Project Charter
Team 23
Members: Daniyal Bekinalkar, Mert Karabulut, Stanley Kim, Meet Patel

Problem Statement:
In the world of travel planning, many travelers face the combined challenge of creating detailed, practical itineraries and the wish to share and work together on these experiences with others, a requirement that existing travel planning solutions, such as TripAdvisor and Expedia, fail to fully meet. These current platforms often concentrate on wider aspects of trip organization, like reservations and destination recommendations, but miss thorough, hour-by-hour itinerary customization and a strong, community-led system for trip sharing, communication, and joint planning. Our project is ready to transform this area by launching an all-encompassing travel planning platform that not only enables travelers to carefully plan every hour of their day with individualized activities and streamlined routes, but also promotes a lively community setting where these plans can be shared, talked about, and improved with other users. This method distinguishes our project by combining detailed trip planning with social interaction and community involvement, elements that are noticeably missing in present travel planning tools, thereby providing a more complete and captivating travel planning experience.

Project Objectives:
1. Develop a dynamic trip planning component that offers tailored features for organizing different types of trips, catering to various user needs and preferences.

2. Enhance real-time adaptive travel planning capabilities within the platform.

3. Implement journey optimization strategies to maximize efficiency and user enjoyment.

4. Develop a comprehensive personalization engine for tailored travel experiences based on individual preferences.

5. Develop a community-focused reputation system that fosters trust and enhances user engagement by leveraging a comprehensive rating mechanism.

6. Integrate adaptive location-based and preference-driven recommendations to enhance user engagement.

7. Foster user collaboration and community interaction through an integrated communication system.

8. Create an engaging and user-friendly interface to enhance overall user experience and platform usability.

9. Ensure the application's functionality, security, and reliability through rigorous testing and quality checks.

10. Strategically deploy the web application to make it accessible to a broad audience, focusing on performance and scalability.

Stakeholders:

1. Users:
    - The users include both the people who use the application to plan their trip which can be shared with other users or the people who use the application to explore the already shared trips to follow it on their own.

2. Product Owner: Mert Karabulut
    - Checks on project management to make sure that all the products and features are functional and satisfy the user's needs.

3. Scrum Master: Mert Karabulut
    - Facilitates all the communication and collaboration between leadership and developers to ensure a successful outcome and ensures that the development team adheres to the scrum standards.

4. Developers: Daniyal Bekinalkar, Mert Karabulut, Stanley Kim, Meet Patel
    - Software developers are involved in developing the application.

5. Project Coordinator: Aline Becerra

Project Deliverables:

1. Develop a web application so that users can easily access the application with information on their trip itinerary on the go, as well as easily access it to manage and edit their trips when planning. Utilize React and Tailwind/CSS for enhanced UX responsiveness and user experience.

2. Implement user authentication through Auth0 to protect user data and enable personalized features and account management, and implement user data storage through the PostgreSQL database.

3. Implement a live trip feature, giving updates about trip driving time through Google Maps API and delivering real-time information through Socket.IO connections.

4. Facilitate communication, provide overall trip ratings, and offer a personalized experience through the usage of user portfolios, which include these features through communication features, overall trip ratings, achievements, profile pictures, and activity timestamps.

5. Allow users to plan trips for themselves and others, copy trips easily, and receive trip recommendations through the trip planning module, which uses the Google Maps API to help build trip itineraries.

6. Allow users to share and scroll through public trips created by other users, share feedback, and like/dislike to gain recognition and/or achievements.

7. Utilize the Google Maps API to give users trip recommendations based on location, time, availability, and preferences.

8. Utilize the Google Maps API to optimize trip planning and driving time, giving users the best trip experience.

9. Develop a connection and messaging system for users to easily send trips to each other, use the same trip itinerary together, or follow users for the trips they create. Also include other media aspects such as block and remove connection functionality.

10. Identify and rectify issues through test plans and reports, security testing measures, and bug tracking through standard testing libraries for React and Node such as Jest.

11. Make the application accessible to users to utilize through the deployment, config, and setup of a website web application through AWS using Kubernetes DevOps.

Platforms/Frameworks needed for this project:

1. React
2. Node.js/Express
3. Google Maps API
4. PostgreSQL/MongoDB
5. Auth0
6. Tailwind/CSS
7. Pern Stack
8. Socket.io

Usage:

- Implement a web application through which the user can access the application.
- Users will access the application through the client-facing React web app.
- The application logic will be run through the Node.js web server.
- The Google Maps API will be queried from the Node.js web server for necessary application details about tourist locations, restaurants, and travel times.
- The PostgreSQL/MongoDB database will be used to store user information, trips, and other necessary info.
- Auth0 will be used as an authentication platform to save user data across devices and sessions.
- Tailwind CSS will be used in the React web app for CSS styling.
- Socket.IO will be used for real-time communication between the client web app and the web server for delivering details such as itinerary progress and messaging.

Domain and Current Solutions:

In the domain of travel planning, several web-based and mobile app solutions currently exist, each offering various features for trip organization. Platforms like TripAdvisor and Expedia are prominent in this space. TripAdvisor is widely used for its extensive collection of traveler reviews and ratings on hotels, restaurants, and attractions, aiding users in making informed decisions. Expedia offers a comprehensive booking service, including flights, hotels, and car rentals, and provides basic travel itinerary planning. These platforms are popular among travelers, including those who are tech-savvy and seeking convenience in planning their journeys.