NOVA SCHOOL OF SCIENCE & TECHNOLOGY

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Travel Itinerary Planner

Stage 2: User and Task Analysis

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Travel Itinerary Planner

Problem Description

Planning a vacation itinerary is complex, requiring careful coordination of time, travel, and activity reservations. Inefficient planning can lead to wasted time, missed activities due to closures or weather, and redundant travel. Discovering places to visit should align with existing plans, ensuring proximity, and matching user interests.

Users

The app targets individuals who seek a well-organized, custom vacation without investing too much time in planning.

The users can be divided into the following groups:

User Characteristic	**User Group**		
	First Time / Occasional Travelers	*Frequent Travelers (including business)*	*Groups of Travelers*
Age	18 - 60		
Gender	All Genders		
Ethnicity	All backgrounds		
Physical Limitations	Some users may have mobility, sight, or hearing limitations, which may impact travel plans.		
Educational Background	May have minimal or no educational qualifications.		
Computer Experience	General computer experience is assumed for users looking to digitally plan their travel		
Application Experience*	Minimal experience with travel planning apps	High level of experience with travel planning apps	Mixed experience; leader usually more experienced
Domain Experience	Low	High	Varies, depending on group leader
Special Needs	Buffer time for navigation; help finding attractions	Limited time for activities but efficient in use of transportation	Balancing multiple preferences within the group.

*Users are not expected to have prior experience with this app, though they may be familiar with some aspects of the experience from using similar apps.

Tasks

Task: Create a new Trip Plan	
Objective	Define the destination and dates of travel
Preconditions	None
Subtasks	• Choose a destination • Select start and end dates for the trip
Exceptions	• Destination is unsupported due to availability of data about activities • User Input is invalid (start date later than end date, dates in the past)
Frequency of Use	Medium: Initial planning of the itinerary

Task: Discover Activities	
Objective	To explore and discover attractions, tours, and activities available at the destination.
Preconditions	Trip destination is defined
Subtasks	• Search or browse activities based on filters, such as category, opening hours, location of destination, price, reviews etc. • Review the options and mark items of interest • Identify related or complementary activities based on previous points of interest and add them to the list • Optionally, add activities discovered elsewhere manually to the list
Exceptions	• No activities fit the filter conditions • None of the discovered activities appeal to the user
Frequency of Use	High: Every time a trip is initially planned or changed

Task: Make Travel Itinerary	
Objective	Create a time schedule for the trip that includes all places of interest
Preconditions	Both previous tasks must have been completed
Subtasks	• Define daily restrictions (e.g. work hours) • Add an activity to the schedule of a travel day • Review automatic suggestions for the scheduling • Rearrange the schedule to minimize travel time • Select transportation methods between activities • Rearrange activities or remove them from the schedule
Exceptions	• Scheduling conflicts (e.g., two activities at overlapping times, not all activities fit into the schedule, etc.) • Other conditions prevent scheduling of activities (e.g., weather, activity unavailability, transportation issues, etc.)
Frequency of Use	Medium: Initial planning of the itinerary

Task: Edit Trip Plan due to Unexpected Changes	
Objective	Adjust the travel plan in response to unforeseen changes
Preconditions	• Schedule is planned
Subtasks	• Identify the changes that need to be made (e.g., activity canceled, transportation delay). • Search for alternative activities or accommodations. • Add selected alternatives to the itinerary. • Rearrange the schedule to accommodate new activities or changes. • Re-evaluate transportation options and timings if necessary. • Confirm changes and notify any affected participants or service providers.
Exceptions	• Rearrangement isn't possible due to other restrictions • No suitable alternatives available
Frequency of Use	Low: when unexpected changes occur

Task: Executing the Travel Plan	
Objective	To follow the planned itinerary, making use of the schedule, activity details, and reminders provided by the app.
Preconditions	• The travel plan has been fully created and finalized.
Subtasks	• Get directions to the next activity, based on the type of transportation defined in the schedule, and follow them
Exceptions	• No available routes due to transportation disruptions
Frequency of Use	High: before every activity

Task: Book Activities	
Objective	Book reservations for all activities that require it
Preconditions	• Schedule is planned
Subtasks	• Verify the activities that require reservation • Confirm price and cancellation policies • Book and reserve the activities
Exceptions	• Booking is unsuccessful due to capacity etc. • The user does not agree with the price or policies
Frequency of Use	Medium: After finishing the planning

Task: Review Activities	
Objective	Share a rating and review of activities with the community
Preconditions	• Activity has been completed
Subtasks	• Select a rating • Type a short review of the activity • Save the rating and review
Exceptions	None
Frequency of Use	Medium: After activities that were particularly good or bad

Task: Manage Budget and Expenses	
Objective	Track spending during trip planning and execution and stay within budget.
Preconditions	The schedule must be planned.
Subtasks	• Set a budget for the overall trip or for specific categories (e.g., accommodation, food, activities). • Track expenses during planning (e.g., booking activities, hotels). • Record expenses during the trip, categorized as accommodation, meals, transportation, etc.
Exceptions	• User forgets to add certain expenses, leading to inaccuracies.
Frequency of Use	Medium: throughout the planning phase and during the trip.

Scenarios

Scenario 1: User Creates a New Trip Plan and Discovers Activities

Nelson decides to take a winter vacation to Japan. He opens the travel app to create a new trip plan, selecting Kyoto (きょうと) as his destination and setting the travel dates for January. Once the trip plan is created, Nelson begins adding activities. Using the "Discover Activities" feature, he searches for activities filtered by "Outdoor" and "Historical" categories. The app suggests a range of attractions that match these criteria, such as the Fushimi Inari Taisha Shrine, which Nelson adds to his activities list. The app also recommends similar points of interest, like the Kiyomizu-dera Temple, which Nelson adds as well. He then searches directly for another activity by name and adds the Arashiyama Bamboo Grove to his itinerary.

Scenario 2: User Creates Trip Schedule

Niklas has discovered several activities to do on his trip to Munich and now needs to Schedule them. He has already added them to the list of interesting activities, and he has already set up the trip location (Munich) and time frame (Friday – Sunday) in the app. The activities to schedule are: Guided hiking trip to the alps, evening at Oktoberfest, Modern Art Museum, Lunch at Viktualien-markt, self guided walking tour of the old town, go up the Olympic Tower Observation deck.

Using the “Schedule trip plan” feature, he wants to schedule the activities in a way that works well in terms of travel time, doesn’t have any issues with opening or reservation-only hours, minimizes the cost of the museum (certain days are cheaper), and be on the observation deck during sunset. On the day after Oktoberfest, the morning activities should start after 11 AM.

Scenario 3: User Executes Trip Plan

Pedro has arrived in Paris for his vacation and has an itinerary that he carefully planned with the app. It includes various touristic spots, dinner experiences and outdoor activities. On his first morning he opens the app and selects “Start Trip Plan”.

The app shows his itinerary plan that begins with a tour of the Eiffel Tower. It provides directions, bus routes, and updates on traffic. After finishing the tour Pedro checks the activity as “Completed”, and the app automatically updates his next destination.

Throughout the day the app keeps Pedro on track with time changes and suggests possible points of interest. For example, after noticing that Pedro has an extra hour before his visit to the Louvre it suggests a quick detour at the Tuileries Garden, and he adds this unplanned stop to his itinerary.

At the end of the day, after checking all stops the app marks the Trip Plan as “Completed”.

Scenario 4: User is Notified That It Will Rain on the Beach Day and Needs to Reschedule

Pedro and his partner are vacationing in the Caribbean. They had originally planned to spend their third day relaxing at a nearby beach. However, on the morning before their beach day, Pedro receives a notification from the app informing him that the weather forecast has changed, with heavy rain expected. Wanting to make the most of their trip, Pedro decides to adjust their plans.

Using the "Edit Trip Plan" feature, Pedro filters available activities by "Indoor" options and selects a museum visit as an alternative. He then reschedules their beach day for two days later when the forecast predicts clear skies. With the revised plan, Pedro ensures they still have an enjoyable day despite the unexpected change in weather.

Interviews

First Time / Occasional Travelers

The interviewed user is comfortable with technology and often relies on multiple tools (e.g., Skyscanner, Airbnb, TripAdvisor) for travel planning, but finds managing scattered information across platforms challenging and desires a more comprehensive solution.

They travel once or twice a year, typically with some friends or family, which adds some complexity to planning but not enough to require high coordination. Activities are discovered through a wide variety of websites and social media. They deliberately leave gaps in their itinerary to allow for spontaneous exploration and revisiting favorite spots. Walking is the preferred mode of transportation for exploration, with public transport used for longer distances, while the user aims to minimize travel time between activities and stay within budget.

Key planning challenges include finding consistent pricing across platforms and organizing activities while considering unpredictable factors like weather. They often cross-reference multiple apps, which is time-consuming.

The user usually prepares contingency plans for outdoor activities impacted by weather and tries to adapt on the spot if needed, trying to maintain an enjoyable trip.

Frequent Travelers (including business travelers who want to use remaining free time)

The interviewed user is experienced with using technology and mobile applications. For trip planning, he usually uses digital apps, such as Google maps, Skyscanner for booking flights, Airbnb/Booking for accommodation, and other specific apps (like restaurant review apps, or simply the notes app to write down places to visit).

The user travels on average once every two months. He travels alone when it’s a business trip, usually on a tighter schedule. When travelling for leisure, it’s usually in a group, with friends or family. In this type of trip, he tries to find a balance that includes activities everyone will enjoy, requiring more collaborative planning.

The user discovers activities/places to visit through third-party suggestions, social media and google searches about the country. Planning is done with the help of Google Maps, based on distances between places. When planning, he tries to balance activities and downtime, leaving some time to wander through the city, visiting local shops, cafés or markets, and also to relax.

The preferred type of transportation when travelling is public transportation and Uber, besides walking. He tries to cluster activities based on their location, so each day can be dedicated to exploring a specific area without wasting much time travelling between places.

The most common challenges include coordinating public transportation, and organizing activities by location, suggesting a need for a solution where this type of information is more centralized.

The user tries to plan the trip with some flexibility to deal with unexpected changes. For instance, when the weather changes suddenly, he chooses indoor activities, such as visiting museums or local pubs.

Groups of Travelers

The interviewed user travels about three times per year, most of the time in groups. She is generally experienced in the use of technology and mobile applications. The user exclusively uses digital tools for travel planning (e.g. social media apps, TripAdvisor, google maps).

The user relies on social media influencers and other user generated content on social media platforms for initial discovery of activities, and then looks for “must do” activities on TripAdvisor. Planning the time schedule is a manual process based on google maps for determining an ideal order of activities based on location, and user reviews and comments to know the time needed.

The user sometimes runs into the issue of some activities not working out as planned (due to outside factors like weather or delays with rental car pickup) or unplanned time due to planning errors (e.g. not thinking of a public holiday or planning too much time for an activity). In that case traveling with a group makes the situation less severe because socializing in a café, bar or restaurant is always a viable backup plan.

For interest-conflicts in the group the approach differs based on the type of trip. On road-trips, where splitting the group isn’t viable, a unified group plan is created, with compromises where needed. On city trips (which this app is focusing on), splitting the group is the user’s option of choice.

Conclusion

Our conclusion is that there is a need for a unified travel planning tool that centralizes information, simplifies planning, and allows for real-time adjustments, as the current process is fragmented, and a comprehensive app could enhance both the organization and adaptability of their travel experience.