
Software Requirements Specification

for

Plan My Trip

Version 1.0

Prepared by

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
Draft Type and Number	Full Name	Information about the revision. This table does not need to be filled in whenever a document is touched, only when the version is being upgraded.	00/00/00

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The explanations provided below, do not cover all of the material, but merely, the general nature of the information you would usually find in SRS documents. It is based on the IEEE requirements and was adapted specifically for the needs of Software Engineering 3K04/3M04 courses. Most of the sections in this template are required sections, i.e. you must include them in your version of the document. Failure to do so will result in marks deductions. Optional sections will be explicitly marked as optional.



1 Introduction

1.1 Document Purpose

This is a SRS for the project PlanMyTrip - Version 1.0. The purpose of this Software Requirement Specifications document is to clearly define the technical aspect of the product we intend to build. It covers how the first version of the application will interact with the users, hardware, software and other interconnecting applications. It specifies the requirements, technical details and the limitations of the project which shall help us ensure we utilize all the factors correctly, satisfy all product requirements and provide the best possible product to our users.

1.2 Product Scope

PlanMyTrip provides a comprehensive platform via its website and mobile app, meeting the diverse needs of global travelers. Offering everything from flight and hotel bookings to itinerary planning and personalized recommendations, it enhances the overall travel experience. With a user-friendly interface, seamless booking process, and exclusive deals, PlanMyTrip simplifies travel planning, saving users time and effort while making exploration more affordable and accessible.

1.3 Intended Audience and Document Overview

PlanMyTrip caters to various stakeholders: developers, project managers, marketing staff, users, testers, and documentation writers. Developers focus on technical specifications, project managers on scope and timeline, marketing on user requirements, users on functionalities and usability, testers on functional and non-functional requirements, and documentation writers on content structure for manuals.

Document overview section contains project's purpose, scope, and objectives. It then delves into specific sections like functional and non-functional requirements, system architecture, user interface design, system constraints, and acceptance criteria. Each section caters to different stakeholders, providing relevant details such as system functionalities, performance, security, and reliability. The document follows a sequential organization, moving from high-level overviews to detailed specifications, facilitating navigation based on readers' roles and interests.

1.4 Definitions, Acronyms and Abbreviations

1. SRS - Software Requirements Specification
2. UI - User Interface



3. QA - Quality Assurance
4. API - Application Programming Interface
5. CRM - Customer Relationship Management
6. CSS - Cascading Style Sheets
7. FAQ - Frequently Asked Questions
8. API - Application Programming Interface
9. HTTPS - Hypertext Transfer Protocol Secure
10. UI/UX - User Interface/User Experience
11. XML - Extensible Markup Language
12. SQL - Structured Query Language

1.5 Document Conventions

The following conventions were followed while creating the document:

- We have used the IEEE standards for document formatting.
- The font used is Arial, font size for title is 14 and font size for text is 11.
- Italics have been used for comments.
- 1" margin has been maintained throughout the document.
- The text is single spaced.

1.6 References and Acknowledgments

<List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document.

TO DO: Use the standard IEEE citation guide for this section. An example citation guide is posted for you on the website.>



2 Overall Description

2.1 Product Perspective

PlanMyTrip functions as a middleman, linking travelers with airlines, hotels, and transport companies. Through its website and app, users can effortlessly search, compare, and book various travel services. It streamlines communication and transactions between users and service providers, while offering additional features like itinerary planning and travel guides to enhance the overall travel experience. Essentially, PlanMyTrip serves as a convenient bridge between travelers and the travel industry, providing ease, choice, and accessibility in travel planning and booking.

2.2 Product Functionality

- Users should be able to search, compare, and book flights based on their preferences, including dates, times, and airlines.
- The system must allow users to find, view details, and book accommodations such as hotels, ensuring a seamless booking process.
- Provide functionality for users to plan their entire trip by integrating flights, hotels, and other travel-related services into a comprehensive itinerary.
- Implement a secure payment gateway to facilitate transactions and provide users with instant confirmation for their booked services.

2.3 Users and Characteristics

- **Frequent Travelers:** These users are characterized by their high frequency of using the platform for booking flights and accommodations. They often seek quick and efficient navigation, personalized recommendations, and loyalty rewards.
- **Occasional Travelers:** This group consists of users who may not travel frequently. They might require more guidance in navigating the platform, personalized suggestions based on their preferences, and user-friendly interfaces to facilitate easy booking.

2.4 Operating Environment

- **Web-based Platform:** The software will primarily operate on a web-based platform, accessible through popular web browsers such as Google Chrome, Mozilla Firefox, and Safari. The system should be compatible with both desktop and mobile devices, ensuring a responsive design for seamless user experience across various screen sizes.
- **Operating System Compatibility:** The application should be designed to operate on major operating systems, including Windows, macOS, and Linux for desktop users.



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Additionally, it should be compatible with popular mobile operating systems such as Android and iOS, enabling users to access MakeMyTrip services on a variety of devices.

2.5 Design and Implementation Constraints

- Developers must adhere to industry-standard security protocols and compliance regulations when integrating payment gateways to ensure secure and reliable financial transactions within the MakeMyTrip platform.
- The system's compatibility with various airlines, hotels, and travel service providers may be constrained by the availability and reliability of third-party APIs, influencing the development team's choices in terms of data integration and real-time updates.
- If the software includes a mobile application, developers must follow guidelines set by app distribution platforms (such as Google Play Store and Apple App Store) to meet their respective standards and approval processes.
- Given the sensitive nature of travel-related information, developers must implement robust security measures to comply with data protection laws and regulations, ensuring the confidentiality and integrity of user data.

2.6 User Documentation

- Comprehensive user manuals will be provided, covering topics such as account registration, booking processes, itinerary management, and troubleshooting common issues.
- The software will feature an integrated online help system and tutorials accessible within the platform, offering step-by-step guidance on utilizing specific features and optimizing the user experience.
- To enhance user understanding, video guides will be made available, demonstrating key functionalities and providing visual assistance for tasks like booking, managing reservations, and utilizing promotional offers.

2.7 Assumptions and Dependencies

- It is assumed that third-party APIs from airlines, hotels, and other travel services will be available and accessible for integration into the MakeMyTrip platform.
- The successful operation of the software relies on users having stable internet connectivity to browse, book, and manage travel services through the web and mobile interfaces.
- The assumption is made that customer-provided data during registration and booking is accurate, as inaccuracies could impact reservation details and other personalized features.



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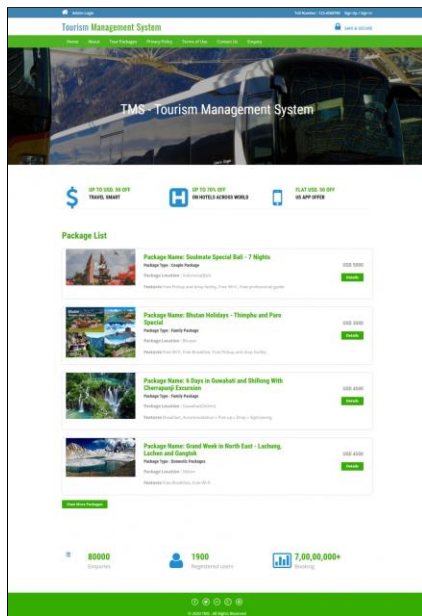
- The project assumes that the selected third-party payment gateways will consistently provide reliable services, ensuring secure and smooth financial transactions.
- It is assumed that users will comply with privacy regulations when sharing personal information, and the software is designed under the assumption that legal and ethical standards will be followed.
- The development assumes that major mobile operating systems (Android and iOS) will continue to support the required features and functionalities, with no significant restrictions or changes that could impact the mobile application's performance.

3 Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

Homepage: The homepage serves as the initial landing page upon accessing the platform. It features a clean layout with a search bar for flights, hotels, and other services. Prominent buttons or tabs for navigation to key sections like Flight Booking, Hotel Reservation, and My Bookings.



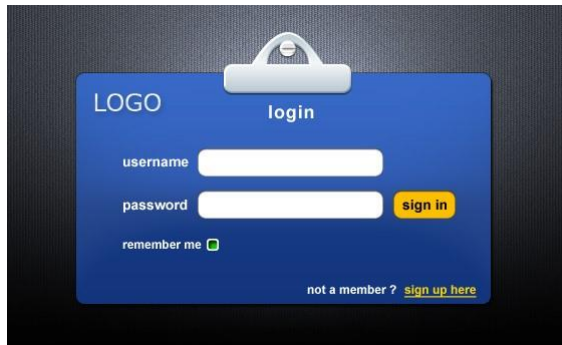
Search and Booking Pages: The search interface includes input fields for travel details, such as destination, dates, and preferences, providing users with filtered results based on their



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criteria. Booking pages feature clear and intuitive layouts with options for seat selection, room preferences, and any additional services, ensuring a seamless booking experience.

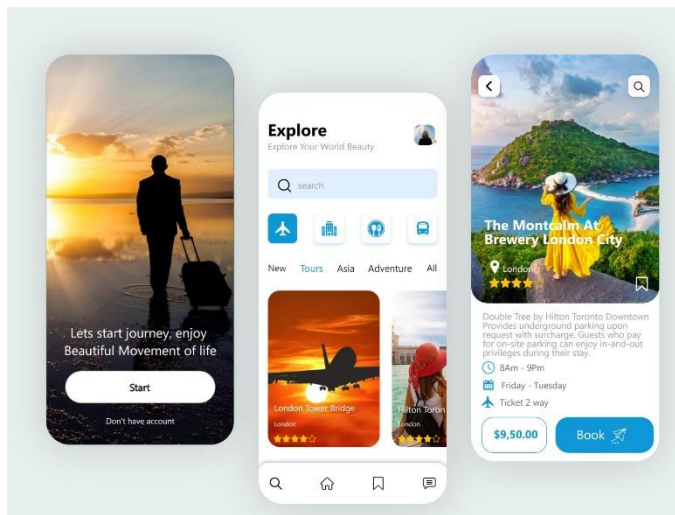
User Account Dashboard: A personalized dashboard accessible upon user login, displaying current bookings, travel history, loyalty rewards, and personalized recommendations. Intuitive navigation for users to manage account settings, payment methods, and notification preferences.



Itinerary Management: A dedicated interface allowing users to view and manage their trip itineraries. It includes details on flights, hotels, and other booked services, with options to modify or cancel reservations.

Payment Gateway Integration: A secure and user-friendly interface for payment processing during the booking and checkout process, following standard security protocols and offering multiple payment options.

Mobile App Interface: The mobile application interface mirrors key features of the web platform, with a responsive design for various screen sizes. Mobile interfaces maintain consistent navigation patterns and visual elements for a unified user experience.



3.1.2 Hardware Interfaces

Web-Based Interface: The software interfaces with standard web browsers (e.g., Chrome, Firefox) on desktop and mobile devices, utilizing HTML, CSS, and JavaScript for rendering and user interaction. It supports a range of hardware configurations, including varying screen sizes and input methods.

Mobile Interface: The mobile application interfaces with the underlying hardware of smartphones and tablets, leveraging platform-specific technologies (e.g., Android Studio for Android, Xcode for iOS) for optimal performance and user experience.

Payment Gateway Integration: The software interacts with secure payment gateways, utilizing encryption protocols for data transmission between the platform and financial institutions, ensuring the confidentiality and integrity of payment transactions.

Third-Party APIs: Interaction with third-party APIs involves data exchange between the software and external systems, following industry-standard communication protocols (e.g., RESTful APIs) for seamless integration of services like airline and hotel booking systems within the MakeMyTrip platform.

3.1.3 Software Interfaces

Browsers:

Supported Web Browsers: The software product is designed to interface with popular web browsers such as Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge. The HTML, CSS, and JavaScript components are optimized for compatibility and consistent performance across these browsers.



Operating Systems:

Desktop Operating Systems: The platform is compatible with major desktop operating systems, including Windows, macOS, and Linux. Users can access the MakeMyTrip website through these systems, ensuring a broad user base.

Mobile Operating Systems: The mobile application is developed for both Android and iOS, utilizing Android Studio and Xcode, respectively. This ensures seamless interaction with the hardware and native user experiences on smartphones and tablets.

Tools and Libraries:

Development Tools: The software is developed using standard web development tools and libraries, including but not limited to Visual Studio Code, Sublime Text, and Git for version control. These tools contribute to efficient code development and collaboration among the development team.

Payment Gateway Integration: The software integrates with third-party payment gateways, such as PayPal, Stripe, and others, using their respective APIs. This allows secure and reliable financial transactions within the platform, enhancing the overall user experience.

Data and Communication:

RESTful APIs: The platform communicates with third-party services, such as airline and hotel booking systems, using RESTful APIs. This ensures a standardized and efficient data exchange mechanism, enabling real-time updates on availability, pricing, and booking details.

User Data Exchange: User data, such as account information and booking details, is securely communicated between the client-side (web browsers and mobile applications) and the server-side using encrypted connections. This safeguards sensitive information and maintains the integrity of user data.

3.1.4 Communications Interfaces

- Communication between the user's web browser or mobile app and the MakeMyTrip server will be secured using HTTPS (HTTP Secure) to encrypt data during transit. This ensures the confidentiality and integrity of user information, including personal details and payment transactions.
- The software relies on RESTful communication protocols to interact with third-party services, such as airline and hotel booking systems. This standardizes data exchange, allowing for seamless integration of external services into the MakeMyTrip platform, ensuring real-time updates and accurate information for users.



- The system will utilize email communication to send important notifications to users, such as booking confirmations, itinerary updates, and promotional offers.

3.2 Functional Requirements

Flight Booking: Users can enter travel details, such as destination and dates, to search for available flights. The system must provide a list of options, allowing users to compare prices, airlines, and flight details before making a booking.

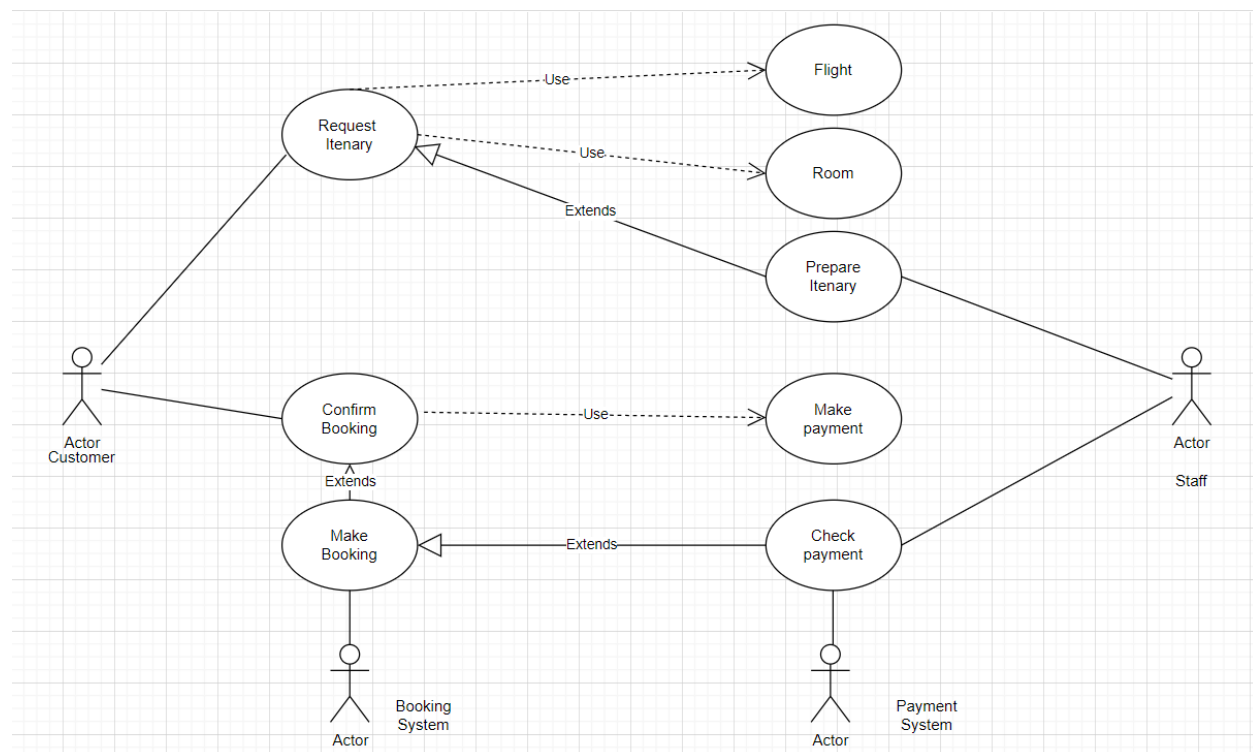
Hotel Reservation: The platform enables users to browse and select hotels based on their preferences. Users can view details, including room types and amenities, and proceed to book accommodations seamlessly within the system.

Itinerary Management: Once booked, users can access a dedicated interface to view and manage their trip itineraries. This includes details on flights, hotels, and any additional services, with options to modify or cancel reservations.

User Account Management: The system allows users to register accounts, providing necessary information for personalized services. Users can also manage account settings, including personal details, communication preferences, and saved payment methods.

3.3 Behaviour Requirements

3.3.1 Use Case View





Actors:

Guest: A user who is not logged in.

Registered User: A user with an authenticated account on the platform.

Administrator: System administrator with special privileges.

Use Cases:

Search and Compare Flights: Both Guest and Registered User can initiate this use case to find and compare available flights.

Book Flight: Registered User can book a selected flight.

Browse and Reserve Accommodations: Both Guest and Registered User can search for hotels and make reservations.

Manage Trip Itineraries: Registered User can view and modify their trip itineraries, including flights and hotel reservations.

User Registration and Account Management: Guest can register for an account, and Registered User can manage their account settings.

Administrator Management: The Administrator can perform system maintenance, manage user accounts, and handle reported issues.

4 Other Non-functional Requirements

4.1 Performance Requirements

- The system should respond to flight search requests within 3 seconds, ensuring a quick and efficient user experience when users are searching for available flights.
- The time taken to confirm a booking, including payment processing and reservation updates, should not exceed 10 seconds to provide users with prompt feedback and confirmation of their reservations.
- The system should support a minimum of 1000 concurrent users during peak hours, ensuring scalability to handle high traffic periods without degradation in performance.
- The system should load and display user itineraries within 5 seconds, facilitating seamless access to trip details and minimizing user wait times.



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- The mobile application should have a maximum app launch time of 4 seconds and provide responsive interactions to enhance the user experience on various mobile devices.
- The integration with payment gateways should have a response time of 5 seconds or less, ensuring swift and secure financial transactions during the booking process.
- The search index for flights and hotels should be updated at least once every hour to ensure the availability and accuracy of real-time information for users searching and booking services on the platform.

4.2 Safety and Security Requirements

Safety Requirements:

Data Privacy Compliance: The system must adhere to international data privacy regulations such as GDPR and local data protection laws to ensure the secure handling of user information and prevent unauthorized access or data breaches.

Secure Payment Transactions: The platform must implement robust encryption measures during payment transactions to safeguard users' financial information and prevent unauthorized access to sensitive data.

Emergency Response Information: In case of unexpected system failures or disruptions, the platform should provide clear and accessible emergency response information, guiding users on appropriate actions to prevent confusion or panic.

Security Requirements:

User Authentication: Implement a secure user authentication mechanism, requiring strong passwords and supporting multi-factor authentication to enhance user account security.

Secure API Communication: Ensure secure communication between the platform and third-party APIs, utilizing secure protocols (e.g., HTTPS) to protect data exchanged during flight and hotel booking processes.

Monitoring and Intrusion Detection: Implement real-time monitoring and intrusion detection systems to identify and respond promptly to any suspicious activities or security threats, safeguarding the platform against potential cyberattacks.

4.3 Software Quality Attributes

Reliability:



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Error Handling: The system shall be capable of handling errors gracefully, providing clear and informative error messages to users, ensuring reliability and minimizing user frustration.

System Uptime: The platform should aim for a minimum of 99.9% uptime, ensuring high availability to users for accessing and utilizing travel-related services without significant disruptions.

Usability:

User Interface Consistency: The user interface across web and mobile platforms shall maintain consistency in design, navigation, and features to enhance user usability and experience.

Intuitive Booking Process: The booking process shall be designed with user-friendliness in mind, minimizing the steps required for users to complete a reservation, thereby improving the overall usability of the platform.

Maintainability:

Modular Code Structure: The software development shall adhere to a modular code structure, promoting maintainability by allowing developers to update or add features without causing extensive system disruptions.

Documentation: Comprehensive and up-to-date documentation for the codebase and APIs shall be maintained to facilitate ease of understanding and future development, ensuring the maintainability of the software.

Portability:

Cross-Browser Compatibility: The web-based interface shall be designed to be compatible with major web browsers (Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge), ensuring portability across diverse user environments.

Mobile App Compatibility: The mobile application shall be developed to run seamlessly on both Android and iOS platforms, providing a portable solution for users across various mobile devices.

Testability:

Automated Testing Suite: The development process shall include the implementation of an automated testing suite to ensure thorough and efficient testing of functionalities, contributing to the overall testability of the system.

User Feedback Integration: The system shall incorporate mechanisms for collecting user feedback on usability and performance, facilitating ongoing testing and improvement based on real user experiences.



5 Other Requirements

- The system should use a scalable and high-performance database system to handle the growing volume of user data, bookings, and transactions efficiently.
- The user interface shall support multiple languages and currencies, allowing users from various regions to access and utilize the platform in their preferred language and currency.
- The system must comply with international and local laws and regulations related to the travel industry, ensuring legal adherence in areas such as data protection, user privacy, and financial transactions.
- Code components and modules with potential for reuse in future projects should be well-documented and organized in a repository to encourage code reuse and knowledge transfer within the development team.

Appendix A – Data Dictionary

Field Name	Data Type	Field Size for display	Description	Example



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User_name	Text	15	Name of each customer	Lord Voldemort
Age	Integer	3	Age of the customer	75
Country_of_origin	Text	20	Country to which the customer belongs	India
Locations_visited	Text	50	Locations visited	Hogwarts
List_of_tourists	List	500	List of tourists	{ Harry Potter, Hermione Granger, Ron Weasley}
Peak_time	Text	50	Peak time of attraction	May

Appendix B - Group Log

DATE	ACTORS	WORK DONE
14/02/2024	Yash, Aryan, Chrisil	Analysed Requirements
14/02/2024	Yash, Aryan, Chrisil	Prepared SRS