

# CSCI 5601 – Milestone 1

## Group Information

Project Title: Vacation Pre-Trip

Date: 2022-10-20

Group Name: Orange

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## Project Description

### Purpose and Background

#### Study Purpose

Describe what you are studying, the purpose/reason for undertaking the study (i.e., what is the goal of the study, why are you doing the study).

Over the years, travelling has not been confined to work-related and personal reasons; now, it has become a hobby, and people find reasons to travel and plan vacations more often. Booking vacations has also become much easier than it used to be, thanks to online platforms and mobile apps. There is always room for improvement for such apps. These apps become increasingly challenging to use as they add more features.

For this purpose, we previously explored a couple of apps, out of which we selected MakeMyTrip as the base app to perform the study, which will reflect how users interact with the app and how they perform the tasks. It is crucial to study and gather data on how different users perceive the features like flight booking, hotel booking, cab booking etc., differently to complete a booking task. The information obtained might help shape design decisions. The observations and the feedback will help us create prototypes for our travel pre-planner app.

#### Objectives

Provide a list with 3-5 objectives that you hope you to learn from this process (this can be in point form)

- 1) Understanding how users perceive features of existing applications.
  - Understanding how the users perceive the features of existing applications is essential. Studying existing applications with users gives us insight into developing a new application so we can avoid bad design choices. Different features can be perceived differently by the users.
- 2) Understanding existing practices and approaches by research.

- It is important to study existing applications, like how they implement features, how difficult they are to use, and how many features it takes to complete a task.

### 3) Understanding user needs for pre-planning a vacation trip

- It is essential to know what the key features are. It is also important to keep the user suggestions and feedback in mind to simplify features and focus on more key features.

### 4) Understanding challenges while making bookings.

- Identifying any areas of concern that make the users face challenges while making bookings; users may find some of the features confusing, and it may consume more time.

## Literature Review and Application Assessment

Booking a flight, lodging, dining at hotels and restaurants, exploring the city's various attractions, reserving taxi services, and other travel-related arrangements can be a herculean task. This issue will be resolved by the chosen application by combining all of these services into a single application, saving the user time when planning a trip. The proposed study makes use of some of the earlier research papers on vacation pre-trip booking application.

Sheng Wang, Mingzhao Li, Yipeng Zhang, Zhifeng Bao, David Alexander Tedjopurnomo and Xiaolin Qin in "Trip Planning by an Integrated Search Paradigm" presented TISP - a Trip planning system based on an Integrated Search Paradigm - a user-friendly end-to-end system. A trip is planned through a series of search processes that use the same or different types of queries until the desired point of interest and trajectories are discovered. The authors proposed seven queries supported by TISP through which the user can explore attractions, facilities, hotels, and the best travel route as represented by the author. The user interface would consist of a selection panel where the user could explore attractions in a map view that would become more detailed if the user clicked on any attraction. In addition, TISP recommends the best route from the user's current location to the attraction [1].

In paper, "Improving Personalized Trip Recommendation by Avoiding Crowds" by Xiaoting Wang, Christopher Leckie, Jeffrey Chan, Kwan Hui Lim, and Tharshan Vaithianathan, the authors propose an Ant Colony Optimisation algorithm extension to recommend POI to users based on their interests and the crowdedness of a POI. The proposed approach suggests that the order in which POIs are visited during a tour be adjusted to minimise overcrowding. The task at hand is a variation of the Orienteering Problem in which profit is determined by a combination of POI popularity, user interest, and crowdedness. Because our theme is holiday pre-trip preparation, a recommendation system like this could help users plan their trip ahead of time to save time [2].

The author, Ivan Burmistrov, in his paper "Mobile air ticket booking" focuses on studying end-user viewpoints and user interface standards specific to airline tickets were the objectives. The study goes into great detail about each suggested guideline for online travel applications. The study focuses on purchasing airline tickets, which is a crucial component of any app for pre-vacation planning. The study discusses target user types, expectations, and the usability point of view. The study also discusses the user's expectations and how the app should keep the user's attention. All of these factors will contribute to a positive user experience and interface for the smartphone app for pre-trip planning [3].

Damianos Gavalas, Vlasios Kasapakis, Charalampos Konstantopoulos, Grammati Pantziou, Nikolaos Vathis, and Christos Zaroliagis proposed an algorithm in their paper "A personalized

multimodal tourist tour planner” which allows users to plan routes that reduce their transit waiting time. It can also assist them in creating a personal tour plan by entering whether they want to reduce walking or the start and end points of their tour, as well as optimising their tour routes [4].

There are numerous ways to plan and organise travels depending on various conditions, as the paper's title suggests: "Not all trips are equal". Based on the visitor's goal, visitor type, trip duration, trip category, location prediction, check-in intensity, venue popularity, etc., one may forecast a great trip. This is feasible because to the popular location-based social network (LSBN) software Foursquare, which offers its target population a wide range of travel-related services. Determining the difference between long-trip and short-trip travel, which is influenced by venue types, visits' purposes, and varied interests, presented a problem for researchers. Short-term visitors are seen to visit popular locations more frequently than long-term visitors. When making travel plans, it is important to take into account the research on check-in intensity because it helps travellers choose a destination based on how many people will be visiting it. In other words, the venue is more well-liked the higher the check-in intensity [5].

For the study we considered two applications MakeMyTrip and Expedia for vacation pre-trip planning. Both the application were sharing features like flight booking, activities to do and attractions around the place, hotel suggestions, vacation packages includes hotel, flight and car booking, hotel booking, car bookings, user profile and authentication, rating and reviews and pay at checkout [6] [7]. MakeMyTrip offers wide range of use cases for the vacation planning. It has a huge market cover across the globe. It provides some of the unique features that its competitors do not provide like special category discounts, visa services, forex cards. Therefore, after critical analysis we choose MakeMyTrip as a primary application for the further study [6].

## Information Gathering Approach – [~1-1.5 (1.5 pages max), not including attachments]

### Location, Equipment/Application and Study Instruments

#### Location

The study will be done in a lab in the Goldberg Computer Science Building. Users will be asked to do a variety of tasks using MakeMyTrip on a phone for us to better understand Vacation Pre-Trip

Participants will be asked to do 4 tasks that demonstrate these features: Booking vacation packages, booking cheap flights, booking accommodation, and exploring activities around the city followed by a short interview on their experiences using see Appendix B for the tasks and questions.

While participants complete the tasks, we will observe them and record these observations using a coding sheet (Appendix C). We may record the session but only the interactions on the screen will be recorded. Nobody will have their video on [for privacy reasons]. All recordings will be deleted at the end of the study (after analysis).

#### Process

This is a step-by-step process of what the user will do. (note, you should refer to Appendix A – study script in this section)

1. The pilot will be briefed about the entire process, and any doubts regarding the study will be answered.
2. The pilot will be asked to perform four tasks using the app and after each task they will be asked task related questions.
3. The pilot will be asked post-interview questions.
4. At the end of the study, the pilot will be asked if they found any questions confusing or difficult to understand.

## Researcher Roles

What will each researcher do – do not use actual names rather Researcher 1, Researcher 2 etc. Remember each researcher will have a role as you will only test one participant at a time.

We conducted interviews with the participants during the Pilot Study and watched them use the app. Our team consisted of 5 researchers who played the following various roles:

The user was requested to complete a task on the app after being given the task.

- Researcher 1: The user was given a description about the purpose of the study and will be instructed to complete the tasks one after another.
- Researcher 2: The researcher saw the user use different features and carry out the task. The researcher also observed the user's actions, such as searching for characteristics that are suitable for their needs.
- Researcher 3: After the user completes the activity, the researcher asks the user follow-up questions, such as what challenges they encountered when making travel plans and how they found using the app.
- Researcher 4: The researcher took note of the user's responses to the post-task questions and asked user about the suggestions.
- Researcher 5: As the last researcher, this person concluded, examined the observation, and spoke with the other researchers. This is done to improvise with the software, uncover its flaws, and fix them.

## Expected Time to do the study

Give a breakdown of expected time for each user.

Each interview/contextual inquiry will take ~25 minutes

- 2-3 minutes to introduce the researchers, topic and process, and answer any questions.
- 20 minutes to go through the questions and observation tasks.
- 2-3 minutes to thank users and answer any questions.

## References

Include all references from Part 1 and if use any references throughout the proposal in ACM format

[1] Sheng Wang, Mingzhao Li, Yipeng Zhang, Zhifeng Bao, David Alexander Tedjopurnomo and Xiaolin Qin. 2018. Trip Planning by an Integrated Search Paradigm. In Proceedings of 2018 International Conference on Management of Data (SIGMOD'18). ACM, New York, NY, USA, 4 pages. <https://doi.org/10.1145/3183713.3193543>

[2] Xiaoting Wang, Christopher Leckie, Jeffrey Chan, Kwan Hui Lim, and Tharshan Vaithianathan. 2016. Improving Personalized Trip Recommendation by Avoiding Crowds. In Proceedings of the 25th ACM International on Conference on Information and Knowledge Management (CIKM '16). Association for Computing Machinery, New York, NY, USA, 25–34. <https://doi.org/10.1145/2983323.2983749>

[3] Ivan Burmistrov. 2009. Mobile air ticket booking. In European Conference on Cognitive Ergonomics: Designing beyond the Product --- Understanding Activity and User Experience in

Ubiquitous Environments (ECCE '09). VTT Technical Research Centre of Finland, FI-02044 VTT, FIN, Article 11,1–5. <https://dl.acm.org/doi/10.5555/1690508.1690523>

[4] Damianos Gavalas, Vlasios Kasapakis, Charalampos Konstantopoulos, Grammati Pantziou, Nikolaos Vathis, and Christos Zaroliagis. 2014. A personalized multimodal tourist tour planner. In Proceedings of the 13th International Conference on Mobile and Ubiquitous Multimedia (MUM'14). Association for Computing Machinery, New York, NY, USA, 73–80. <https://doi.org/10.1145/2677972.2677977>

[5] Ivan Burmistrov. 2009. Mobile air ticket booking. In European Conference on Cognitive Ergonomics: Designing beyond the Product --- Understanding Activity and User Experience in Ubiquitous Environments (ECCE '09). VTT Technical Research Centre of Finland, FI-02044 VTT, FIN, Article 11,1–5. <https://dl.acm.org/doi/10.5555/1690508.1690523>

[6] MakeMyTrip - #1 Travel Website 50% OFF on Hotels, Flights & Holiday. *MakeMyTrip*. Retrieved October 20, 2022 from <https://www.makemytrip.com/>

[7] Travel with Expedia.ca: Vacation Homes, Hotels, Car Rentals . *Expedia*. Retrieved October 20, 2022 from <https://www.expedia.ca/>

## Appendices

Appendix A – Introduction Script

Appendix B – Task List/task scenarios and interview questions

Appendix C – Coding Sheets

Appendix D – Work break down by team member

**Note: each Appendix should start on a new page.**

## **Appendix A – Introduction Script**

*Instructions: fill in the parts that are in the [square brackets] and other changes if need be... this is to be read to each of users when you first meet them. By doing this script, it ensures that it doesn't matter which researcher talks with the participants (consistency) and ensures you don't forget something.*

Hello, we are team Orange

We are studying the topic of Vacation Pre-Trip using smart phone. In order to find out more about this, we have chosen an application based on this topic. This application is: MakeMyTrip.

We have come up with 4 different tasks that we are going to ask you to perform on our device using this application.

After you perform the tasks, we have a short interview with specific questions about your experience using the app and about trip planning in general.

The process should take 20 minutes. Please let us know of any questions that you have at any time.

## **Appendix B – Task List/task Scenarios**

### **TASKS AND QUESTIONS**

#### **Task 1:**

In the first task, we would like you to book a budget-friendly vacation package to the Maldives for 7-8 days that will include airport transfers, flight booking, accommodation for you and your family.

We would like you to use the MakeMyTrip app to book a vacation trip from New Delhi to Maldives to spend some quality time with your family at its famous beach, as you have 7-8 days of vacation days at work. You have a budget of Rs 500,000 for the whole trip including flight tickets, accommodation, and food etc. From the 11th of December, you must look for Maldives vacation packages that includes flight bookings, airport transfers, accommodation etc. on MakeMyTrip.

#### **Questions:**

After doing this task, we have a few questions we would like to ask you:

1. How did you previously book vacation packages for your family vacation?
2. What features did you use to find a budget friendly holiday package from New Delhi to Maldives?
3. What other suggestions do you have for filters that will help you be more specific about your requirements to book a holiday package?
4. How simple was it to book a package for less than Rs 500,000 to Maldives?

#### **Task 2:**

The second task we would like you to perform is to find the cheapest flight tickets from Halifax to Toronto.

Using the application, MakeMyTrip, to complete the following task:

Imagine that your best friend, who lives in Toronto, will hold a birthday party on Saturday, October 15, 2022 and invite you to his birthday party. Since he is your best friend, and you really want to show up at his birthday party. You plan to take a flight from Halifax to Toronto on October 15, 2022. You're trying to find the least expensive flight ticket that will still leave room in your budget and get you there on October 15, 2022, in time for his birthday celebration.

#### **Questions:**

After doing this task, we have a few questions we would like to ask you:

1. What features of this application helped you filter the cheapest flight?
2. What aspects of this feature did you like or dislike?
3. How simple was it for you to choose the least expensive flight out of all the options? If not, what recommendations do you have for enhancing the features you used to complete the task?
4. How do you typically compare airline ticket prices?

#### **Task 3:**

The third task would like you to plan a trip that offers luxury services and hospitality.

Consider visiting Australia to cheer on Team India in the upcoming Cricket World Cup. As this is your first international trip, you want to have a good time while you're there. You want to book a room at a five-star hotel that provides high-end services and amenities such as valet parking, multilingual staff, a pool, round-the-clock assistance, spa services, live entertainment, and so on, and is close to Melbourne Cricket Stadium, making it easier for you to reach there.

#### **Questions:**

After doing this task, we have a few questions we would like to ask you:

1. How did you compare the high-end hotel to other high-end hotels and what search criteria did you use to find it?
2. How difficult was it to find a hotel that had all the benefits?
3. Have you ever booked the hotel previously? If yes, how did you book it?
4. How many filters did you use to find a hotel room near Melbourne Cricket Stadium, and what were they?

#### **Task 4:**

The last task we would like you to perform is to explore and book attractions and activities happening in Dubai city.

Using the application, complete the following task:

Assume you're going on a three-day business trip to Dubai. You want to spend your weekend in Dubai in addition to those three days because you've always wanted to see the Burj Khalifa, the world's tallest building, and the Dubai Frame. Using the app, you must book a tour to the Burj Khalifa and Dubai Frame, as well as explore and book other attractions and activities.

**Questions:**

After doing this task, we have a few questions we would like to ask you: [add questions from Lab 3]

1. What features in the app allow you to find desired attractions? What are the steps you took to make the booking?
2. How easy was it for you to find the attractions? What are the things that you liked and disliked about the application while finding the attraction?
3. Have you ever done the same kind of task before? If yes, how different was this time as compared to the previous one? Which one was better?
4. What are your suggestions to improve the existing process? What things can be added?
5. How confident were you while exploring the activities? Did you ever feel lost and confused to find something meaningful? What helped you to come out of that situation and do the bookings?



## **End of Study Questions**

Finally, we have a short interview to find out more about your overall experience using the application and the application in general. We have organized the questions by themes:

### **Theme 1**

First, we will ask you questions about booking flights in mobile apps:

Questions:

1. Do you prefer booking flights with smartphone? If not, why do you not like to use it?
2. How long does it take for you to book a flight with smartphone application? Which parts/feature slow you down to do the task?
3. Which feature of the pre-trip smartphone application does you like most while booking a flight? And why do you like it?

### **Theme 2**

Next, we will ask you questions about planning holiday trips:

Questions:

1. Do you prefer using individual features for planning trips like booking flights, booking hotels, booking cabs etc. or do you prefer a holiday package that includes everything?
2. Do you prefer travel agents over websites and applications for trip planning?
3. Do you prefer pre-planning trips like exploring and booking attractions and hotels or do you like planning trips spontaneously?

### **Theme 3**

Next, we will ask you questions about booking accommodation:

Questions:

- 1) Do you read the reviews and ratings of each hotel while booking accommodation? If yes, do you see the bad reviews first or the good reviews for each hotel
- 2) What kind of amenities are a must have while you book a hotel?
- 3) What payment methods do you prefer to book a hotel?
- 4) Do you prefer property and location of hotels or in-room facilities offered by a hotel while booking accommodation?

### **Theme 4**

Finally, we will ask you questions about booking cab services for a multi-day trip:

Questions:

- 1) What are the features that you look at in an application for booking cab services?
- 2) What makes you feel confident and trust the online apps instead of booking the cab from local providers?
- 3) What services do you like to book alongside cab booking when planning for a trip?

## Appendix C – Coding Sheets

### Coding Sheet

Participant ID: \_\_\_\_\_

Researcher: \_\_\_\_\_

Date: \_\_\_\_\_

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#### Instructions:

Add each question and/or task that you want to observe and questions, leaving space for researchers to make notes or sketches after each task and question. Leave the top portion blank – this will be filled in by whoever is filling in the sheet. On the study day, you will need to use one coding sheet (file) per user/recorder when you do the study.

#### Task 1:

In the first task, we would like you to book a budget-friendly vacation package to the Maldives for 7-8 days that will include airport transfers, flight booking, and accommodation for you and your family.

We would like you to use the MakeMyTrip app to book a vacation trip from New Delhi to Maldives to spend some quality time with your family at its famous beach, as you have 7-8 days of vacation days at work. You have a budget of Rs 500,000 for the whole trip including flight tickets, accommodation, food etc. From the 11th of December, you must look for Maldives vacation packages that include flight bookings, airport transfers, accommodation etc. on MakeMyTrip.

#### Observations [take notes while participant does the tasks]:

#### Post-task Questions:

Q1. How did you previously book vacation packages for your family vacation?

Q2. What features did you use to find a budget friendly holiday package from New Delhi to Maldives?

Q3. What other suggestions do you have for filters that will help you be more specific about your requirements to book a holiday package?

Q4. How simple was it to book a package for less than Rs 500,000 to Maldives?

**Task 2:**

Imagine that your best friend, who lives in Toronto, will hold a birthday party on Saturday, October 15, 2022 and invite you to his birthday party. Since he is your best friend, and you really want to show up at his birthday party. You plan to take a flight from Halifax to Toronto on October 15, 2022. You're trying to find the least expensive flight ticket that will still leave room in your budget and get you there on October 15, 2022, in time for his birthday celebration.

**Observations [take notes while participant does the tasks]:****Post-task Questions [leave room to take notes]:**

Q1. What features of this application helped you filter the cheapest flight?

Q2. What aspects of this feature did you like or dislike?

Q3. How simple was it for you to choose the least expensive flight out of all the options? If not, what recommendations do you have for enhancing the features you used to complete the task?

Q4. How do you typically compare airline ticket prices?

**Task 3:**

The third task would like you to plan a trip that offers luxury services and hospitality.

Consider visiting Australia to cheer on Team India in the upcoming Cricket World Cup. As this is your first international trip, you want to have a good time while you're there. You want to book a room at a five-star hotel that provides high-end services and amenities such as valet parking, multilingual staff, a pool, round-the-clock assistance, spa services, live entertainment, and so on, and is close to Melbourne Cricket Stadium, making it easier for you to reach there.

**Observations [take notes while participant does the tasks]:**

**Post-task Questions [leave room to take notes]:**

Q1. How did you compare the high-end hotel to other high-end hotels and what search criteria did you use to find it?

Q2. How difficult was it to find a hotel that had all the benefits?

Q3. Have you ever booked the hotel previously? If yes, how did you book it?

Q4. Which filters do you find most useful/efficient for you to find the desired results? Was using those filters convenient for you?

**Task 4:**

The last task we would like you to perform is to explore and book attractions and activities happening in Dubai city.

Using the application, complete the following task:

Assume you're going on a three-day business trip to Dubai. You want to spend your weekend in Dubai in addition to those three days because you've always wanted to see the Burj Khalifa, the world's tallest building, and the Dubai Frame. Using the app, you must book a tour to the Burj Khalifa and Dubai Frame, as well as explore and book other attractions and activities.

**Observations [take notes while participant does the tasks]:**

**Post-task Questions [leave room to take notes]:**

Q1. What features in the app allow you to find desired attractions? What are the steps you took to make the booking?

Q2. How easy was it for you to find the attractions? What are the things that you liked and disliked about the application while finding the attraction?

Q3. Have you ever had done the same kind of task before? If yes, how different was this time as compared to previous one? Which one was better?

Q4. What are the things that you wanted to see that were not present there? What are your suggestions to improve the existing workflow? What things can be added?

Q5. How confident were you while exploring the activities? Did you ever feel lost and confused to find something meaningful? What helped you to come out from that situation and find the desired package?

## **POST-STUDY INTERVIEW QUESTIONS:**

**THEME 1:** First, we will ask you questions about booking flights in mobile apps.

Q1. Do you prefer booking flights with smartphone? If yes, why do you like to use it?

Q2. How long does it take for you to book a flight with smartphone application? Which parts/feature slow you down to do the task?

Q3. Which feature of the pre-trip smartphone application does you like most while booking a flight? And why do you like it?

**THEME 2:** Next, we will ask you questions about planning holiday trips.

Q1. Do you prefer using individual features for planning trips like booking flights, booking hotels, booking cabs etc. or do you prefer a holiday package that includes everything?

Q2. Do you prefer travel agents over websites and applications for trip planning?

Q3. Do you prefer pre-planning trips like exploring and booking attractions and hotels or do you like planning trips spontaneously?

**THEME 3:** The third task would like you to plan a trip that offers luxury services and hospitality.

Q1. Do you read the reviews and ratings of each hotel while booking accommodation? If yes, do you see the bad reviews first or the good reviews for each hotel

Q2. What kind of amenities are a must have while you book a hotel?

Q3. What payment methods do you prefer to book a hotel? Does the user save the payment information?

Q4. Do you prefer facilities or in-room facilities from on-premises hotels, or do you like to visit different hotels?

**THEME 4:** Finally, we will ask you questions about booking cab services for a multi-day trip:

Q1. What are the features that you look at in an application for booking cab services?

Q2. What makes you feel confident and trust the online apps instead of booking the cab from local providers?

Q3. What services do you like to book alongside cab booking when planning for a trip?

## Appendix D – Work Breakdown

*The template has a number of sections and appendices. It is assumed that all members will contribute to the main parts of the assignment (e.g., purpose, background, task list, interview/contextual inquiry) but other parts may be assigned to different team members.*

*As well, everyone should take turns being the group assignments/final report as proofreaders to ensure that the team hands in a complete, cohesive and well organized (with consistent layout/fonts) document. This extra step which doesn't take a lot of time BUT can have a substantial effect on your grade.*

*At the end of the project, your teammates will evaluate your overall performance and participation in the group project.*

Activity	Team member/s who helped or were responsible
Purpose	Harsh, Hrishi, Karan, Faiza, Qiwei
Background/references	Harsh, Hrishi, Karan, Faiza, Qiwei
Objectives	Harsh, Hrishi
Process	Faiza, Qiwei
Script	Harsh, Hrishi, Karan
Task list and Questions	Harsh, Hrishi, Karan, Faiza, Qiwei
Post-study Interview Questions	Harsh, Karan
Coding Sheets	Karan, Hrishi
Proofreader/s	Harsh, Faiza