

Social Computing 2024-2025 Final Report group 20 (2).pdf

by Turnitin LLC

Submission date: 18-Nov-2024 03:09AM (UTC-0800)

Submission ID: 2523631721

File name: Social_Computing_2024-2025_Final_Report_group_2.pdf (2.31M)

Word count: 8234

Character count: 46437

Team 20

Gihan Wansekara, 2410243, gihan.wansekara@student.oulu.fi
Muhammad Ramish, 2411318, muhammad.ramish@student.oulu.fi
Uswah Batool, 2407697, uswah.batool@student.oulu.fi
Pamodh Ranasinghe, 2307267, Pamodh.Ranasinghe@student.oulu.fi

Hybrid Support Platform for Connecting Travelers

October 31, 2024

1 INTRODUCTION OF THE PROJECT IDEA

*In today's digital and globalized world where the hobby of travelling is more accessible than ever. For an example, picture your childhood memories on travelling somewhere in the summer or for your holidays. Compare that how hard it was to even get directions for the destination. You should ask the locals for directions or should have a guide with you who has the idea of that area. Also, at present it is much easier to find a place that you have not visited. But back in the days the chance of visiting a new place that you knew was quite low. However, despite the advances in travel there are many challenges that still exist as they are. If we name few; finding the right travel partners, ensuring safety during trips, connecting with locals or simply staying informed about real-time developments during a journey. In order to answer these questions and taking a step further than that of the existing options, our team has brought up and idea of “**Hybrid Support Platform for Connecting Travelers**” which initially planned to be available as a mobile app that any enthusiast on travelling can use. This report hereby will present the details of the application. This innovative platform combines state of the art technology such as artificial intelligence, real-time communication and navigation systems, with human-centered services like 24/7 support for travelers. By fostering hybrid communities of travelers, the platform connects individuals with similar travel interests, destinations and budgets, ensuring their journey is not just a solitary experience but a collaborative, enjoyable and safe adventure.*

From this platform the team not only focuses as a personal travel assistant but also serves as a community building tool. This is one of the main reason that sets apart from the existing travel apps. It is also focused on the hybrid communities in which is a blend of real world human interaction and machine. The users of the platform not only can plan trips, book tours but also receive local event notifications and have the opportunity to join travel groups based on AI-generated suggestions that match their interests and budgets.

For an example consider a solo traveler planning a trip to Oulu with a moderate budget and can input their preferences into the platform and the system will suggest several travel groups comprising individuals with similar interests. These groups could range from budget backpackers to luxury vacationers in which is allowing the users to make informed choices about their travel companions. This AI generated group recommendation feature is particularly useful for solo travelers or those looking to expand their social circles. Also the team suggests a real time communication tool like voice calls, messaging and video conferencing make it easier for group members to plan activities, discuss logistics and even share travel tips. The platform's live location feature ensures that travelers can navigate unknown territories safely while the real time alert system keeps the users informed of potential disasters or safety hazards.

So for whom is this app target for? The team suggests that the platform will majorly benefit the solo travelers. These are the individuals who are traveling alone that often face the challenge of finding suitable companions, feeling isolated or lacking critical information. As intention of all the solo travelers is to travel safely or simply the safety is their main concern, the platform provides 24/7 uninterrupted service for emergencies and provides live guided maps. Group travelers also can benefit from this proposed platform. When considering the practical scenario organizing group trips can be a logistical nightmare especially when it comes to coordinating schedules, destinations and budgets. Since the platform provides the AI powered tools that automatically fix and suggest it for them. Furthermore the feature of group suggestion feature helps the groups to find other groups that match their interests and helps to expand their network. Another group that the team believes that this platform can be benefit is the frequent travelers. For those who travel often the platform offers a space to create and maintain a “travel history” which will provide an organized account of their experiences, favorite spots and recommendations. These groups can help the community by giving recommendations, feedback and any kind of activities that can be done or not to do with in the space provided in the platform. The platform will maintain an awarding system using badges and titles which can be earned using reviewing, uploading photos and commenting which will help to even recognize the frequent travelers and give them a good recognition. Another main group that the platform will focus on is the Hybrid community members. These are the members who are part of digital nomad communities, expats or people with international lifestyles will find value in the platform’s ability to look deeper connections across borders merging the best of online and offline worlds. For an instance consider that you are living outside Finland and hoping to travel in Oulu. The open commentary and suggestions sections that provides by the platform which was explained earlier, can be used to review and plan their trips accordingly. Also in future updates the team is expecting to add the virtual reality that will use a similar technology as the present day “Google Street View” use. Although the team did not focus or did not expect, Local businesses and guides can be also benefited from the platform. By allowing the users to rate and review not only natural places like national parks but also restaurants and hotels, the local businesses benefit from increased exposure. This gives the travelers the confidence they need to make better decisions based on real reviews.

The purpose of the team to develop such a Hybrid Support Platform is simple. It is to enhance the travel experience by making it safer, more enjoyable and collaborative. From this platform the team expects that the travelers have peace of mind knowing that help is always just a click away. Whether it is navigating to a new city, finding the best local events or even seeking help during an emergency the platform offers 24/7 support to users. Furthermore as explained earlier it empowers travelers to make informed decisions. The combination of user generated content using photos, videos, reviews and recommendations and also the AI based

recommendations ensures that the decisions are not only data driven but also personalized. The system even takes into account about the personal preferences, travel history and the user ratings which results of offering a level of customization that typical travel platforms simply cannot match. For an example if an user is interested in exploring local festivals during a trip could receive notifications about nearby events along with recommendations for their accommodations and dining options based on other users' experiences. Hence this can be considered not only as a just a travel app but also a cultural discovery tool. Furthermore as mentioned earlier, the team has given priority for the Safety. The platform's real time alert system keeps the users informed of any impending disasters whether natural, political or social. Also equipped with a 24/7 support team which is capable of assisting with medical emergencies or disaster evacuation the platform ensures that users are never left in the dark when it comes to their wellbeing.

When considering the overall not all are positive impacts. There are several drawbacks from this platform that can be pointed out. Let us discuss this briefly using the following table.

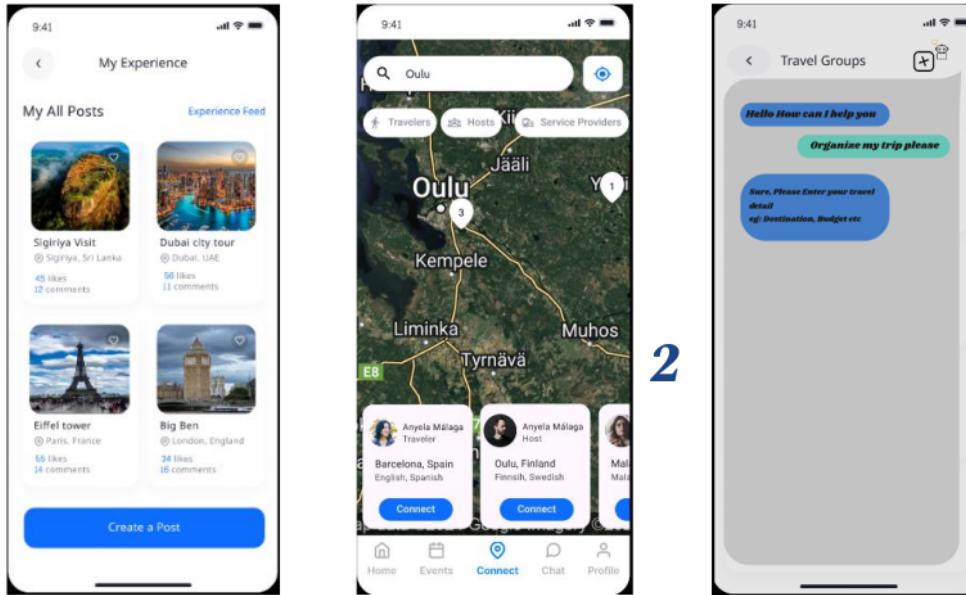
Positive	Negative
Enhanced safety	Privacy concerns
Stronger travel communities	Over reliance on technology
Better travel planning	-
Support for local economies	-

Yes privacy can be a concern. This is because the platform is using the user's live location there can be a privacy concern for some users. But to minimize this the team are planning to use the location while you are using the app only. And once it is closed this automatically disables and will no longer be using the user's location data. And while the platform is designed to assist the users it could also lead to an over reliance on technology potentially taking away from the spontaneity and unpredictability that make travel exciting.

Finally to conclude, the team conducted this project in deeply relevant to the theme of supporting hybrid communities as it brings together digital and physical worlds in a seamless way. The platform enables the users to engage in real time, face to face interactions while simultaneously offering the safety, convenience and flexibility of digital communication and planning. Form the AI generated suggestions, the real time communication tools and the location services the platform creates a bridge between online connections and real world experiences. It supports the travelers at every step of their journey before, during and even

after their trips which allowing them to form a deeper and more meaningful connections with others no matter whether they are meeting for the first time or reuniting with a group they have traveled with before.

So ultimately the project of “**Hybrid Support Platform for Connecting Travelers**” not only transforms the way the people travel but also paves the way for a future where the hybrid communities can and will play a pivotal role in shaping the global experiences. By prioritizing safety, collaboration and cultural exchange this project has the potential to create a travel environment that is not only connected, inclusive but also rewarding for everyone.



RELATED PROJECTS

There are several existing projects that have elements like group travel, real-time communication, AI-powered suggestions, and sharing users' experience about different destinations under their umbrella. This section will focus on listing current projects in the market that align closely with the goals of our topic. Moreover, the key features of these projects, and similarities and differences with our project will also be discussed.

The four projects mentioned below have features that partially overlap with our proposed solution; however, their scope is different.

TripIt - Simplifying Travel Itineraries

TripIt is a travel management application that aims to combine all your travel itineraries at one place [1]. Through TripIt, all the necessary travel details that you will need including flight status, hotel bookings, restaurant reservations, car rentals etc. To add to that, one can share these details with their travel companions as well [2].

Key Features

The primary features of TripIt are:

1. *User profile management: All the data of a user is collected and stored in their profile, which can only be accessed and edited through secure login credentials [2]. The easy-to-use interface allows users to look at past and upcoming trips. This feature is like our app's user management module.*
2. *Live notifications: Users can receive notifications related to flight updates in real time which can help them always be prepared for upcoming situations [2]. This feature somewhat relates to our app's live event notification feature.*
3. *Sharing itineraries: TripIt allows its users to share their itineraries with others, which can help travel companions stay connected and families be aware of the user's travel plans [2]. The goal of this feature is to offer social connectivity, which is similar to the goals of our group communication feature.*

Differences

TripIt's main focal point is individual travel plan management, however, our proposed solution is more about group experiences and building travel communities. Compared to TripIt, our app stands out by offering features like creating groups and AI-based group suggestions.

Travello - A Social Network for Travellers

Travello is a social network that is specifically tailored for travelers from all around the world [3]. The primary goal of Travello is to help travelers connect with each other and

explore destinations together. Moreover, users can join interest-based travel groups and attend local events together [3].

Key Features

The key features of Travello are mentioned below:

1. *Creating groups and AI suggestions:* In Travello, users can create groups based on shared interests, very much like the travel group module in our application. Not only that, the AI feature in Travello suggests groups to its users relative to their location, interests, and travel destinations [3].
2. *Realtime communication:* Compared to our app, Travello offers a similar messaging feature between group members and other travelers to help them stay connected and updated about each other [3].
3. *Reward System:* The reward system of Travello is identical to our application as both offer tiered badges to their users to reflect special recognition.

Differences

Although Travello offers similar features like creating groups and messaging, and offers an identical reward system, it does not offer real-time location sharing and navigation features which are distinct modules of our application. Apart from that, our solution also offers an emergency alert system, which is missing in Travello.

TourRadar – Booking Group Travel Experiences

TourRadar is an application for travel groups and individuals who want to travel with travel groups [4]. It specializes in offering organized tours to users that align with their travel interests, budget, and various other preferences [5].

Key Features

The basic features of TourRadar are as follows:

1. *AI based suggestions:* As mentioned before, TourRadar has an AI group suggestion feature which uses the user's travel interests, location, preferences, and budget to suggest travel groups [5]. This feature is similar to our AI suggestion feature which suggests trips and destinations based on their interests.
2. *Group Travel:* TourRadar allows users to filter from various group tours based on their destination, travel time, prices, etc. Furthermore, they can read feedback from other users who have booked the same tours in the past [5].
3. *Sharing User Experience:* Once the tour has ended, the application allows the user to rate the trip and give feedback to help others [5]. This feature is identical to our platform's user experience sharing and rating module.

Differences

Unlike TourRadar, our application offers custom user-generated groups rather than pre-organized group tours. Moreover, features like emergency support and real-time communication through messaging make our application stand out from TourRadar.

Summarized Table

Here is a summarized table to compare the features between our application and others:

Feature	TripIt	Travello	TourRadar	Our App
User Profile Management	Stores user travel plans and itineraries	User profile, travel history, and preferences	None	Stores personal details, travel history, blogs, activity, etc.
Group Travel	None	Offers travel group creation and joining options	Offers pre-organized group tours	Customization and management of travel groups and trips
Real-time Communication	Users can only share itineraries, but no direct communication	Real-time messaging is offered, but only within groups	None	Offers messaging, voice and video calls for 1 to 1 and group communication
AI Based Suggestions	None	AI based travel group suggestion using user's location and preferences	Recommends tours based on budget and preferences	Travel group and trip recommendation based on user interests and location
Location & Navigation	Location-based notifications, but no live navigation	None	None	Users can share live location and navigate to destinations using Google Maps
Reward System	None	Edges and rewards for users based on their activity and contribution	None	Edges and rewards for users based on their activity and contribution

<i>Support Services</i>	<i>None</i>	<i>None</i>	<i>None</i>	<i>24/7 support for technical issues, emergencies, and disasters</i>
<i>Experience Sharing & Feedback</i>	<i>None</i>	<i>Feedback and rating on travel destinations</i>	<i>Feedback and rating on group tours</i>	<i>Offers experience sharing through rating, feedback, blogs, etc.</i>
<i>Notifications</i>	<i>Notifications for flight status and delays</i>	<i>Location-based event notifications to users</i>	<i>No notifications for local events</i>	<i>Location-based notifications for local events and disasters</i>

3 RELATED LITERATURE

There are multiple aspects of our hybrid support platform for travelers that have been researched on and experimented with. These aspects include AI-driven recommendations for group travel, real-time communication, safety support, user experience, reward systems, and location sharing during travel.

The use of AI in enhancing user experience by providing recommendations in travel apps has become very popular. According to Badouche et al. [5], Tourism Recommendation Systems (TRS) have benefits such as personalization, convenience, improved user experience, and increased profit for tourist companies. The paper discusses the use of hybrid recommendation models that make suggestions to the user based on their profile, travel budget, and the country/city they are interested in. These models align well with our AI group suggestions feature.

Real-time communication in travel applications is not only helpful to keep the user informed about their itinerary, but also provide them support in an emergency. Nunes et al. [7] discusses the use of social networking applications as means for communication for travelers in public transportation. The paper emphasizes how apps like Twitter and Facebook have become a medium for useful communication in travel management. Hence, a cooperative exchange model for information of users during travel is proposed. As users would already be using these social media apps, their permission to the respective travel company for access of their location, experience, and relevant information would allow the company to always be aware of their safety [7]. Moreover, research suggests that such real-time location services are highly valued in travel platforms if the social networking application being used as the medium for communication is trustworthy amongst users [8]. This research shows that using third party applications for group and 1to1 communication in our application is better than creating an in-built social network. As users need to trust the application on which their information is being shared, using an already trustworthy social networking platform will be better.

Initiating reward systems into travel platforms makes them more engaging and richer in content [9]. Reward systems are an aspect of gamification as they provide a set of goals to the user and reward them for achieving those goals. Through reward elements like badges and reviews, users get a sense of achievement, and as a result, user retention rates increase [9]. This finding validates the usefulness and importance of a reward system being used in our application.

Privacy concerns can arise when users share their location on a social networking platform in real time. According to Wei et al. [10], sharing one's location on a social networking application may reveal private information such as interests, habits, and health conditions. If this information is breached, the user may become unsafe. In response, the paper proposes MobiShare, a flexible privacy preserving location sharing system that offers the user the chance to control the information that is being shared with trusted and untrusted users. Integrating such a tool in our application will make the users feel more safe and secure while using it.

4 COMMUNITY HEURISTICS

The idea behind this application is to bring together people from diverse backgrounds who have similar travel interests or needs. It provides a collaborative platform for its target community. The target community is diverse as it includes travelers, local hosts & guides, service providers, and support network. The diversity within the community makes the platform stronger as it allows users to benefit from each other's experiences and insights.



We have applied the 6 key heuristics, **Purpose**, **Members**, **Common Grounds**, **Contribution**, **Platform** and **Moderation**, while creating this platform:

1. Purpose

The platform is built to meet the needs of its members by providing both digital and real-world support. The primary goal is to provide easy access to practical travel information, connect with like-minded travelers, and organize trips together. Mostly travelers are looking for a reliable platform where they can get timely advice, share their experiences, and collaborate on travel plans, whether online or in person, our platform is built to provide all of it.

Our goal is to create a space that encourages meaningful connections between travelers and locals which further enhances the travel experience. The platform aims to bridge the gap between online planning and in-person interactions, helping users navigate new destinations more easily.

2. Members

The community mainly consists of 4 groups.

- 1) **Travelers:** This group includes all types of travelers, such as digital nomads, backpackers, business travelers, and tourists.
- 2) **Local Hosts:** These are the people who share helpful tips and real-time advice about the destination.
- 3) **Service Providers:** This group includes tour operators, local guides, and transportation services and accommodation providers.
- 4) **Support Network Group:** This group includes individuals who provide assistance during trips.

3. Common Grounds

The common interests that bind the community members is the desire to make traveling easier and better through a collaborative platform. Apart from that everyone wants to enhance safety, explore new destinations, and create meaningful

connections while traveling. These shared goals are the prime reason behind the engagement on our platform.

4. Contribution

Each group contributes to the platform according to their own background and expertise.

- 1) **Travelers:** *Each traveler brings their own expertise and perspective to the platform. Travelers can organize trips or join already organized trips. Travelers can share their stories and experiences through their profile and groups, making it a more collaborative platform.*
- 2) **Local Hosts:** *Local hosts can share helpful tips and real-time advice about the destination through their profile or different travel groups. Their insights will help other travelers on their trip, making this system more valuable.*
- 3) **Service Providers:** *This group will provide their travel-related services to travelers during their trip through this platform.*
- 4) **Support Network Group:** *This group will provide assistance to the users, making their trips more safe and secure.*

5. Platform

Our platform is based on a hybrid model, so the community members can interact with each other online or in-person. For virtual interaction, it offers chat, calls, and video conferencing features. On the other hand, to facilitate in-person interaction, it offers events, trips, communication and navigation tools.

6. Moderation

The platform has implemented moderation practices to create a safe and welcoming environment. Each user will go through a set of guidelines before registering to this platform. These guidelines will help everyone understand how to contribute positively. All user activities will be monitored to see if someone is violating the rules. And strict action such as blocking the user account will be taken in case a user caught violating the guidelines. This way, we can ensure that everyone can fully benefit from the features our application offers.

Let's discuss **why**, **who**, **what**, and **where**, to learn more about our platform,

Why?

This platform is designed to provide a dedicated platform for the community of travelers. It offers a combination of online tools as well as real-world support to improve their travel experiences.

Here are the reasons why users will need this application:

- To find and connect with companions for upcoming trips.
- To arrange joint trips with fellow travelers.
- To find nearby locals, travelers and service providers.
- To get tips and insights from locals.
- To share travel stories and inspire others.
- To get information about events happening near them or their next destination.
- To navigate through different travel spots.
- To get AI-generated suggestions for travel groups that match their interests and budgets.
- To receive alerts about potential disasters or safety hazards in their current or upcoming destination.
- To find hidden spots discovered by other travelers or locals.

The goal is to create a travel community who collaborates through this platform.

Who?

The platform's community mainly consists of 4 groups, each playing a significant role in creating a unique and diverse travel network.

1. **Travelers:** This group includes all types of travelers, such as digital nomads, backpackers, business travelers, and tourists. Each traveler brings their own perspectives and needs to the community.
2. **Local Hosts:** These are the people who share helpful tips and real-time advice about the destination. Their local knowledge provides travelers personalized recommendations, which makes their trip better.
3. **Service Providers:** This group includes tour operators, local guides, and transportation services and accommodation providers. Their services help travelers during their trip.
4. **Support Network Group:** This group includes individuals who provide assistance during trips, such as guidance during emergencies or for medical support.

By combining these diverse groups, the platform creates a collaborative environment where everyone can share their knowledge and enhance the travel experience for everyone.

What?

This hybrid platform provides a wide range of features for its diverse community of travelers. The purpose of these features is to enhance their travel plans. These are the main features which are being provided by our application:

1. User Profile

It includes personal details, travel history and travel recommendations of the user.

2. Organizing and Joining Trips

Users can join an upcoming trip or can organize a new one.

3. AI-Generated Group Recommendations

It suggests travel groups based on users' interests, and budget.

4. Real-Time Communication Tools

It includes voice calls, messaging, and video conferencing features for individuals and groups to coordinate.

5. Navigation Feature

It helps users to navigate locations and find other travelers, locals and service providers present there.

6. Real-Time Alert System

It informs users about potential disasters or safety hazards.

7. Real-Time Communication Tools

It includes voice calls, messaging, and video conferencing features for individuals and groups to coordinate.

8. 24/7 Support for Travelers

It provides assistance during emergencies and offers real-time support.

9. Awarding System

It recognizes active users through badges for contributions.

Where?

The platform's hybrid nature allows the community to interact both online and offline. In online interactions, members interact through their profiles, joining travel groups, and using private messenger to share experiences and plan for a trip. Through these features, users can easily share information with one another in no time and can feel connected even if they have never met in person.

For offline interactions, the platform supports real-world meetups, collaborative group travels, and events like guided tours. Though these in-person interactions users can strengthen their bonds which they have created in virtual environment. The platform provides multiple features such as navigation, instant messenger to enhance the real world meet ups.

5 DESIGN AND PROTOTYPE

Ideating

Core idea was to facilitate travelers from around the world on one single platform and offer something unique. Quickly the idea of developing an AI powered app was formed. Each group member individually brainstormed and wrote down the ideas on a collaborative file and then filtered the most suitable ideas. The following are the initial key features that were collected.

- Login and register (basic features are accessible even without an account)
- User Profile (personal details, travel history, create posts/blogs)
- Creating and joining travel groups - Organizing Trips Virtually
- Live location for navigation
- Real time communication through messaging, voice call and video call
- AI generated travel group suggestion (Users can give desired countries/cities and their budget. Then App suggests multiple travel groups to select)
- 24/7 support team for any assistance during visits (guiding to escape from a disaster, medical support contact)
- 24/7 tech support for app
- User experience sharing / giving ratings for services and locations like restaurants
- Rewarding for the users who continuously contribute (having badges in their profile)
- Real time alert system to inform any disaster. Also providing safety precautions
- Booking Tours
- Local Event Notifications
- User Roles: Tourists, Tour guides

Then booking tours and tour guide account profiling were eliminated since the design may tend towards a booking app instead of connecting hybrid travel communities.

Finalized design structure.

Once the most suitable features are selected, following design structure was formed.

1. User Management Module

Purpose: Manage user registration, login, and profiles.

Components:

- **Login & Registration Service:** Handles account creation, authentication and basic access to features without an account.
- **Profile Management:** Manages user data (personal details, travel history, posts/blogs, etc.).
- **Reward System Integration:** Assigns badges to users for their contributions.

2. Travel Group Module

Purpose: Allows users to create and join travel groups and organize trips.

Components:

- **Travel Group Creation & Management:** Users can create or join groups, and organize trips virtually (invite members, set trip dates).
- **AI-Suggested Groups:** Suggests groups based on user preferences (budget, destination).
- **Group Discussion Service:** Real-time chat, event coordination within groups.

3. Real-Time Communication Module

Purpose: Enables messaging, sharing data, voice calls, and video calls.

Components:

- **Messaging Service:** Real-time text messaging within groups and between individuals.
- **Voice/Video Calling Service:** Allows users to communicate via calls

4. Location & Navigation Module

Purpose: Provides live location sharing and navigation support.

Components:

- **Live Location Service:** Real-time location tracking and sharing during trips.
- **Navigation System Integration:** Integrates with map services (e.g., Google Maps) to provide turn-by-turn navigation. Also helps in navigating travelers, locals and service providers on a specific location

5. AI-Powered Travel Group Suggestion Module

Purpose: AI-based recommendations for travel groups.

Components:

- **Recommendation Engine:** AI analyzes users' desired destinations and budgets, suggesting suitable groups.
- **Data Processing Layer:** Collects and processes user input for destinations and budget.

6. Support Services Module

Purpose: Provide users with 24/7 support for app issues and travel-related assistance.

Components:

- **Technical Support System:** Offers 24/7 tech support for issues with the app (could be integrated with live chat).
- **Emergency Support System:** Provides real-time disaster and medical support (could use external APIs for alerts and contacts with emergency services).
- **Disaster Alert System:** Push notifications and safety guidelines for nearby hazards.

7. User Experience Sharing & Reaction/Comment

Purpose: Allow users to share experiences and rate services/locations.

Components:

- **Experience Posting System:** Users can create posts or blogs about their trips and experiences.
- **Reaction/Comment:** React/Comment on content posted by others

8. Notification Module

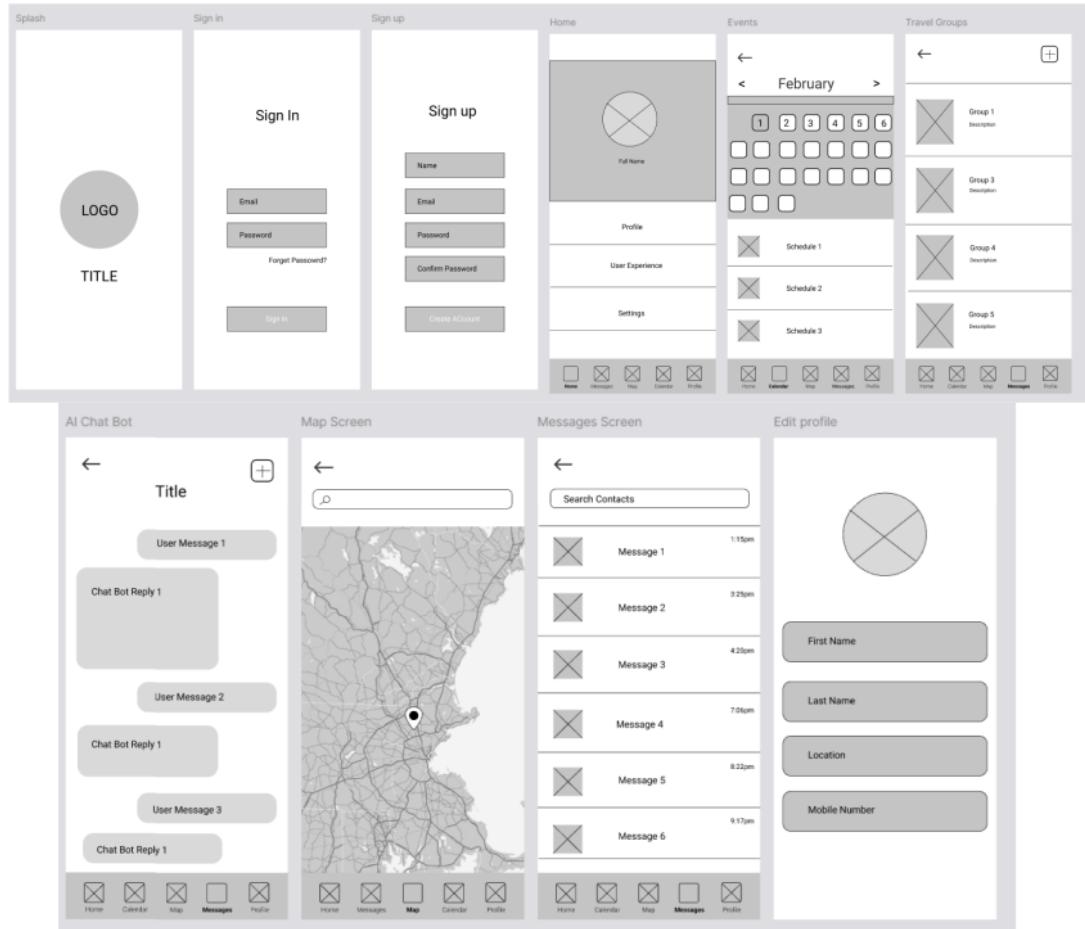
Purpose: Notify users about events, disasters, or relevant updates.

Components:

- **Event Notification Service:** Push notifications for local events happening around users' destinations.
- **Disaster Alert System:** Push real-time alerts to users based on geolocation in case of emergencies (e.g., natural disasters).

Low fidelity Prototyping

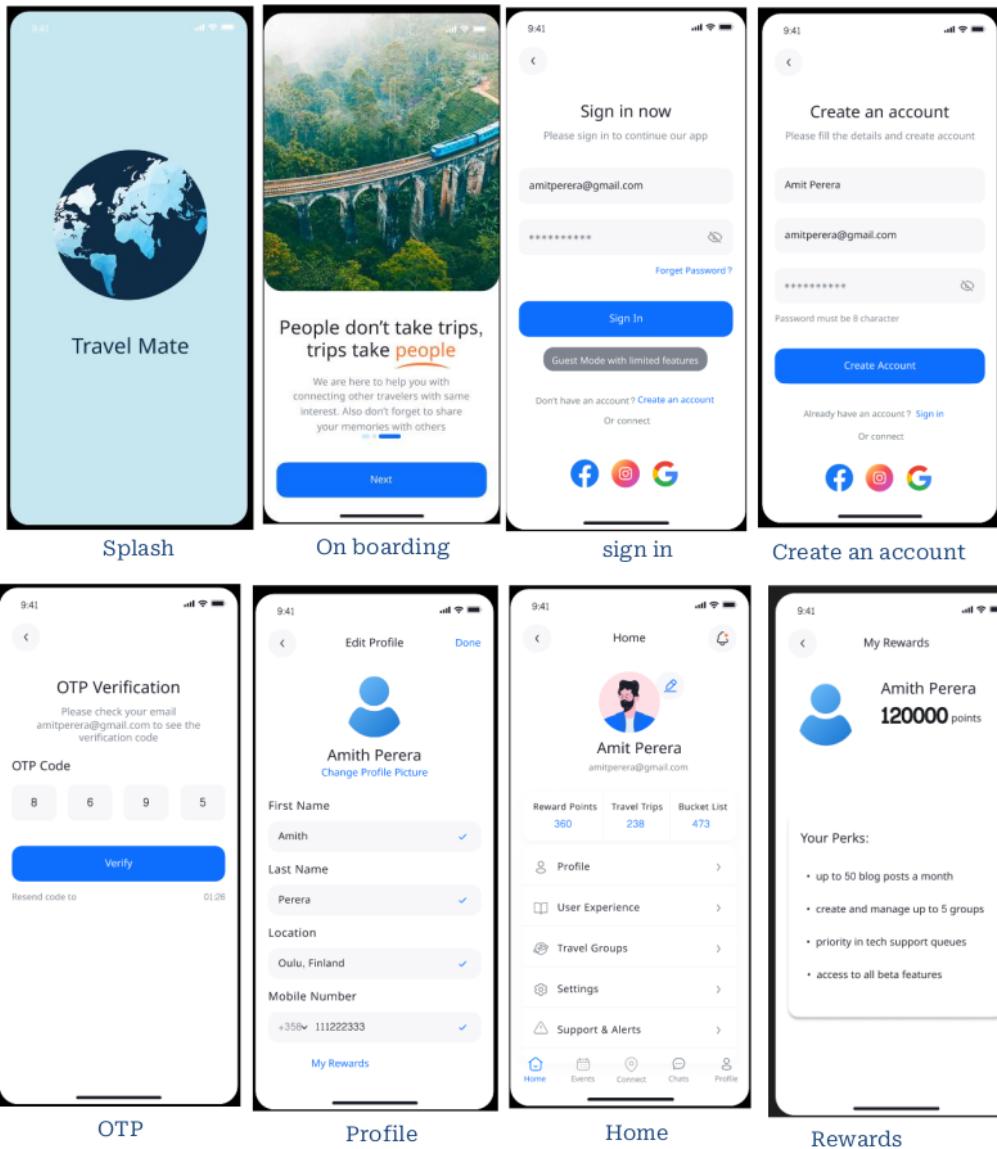
Once the design structure was formed, a low fidelity prototype was designed as follows.



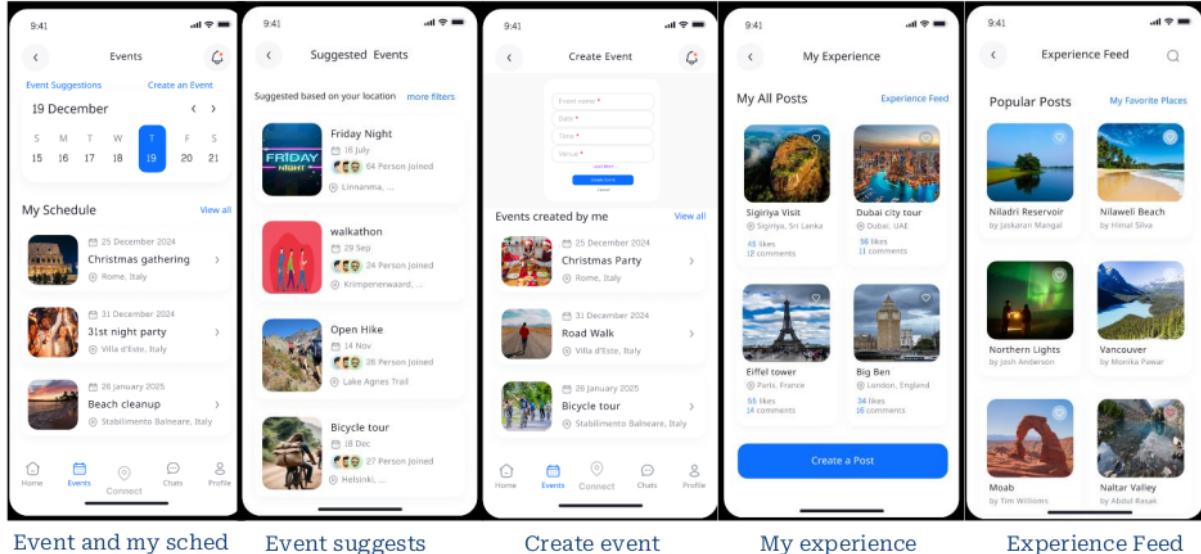
High fidelity Prototyping

After designing the low fidelity prototype, the high-fidelity prototype was developed using Figma interface design tool. Followings are the user interfaces designed.

- User Login and profile**



- Events, user experience sharing and notifications



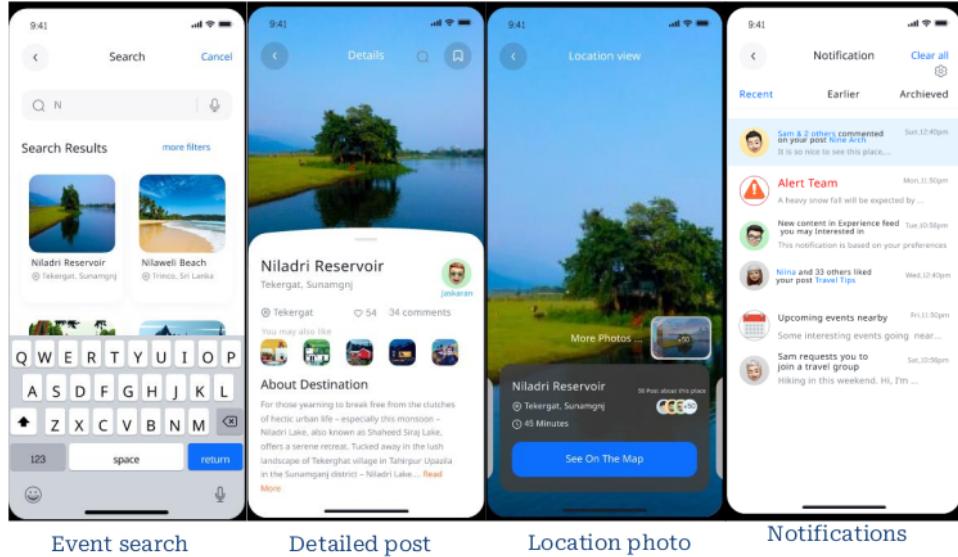
Event and my sched

Event suggests

Create event

My experience

Experience Feed



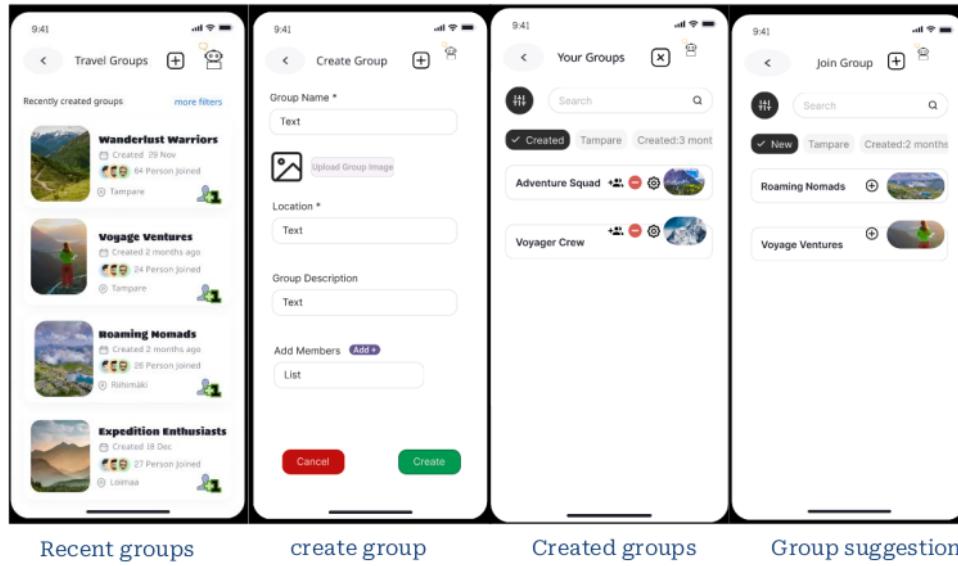
Event search

Detailed post

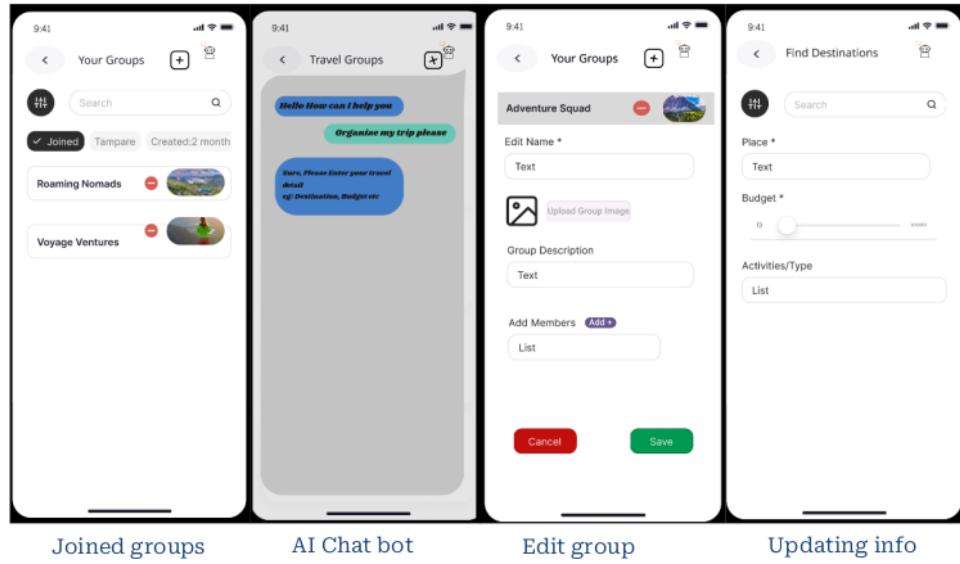
Location photo

Notifications

- Groups and AI chat bot

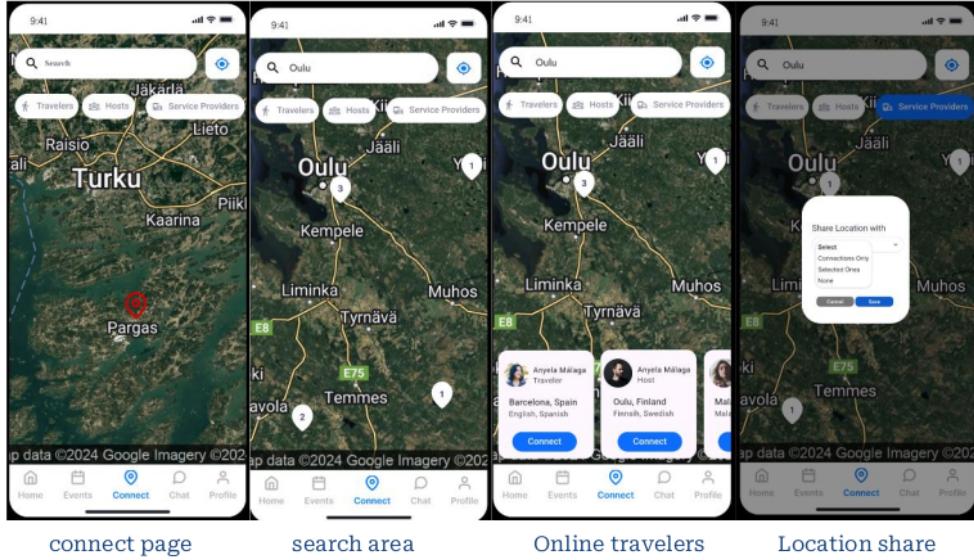


Recent groups create group Created groups Group suggestion

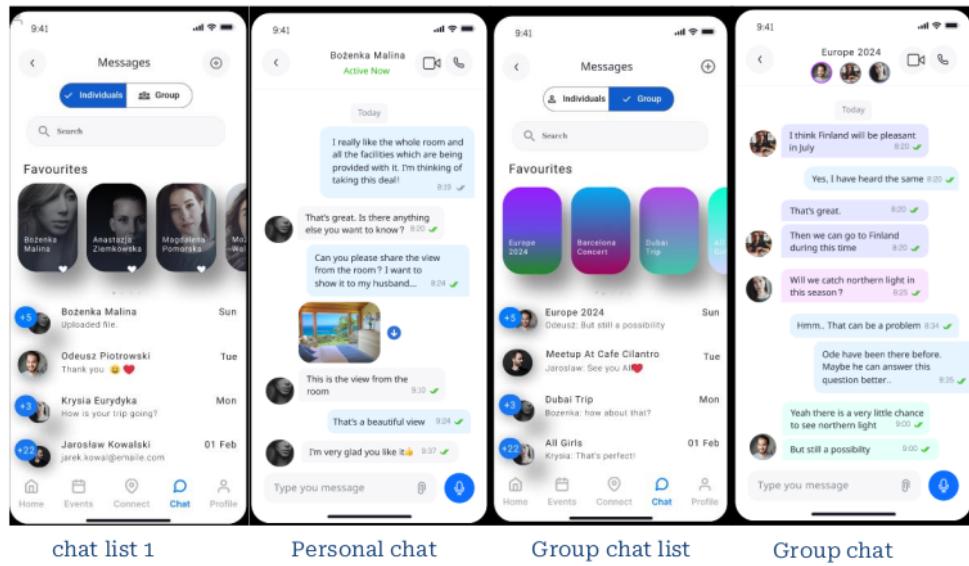


Joined groups AI Chat bot Edit group Updating info

- Location sharing, Navigation and connecting travelers**



- Communication**



6 EVALUATION

How was the evaluation done?

In this project, user interfaces related to each function were designed using Figma. Then Figma prototype ([Figma prototype](#)) was shared in a google form together with 12 questions. In the google form, key features of the app were mentioned, and evaluators were requested to go through the prototype first and then answer the questions. In the prototype, users were guided to each section one after another instead of going to all the sections in a random manner. This was done to avoid users getting confused and to provide an initial guide to the application. Also, no user data such as name, email was collected to keep the responder's privacy and make the evaluation results unbiased. Students from different groups and some friends participated in this evaluation.

Evaluation questions

Followings are the questions given in the google form. There were 3 sections.

Section 1: Here following 2 questions were asked to identify users travel patterns. The most suitable option could be selected and only one option is allowed.

Q1. How often do you travel?

- One time or more per week
- Once or a few times per month
- One or a few times per year
- I don't travel much

Q2. Do you prefer Solo travel or Group Travel?

- Solo Travel
- Group Travel
- Prefer both
- Depends on the trip

Section 2: Here following questions were asked to get user experience on prototype design. Here also user was supposed to select the most suitable answer.

Q3. Aesthetics

- Excellent - (Beautiful design, visually engaging, harmonious and well executed)
- Good - (Visually pleasing, somewhat balanced and cohesive)
- Satisfactory - (Basic design, not particularly eye catching or balanced)
- Needs Improvement - (Poor visual appeal, cluttered, lacks harmony)

Q4. Usability

- Excellent - (Extremely intuitive, effortless interactions, high user friendly)
- Good - (Clear navigation, easy to use)
- Satisfactory - (Somewhat clear, but with some navigation issues)
- Needs Improvement - (Difficult to navigate, Confusing UI)

Q5. Innovation

- o **Excellent** - (Highly original, pushes boundaries in a compelling way)
- o **Good** - (Innovative use of elements, brings some fresh ideas)
- o **Satisfactory** - (Some creativity but predictable)
- o **Needs Improvement** - (No new ideas, standard design)

Q6. Accessibility

- o **Excellent** - (Fully accessible for all users, inclusive design)
- o **Good** - (Mostly accessible, minor issues)
- o **Satisfactory** - (Somewhat accessible but not fully inclusive)
- o **Needs Improvement** - (Not accessible, no consideration for disabilities)

Q7. Complexity

- o **Excellent** - (Simple and having ideal features that anyone can use)
- o **Good** - (Simple and having good features)
- o **Satisfactory** - (Features are ok but need to optimize)
- o **Needs Improvement** - (Too much options. Need to optimize)

In the following question, the user was given chance to provide multiple options.

Q8. Favorite / Attractive Feature(s)

- Login and user profile
- Creating travel groups and user experience sharing
- AI based group suggestion
- Communication and location sharing
- Support and Notifications
- None

Section 3: Here following questions were asked from the user to get their opinion on the project. Users were supposed to give ratings from 1 (Very Unlikely) to 5 (Very Likely)

Q9. Do you believe this app will help connecting travelers?

14
Q10. Considering your overall experience, how likely would you use this app ?

11
Q11. Considering your overall experience, how likely would you recommend this app to a friend or colleague?

Also, additional paragraph field was given to users to express their opinion.

Q12. Please provide your overall Feedback/comments/suggestions on this app

Evaluation Methodology

In this project, design prototype was evaluated with Rubrics. A rubric is an explicit set of criteria used for evaluating a particular type of work or performance and provides more details than a single grade or mark. Rubrics, therefore, will help to evaluate more objectively. Rubrics are designed as a grid-type structure, a grading rubric includes criteria, levels of performance, scores, and descriptors which become unique assessment tools for any given assignment. Also, participatory evaluation was done with the teaching assistant.

Due to the following reasons, Rubrics was selected as the evaluation method for this project.

1. Assessment clarity.

Using rubrics clarifies assessment goals, helping identify essential components of assignments. This clarity ensures that evaluations effectively measure the design outcomes. Ultimately, rubrics help distinguish different levels of user experience by clearly defining expected outcomes.

2. Transparency

Rubrics provide clear criteria and expectations for evaluators reflecting designer's expectations.

3. Reduced evaluation time

Rubrics serve as both a guide for evaluators and an analytic tool for designers. While evaluating functions and services is time-consuming, using a rubric can streamline the process by keeping the focus on specific evaluation criteria, ultimately speeding up the evaluation.

4. Simplicity

The Rubrics method is simple for both the evaluators and the designers. Therefore, it helps both parties to avoid unnecessary evaluation complexities.

5. Avoiding bias

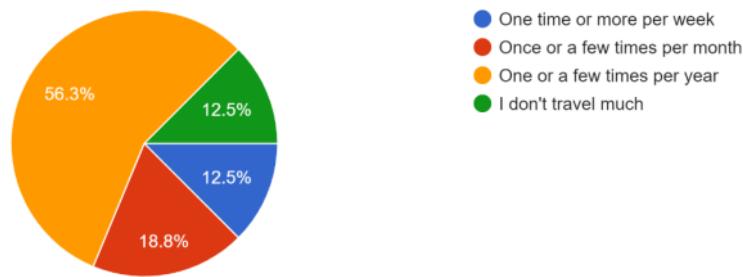
Designers can use the same criteria across many functionalities of the mobile app. Therefore, it will not lead to biasing certain functionalities.

Evaluation Results

There was total 16 responses given in the evaluation. Followings are the graphical representation of results.

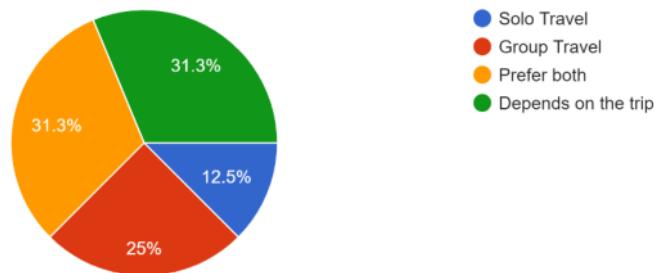
How often do you travel ?

16 responses



Do you prefer Solo travel or Group Travel ?

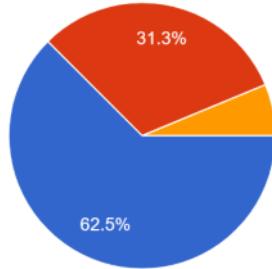
16 responses



As per the travel patterns of the respondents, most of them do travel at least one or more times per week/month. Also, they have a diverse preference for solo travel and group travel. This shows that the participants are good candidates (People who travel and have different travel preferences) for this evaluation.

Aesthetics

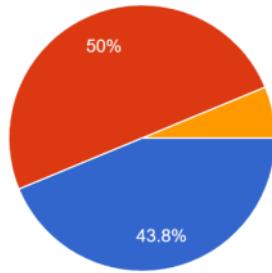
16 responses



- Excellent (Beautiful design, visually engaging, harmonious and well executed)
- Good (Visually pleasing, somewhat balanced and cohesive)
- Satisfactory (Basic design, not particularly eye catching or balanced)
- Needs Improvement (Poor visual appeal, cluttered, lacks harmony)

Usability

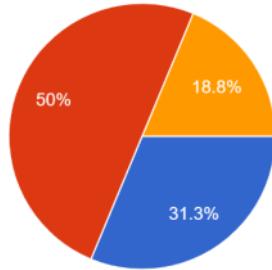
16 responses



- Excellent (Extremely intuitive, effortless interactions, high user friendly)
- Good (Clear navigation, easy to use)
- Satisfactory (Somewhat clear, but with some navigation issues)
- Needs Improvement (Difficult to navigate, Confusing UI)

Innovation

16 responses



- Excellent (Highly original, pushes boundaries in a compelling way)
- Good (Innovative use of elements, brings some fresh ideas)
- Satisfactory (Some creativity but predictable)
- Needs Improvement (No new ideas, standard design)

Accessibility

16 responses

**Complexity**

16 responses

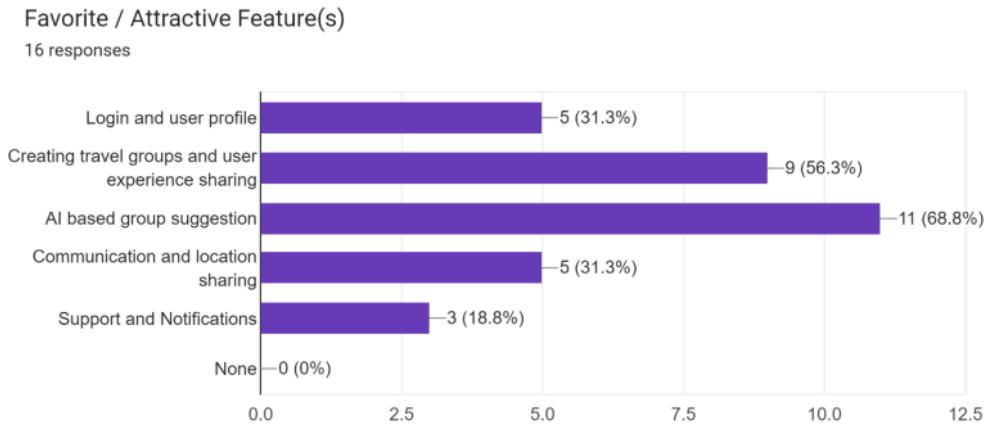


Most of the people have responded that the app is aesthetic and has excellent/good usability.

Regarding the innovation, around 50% of people responded as good and around 30% say it is excellent. Also, around 20% say it is satisfactory which means some improvements may be required in future.

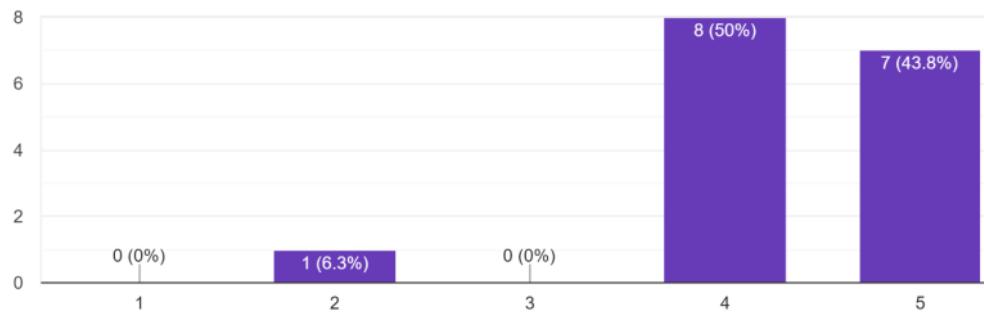
Considering accessibility and complexity, most people have responded to them as excellent and good. Around 12.5% believes it is satisfactory.

No one believes that the design needs improvements considering above 5 criterias.



Considering the features, AI based group suggestion is the most favorite feature. Then creating travel groups and user experience sharing comes at the 2nd place. Logging and user profile, Communication and location sharing becomes 3rd favorite.

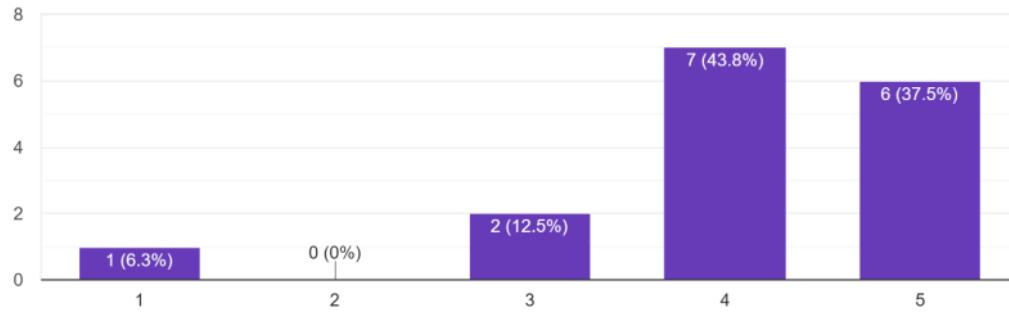
Do you believe this app will help connecting travelers? (1 Very Unlikely to 5 Very Likely)
16 responses



Most people believe that this app will help connect travelers.

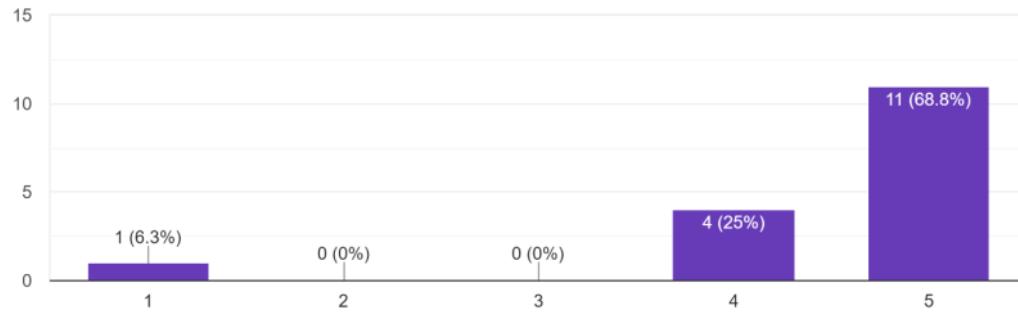
Considering your overall experience, how likely would you use this app ? (1 Very Unlikely to 5 Very Likely)

16 responses



Considering your overall experience, how likely would you recommend this app to a friend or colleague? (1 Very Unlikely to 5 Very Likely)

16 responses



Also, many people expect to use the app, and they like to suggest it to friends/colleagues.

User Feedback from Google Form

Following are the overall Feedback/comments/suggestions on this app. 5 responses were there.

1. It would be better if permission for connecting can be edited as user wants. May be connecting is allowed during some periods or to show only friends, visible only to friends.
2. It would be better if traveling apps like uber, train schedule and booking apps can be integrated
3. I think an initiative for helping connect travelers is a great one since I have only seen people connect through Facebook groups
4. Would need some time to get familiar with all the features but overall interesting ideas.
5. Have some mechanism to control forum post reaction/comments to make it safe and pleasant

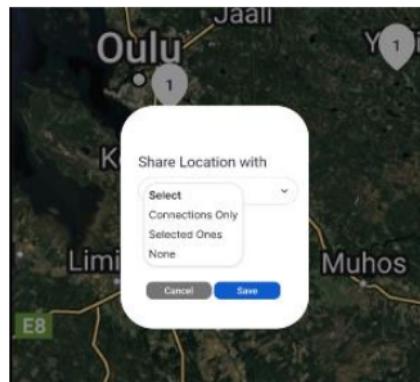
Suggestions 1 says that connecting with others also may need some moderation. Suggestion 2 says that interconnecting some travel related apps with this app. No 5 says forum posts may need some moderation. This feedback will be taken into consideration and to be planned and added in future work.

Feedback 3, 4 are complements. As per feedback 4, one user wanted more time to get familiar with the app. This also can be considered in future work to reduce complexity.

User Feedback from in-person review with the teaching assistant

Also, from the in-person review with the teaching assistant, the following feedback was received.

1. Initially location share with everyone was there. But that could have led to security and privacy issues. Therefore, it was changed to share with none, connections only and selected ones



2. Reactions and comments may need some moderation. This is added to the future work of the design.
3. To look at the possibilities to use the app to connect travelers at the same time - different locations even during a travel. Ex: during a hike, connecting/communicating hikers in 2 different locations. This also to be added in the future work.

7 CONCLUSION AND REFLECTION

Our group from the beginning of the project had a good start and was able to continue smoothly with minimum difficulties and was able to complete the project successfully. Throughout our project the group was able to connect the theories of social computing and the intricate social computational systems that was basically can be mentioned as the foundation of modern digital interactions. The development of 'Travel Mate' has not only deepened the understanding of the technical aspects involved but has also offered profound insights into the human behaviors and interactions that drive these systems.

As mentioned earlier through the process of designing and building the app the team has gained a clearer understanding of how social computing encompasses not just the technical infrastructure but also the social dynamics that influence the user engagement and an also the user experience. The necessity of creating user stories highlighted the importance of the empathy in design in which was helping the team pushing and to consider the diverse backgrounds, motivations and needs of the users. By reflecting on the different types of travelers from solo adventurers to families, the team were able to enhance and design the app features ensuring that the user experience was not just functional but also an emotionally resonant.

Going back through the project it is clearly seen that there were many rewarding aspects of this project there were certain challenges inevitably arose. One of the more straightforward elements was the ideation phase in where brainstorming sessions mentally picturing the ideas and how the app will work, the team has shared their ideas and has built upon one another's suggestions. This collaborative spirit shows the creativity and a sense of ownership among all team members. Additionally in the creation of user stories it is proved to be a practical tool which was making it easier to visualize the app's purpose and functionalities.

However in the designing or developing the prototype phase presented many difficulties mainly when it come to translating the concepts into tangible designs. Initially the team had a struggle of getting the ideas clarified leading to confusion about navigation and user interactions. Even as the reader of the report it is clear that the iterating on the prototypes required not just technical skills but also open mindedness to feedback both from team members and potential users. This iterative process was time consuming but it ultimately refined the team designs and resulted in a more user friendly interface.

So What Worked Well and what were Areas for Improvement?

One of the main successes of the project was the incorporation of user feedback into the team's evaluation methodology. Utilizing the rubrics as an assessment tool provided a structured approach to gauge the user satisfaction across the various app functionalities. The clarity and transparency offered by rubrics helped the team to identify their key strengths mainly such as the aesthetic appeal and the usability of the app. Moreover the AI based group suggestion feature emerged as a favorite among users validating the teams' initial assumptions about its potential impact on user engagement.

Furthermore the group also encountered areas that need improvement. The feedback revealed that while many users appreciated the app's innovative features and some expressed the need for more intuitive navigation especially for those less familiar with the technology. This highlighted a crucial lesson for the team which is that "no matter how advanced the technology accessibility should always remain a priority." Ensuring that the app accommodates a broader range of user abilities and preferences will be essential as we move forward.

And what are the Personal Insights and what will be the Future Directions of the app?

It is a really good question to ask. Reflecting on this project it is clear that how intertwined social dynamics and computational systems are in shaping user experiences. The process has reinforced the belief of the team which is that **successful social computing solutions require a balance between innovative technology and a deep understanding of user needs**. In the viewpoints of we have evolved throughout this project and now the team really appreciates the importance of involving users in every step of the design process but not just as a final check but as active participants.

Moving forward the team aim to incorporate these lessons into future projects. Emphasizing more user centered design, improving accessibility and also ensuring that technological solutions address real social problems will be paramount. The team believes that following these steps will help to make any design or product be an impact not even in the marketplace but also among the society. As we continue to explore the field of social computing the team eager to engage with users and stakeholders even more deeply which will help in creating the systems that not only facilitate connections but also enhance the quality of those connections.

So finally motioning all the facts in details what is our final message? This project has been a transformative experience merging technical skills with a greater understanding of the social context in which technology operates. As we the team strive to create tools that enhance social interactions the lessons learned here will serve as a foundation for future endeavors in the ever evolving landscape of social computational systems.

8 CONTRIBUTIONS

Member	Contribution
Name: Gihan Wansekara Student Id: 2410243, <gihan.wansekara@student.oulu.fi>	<p>Prototype design: 'User Experience Sharing & Reaction/Comment', 'Events', 'Support Services', 'Notification Module'</p> <p>Figma design: Getting started, Login, creating account, password reset, OTP verification, Home page, events calendar, user event schedule, suggested events, User created post (My experience), All the posts by users (User Experience feed), post/content search, detailed post description and location view, notification panel</p> <p>Evaluating the design: Creating the google form with questions and conducting the evaluation.</p> <p>Reporting: Then writing the evaluation section of the report and presentation</p> <p>Presentation: Evaluation section</p>
Name: Muhammad Ramish Student Id: 2411318 <muhmmad.ramish@student.oulu.fi>	<p>Prototype Design: User Management Module, Profile Module</p> <p>Figma Design: Profile page, Home page, Rewards page</p> <p>Reporting: Related Projects and Related Literature sections, References</p> <p>Presentation: Design section</p>
Name: Uswah Batool Student Id: 2407697 <uswah.batool@student.oulu.fi>	<p>Prototype Design: Real-Time Communication Module, Location & Navigation Module</p> <p>Figma design:</p> <ul style="list-style-type: none"> • User's current location on Map • Search location on Map • View travelers, hosts or service providers based in a location on Map • Connect with users through their location • Switch location sharing • Messaging with individuals • Messaging in groups • Sharing option in a Chat • Splash Screen • Bottom navigation bar

	<p>Low Fidelity Prototype: Created wireframes for all the major modules.</p> <p>Report writing: Community Heuristics</p> <p>Presentation: Prototype low-fidelity, Prototype Final Product</p>
Name: Pamodh Ranasinghe Student Id: 2307267 <Pamodh.Ranasinghe@student.oulu.fi>	<p>Prototype design: 'Travel Group Module', 'Travel Group Creation & Management', 'AI-Suggested Groups', 'Group Discussion Service'</p> <p>Figma design: 'Travel group initial page', 'Suggested travel group according to the location', 'Creation of travel group', 'Travel groups you already created page', 'Join new travel groups according to search', 'Filtration for the search for travel groups (According to location eg: Tampere)', 'AI chatbot chat interface', 'Page for editing the travel group you created', 'Search Destination', 'Filter for search destination'.</p> <p>Reporting: Writing the introduction, conclusion and reflection part of the report. Introduction and reflection in presentation.</p> <p>Presentation: Introduction and Reflection sections</p>

9 REFERENCES

- [1] TripIt - Highest-rated trip planner and flight tracker. Retrieved October 3, 2024 from <https://www.tripit.com/web#:~:text=Unlike%20other%20travel%20apps,%20TripIt%20can%20organize%20your%20travel%20plans>
- [2] Matt Brown. 2019. Tripit: Everything You Need to Know. Retrieved October 3, 2024 from <https://10xtravel.com/tripit-everything-you-need-to-know/>
- [3] Travello Makes Travel An Engaging Social Party. Retrieved October 3, 2024 from <https://www.travelpulse.com/news/technology/travello-makes-travel-an-engaging-socialparty#:~:text=Travello%20allows%20you%20to%20see%20all%20of%20those%20travelers%20in>
- [4] About TourRadar: Organized Adventure Platform | Learn Our Story & Team. Retrieved October 3, 2024 from <https://www.tourradar.com/about>
- [5] Amar Hussain. 2024. TourRadar Review - Specializing in Multi-Day Tours & Travel Packages. Retrieved October 3, 2024 from <https://upgradedpoints.com/travel/tourradar-review/>
- [6] Mohamed Badouch and Mehdi Boudaoune. 2023. Personalized Travel Recommendation Systems: A Survey of Machine Learning Approaches in Tourism. (April 2023). Retrieved from <https://doi.org/10.55529/jaimlnn.33.35.45>
- [7] A. A. Nunes, T. Galvao, J. Falcao e Cunha, and J. V. Pitt, "Using social networks for exchanging valuable real-time public transport information among travellers," in Proc. 2011 IEEE 13th Conf. Commerce Enterprise Comput., 2011, pp. 285–292. doi: [10.1109/cec.2011.60](https://doi.org/10.1109/cec.2011.60).
- [8] Kiyana Zolfaghar, Farid Khoshalhan, and Mohammad Rabiei. 2010. User Acceptance of Location-Based Mobile Advertising: An Empirical Study in Iran. *International Journal of E-adoption* 2, 2 (April 2010), 35–47. <https://doi.org/10.4018/JEA.2010040103>
- [9] Feifei Xu, Jessika Weber, and Dimitrios Buhalis. 2013. Gamification in Tourism. *Information and Communication Technologies in Tourism 2014* (2013), 525–537. DOI: https://doi.org/10.1007/978-3-319-03973-2_38
- [10] Wei Wei, Fengyuan Xu, and Qun Li. 2012. MobiShare: Flexible privacy-preserving location sharing in mobile online social networks. 2012 *Proceedings IEEE INFOCOM* (2012), 2616–2620. DOI: <https://doi.org/10.1109/infcom.2012.6195664>

Social Computing 2024-2025 Final Report group 20 (2).pdf

ORIGINALITY REPORT



PRIMARY SOURCES

- | | | |
|---|--|------|
| 1 | Submitted to Hillsborough County Public Schools - Professional Development Courses | 1 % |
| 2 | hdl.handle.net | <1 % |
| 3 | trepo.tuni.fi | <1 % |
| 4 | irandoc.ac.ir | <1 % |
| 5 | www.springerprofessional.de | <1 % |
| 6 | Submitted to Southampton Solent University | <1 % |
| 7 | Submitted to Kaplan College | <1 % |
| 8 | Submitted to Georgetown University | <1 % |
| 9 | Submitted to University College London | <1 % |
- 1 Submitted to Hillsborough County Public Schools - Professional Development Courses 1 %
Student Paper
- 2 hdl.handle.net <1 %
Internet Source
- 3 trepo.tuni.fi <1 %
Internet Source
- 4 irandoc.ac.ir <1 %
Internet Source
- 5 www.springerprofessional.de <1 %
Internet Source
- 6 Submitted to Southampton Solent University <1 %
Student Paper
- 7 Submitted to Kaplan College <1 %
Student Paper
- 8 Submitted to Georgetown University <1 %
Student Paper
- 9 Submitted to University College London <1 %
Student Paper

- 10 Maria Anastasia Katikaridi, Aphrodite Tsalgatidou, Eleni Koutrouli. "A Study on Rewarding Mechanisms for Activating Silent Users in Social Media", 2023 14th International Conference on Information, Intelligence, Systems & Applications (IISA), 2023
Publication
-
- 11 Submitted to University of Science and Technology of Fujairah <1 %
Student Paper
-
- 12 docplayer.net <1 %
Internet Source
-
- 13 www.grafiat.com <1 %
Internet Source
-
- 14 Submitted to Pacific International Hotel Management School <1 %
Student Paper
-
- 15 hmjournals.com <1 %
Internet Source
-
- 16 journal.hmjournals.com <1 %
Internet Source
-
- 17 publikationen.bibliothek.kit.edu <1 %
Internet Source
-
- 18 scholarworks.waldenu.edu <1 %
Internet Source

Exclude quotes

Off

Exclude bibliography

Off

Exclude matches

Off