Software Requirements Specification (SRS)

For DiscoverDeck

Version 1.0

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Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Title	04.10.23	none	1.0
Short description	04.10.23		
	27.10.23	new customized system added	
SRS	23.10.23		
	24.10.23	Database design added	

	25.10.23	User case diagram , class diagram added	
	27.10.23	change in class diagram added	
Figma Outline	.11.23		
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1. Introduction

1.1 Purpose

The purpose of this document is to provide a detailed description of the requirements for the DiscoverDeck platform, a travel booking platform that allows users to book both hotels and air tickets as bundled packages, special deals for off-season travel, and customized travel packages.

1.2 Scope

The DiscoverDeck platform aims to simplify the travel booking process by providing users with a comprehensive solution to plan, customize, and book their trips conveniently and cost-effectively.

1.3 Definitions, Acronyms, and Abbreviations

SRS: Software Requirements Specification
UI: User Interface
UX: User Experience

1.4 Overview

DiscoverDeck Overview

DiscoverDeck is a state-of-the-art travel booking platform designed for the modern traveler. By integrating both hotel accommodations and flight bookings, it offers a streamlined approach to planning and executing travel journeys. Emphasizing convenience, affordability, and personalization, DiscoverDeck seeks to revolutionize the way people plan their trips.

Key Highlights:
Bundled Packages : Offers combined hotel and air ticket bookings, simplifying the process and often leading to cost savings.

Customization Options : Provides travelers the flexibility to tailor their experiences based on individual preferences and budgets.

Off-Season Deals : Curates special offers for those traveling during less popular times, ensuring affordability without compromising the experience.

User-Centric Design : With features like user profiles, itinerary planning, and real-time notifications, the platform is built around the needs and preferences of its users.

Destination Insights : A comprehensive database on various destinations assists travelers in making informed choices, backed by interactive user reviews.

Global Reach : Multilingual and multi-currency support ensures accessibility for a worldwide audience.

Mobile Optimization : With a design that's friendly for mobile users, DiscoverDeck caters to the on-the-go traveler.

Data Security : Prioritizes the safety and privacy of user data with top-tier security measures.

In essence, DiscoverDeck positions itself as a holistic solution for all travel needs, aiming to be the preferred choice for travelers worldwide.

2. Overall Description

2.1 Product Perspective

DiscoverDeck is an independent travel booking system that integrates with various hotel and airline databases to provide users with real-time information and booking capabilities.

2.2 Product Functions

- User account creation and profile management
- Search for destinations, hotels, and flights
- Special deals and off-season offers
- Customization of travel packages
- Pricing and budget control
- Booking and payment processing
- User reviews and ratings
- Itinerary planning
- Multilingual and multi-currency support

2.3 User Characteristics

The primary users of DiscoverDeck will be individuals looking to plan and book travel, including accommodations and flights.

2.4 Constraints

- Internet dependency for real-time data fetching and booking
- Dependency on external APIs for hotel and flight information

2.5 Assumptions and Dependencies

- Users will have access to the internet.
- External APIs for hotels and flights are reliable and up-to-date.

3. System Features and Requirements

3.1 Functional Requirements

1. User Account Management:
   Feature Description: Users should be able to register, log in, log out, and manage their profiles.
   Inputs: User details including name, email, and password.
   Outputs: User account creation, update, or login session.
   Process: The system will validate user inputs, create/update the user profile, and manage user sessions.

2. Destination Search and Information:
   Feature Description: Users should be able to search for destinations and view detailed information including descriptions, attractions, and off-season details.
   Inputs: Search query or selection from a list.
   Outputs: A list of destinations or detailed information about a selected destination.
   Process: The system will retrieve and display destination information from the database.

3. Hotel and Flight Booking :
   Feature Description: Users should be able to search, select, and book hotels and flights.
   Inputs: Travel dates, destination, and preferences.
   Outputs: A list of available hotels and flights, booking confirmation.
   Process: The system will integrate with hotel and airline databases to retrieve and display availability, then process bookings and payments.

4. Special Deals and Offers:
   Feature Description: The system should display special deals and off-season offers.
   Inputs: User preferences, current date.
   Outputs: List of special deals and offers.
   Process: The system will analyze user preferences, date, and available deals to display relevant offers.

5. Customizable Travel Packages:
   Feature Description: Users should be able to customize their travel packages.
   Inputs: Destination, hotel, flight, and budget preferences.
   Outputs: A custom travel package within budget.
   Process: The system will allow users to select their preferences and create a package that fits their budget.

6. Review and Ratings:
   Feature Description: Users can leave reviews and ratings for hotels and flights.
   Inputs: User reviews and ratings.
   Outputs: Published reviews and ratings.
   Process: The system will collect user input and display it on the relevant hotel or flight page.

7. Itinerary Management:
   Feature Description: Users can create, view, and manage their travel itineraries.
   Inputs: Travel details, activities, and schedule.
   Outputs: A user-specific travel itinerary.
   Process: The system will assist users in organizing their travel plans and display them in an itinerary format.

8. Notifications and Alerts:
   Feature Description: Users receive real-time updates about their bookings, deals, and travel-related information.
   Inputs: User actions, system updates.
   Outputs: Notifications and alerts to users.
   Process: The system will monitor user activities and system updates to push relevant notifications and alerts to the user.

9. Payment and Booking Confirmation:
   Feature Description: Secure payment processing and booking confirmation.
   Inputs: Payment details.
   Outputs: Payment confirmation, booking confirmation.
   Process: The system will integrate with a payment gateway to process payments and confirm bookings.

10. Customer Support and Helpdesk:
   Feature Description: A system for users to get assistance with inquiries and issues.
   Inputs: User inquiries and issues.
   Outputs: Support responses and solutions.
   Process: The system will provide a platform for users to submit their inquiries and issues, which will be addressed by the customer support team.

3.2 Non-Functional Requirements

1. Performance:
   -The system should be optimized for fast response times, aiming for a maximum of 2 seconds to load any given page.
   - It should be able to handle a minimum of 1000 simultaneous users.

2. Security:
   - All user data, including personal information and payment details, must be securely encrypted.
   - The system should implement strong authentication and authorization mechanisms.

3. Availability:
   - The system should be available 99.9% of the time, with maintenance and updates scheduled during off-peak hours.

4. Scalability:
   - The platform should be able to scale to accommodate growing user traffic, especially during peak travel seasons.

5. Usability:
   - The user interface should be intuitive and user-friendly, optimized for both desktop and mobile devices.

6. Maintainability:
   - The system should be easy to maintain and update, with clear documentation and modular design.

7. Compatibility:
   - The system should be compatible with major browsers and devices.

8. Data Integrity and Backups:
   - The system should ensure data integrity and provide regular backups to prevent data loss.

9. Legal Compliance:
   - The platform must comply with all relevant laws and regulations, including data protection and travel industry regulations.

10. User Support and Documentation:
    - Comprehensive user support and documentation should be provided to assist users in utilizing the platform effectively.

These requirements are essential for ensuring that the DiscoverDeck platform operates effectively, securely, and to the satisfaction of its users. By addressing both the functional and non-functional aspects, the platform aims to provide a comprehensive and user-friendly travel booking experience.

3.3 System Interfaces

- Database for storing user profiles, destination information, and bookings
- External APIs for fetching hotel and flight information

3.4 User Interfaces

- Responsive web interface
- Mobile application (iOS and Android)

3.5 Hardware Interfaces

- Web servers
- Database servers

3.6 Software Interfaces

- Web browsers (Chrome, Firefox, Safari, etc.)
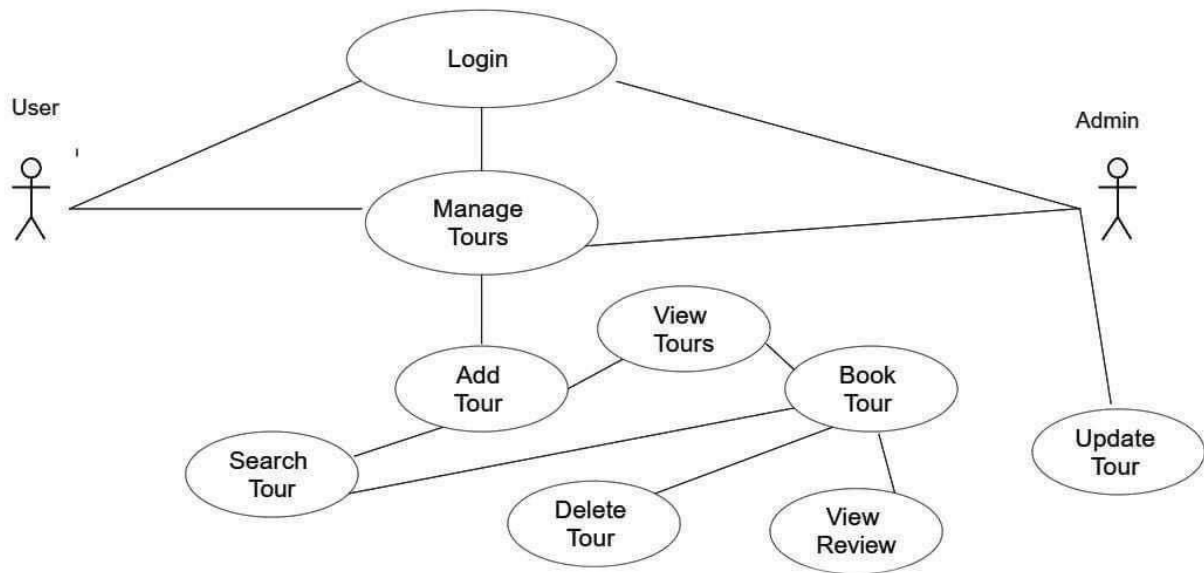- Mobile operating systems (iOS, Android)

3.7 Communications Interfaces

- HTTPS for secure communication
- RESTful APIs for data exchange

3.8 Operations

- 24/7 availability
- Regular updates and maintenance

4. System Figure : User Case Diagram

5. Database Design

The database design for DiscoverDeck is crucial for ensuring efficient data storage, retrieval, and management, as it underpins the functionality of the entire platform. Below is an elaboration on the primary tables, their attributes, and the relationships between them.

1. Users Table:
  - Attributes: UserID (PK), Name, Email, Password, Contact_Details, Preferences, Created_At, Updated_At

 [Note: PK - Primary Key , FK - Foreign Key
&
 In the context of the Database Design for DiscoverDeck, "At" in "Created_At" and "Updated_At" refers to timestamps representing when a record in the database was created and last updated, respectively. These fields are essential for tracking changes, maintaining data integrity, and ensuring that the application can display the most current and accurate information to users.

Created_At: This is a timestamp that gets automatically generated when a new record is added to the database. It records the exact date and time when the record was created.

Updated_At: This is another timestamp that gets updated every time any changes are made to a record in the database. It helps to track when the last modification was made to the data.

Incorporating these fields in the database tables is a best practice as it helps administrators and developers troubleshoot issues, audit changes, and maintain a healthy and reliable database.
]

  - Description: Stores information about registered users.

2. Destinations Table:
   - Attributes: DestinationID (PK), Name, Description, Attractions, Off_Season_Info, Created_At, Updated_At
   - Description: Contains details of various travel destinations.

3. Hotels Table:
   - Attributes: HotelID (PK), Name, Price_Per_Night, Amenities, Rating, Created_At, Updated_At
   - Description: Stores information on accommodations and their amenities.

4. Flights Table:
   - Attributes: FlightID (PK), Airline, Departure_Date, Arrival_Date, Price, Created_At, Updated_At
   - Description: Holds data related to flight schedules and pricing.

5. Packages Table:
   - Attributes: PackageID (PK), UserID (FK), DestinationID (FK), HotelID (FK), FlightID (FK), Total_Price, Status, Created_At, Updated_At
   - Description: Records the travel packages booked by users, linking to respective hotels, flights, and destinations.

6. Reviews Table:
   - Attributes:ReviewID (PK), UserID (FK), HotelID (FK), FlightID (FK), Rating, Comment, Created_At, Updated_At
   - Description: Captures user reviews and ratings for hotels and flights.

7. Bookings Table:
   - Attributes: BookingID (PK), UserID (FK), PackageID (FK), Payment_Details, Status, Created_At, Updated_At
   - Description: Manages the booking transactions and their statuses.

8. Special_Deals Table:
   - Attributes:DealID (PK), DestinationID (FK), Description, Discount_Rate, Expiry_Date, Created_At, Updated_At
   - Description: Holds special deals and offers related to specific destinations.

9. Itineraries Table:
   - Attributes:ItineraryID (PK), UserID (FK), PackageID (FK), Activities, Schedule, Created_At, Updated_At
   - Description: Stores users' travel itineraries, activities, and schedules.

[Note: The "Itineraries" table in the DiscoverDeck database is designed to store and manage the travel plans and schedules of users. Each record in this table represents a specific travel itinerary associated with a particular user and travel package.

ItineraryID: This is the primary key (PK) of the "Itineraries" table. It is a unique identifier for each travel itinerary stored in the table, ensuring that every itinerary can be distinctly and efficiently accessed and managed.

In brief, the "Itineraries" table holds the detailed schedules and activity plans for users' trips, with "ItineraryID" serving as the unique identifier for each itinerary record.
]

Relationships:
- Users – Packages: One-to-Many (One user can book multiple packages)
- Destinations – Packages: One-to-Many (One destination can be part of multiple packages)
- Hotels – Packages: One-to-Many (One hotel can be part of multiple packages)
- Flights – Packages: One-to-Many (One flight can be part of multiple packages)
- Users – Reviews: One-to-Many (One user can write multiple reviews)
- Hotels – Reviews: One-to-Many (One hotel can have multiple reviews)
- Flights – Reviews: One-to-Many (One flight can have multiple reviews)
- Destinations – Special_Deals: One-to-Many (One destination can have multiple special deals)
- Users – Bookings: One-to-Many (One user can have multiple bookings)
- Packages – Bookings: One-to-One (One package corresponds to one booking)
- Users – Itineraries: One-to-Many (One user can have multiple itineraries)
- Packages – Itineraries: One-to-One (One package corresponds to one itinerary)

This database design ensures that all necessary information is stored efficiently, with clear relationships between different entities, facilitating smooth and fast data retrieval for an enhanced user experience on DiscoverDeck.

6. Other Requirements
6.1 Appendix A:
Glossary for DiscoverDeck App

1. Bundled Package : A travel package that combines multiple services, such as hotel bookings and flight reservations, into one unified deal.

2. Customization : The process of tailoring a travel package to fit a user's specific needs and preferences, including their choice of destination, hotel, and flight.

3. Destination : The place to which someone is going or where something is being sent.

4. Off-season : A period of the year when a particular travel destination experiences fewer tourists, often due to weather conditions or other seasonal factors.

5. Itinerary : A detailed plan or route of a journey, indicating the sequence and schedule of places to be visited.

6. User Profile : An account feature that contains personal and travel preference information of a user.

7. Special Deals : Exclusive offers provided to users, often involving discounted prices or additional perks.

8. Payment Gateway : A merchant service that processes credit card payments for online and traditional brick and mortar stores.

9. Authentication : The process of verifying the identity of a user who is trying to access the system.

10. Airline System : A digital platform used by airlines to manage and track flights, reservations, and other related operations.

11. Hotel Database : An extensive collection of information about hotels, including their rates, availability, amenities, and customer reviews.

12. GPS (Global Positioning System) : A system used to determine one's precise location and provide navigational assistance.

13. Multi-Currency Support : A feature that allows users to conduct transactions in multiple currencies, based on their preference or location.

14. Multilingual : Supporting multiple languages, especially in terms of user interface and user experience.

15. Stakeholder : Any individual, group, or organization that has an interest in or can affect or be affected by the objectives or actions of a project.

16. Compliance :Adherence to laws, regulations, guidelines, and specifications related to the app's business operations.

17. Data Encryption : The process of converting data into a code to prevent unauthorized access.

18. User Interface (UI) :The space where interactions between users and the app occur.

19. User Experience (UX) : A person's emotions and attitudes about using a particular product, system, or service.

20. Agile Methodology : A project management and product development approach that prioritizes flexibility, collaboration, and customer feedback.

21. Scrum :A subset of Agile that organizes work into cycles called Sprints, typically lasting two weeks.

22. Sprint : A set period during which specific work has to be completed and made ready for review.

6.3 Appendix C

To Be Determined List for DiscoverDeck App

1. Finalized UI/UX Design : The complete layout and user experience design is yet to be finalized, which will be based on stakeholder feedback and user testing.

2. Pricing Structure : The cost model for using the app, whether subscription-based, one-time fee, or freemium, is still under discussion.

3. Third-party Integrations : Decisions regarding integration with other platforms, services, or tools are pending.

4. Platform Compatibility : Final list of devices and operating systems that the app will be compatible with.

5. Specific Hotel Partnerships : While the app will feature numerous hotels, the exact partnerships and collaborations are still being negotiated.

6. User Data Storage Policy : The precise manner and duration for which user data will be stored are to be determined.

7. Marketing and Launch Strategy : The strategy for app promotion and its official launch date are not yet set.

8. Multilingual Support : The set of languages to be initially supported by the app, besides English, is still under consideration.

9. Customer Support Channels : Methods of customer support (chat, email, phone, etc.) are still being evaluated.

10. Payment Methods : Types of payments (credit card, PayPal, digital wallets, etc.) to be accepted by the app are still under discussion.

11. In-app Features : Some potential features like virtual tours, augmented reality experiences, and user-generated content are being considered but have not been finalized.

12. Beta Testing : Dates and the scope of the beta testing phase are yet to be determined.

13. Security Protocols : While basic security measures are in place, detailed protocols and layers of security are being reviewed.

14. Feedback Mechanism : How user feedback will be collected, evaluated, and acted upon is still under discussion.

15. Training and Documentation : The nature and extent of training materials and user manuals are yet to be decided.

16. Legal Considerations : Issues like data privacy regulations, terms of service, and licensing are being examined and are still open.

17. Analytics Tools : The exact tools and metrics for tracking user behavior and app performance are being considered.

18. Post-launch Updates : The frequency and nature of app updates after its initial launch are not yet defined.

The "To Be Determined" (TBD) list captures aspects of the project that are still open, need more information, or require decisions to be made. It's important to regularly revisit this list during the project lifecycle to ensure that all aspects are addressed before the app goes live.

(connected to 6.4 Legal and Regulatory Compliance) In developing DiscoverDeck exclusively for Bangladesh, it is crucial to adhere to the country-specific legal, regulatory, and compliance-related standards to ensure the platform operates within the legal framework, provides secure services, and maintains the trust of its users. Below are the additional requirements tailored for the Bangladeshi context:

6.4 Legal and Regulatory Compliance:
  - Data Protection and Privacy: Comply with the Bangladesh Data Protection Act, ensuring that user data is handled securely, and privacy is maintained. Users should have the ability to access, update, and request deletion of their personal data.

- Intellectual Property Rights: Ensure all content, including images, text, and other media, comply with Bangladeshi copyright laws, and any third-party content is properly licensed.

- Consumer Rights Protection: Abide by the Consumer Rights Protection Act of Bangladesh, providing clear and truthful information about travel packages, accommodations, and flights, and maintaining transparency in pricing and terms of service.

- Accessibility: Ensure the platform is accessible to individuals with disabilities, adhering to internationally recognized accessibility standards.

6.5 Security Requirements:

- Data Encryption: Implement strong encryption protocols for user data and transaction information to prevent unauthorized access.

- Secure Payment Processing: Ensure secure payment processing, particularly focusing on popular payment methods in Bangladesh, and comply with relevant financial regulations.

- Regular Security Audits: Conduct security audits regularly to identify and mitigate potential risks, ensuring the platform's integrity.

6.6 Backup and Disaster Recovery:

- Data Backup: Establish a robust data backup system, ensuring all critical data is backed up regularly to prevent loss due to unforeseen incidents.

- Disaster Recovery Plan: Implement a comprehensive disaster recovery plan to ensure quick service restoration in case of system failures or other emergencies.

6.7 Performance and Scalability:

- Local Server Hosting: Consider hosting servers locally in Bangladesh to ensure optimal performance and reduced latency for Bangladeshi users.

- Scalability: Ensure the platform is scalable to accommodate growth in user base and data volume, ensuring consistent performance.

6.8 Ethical and Social Considerations:

- Cultural Sensitivity: Ensure that content and services are culturally appropriate and respectful to the diverse population of Bangladesh.

- Environmental Responsibility: Promote eco-friendly travel options and contribute to sustainable tourism practices in Bangladesh.

6.9 Language and Localization:

- Bengali Language Support: Provide full support for Bengali, the official language of Bangladesh, ensuring that the platform is accessible and user-friendly for local users.

- Local Currency and Payment Methods: Support Bangladeshi Taka (BDT) and popular local payment methods to facilitate seamless transactions.

By addressing these requirements, DiscoverDeck aims to create a trustworthy, secure, and user-friendly platform that is fully tailored to the needs and legal standards of Bangladesh, ensuring a seamless and enjoyable travel planning experience for Bangladeshi users.

7. Supporting Information

[Additional information to support the requirements described in this document]

To supplement the requirements outlined in this document and provide further clarity on the DiscoverDeck platform's functionality and design, the following supporting information is provided:

7.1 Glossary and Terminology:
  - A comprehensive glossary of terms and abbreviations used throughout this document and the platform, ensuring all stakeholders have a clear understanding of the language and concepts used.

7.2 Assumptions and Dependencies:
  - A list of assumptions made during the requirements gathering process and dependencies that may affect the implementation and operation of the platform.

7.3 Data Dictionary:
  - Detailed descriptions of the data elements used in the system, including format, type, and any constraints, to ensure consistency across the platform.

7.4 User Personas and Scenarios:
  - Development of user personas representing the target audience of DiscoverDeck, accompanied by scenarios illustrating typical user interactions with the platform, helping to contextualize the requirements.

7.5 Technical Constraints and Limitations:
  - A description of any technical constraints or limitations that may impact the design or functionality of the DiscoverDeck platform.

7.6 Standards and Guidelines:
  - A list of industry standards, guidelines, and best practices that the platform will adhere to, ensuring quality, performance, and security.

7.7 Security Protocols:
  - Detailed description of the security measures and protocols in place to protect user data and ensure the integrity of the platform.

7.8 Mockups and Prototypes:

- Provision of visual mockups or prototypes of the user interface, helping stakeholders visualize the final product and ensure alignment with the requirements.

7.9 Change Management and Version Control:
  - A description of the procedures in place for managing changes to the requirements document, ensuring all stakeholders are aware of updates and modifications.

7.10 Risk Management:
  - Identification of potential risks associated with the platform's development and operation, along with strategies for mitigation.

7.11 Quality Assurance and Testing:
  - An outline of the quality assurance practices and testing strategies that will be employed to ensure the DiscoverDeck platform meets all requirements and operates reliably.

7.12 Training and User Support:
  - Details on any training programs or user support services that will be provided to help users navigate and utilize the DiscoverDeck platform effectively.

7.13 Legal and Regulatory Documentation:
  - Copies or references to any legal or regulatory documents that have been cited in the requirements, ensuring full transparency and access to source material.

7.14 Contact Information:
  - A list of contact information for all stakeholders and team members involved in the DiscoverDeck project, facilitating easy communication and collaboration.

By providing this supporting information, stakeholders and team members involved in the DiscoverDeck project are equipped with a comprehensive understanding of the platform, its requirements, and the context in which it operates, contributing to a smooth development process and successful implementation.

This Software Requirements Specification provides a thorough description of all the functions and specifications of the DiscoverDeck platform. It serves as a guide for the development team and a point of reference for all stakeholders involved in the project.