Travel Solving

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PHASE 1

1 Introduction

In today's era of advanced technology, applications that provide information about tourist attractions have become indispensable tools for travelers. These programs simplify the discovery of new destinations and assist in planning trips with ease and convenience. By offering comprehensive data on tourist spots, hotels, restaurants, and available activities, they allow users to make well-informed decisions based on the reviews, experiences, and ratings shared by other travelers. This ability to access collective wisdom from previous visitors reduces uncertainty and enhances the chances of choosing the most suitable options, ensuring that users enjoy a smooth and rewarding travel experience.

Among these applications is Travel Solving, a cutting-edge platform that stands out for its focus on providing innovative and personalized solutions to modern-day travelers. The app aims to streamline the process of finding and selecting travel options that align with users' specific interests, preferences, and budgets. Whether users are searching for adventurous activities, cultural experiences, or peaceful retreats, Travel Solving offers tailored recommendations that make the trip-planning process more enjoyable and less stressful.

The Travel Solving app is not just a guide for discovering destinations, but also serves as a comprehensive travel management tool. It provides users with a variety of features to assist in choosing destinations, planning their budget, organizing activities, and even tracking the trip in real-time. The app is designed to be an all-in-one solution, simplifying everything from flight bookings to accommodation reservations and activity planning, making it easier for users to manage all aspects of their trip from one platform.

What sets Travel Solving apart is its integration of real-time data and smart recommendations. The app not only offers detailed information about attractions and accommodations but also provides real-time updates on transportation schedules, weather conditions, and local events. This ensures that travelers can adapt their plans to any changes during their trip, whether they need to modify their itinerary due to unforeseen delays or find alternate activities based on weather conditions.

Additionally, Travel Solving enhances the social aspect of travel by connecting users with a community of fellow travelers. Users can share their travel experiences, post reviews, and exchange tips about destinations, hotels, and restaurants. This feature enables travelers to benefit from the shared knowledge and recommendations of others, making their trips more enriching and informed.

In essence, Travel Solving is more than just a tourist guide; it is a personalized travel companion that caters to each traveler's unique needs, offering intelligent solutions that simplify planning, enhance enjoyment, and ensure that every journey is memorable and hassle-free. Whether you are a solo adventurer, a family traveler, or someone looking for a luxurious getaway, Travel Solving provides the tools and information you need to craft the perfect trip.

2 Purpose of the Application

Travel Solving is an innovative travel application designed to simplify and enrich the travel experience for users by providing them with personalized, real-time information related to various sectors of travel, including entertainment, accommodation, transportation, and more.

The primary goal of the app is to offer comprehensive support for all stages of the trip, from planning and budgeting to execution and experience tracking.

By utilizing advanced algorithms and user data, the app tailors suggestions for destinations, hotels, restaurants, and activities based on personal preferences such as budget, interests, and travel history. This ensures that travelers can discover options that suit their unique needs and desires, enhancing their overall satisfaction.

Furthermore, Travel Solving goes beyond just providing destination information. It includes features like:

- Real-time updates on flight schedules, weather conditions, and local events, allowing users to make on-the-go adjustments to their plans.
- Trip Budgeting tools: The app helps users manage expenses by tracking costs across accommodations, meals, transportation, and activities. It also offers suggestions to stay within budget or maximize the value of their spending.
- Interactive itineraries: Travelers can create, modify, and share detailed itineraries, which sync across devices. This feature allows users to stay organized while exploring new locations.
- Social sharing and review integration: The app connects users with fellow travelers, enabling them to share experiences, reviews, and tips for specific attractions, hotels, and local eateries.

By incorporating these elements, Travel Solving not only improves trip efficiency but also enhances the personalization of the travel experience, catering to both novice and experienced travelers. Ultimately, it serves as a one-stop solution for exploring new destinations, managing trips, and making informed decisions while traveling..

Figure 1: User Experience Flow

3 Survey for Travel Solving Application

Based on a survey of user needs, several requirements aligned with their demands were identified.

- Searching for flights
- Booking hotels and restaurants in advance
- Suggesting recreational activities
- Providing real-time crowd status at various destinations

Existing Programs

Booking

Airbnb

Yelp

Criterion	***Travel Solving***	***Airbnb***	***Booking***	***Yelp***
Main Focus	Comprehensive trip customization (hotels, restaurants, activities)	Rental and leasing of apartments and homes	Hotel and flight bookings	Reviews of restaurants and local services
Customization	Personalized recommendations based on user interests	Offers accommodation options based on location and budget	Booking options without customization	Reviews based on area and ratings
Experience Sharing	Allows users to share their experiences	No strong focus on social sharing	Very limited in experience sharing	Allows sharing of reviews and ratings
Information Completeness	Comprehensive information on hotels, restaurants, and activities	Focuses only on accommodation	Focuses solely on bookings	Focuses on restaurant and service reviews
Social Aspect	Focuses on interaction among users	Not present	No social interaction	Available through reviews and comments
User Dependence	Relies on user reviews and contributions	Depends on users to rate accommodations	Depends on ratings but does not encourage social interaction	Heavily relies on user contributions
Disadvantages	Heavy reliance on users may lead to inaccurate information	Lacks information on recreational activities	Lacks social experience sharing	Lacks comprehensive information on accommodation and activities

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Figure 2: Survey Results

4 Unique Features of the App

Our app stands out from current applications by offering unique features that target user needs in a broader and more detailed way:

- Customizing travel plans based on the user's interests
- A social network for travelers
- Reviews based on specific activities
- Automatic suggestions based on user data
- Interaction with locals
- Pre-travel and during-travel services
- Automatic alerts and updates

PHASE 2

5 Functional Requirements

1. **User Registration:** Create an account by entering name, email, and password.
2. **Search Functionality:** A search box supporting multiple criteria and filters for specific preferences.
3. **Messaging Feature:** An option for users to send messages to the support team.
4. **Tourist Destination Information:** A comprehensive database of attractions, operating hours, and entry fees.
5. **Transportation Details:** Information on transportation options, schedules, and ticket prices.
6. **Safety and Security Information:** Details about safety measures and local laws.
7. **Map Integration:** Interactive maps to assist with navigation and directions.

6 Non-Functional Requirements

6.1 Reliability

The system shall be reliable. All information entered is subject to audit, verification, and validation.

6.2 Maintainability

The system shall include mechanisms for recording, monitoring, and reporting errors.

6.3 Security

The system shall have security measures to protect users' information and data.

6.4 Usability

The system should be easy to use, ensuring a clear understanding of its features through a simple user interface.

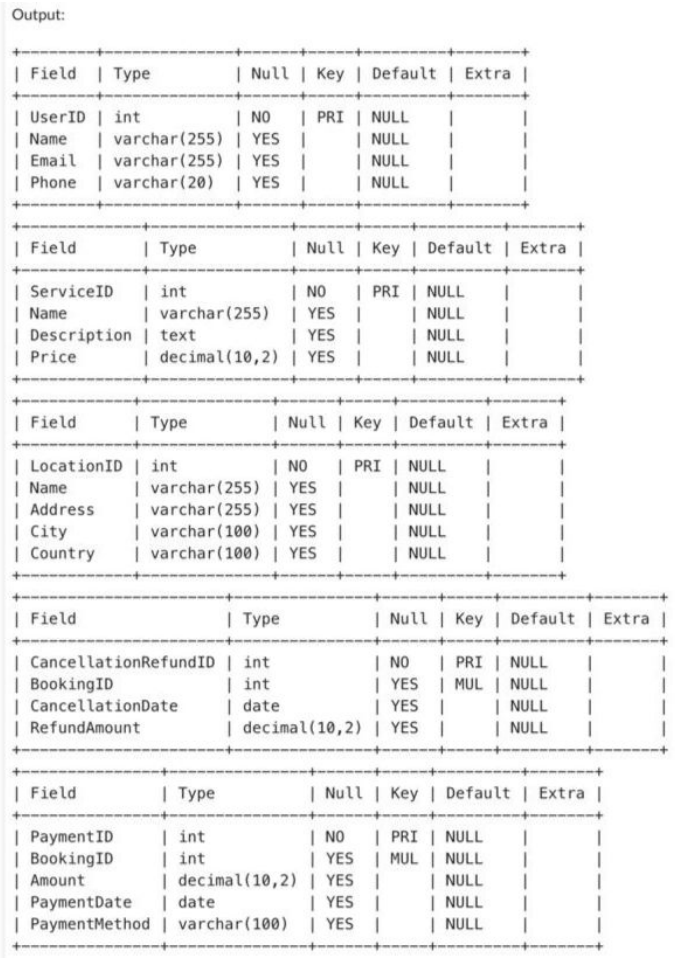
6.5 Scalability

The system should be scalable to allow users to add their experiences and reviews without complicating the process, while considering budgetary constraints. This can be achieved by implementing some database partitioning techniques, allowing the system to handle a larger volume of data efficiently.

PHASE 3

7 Databases

MySQL or PostgreSQL are used to store structured data such as user information. These types of databases are suitable because they support storing data in an organized way using tables, and they provide functions for querying, updating, and deleting data effectively.



Output:

Field	Type	Null	Key	Default	Extra
UserID	int	NO	PRI	NULL	
Name	varchar(255)	YES		NULL	
Email	varchar(255)	YES		NULL	
Phone	varchar(20)	YES		NULL	

Field	Type	Null	Key	Default	Extra
ServiceID	int	NO	PRI	NULL	
Name	varchar(255)	YES		NULL	
Description	text	YES		NULL	
Price	decimal(10,2)	YES		NULL	

Field	Type	Null	Key	Default	Extra
LocationID	int	NO	PRI	NULL	
Name	varchar(255)	YES		NULL	
Address	varchar(255)	YES		NULL	
City	varchar(100)	YES		NULL	
Country	varchar(100)	YES		NULL	

Field	Type	Null	Key	Default	Extra
CancellationRefundID	int	NO	PRI	NULL	
BookingID	int	YES	MUL	NULL	
CancellationDate	date	YES		NULL	
RefundAmount	decimal(10,2)	YES		NULL	

Field	Type	Null	Key	Default	Extra
PaymentID	int	NO	PRI	NULL	
BookingID	int	YES	MUL	NULL	
Amount	decimal(10,2)	YES		NULL	
PaymentDate	date	YES		NULL	
PaymentMethod	varchar(100)	YES		NULL	

Figure 3: Database Structure

8 ER Diagram for Travel Solving App

The relationships in the ER Diagram are as follows:

1. User and Travel Solving: The relationship is one-to-many (1:M), where a user can make multiple travel bookings.
2. Travel Solving and Services: The relationship is many-to-many (M:N), where a travel booking can include multiple services, and a service can be associated with multiple travel bookings.
3. Travel Solving and Payment: The relationship is one-to-one (1:1), where each travel booking has a single payment.
4. Travel Solving and Cancellation: The relationship is one-to-one (1:1), where each travel booking can have a single cancellation.
5. User and Reviews: The relationship is one-to-many (1:M), where a user can write multiple reviews.
6. Services and Reviews: The relationship is one-to-many (1:M), where a service can receive multiple reviews.
7. Services and Location: The relationship is many-to-one (M:1), where multiple services can be available at one location.

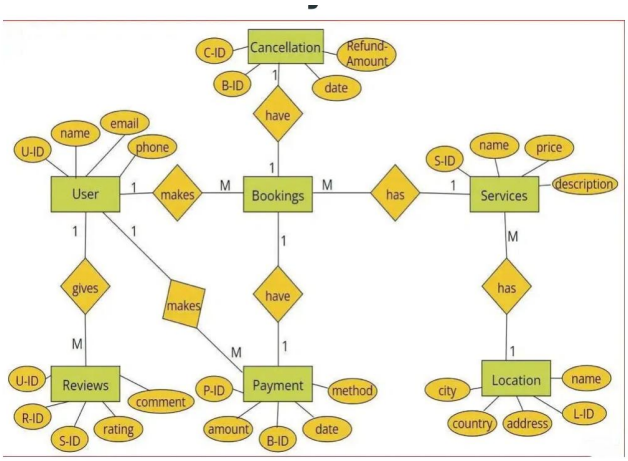


Figure 4: ER Diagram

9 Programming Languages

The application will utilize the following programming languages and technologies:

- HTML
- CSS
- JavaScript
- Python
- React.js

Figure 5: Programming Languages

10 Application interfaces

10.1 Login and Registration Interface

The login or new registration interface in the travel application represents the first step in user interaction. Here's a summary of the key elements:

- **Icon and Logo:** Reflect the identity of the application and enhance the brand.
- **Login:** For existing users through email or social media options like Google or Facebook.
- **Create Account:** Allows new users to register with information such as name and email address.
- **Graphics and Descriptive Texts:** Enhance the playful character and guide users easily.
- **Quick Interaction:** Facilitates swift and smooth navigation between login and registration options.

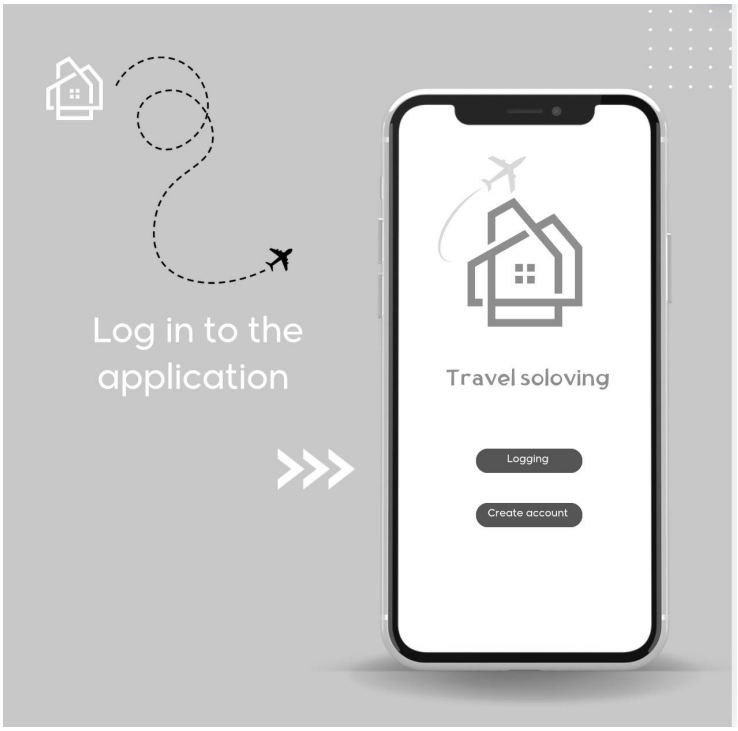


Figure 6: Login and Registration Interface

11 Main Screen Interface

Figure 7: Main Screen Interface

This interface displays the main screen of a travel application, offering key options for users related to trip planning and activities while traveling, such as:

- **Map and Destination:** A map of a geographical area with an airplane icon suggesting travel movement.
- **Main Icons:**
  - Hotels: For searching or selecting accommodations.
  - Restaurants: To explore dining options at the specified destination.
  - Shopping: For finding shopping centers.
  - Entertainment: For recreational activities such as events, museums, and cinemas.
- **Control and Interaction:** The interface is simple and user-friendly, making it easy for users to navigate between options, allowing them to search based on their needs. The interface is comfortable and designed to facilitate access to important services while traveling.

12 Conclusion

This app promises to be an important step towards improving the travel experience, as it provides guests with personalized information covering various entertainment details and options. By providing comprehensive data on activities, it allows users to share their experiences and suggestions, helping visitors discover the best places and enjoy their trips to the fullest.

Task Table

Phase	Responsible	Duration Time
Introduction phase	Maymouna Aryam	2 days
Requirment phase	Aryam	2 days
Design phase	Maymouna	3 days

Figure 8: Final Design

13 References

- **UNWTO:** (2024). Tourism Statistics. https://www.unwto.org/
- **Reddit:** (2024). Travel [Online forum]. https://www.reddit.com/r/travel/
- **Statista:** (2024). Global Tourism Industry Overview. Statista Research Department. https://www.statista.com/
- **Booking.com API:** (n.d.). API documentation. Booking.com Developers. Retrieved October 24, 2024, from https://developers.booking.com/
- **Airbnb:** (n.d.). Airbnb open source projects. Airbnb. Retrieved October 24, 2024, from https://airbnb.io/
- **Yelp API:** (n.d.). API documentation. Yelp Developers. Retrieved October 24, 2024, from https://www.yelp.com/developers/