Project Name: BluMap
Team 23 - Project Backlog
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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.

Background Information:

Audience

The problem our project addresses arises from the limitations of existing travel planning platforms in offering in-depth customization and a strong community engagement. Our target users are travelers who seek a comprehensive travel planning experience, going beyond basic reservations and destination tips. These individuals often struggle with creating precise, hour-by-hour itineraries and desire a platform that not only facilitates such detailed planning but also encourages sharing and collaboration on these plans with a wider community. Our focus is on elevating the travel planning domain by blending detailed trip planning with social interaction.

Our target demographic consists of adults aged between their early twenties and late sixties, who lead active and engaged lifestyles, often trying to balance professional commitments with a passion for travel and cultural exploration. While this group exhibits a range of familiarity with technology, many use digital tools to enhance their travel experiences. This indicates a need for a travel planning solution that is intuitive and accessible, accommodating a wide range of technological proficiency. The ideal platform would therefore not only simplify exploring diverse destinations but also would facilitate interactions between like-minded individuals in the travel community. This approach ensures a comprehensive and user-friendly travel planning process, meeting the specific needs of our diverse user base.

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.

Limitations of Current Solutions:

- **Authenticity and Integrity of Reviews (TripAdvisor):**
    - Limitation: The review system is susceptible to manipulation, lacking robust measures to prevent the creation of fake accounts or unverified reviews.
    - Impact: This undermines user trust and the reliability of the information.
    - Our Solution: We plan to put in place a strict system for verifying users and will require evidence of their visit before they can submit a review, to make sure all reviews are genuine.
- **User Interface and Engagement:**
    - Limitation: Users often find the interfaces of these platforms, particularly Expedia, to be overwhelming, leading to a less interactive experience.
    - Impact: This can result in lower user satisfaction and engagement.
    - Our Solution: Our platform will feature a more intuitive and visually appealing interface, enhancing user engagement and overall experience.
- **Detailed Itinerary Planning:**
    - Limitation: Both TripAdvisor and Expedia focus on broad travel elements like booking and reviews but lack detailed, customizable itinerary planning features.
    - Impact: Travelers seeking meticulous trip planning are underserved.
    - Our Solution: We will offer a dynamic trip planning tool for creating detailed, hour-by-hour itineraries, tailored to individual user preferences.
- **Community Engagement and Collaboration:**
    - Limitation: There is a notable lack of features that facilitate community building and collaborative travel planning.
    - Impact: This limits opportunities for shared experiences and insights among users.
    - Our Solution: By developing a community-focused trip sharing system, we aim to foster user collaboration and enhance the social aspect of travel planning.

- **Trip Update on the Fly:**
    - Limitation: While platforms like TripAdvisor and Expedia are useful for initial trip planning, they fall short in offering real-time adjustments to itineraries based on sudden changes, such as traffic and weather conditions.
    - Impact: This limitation can lead to inefficient travel experiences and inconvenience for users who encounter unexpected changes during their trips.
    - Our Solution: We plan to introduce an 'Active Trip Update' feature that will provide real-time updates and alternative suggestions to users, allowing them to adapt their itineraries quickly and efficiently in response to current traffic and weather conditions. By integrating this dynamic component, our platform will significantly enhance the adaptability and practicality of travel planning, ensuring a smoother and more reliable experience for users even when faced with unforeseen circumstances.

By addressing these specific limitations, our platform aims to fill the gaps in current travel planning solutions, providing a more comprehensive, trustworthy, and user-engaging service.

Functional Requirements:

Core

1. As a user, I would like to view events, attractions, restaurants, hotels, and transportation in a location so that I can add them to my itinerary.
2. As a user, I would like to receive timely notifications for upcoming activities.
3. As a user, I would like to receive notifications about changes in the itinerary and important updates related to my trip.
4. As a user, I would like real-time travel planning capabilities that lets me adjust my event itinerary on the go so that I can ensure flexibility during the trip.
5. As a user, I would like personalized recommendations based on current location and preference when adjusting events on an active itinerary.
6. As a user, I would like to save my travel history, including past itineraries.
7. As a user, I would like to be able to view my saved travel histories.
8. As a user, I would like to access my frequently planned activities.
9. As a user, I would like journey optimization strategies, including route optimization, suggesting attractions, and ordering for visiting attractions, to maximize efficiency and enjoyment so I can reach the destination in the quickest time.
10. As a user, I would like to be given travel and itinerary recommendations based on my preferences.
11. As a user, I would like to be given travel and itinerary recommendations based on the trip or my location.

Utils

1. As a user, I would like to be able to use the site without an account to view others' itineraries.
2. As a user, I would like to be able to create and register an account.
3. As a user, I would like to be able to log in for a personalized experience.
4. As a user, I would like the ability to personalize the look and feel of the application by choosing from different themes or color schemes.
5. As a user, I would like to create detailed, hour-by-hour trip itineraries for different types of trips so that I can plan my travel effectively.
6. As a user, I would like the option to use the application in multiple languages to cater to a diverse user base.
7. As a user, I would like a tutorial so that I can use the app correctly.

Social

1. As a user, I would like a post-reputation system so that I can review other user content and their created itineraries.
2. As a user, I would like to be able to get badges or rewards, for achieving certain milestones or actively participating in the community.
3. As a user, I would like to be able to upload photos to add to my itinerary.
4. As a user, I would like to be able to see my photos from my past travels.
5. As a user, I would like the ability to share my trip itinerary, experiences, and photos with others on the social tab of the application.
6. As a user, I would like the ability to share my trip itinerary, experiences, and photos on other social media platforms directly from the application.
7. As a user, I would like to view emergency contact information, local emergency services, and travel advisories for each destination.
8. As a user, I would like to manage my emergency contact information, local emergency services, and travel advisories for each destination.
9. As a user, I would like to leave reviews and ratings for specific activities or locations within my itinerary, contributing to the overall community-driven system.
10. As a user, I would like to comment on itineraries designed by myself and other users.
11. As a user, I would like to be able to activate an itinerary with another user as we go through the active itinerary together.
12. As a user, I would like to be able to follow other users.
13. As a user, I would like to be able to get trip or itinerary recommendations based on my preferences or location.
14. As a user, I would like to be able to block other users.
15. As a user, I would like to be able to make my account public or private.
16. As a user, I would like to be able to add friends on the platform.
17. As a user, I would like to be able to view my user profile as well as other user profiles.
18. As a user, I would like to be able to chat with other users through the application.

19. As a user, I would like to be able to anonymize itinerary event information.

Admin

1. As an admin, I would like to manage user accounts, which includes viewing, suspending, or deleting them if necessary.
2. As an admin, I would like to access analytics and insights on user engagement.
3. As an admin, I would like to access information about popular destinations.
4. As an admin, I would like to access frequently planned activities.
5. As an admin, I would like to moderate user-generated content, including reviews, comments, and uploaded media, to ensure compliance with community guidelines and prevent inappropriate or offensive content.
6. As an admin, I would like a reporting system where users can flag content or report issues.
7. As an admin, I would like to verify user identities, especially for users who contribute significantly to the community, to enhance the credibility of reviews and recommendations.
8. As an admin, I would like the ability to send important announcements or notifications to users, either individually or as a group, to communicate updates or address issues.

Non-Functional Requirements

Architecture and Performance

In the development of our application, we are adopting a modular architecture that separates the frontend and backend components to streamline the development process and avoid any potential integration challenges. The frontend will utilize React to provide a dynamic user interface, whereas the backend, powered by Node.js through Express.js, will focus on efficiency and scalability. We aim to optimize backend performance to target a response time of under 500 ms to ensure a seamless user experience. Achieving this enhanced responsiveness is vital for maintaining user satisfaction and engagement.

System Requirements

Our system requirements will intentionally be designed to be accessible and user-friendly, ensuring that users can interact with our platform using any device with internet connectivity. Whether accessed through a laptop, desktop, tablet, or smartphone, our web-based application will offer flexible use across all modern devices. However, using up-to-date web browsers will be necessary to ensure complete functionality and the optimal user experience on our platform. We are also committed to maintaining a high level of system uptime for reliability. Our objective is to provide consistent, uninterrupted access to our web-based project, emphasizing our dedication to system dependability and user convenience, making the platform dependable and accessible at all times.

Scalability and Reliability

For scalability, we will initially support 100 simultaneous requests with a clear plan to optimize the program to handle 1,000 simultaneous requests as the demand for more users increases over time. Additionally, we will conduct rigorous testing and quality checks to identify any issues within our program to ensure a reliable and trustworthy application. We will use a rigorous testing process that includes using Python Selenium. This will allow us to automate user interactions for testing, which can simulate user registration, explore different features, and verify common tasks. As part of our testing process, we will closely monitor and measure the error rate to ensure the application's repairability and our goal is to keep the error rate below 1% to provide an enhanced user experience and quickly address any issues that may arise.

Security

Security will be a critical priority for BluMap, as we will be housing various pieces of sensitive information. To prevent any security incidents and address potential concerns, we will implement Auth0 for robust user authentication and use PostgreSQL for secure data storage to effectively protect users' data. Furthermore, we will provide the option for users to keep their itineraries private, ensuring these remain confidential until after their trip concludes. This feature will guarantee that users' privacy is maintained throughout their travels. Moving forward, we will continuously prioritize and strengthen our security measures to safeguard user information and uphold their trust.

Usability

To enhance usability, we will design a user-friendly interface that ensures ease of navigation. This will include the integration of a tutorial, advanced search and recommendations, streamlined profile management, and timely notifications and alerts. By concentrating on these aspects we will strive to make the app user-friendly, providing a complete travel planning experience.

Deployment

Regarding deployment, we plan to strategically launch the web application on AWS, utilizing Kubernetes for optimal accessibility and resource management. This approach is in line with our objective to make the application universally accessible, catering to any target audience we aim to reach. The adoption of this deployment strategy will not only facilitate the community's growth at any desired rate but will also ensure enhanced scalability and constant uptime, reinforcing the reliability and reach of our application.