TripSync, Usability Testing Report

Goal of Usability Testing:

Usability Goals:

1. Task Completion: Users can complete the planning of a multi-step trip (flight search → accommodation selection → transportation request). Users should complete this task with limited mistakes.
2. Learnability: New users should be able to use TripSync's main features without extensive assistance from others.
3. Efficiency: Users should be able to plan and book a trip in a timely manner.
4. Error Recovery: When users make mistakes (for example, unable to log in correctly, unable to make correct selections), they receive clear feedback on their mistakes and guidance on how to fix them.
5. Clarity of Navigation: There should be no confusion by the user in navigating from one section of the application (flights, hotels, transportation, etc.) to another.

UX Goals

1. Minimize Cognitive Load: By offering a single place to plan a trip, users will be able to minimize the mental effort associated with managing multiple apps.
2. Increase User Confidence: By providing users with clear feedback on actions taken, they will feel comfortable and empowered in using TripSync.
3. Satisfaction & Willingness to Use: Users should see TripSync as a suitable, practical replacement for using multiple apps (for travel, accommodation, flights, etc.).
4. Consistency: All UI elements and interaction styles should remain the same throughout the application to provide a cohesive user experience.
5. Accessibility: A wide range of users, including those with varying ages and levels of tech familiarity, should find the interface easy to use.

Key Research Questions

1. Is it possible for users to book a multi-step journey consisting of flights, hotels as well as transportation using TripSync?
   Focus: The error rate while performing tasks.
2. Is it easier for users to combine travel planning in TripSync instead of using different apps for each travel activity?
   Focus: Ease of navigation in TripSync.
3. Where are users confused about using TripSync's interface?

Focus: Identify where users experience usability pain points.

4. Is the cognitive load reduced using TripSync vs using several travel booking apps?
   Focus: How effortless it is to the user.
5. Are users happy with TripSync's overall usability/design?
   Focus: Overall satisfaction with TripSync and likelihood that users would recommend to others.

Participants:

Number of Participants:

4 university students participated in the usability testing of TripSync.

Participant Demographics:

Participant	Age	Gender	Tech Familiarity
User 1	21	Female	Experienced with travel booking apps
User 2	20	Female	No prior experience with travel booking apps
User 3	19	Male	No prior experience with travel booking apps
User 4	20	Female	Experienced with travel booking apps

Ethical Approval:

The university's coursework project was designed to be done without collecting any type of sensitive personal information. A formal ethics committee at the university was not necessary for this study, however, but main ethical principles such as keeping users' data private were followed.

All four participants (User 1, User 2, User 3, User 4) were given all the relevant information regarding the purpose of this usability study, what type of tasks each participant would be asked to perform, and how long each participant would be engaged in the study prior to participating in this study. Participants were informed that voluntary participation could be withdrawn at any time without providing any reason and that there would be no negative consequences for withdrawing from this study.

Each participant signed a recording consent form before each participant began the usability session with TripSync, indicating that the usability session would be able to be recorded and used within the project team to assess how to improve the product based on participant feedback. Personal identifiers, including first and last names and contact information, were not included in this document and all information was provided using an anonymous labeling system (User 1, User 2, User 3, User 4) for the purposes of protecting the identity of the participants and for academic purposes.

Tools:

Data Collection Methods

1. **TripSync Interactive Prototype -** The TripSync Interactive Prototype serves as the primary method of collecting data during testing of the TripSync Interactive Prototype.
2. **Observation Notes** - The researcher observed each participant during the session and documented:
    - User Interaction and Navigation Patterns
    - Points of Hesitancy or Confusion by Users
    - User Comments and Verbal Feedback.
    - Task Completion Results
3. **Task Timing** - A stopwatch was used to measure and document each user's elapsed time for completion of all tasks.
4. **Single Ease Question (SEQ)** - A task-level questionnaire asking users to rate the difficulty of completing the task on a scale from one to seven.
5. **System Usability Scale (SUS)** - A 10-item standardized questionnaire administered after the testing session to assess overall satisfaction and system usability perception of the TripSync Interactive Prototype on a scale of one to five.
6. **Recording and Documenting Data**
    - Session notes and observations were recorded in written format.
    - Participants answered two questionnaires: SEQ and SUS.
    - Task time was measured and documented for each task.

Session Details:

Participants were given 7 tasks to complete during the usability testing session

Task	Description
1	Login using the correct username and password.
2	Scroll through the home screen to view trip options.
3	Search for and select a flight.
4	Select a hotel.
5	Confirm the reservation and try to download the ticket.
6	cancel a booking.
7	Use the footer icons to navigate back to the home page.

Session Structure

Each usability testing session followed this structure:

1. **Introduction (5 minutes)**
    - Explanation of the study purpose
    - Overview of what the participant would be asked to do
    - Clarification that participation is voluntary
2. **Task Completion (25–35 minutes)**
    - Participants completed the 7 tasks listed above on the TripSync prototype
    - A researcher observes and document user behavior, comments, and interactions
    - No assistance is provided unless the participant is completely stuck
3. **Post-Test Questionnaires (5–10 minutes)**
    - Single Ease Question (SEQ) questionnaire for each task
    - System Usability Scale (SUS) questionnaire

Session Duration

Total session time: Approximately **30–45 minutes** per participant

Results:

Time-on-Task Measurement

The following table shows the time each participant took to complete each task (in seconds):

User: Name/Age/Gender				
Sr.	Task Description	Task Time	No. of errors	Problems faced / Comments
1	Log in using the correct username and password.	7	1	logging in, I sign in , I write my personal details and sign in
2	Scroll through the home screen to view trip options.	24	0	It was easy to find good options
3	Search for and select a flight.	131	2	I couldn't find a flight at first but then I managed to find it
4	Select a hotel	97	1	easy to find a lot of options
5	Confirm the reservation and try to download the ticket.	78	0	click on bookings and then tickets and then download them
6	Cancel booking	63	5	Can't find a feature that allows cancelling a booking
7	Use the footer icons to navigate back to the home page.	5	0	so easy to navigate to different sections

The average time for the tasks was 57.9 seconds (approximately 1 minute)

Single Ease Question (SEQ) Results

Task-level difficulty ratings (1 = Very Difficult, 7 = Very Easy):

The average SEQ score in research is typically between 4.8 and 5.1.

		Users 1-4 rated the tasks on a scale of 7, according to the question 0 - Failed to perform 1 - Very Difficult 7 - Very Easy			
		1	2	3	4
1	Log in using the correct username and password.	7	7	6	7
2	Scroll through the home screen to view trip options.	6	6	7	5
3	Search for and select a flight.	4	6	5	6
4	Select a hotel.	5	6	4	5

5	Confirm the reservation and try to download the ticket.	4	4	5	7
6	cancel a booking.	0	0	0	0
7	Use the footer icons to navigate back to the home page.	6	6	7	6
	User Average	**4.57**	**5.00**	**4.86**	**5.14**
	Total Average	**4.89**			

Average SEQ was 4.89 this means the tasks were rated within the typical average ease range (4.8–5.1).

System Usability Scale (SUS) Results

Overall system satisfaction and usability scores:

The average SUS score is 68.

		Users 1-4 rated the tasks on a scale of 5, according to the question 1 - Strongly Disagree 5 - Strongly Agree			
		1	2	3	4
1	I think that I would like to use this system frequently.	4	4	3	5
2	I found the system unnecessarily complex.	3	1	2	3
3	I thought the system was easy to use.	3	4	2	3
4	I think that I would need the support of a technical person to be able to use this system.	1	1	3	1
5	I found the various functions in this system were well integrated.	3	4	3	4
6	I thought there was too much inconsistency in this system.	2	3	1	3
7	I would imagine that most people would learn to use this system very quickly.	4	4	3	4
8	I found the system very cumbersome to use.	2	1	2	2
9	I felt very confident using the system.	4	2	3	4
10	I needed to learn a lot of things before I could get going with this system.	2	2	3	2
	User Score (after applying SUS formula)	**70.00**	**75.00**	**57.50**	**72.50**
	Total Average	**68.75**			

A score of 68.75 indicates slightly above-average usability.

Conclusion:

Summary of findings

Essentially the results of our usability testing of TripSync indicates that it does support the basic functions necessary for planning a trip, including Logging In, Viewing Trip Options, Selecting Flight and Hotel Reservations. Users completed the majority of the tasks assigned to them; however, there were a few areas where some users were confused by the interface, and our most important user-defined requirement, cancelling a reservation, was not supported on the prototype. Thus, we found that TripSync may be a potential all-in-one solution for managing many aspects of a trip, but it requires additional development work.

Achievement of usability and UX goals

Across each of the participants, the major trip-planning flow was generally understood by most users, indicating success in learnability and some usability of the basic navigation structure of TripSync. For the simpler tasks (Logging In and Browsing Trip Options), the efficiency of the application was reasonable; however, due to the complexity of some of the other tasks, they took longer to accomplish, and therefore more work for the users to do. The inability for users to complete a cancellation flow led to an incomplete understanding of how error recovery and trip management were achieved, and therefore it highlighted one of the main limitations of today's TripSync prototype. Nevertheless, users did report that having their Flights, Hotel and Transportation bookings located in one place made their lives easier by decreasing the need for them to constantly switch between different applications.

Key usability issues identified

1. **Missing cancellation/modification feature**
   In testing, users attempted to perform a cancellation on a booking, but the prototype currently does not contain the functionality to enable this action. Therefore, users were unable to accomplish this task and lost their ability to manage their travels as well as exert control over their bookings.

2. **Clarity of some actions and feedback**
   During testing, some areas of the user interface were uncertain to the users about the success of their actions. For instance, confirmation would give minimal feedback to users and the same was true for trying to download tickets. The lack of

feedback resulted in hesitation and repeated clicks, indicating that the ability to determine the status of the system is not very visible or apparent.

Design recommendations

1. **Implement a clear cancellation and modification feature**
   A dedicated workflow should be created within the itinerary to allow users to adjust or cancel any previously booked accommodation. Users should receive an immediate notification and accurately be made aware of changes or refunds made due to altering their existing reservations. This workflow is an important step to completing the user's complete trip management process and providing a greater degree of control.

2. **Improve visibility of system feedback**
   Provide stronger visual and written feedback when users are taking important actions on the app, such as confirming reservations, downloading tickets, and adding items to their itinerary. This can include a visible confirmation page, status messages, and icons indicating that users know exactly what happened after taking specific actions.