Database Consistency*: The system maintains database consistency even if a customer system is abnormally shut down, ensuring that passengers' data remains intact and accurate.

5.2.3 Security

Security is a paramount concern for IRCTC 2.0, and several measures are in place to safeguard passenger data and transactions:

- ✓ *Stringent Password Requirements*: The system enforces strict password policies, requiring passwords to be 6-14 characters long, contain a digit, an alphabet, and a special character. This ensures the security of user accounts.
- ✓ *Limited Login Attempts*: Users are provided with only a single attempt for transactions. After this, they are required to log in again, enhancing security measures.
- ✓ *Captcha Authentication*: Captcha authentication is implemented on the login page to prevent robot access, further securing user accounts and transactions.

5.2.4 Maintainability

Maintainability is a fundamental aspect of IRCTC 2.0, allowing for the seamless management of the system:

- ✓ *Simplified Maintenance*: The system is engineered for simplified maintenance, facilitating timely updates, debugging, and feature enhancements. This ease of maintenance ensures that the system can adapt to evolving passenger needs and industry requirements.
- ✓ *Self-Monitoring Mechanisms*: Self-monitoring mechanisms are in place to autonomously detect and report system faults. These mechanisms enable swift corrective interventions by maintenance personnel, minimizing downtime and disruptions.
- ✓ *Flexibility*: The platform exhibits flexibility in adapting to evolving policies and services mandated by Indian Railways. This adaptability ensures that the system can continue to meet the changing needs of passengers and authorities.

5.3 Business Rules

IRCTC 2.0 operates within a framework of specific business rules and policies governing online railway ticket bookings:

- ✓ *User Responsibility*: Passengers are responsible for maintaining the confidentiality of their login credentials and adhering to booking regulations, ensuring the security of their accounts.
- ✓ *IRCTC 2.0 Policy Compliance*: The platform strictly complies with Indian Railways' policies pertaining to ticket booking, cancellations, and refund procedures. This compliance ensures that passengers' rights and entitlements are protected.
- ✓ *Comprehensive Record-Keeping*: IRCTC 2.0 maintains comprehensive records encompassing user accounts, booking histories, and fixed assets. These records serve operational and security imperatives, providing a detailed history of user interactions.
- ✓ *Railway Administration Authority*: Railway administration has the authority to establish and update rules and regulations as required. The system is designed to accommodate changes in policies and procedures set by the railway administration.

6 Other Requirements

The "Other Requirements" section encompasses additional aspects and features of the IRCTC 2.0 Online Railway Reservation System that are essential for its functionality and user satisfaction. These requirements address predictive ticket availability, user-generated reviews and ratings, and other important considerations.

6.1 Predictive Ticket Availability

6.1.1 Percentage Chance Assessment

IRCTC 2.0 aims to go beyond traditional seat availability information by introducing a predictive ticket availability feature. Passengers will have the ability to view a percentage chance assessment of securing a confirmed ticket for a particular train and class. This assessment will be based on historical booking patterns, current seat availability, and predictive algorithms.

6.1.2 Benefits of Predictive Ticket Availability

The introduction of predictive ticket availability offers several advantages to passengers:

- ✓ Informed Decision-Making: Passengers can make more informed decisions about booking tickets, especially during peak travel seasons when ticket availability is limited.
- ✓ Reduced Uncertainty: Predictive assessments reduce uncertainty by providing a clear indication of the likelihood of ticket confirmation, helping passengers plan their journeys effectively.

- ✓ Alternative Options: Passengers can explore alternative travel dates or classes if the predictive assessment indicates a low chance of ticket confirmation.
- ✓ Enhanced User Experience: This feature enhances the overall user experience by providing valuable information and improving passenger satisfaction.

6.2 User-Generated Reviews and Ratings

6.2.1 Passenger Feedback Mechanism

IRCTC 2.0 will implement a comprehensive user-generated reviews and ratings system. Passengers will have the opportunity to provide feedback and ratings for various aspects of their journey, including trains, stations, and food service providers.

6.2.2 Key Components of the Feedback System

The user-generated reviews and ratings system will comprise the following components:

- ✓ Train Reviews: Passengers can submit reviews and ratings for specific train journeys, sharing their experiences regarding cleanliness, punctuality, onboard amenities, and overall satisfaction.
- ✓ Station Reviews: Users can provide feedback on the facilities and services available at railway stations, such as waiting areas, restrooms, ticketing counters, and accessibility.
- ✓ Food Service Reviews: Passengers can rate and review food service providers, including pantry cars and station vendors, based on the quality, variety, and pricing of food and beverages.

6.2.3 Benefits of User-Generated Feedback

The implementation of a user-generated feedback system offers numerous benefits:

- ✓ Continuous Improvement: Railway authorities can use passenger feedback to identify areas for improvement in services, infrastructure, and customer experience.
- ✓ Transparency: Transparency is enhanced as passengers can access and contribute to a wealth of information about train journeys, stations, and food services.
- ✓ Accountability: Service providers and authorities are held accountable for maintaining high standards based on passenger ratings and reviews.
- ✓ Enhanced Passenger Experience: By addressing passenger concerns and preferences, the railway system can enhance the overall passenger experience.

6.2.4 Moderation and Verification

To maintain the integrity of the user-generated feedback system, IRCTC 2.0 will implement moderation and verification processes. Reviews and ratings will be subject to scrutiny to prevent fraudulent or malicious submissions and ensure the authenticity of user-contributed content.

6.3 Accessibility and Inclusivity

6.3.1 Inclusive Design

IRCTC 2.0 is committed to ensuring that its online railway reservation system is accessible to all passengers, including those with disabilities. The platform will adhere to inclusive design principles and international accessibility standards, such as the Web Content Accessibility Guidelines (WCAG).

6.3.2 Accessibility Features

The system will include a range of accessibility features to accommodate passengers with diverse needs, including:

- ✓ Screen Reader Compatibility: The website and mobile app will be compatible with screen reader software to assist visually impaired users.
- ✓ Keyboard Navigation: Keyboard navigation options will be available for users who rely on keyboard input.
- ✓ Text-to-Speech Functionality: Text-to-speech functionality will be integrated to aid users with reading difficulties.
- ✓ Alternative Text for Images: All images and visual elements will include alternative text descriptions.
- ✓ Color Contrast: The platform will maintain appropriate color contrast for readability.

6.3.3 User Training and Support

IRCTC 2.0 will provide training and support materials for passengers who may require assistance in using the accessibility features. This includes tutorials, documentation, and dedicated customer support channels to address accessibility-related inquiries and issues.

6.4 Environmental Sustainability

6.4.1 Sustainable Practices

IRCTC 2.0 is committed to environmental sustainability and will implement practices to minimize its environmental impact. Key sustainability measures include:

- ✓ Paperless Ticketing: Encouraging passengers to use e-tickets to reduce paper usage and waste.
- ✓ Energy Efficiency: Employing energy-efficient technologies in data centers and server infrastructure to reduce energy consumption.
- ✓ Waste Reduction: Promoting responsible waste management practices at railway stations and on trains.
- ✓ Eco-Friendly Initiatives: Exploring and implementing eco-friendly initiatives, such as solar power generation and waste recycling.

6.4.2 Awareness and Education

IRCTC 2.0 will also raise awareness among passengers about the importance of environmental sustainability. Educational materials and campaigns will inform passengers about sustainable practices and how they can contribute to a greener railway system.