



TERHAL

CCSW-315 Software Process Models Course
Project Final Report

Team Members:

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Section E2



Table of Contents

Sprint 0.....	5
Sprint 1.....	13
1.1 Requirement specification	13
1.1.1 Story Backlog.....	13
1.1.2 Work Breakdown Structure	14
1.2 Design	15
1.2.1 Activity Diagram.....	15
1.2.2 Sequence Diagram	16
1.3 Implementation:	16
1.4 meeting Details.....	17
1.5 Testing.....	18
1.5.1 Test cases for registration:	18
1.5.2 Test cases for Login:	20
1.5.3 Test cases for entering main information:	21
1.5.4 Test cases for providing country suggestions:	22
Sprint 2.....	24
2.1 Requirement specification:	24
2.1.1 Story Backlog.....	24
2.1.2 Work Breakdown Structure	25
2.2 Design:	26
2.2.1 Use case Diagram.....	26
2.2.2 Sequence Diagram: Create daily plan	27
2.3 Implementation:	27
2.4 meeting Details:	28
2.5 Testing.....	29
Sprint 3.....	31
3.1 Requirement specification:	31
3.1.1 Story Backlog.....	31
3.1.2 Work Breakdown Structure	32
3.2 Design:	33
3.2.1 Use case Diagram.....	33
3.2.2 Sequence Diagram: display flight information	33

3.2.3 Sequence Diagram: display hotel information.....	34
3.3 Implementation:	35
3.4 meeting Details:	35
3.5 Testing.....	36
4. Lessons Learned.....	37
4.1 Donts:.....	37
4.2 key takeaways:.....	37
5. Future enhancements and conclusion:	37



SPRINT 0



Sprint 0 - Project Initiation

Project Name: Terhal: Travel Agent App

Project Members: Jana Zakai, Reem Khalid, Sahar Adel, Gharam Khalil, Sara Al-shehri, Suad Anees

1. Project Description:

Planning trips can be time-consuming, effort-intensive, and expensive due to the overwhelming number of options available for flights, accommodations, and activities. Travelers often waste time and money trying to optimize their travel plans.

Terhal aims to facilitate the travel experience by offering a personalized travel agent to handle all preparations in one place. The app will streamline the process of planning and managing trips within the regions of Saudi Arabia, catering to travelers with various purposes and preferences.

1.1 target audience

The main users of the app are individual travelers within Saudi Arabia and tourists coming to the country, including those traveling for work or tourism, who desire a fully planned travel experience.

1.2 Stakeholders

1.2.1 Individual Travelers

- Primary users of the app, benefiting from personalized, optimized travel plans and budget management features.

1.2.2 Travel Agencies

- Benefiting from increased bookings as users are directed to their services through the app's recommendations for flights, hotels, and activities.

1.2.3 Tourism Governments

- Governments will gain from promoting tourism through the app, which encourages visits to various destinations by simplifying travel planning.

1.2.4 Flight and Hotel Booking Systems

- Integrated into the app to provide real-time options and booking capabilities for users.

1.3 Market Value:

The global travel and tourism market, TAM, was valued at \$9.25 trillion in 2019 and is projected to reach \$11.4 trillion by 2027 (Statista). Saudi Arabia was valued at approximately \$37 billion in 2022. It is projected to grow to around \$66 billion by 2028.

1.3 Scope

- **B2C Focus:** The app is currently focused on individual travelers, providing personalized trip planning and management.
- **Travel Plan Generator:** Automatically creates tailored travel itineraries based on user budget and preferences.
- **Budget Management:** Users can input their budget and receive suitable options for destinations in Saudi Arabia based on their budget and preferences.
- **Booking Integration:** Direct integration with flight and hotel booking systems, allowing users to book within the app.
- **Travel Preferences:** Customization options for locations, weather, activities, and cuisine.

- **Social Feed:** Explore and add social media trends to travel plans.

1.4 Out of Scope

- **B2B Services:** Current phase does not include services aimed at travel agencies or tourism governments.
- **Group Travel Features:** The app currently does not focus on features for group travel coordination or corporate bookings.
- **Crowd Detection:** Real-time analysis of crowd levels at destinations, helping users avoid crowded places.
- **In-depth Visa Processing:** Visa application and processing services are not included, although the app checks visa availability.
- **Car Rentals or Local Transport Integration:** The app does not currently provide options for booking local transport or car rentals.

2. Prioritized Functional and non-functional requirements:

Functional Requirements:

2.1

Component Name: Registration / Login

Story Name: Register / Login

Story Sequence No: 001

Story Short Description: Users can register or log in to the system.

Story Long Description: Users shall be able to provide personal information such as name, email, phone number, and address. The system will handle and store the provided information in the database, ensuring that sensitive information (passwords) is encrypted and securely stored.

2.2

Component Name: Collect Main Information

Story Name: User answers Travel Plan Questionnaire

Story Sequence No: 002

Story Short Description: Users can input core details related to their trip.

Story Long Description: Users will be able to provide key information such as their travel budget, the duration of travel, the number of members accompanying them, Users shall have the ability to set preferences for locations (including checking visa availability), preferred weather, activities, and cuisine. The system will utilize these inputs to generate customized travel options based on the user's preferences and travel requirements.

2.3

Component Name: Receive city suggestion

Story Name: User receives city suggestions

Story Sequence No: 003

Story Short Description: User can receive destination suggestions if they don't already have one.

Story Long Description: User is asked if they have a destination to visit. The user would be asked to choose which destination they want to go to. If the user chooses that they don't have a destination in mind, the system will pass through search algorithms and provide city suggestions.

2.4

Component Name: Travel Plan Display

Story Name: Display Plans

Story Sequence No: 004

Story Short Description: Users can view and edit generated travel plans.

Story Long Description: The system shall display a variety of options such as activities (including activity warnings), restaurant choices, hotel options (with booking capabilities), flight options (with booking capabilities), country entry instructions, and communication facilities like SMS cards.

Users can extend the displayed options to include edits or add social media trends from platforms such as TikTok.

2.5

Component Name: Social Feed

Story Name: Explore Feed

Story Sequence No: 005

Story Short Description: Users can explore social media posts related to travel.

Story Long Description: The user shall have access to a social media feed integrated into the app, allowing them to explore travel-related content. The system will provide options to add relevant posts to their travel plan or share them on their personal feed.

Non-Functional Requirements:

Performance Requirements:

- Specifies the maximum acceptable time for the system to respond to a user's request.
- Specifies the maximum number of users or amount of data the system can handle.

Usability Requirements:

- Ensures that the system is easy to learn and understand for new users.
- The system shall have a user-friendly interface that is intuitive and easy to navigate.

Security Requirements:

- the system shall use multi-factor authentication for all user logins

Prioritize stories and define sprints:

Sprint #1:

- **Information collection**
 - functional requirement: 001, 002, 003

Sprint #2:

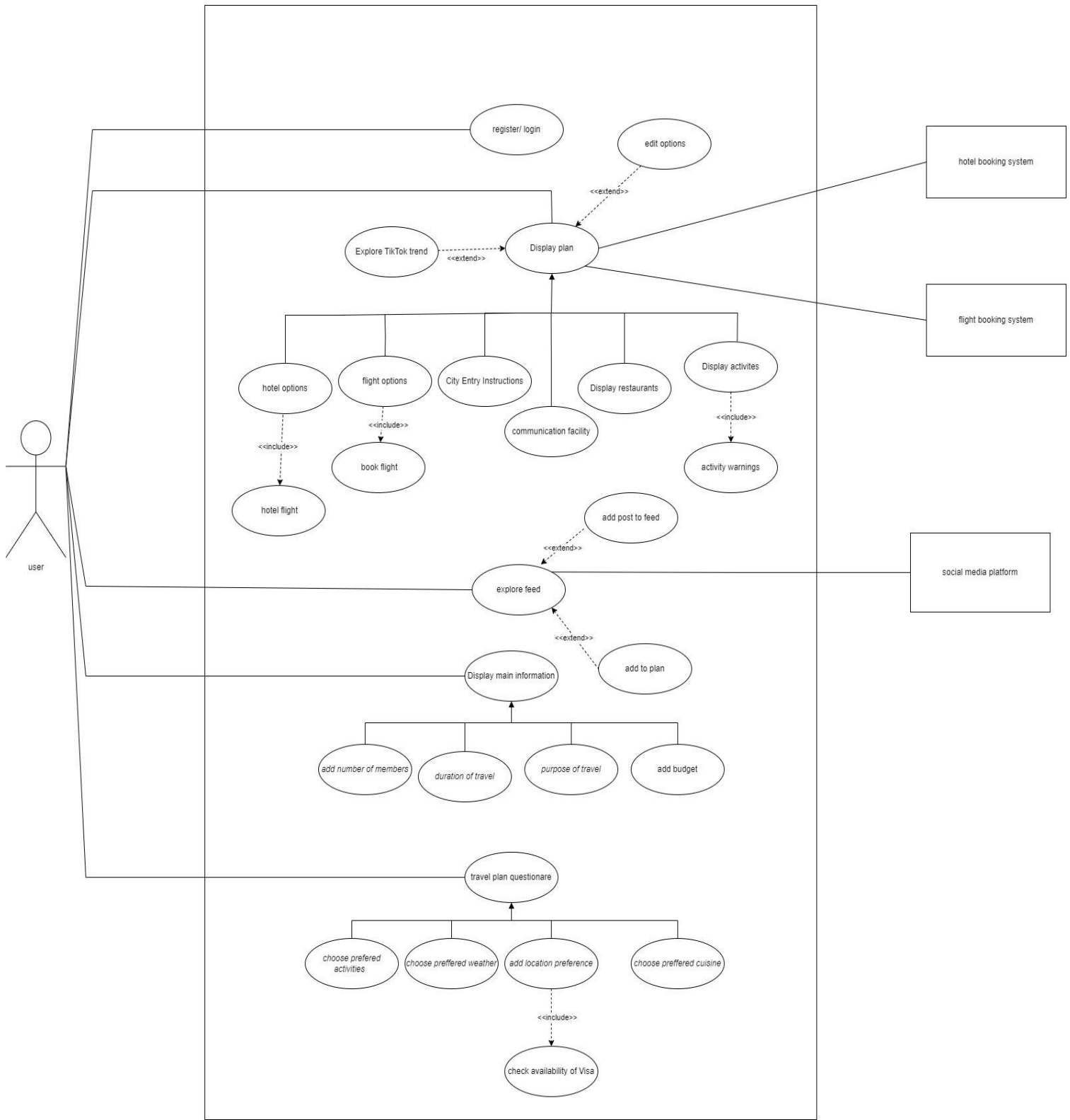
- **Travel plan generation**
 - Functional Requirement: 004

Sprint #3:

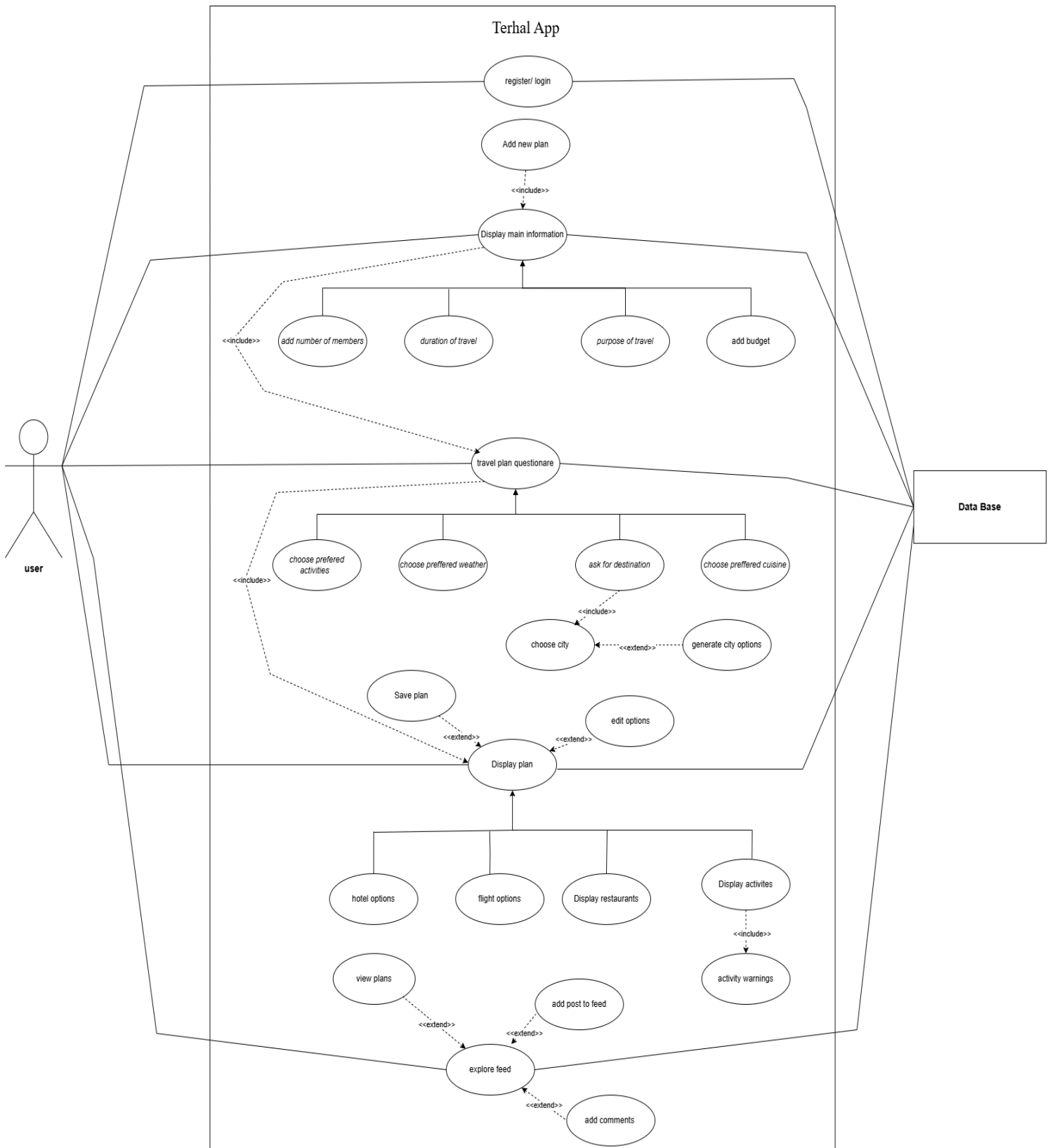
- **Add Explore Feed feature**
 - Functional requirement: 005

Use Case and Class Diagram:

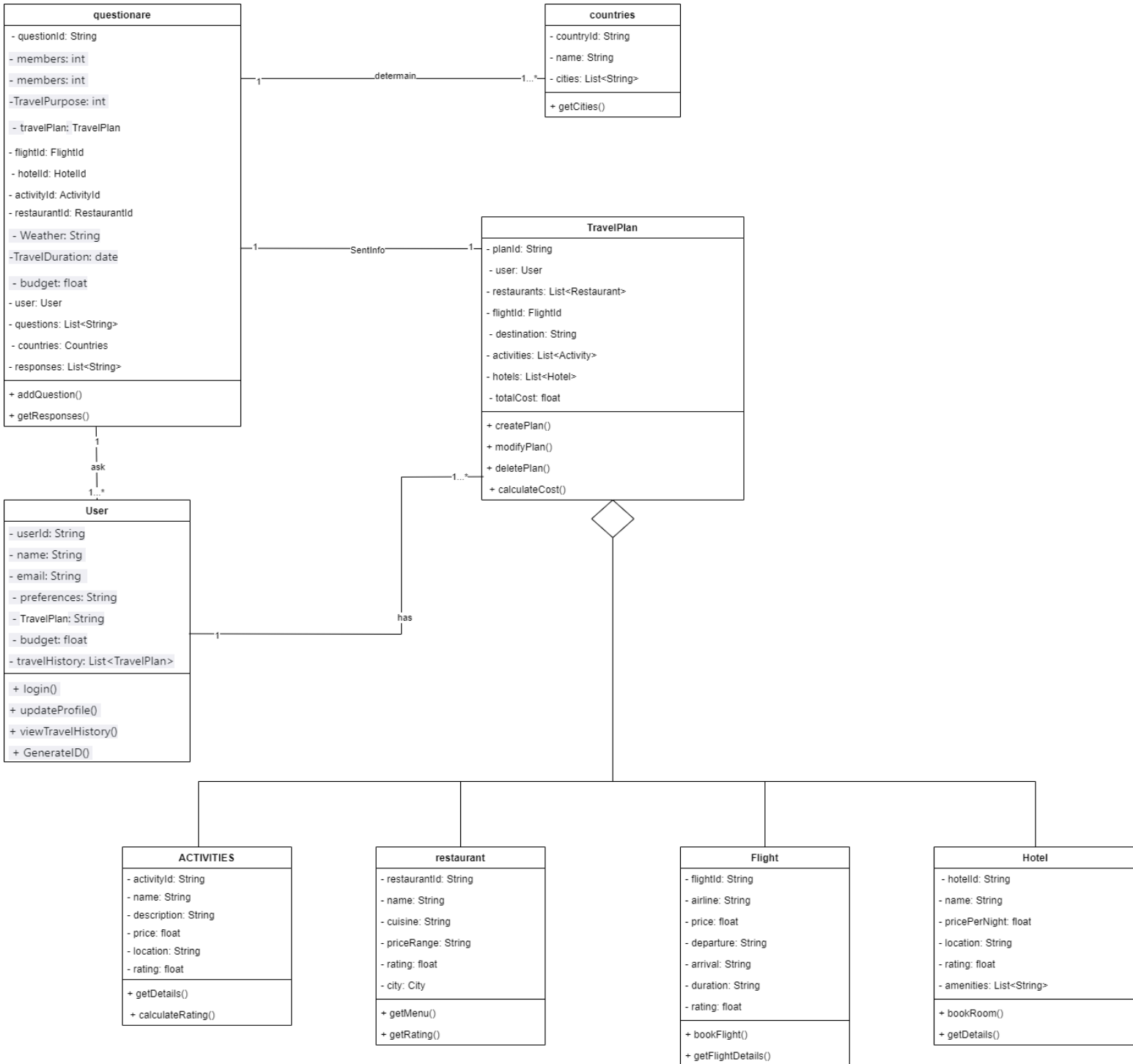
use case version 1:



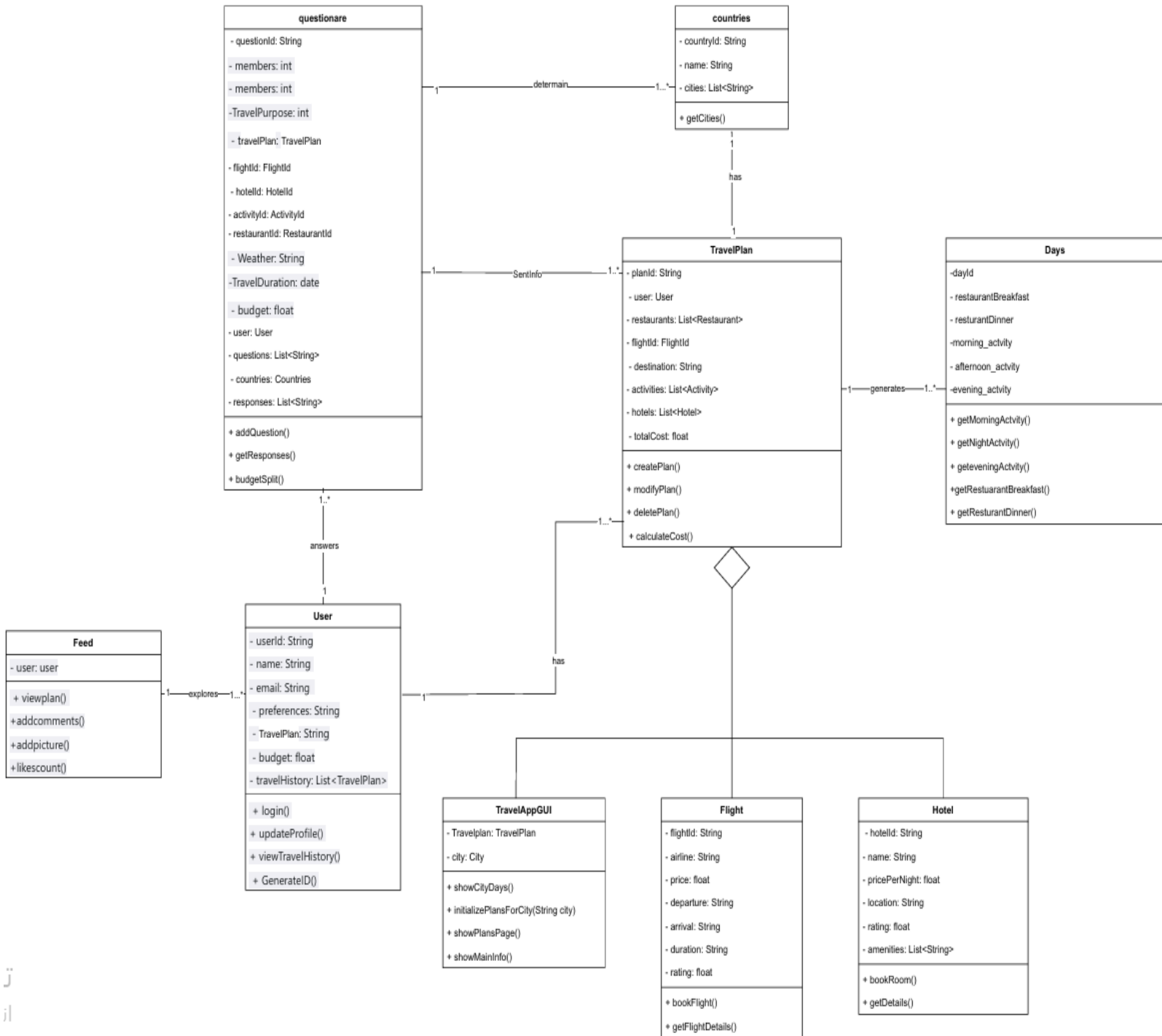
Version 2 (final):



Class diagram version 1:

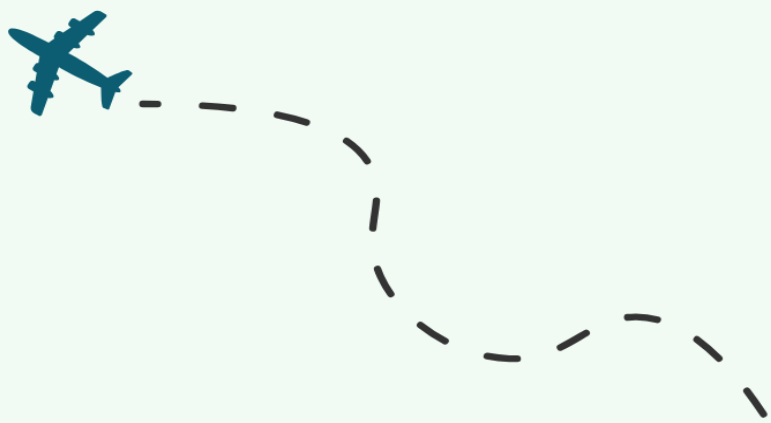


Version 2 (final):





SPRINT 1



Sprint 1

1.1 Requirement specification

1.1.1 Story Backlog

Component Name: Registration / Login

Story Name: Register / Login

Story Sequence No: 001

Story Short Description: Users can register or log in to the system.

Story Long Description: Users shall be able to provide personal information such as name, email, phone number, and address. The system will handle and store the provided information in the database, ensuring that sensitive information (passwords) is encrypted and securely stored.

Component Name: Collect Main Information

Story Name: User answers Travel Plan Questionnaire

Story Sequence No: 002

Story Short Description: Users can input core details related to their trip.

Story Long Description: Users will be able to provide key information such as their travel budget, the duration of travel, the number of members accompanying them, Users shall have the ability to set preferences for locations (including checking visa availability), preferred weather, activities, and cuisine. The system will utilize these inputs to generate customized travel options based on the user's preferences and travel requirements.

Component Name: Receive city suggestion

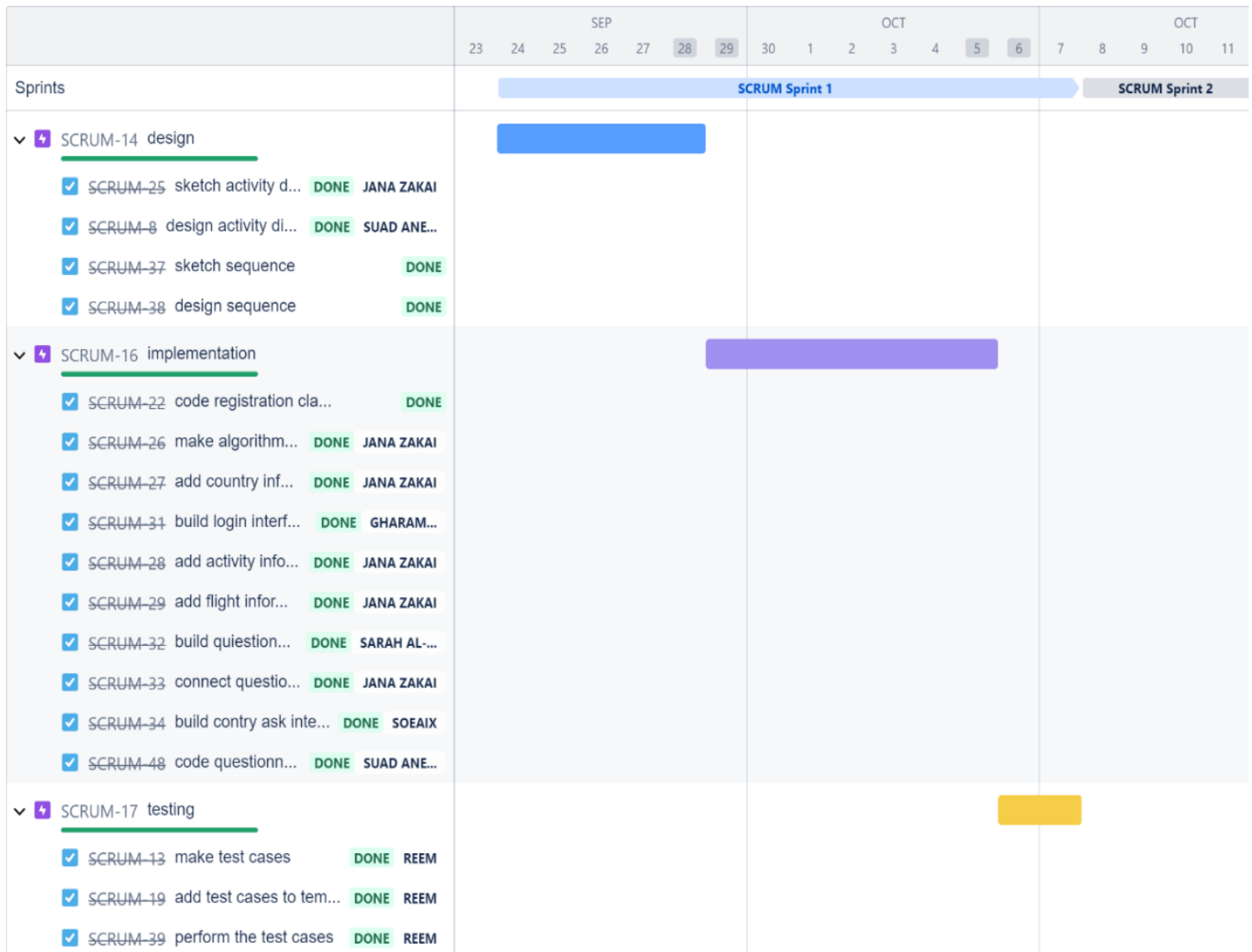
Story Name: User receives city suggestions

Story Sequence No: 003

Story Short Description: User can receive destination suggestions if they don't already have one.

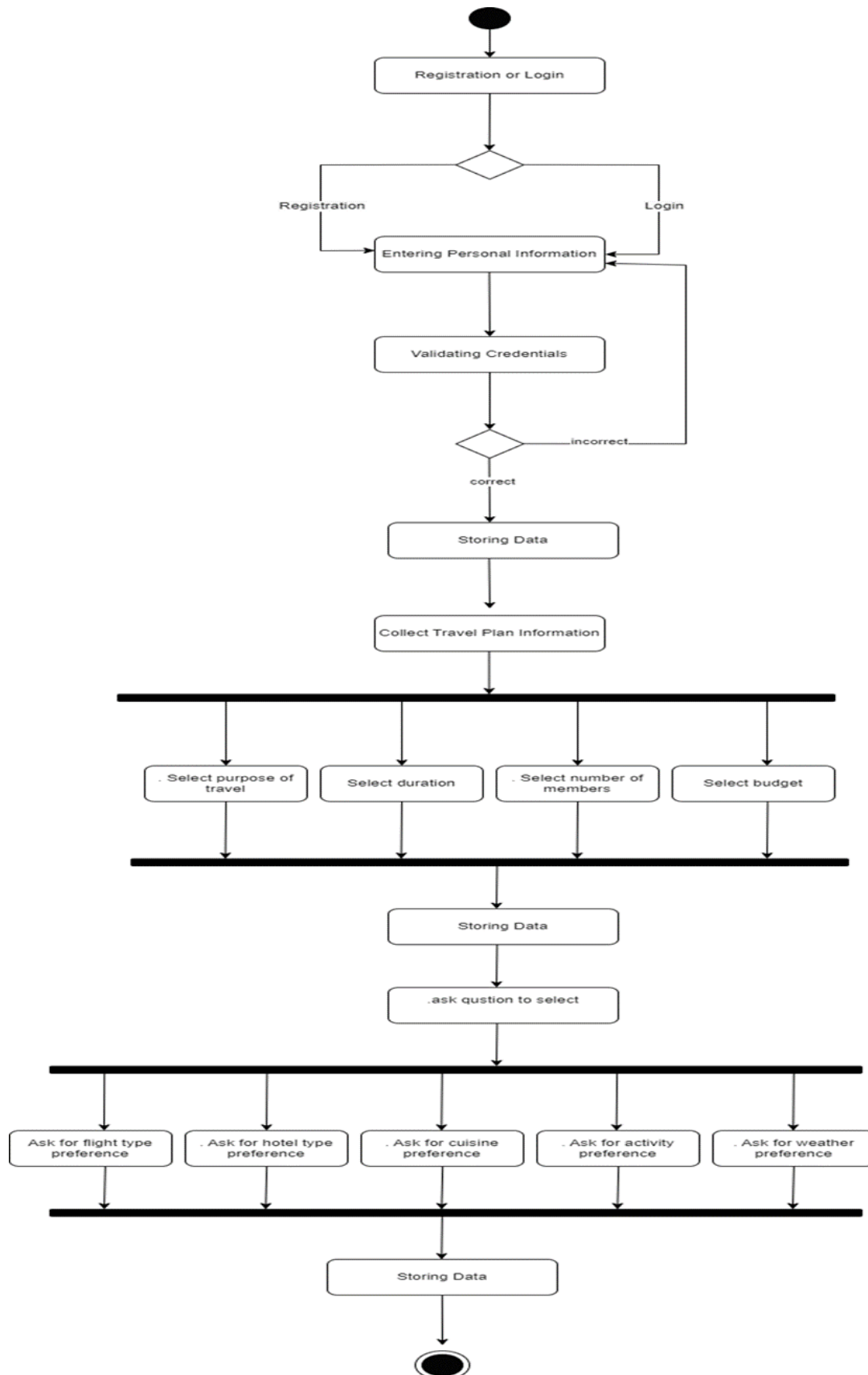
Story Long Description: User is asked if they have a destination to visit. The user would be asked to choose which destination they want to go to. If the user chooses that they don't have a destination in mind, the system will pass through search algorithms and provide city suggestions.

1.1.2 Work Breakdown Structure

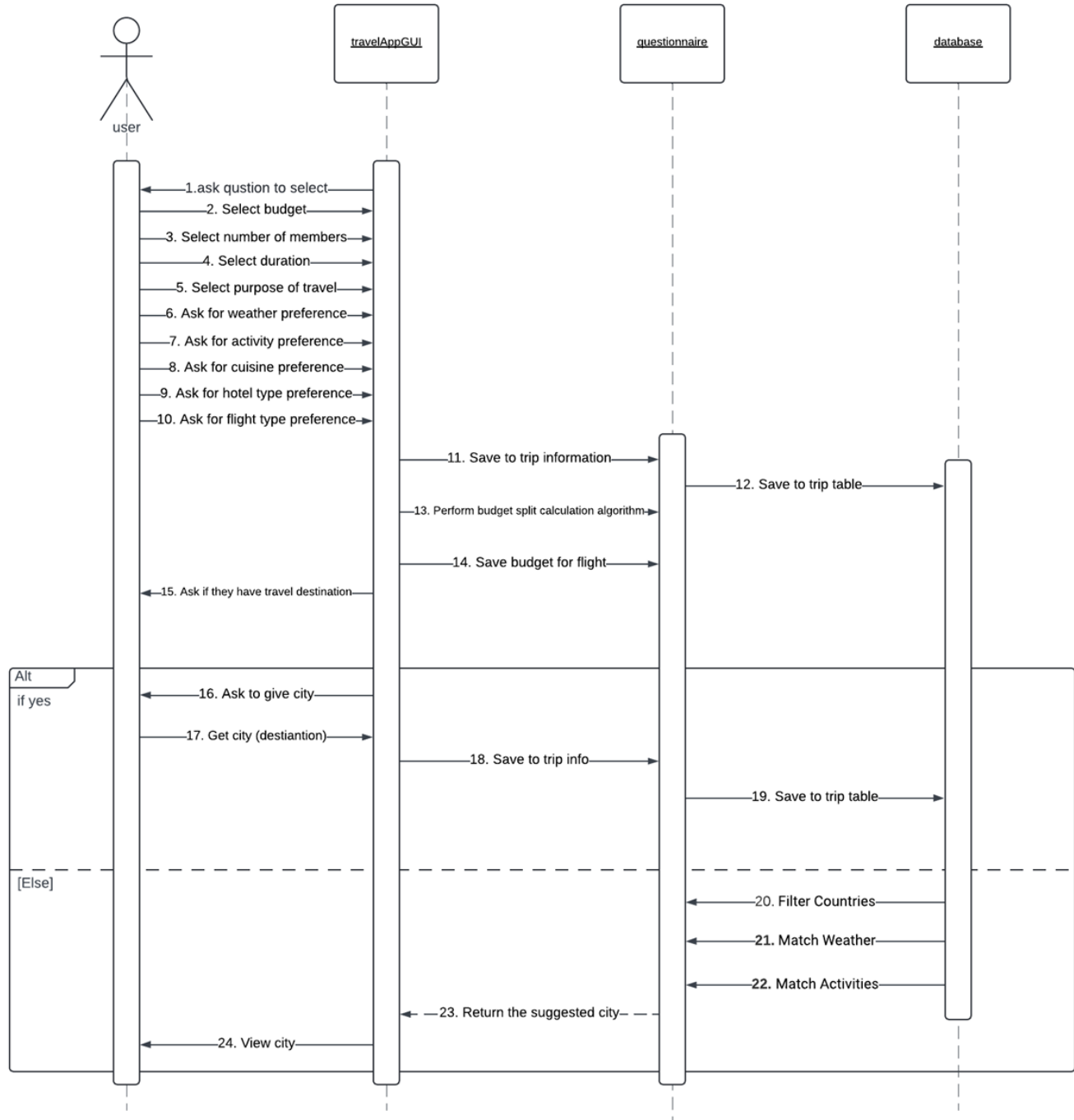


1.2 Design

1.2.1 Activity Diagram



1.2.2 Sequence Diagram



1.3 Implementation:

Below is the link to the Github Repository containing all the code files related to sprint 1.

<https://github.com/TravelAgentApp/Terhal>

1.4 meeting Details

Sprint Meeting(s)		
Project Name: Terhal		
Project Members: Jana Zakai, Reem Khalid, Sahar Adel, Gharam Khalil, Sara Alshehri, Suad Anees		
<hr/>		
<hr/>		
Sprint #1 Stand up Meeting – [24 Sept- 2024]		
<u>Sprint Duration:</u> 2 weeks Sep 22 – Oct 9 2024		
<u>Scrum Master:</u> Jana		
<u>Pair Programmers:</u> Sara Alshehri, Gharam, Sahar		
<u>Stories</u>		
Component Name	Story Sequence Number	Use Cases (e.g., functionalities)
Registration/ Login	001	Users can register or log in to the system.
Travel Plan Questionnaire	002	Users can input core details related to their trip.
<u>Follow-up meeting questions:</u>		
<ol style="list-style-type: none">1. What has been completed since the last meeting?2. What are you going to be working on next?3. Do you have any issues/impediments?		
<u>Scrum's Master comments based on the above questions:</u>		
<ul style="list-style-type: none">- Add flight preference and hotel preference questions to secone questionare window- Switch place of country question to second window		

1.5 Testing

1.5.1 Test cases for registration:

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	User taps on SIGN UP button on main screen.	User should be taken to registration screen	pass
TC002	User leaves all fields blank on Registration screen and taps SUBMIT button	Error message appers tell the user to fill the all the fields	pass
TC003	User enters First Name and leaves all other fields blank on Registration screen and taps SUMBIT button.	Error message appers tell the user to fill the all the fields	pass
TC004	User enters First Name and Second Name and leaves all other fields blank and taps SIGN UP button.	Error message appers tell the user to fill the all the fields	pass
TC005	User enters First Name, Second Name, last name, and leaves other fields blank and taps SIGN UP button.	Error message appers tell the user to fill the all the fields	pass
TC006	User enters First Name, Second Name, last name , User name , and leaves other fields blank and taps SIGN UP button and taps SIGN UP button.	Error message appers tell the user to fill the all the fields	pass
TC007	User enters First Name, Second Name, last name , User name , and Email, and leaves other fields blank and taps SIGN UP button.	Error message appers tell the user to fill the all the fields	pass
TC008	User enters First Name, Second Name, last name , User name , and Email, and domain, and leaves other fields blank and taps SIGN UP.	Error message appers tell the user to fill the all the fields	pass

TC009	User enters First Name, Second Name, last name , User name , and Email, and domain, and Password that isn't 8 character long and taps SIGN UP	Error message appers tell the user to write a password the is 8 character long	pass
TC010	User enters for first name and last name a symbol not alphabetic character	Error message apears mentioning that it is not allowed	pass
TC011	User enters or fields successfully	User moves to main information window	pass

1.5.2 Test cases for Login:

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	User leaves all fields blank on Login screen.	Error message appear tell the user to fill the fields	pass
TC002	User enters a valid username and leaves password blank	Error message appear tell the user to fill the fields	pass
TC003	User enters valid username and an invalid password.	Error message appear tell the user “invalid login credentials”	pass
TC004	User enters invalid username and an valid password.	Error message appear tell the user “invalid login credentials”	pass
TC005	User leaves username blank and enter an valid password.	Error message appear tell the user to fill the fields	pass
TC006	user enters a valid username and a valid password.	A message appear “welcome to main interface “ followed by user first and last name	pass

1.5.3 Test cases for entering main information:

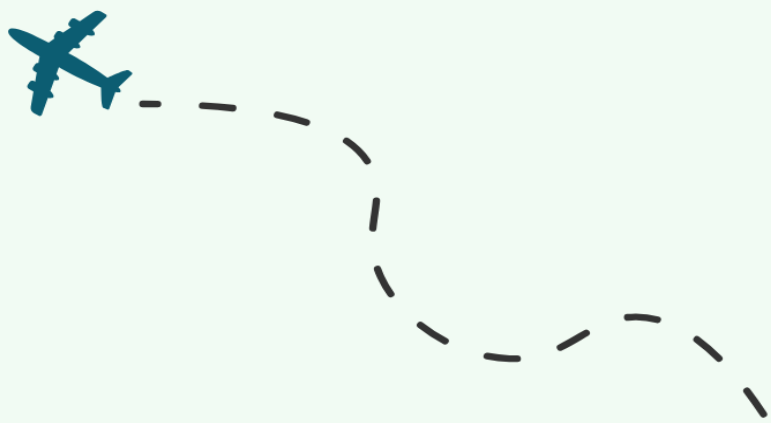
Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments
TC001	Don't select any input for travel purpose	Error message, wont continue until values selected	Pass
TC002	Selects a choice for travel purpose, budget, number of members, duration, date	User moves to next window	Pass
TC003	User leaves one of these fields unselected: preferred cuisine, activity, weather, type of hotel, type of flight, if the user has specific coutry in mind	Error message displayed, wont continue until all fields selected	Pass
TC004	User selects NO for question "Do you have a specific country in mind?"	No country options are displayed	Pass
TC005	User selects YES for question "Do you have a specific country in mind?"	A list of countries appear	Pass

1.5.4 Test cases for providing country suggestions:

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments
TC001	User selects NO for question "Do you have a specific country in mind?" then selects continue	User gets a list of cities and contries that matches the user's preferences	Pass
TC002	User selects YES for question "Do you have a specific country in mind?" then selects continue	Message displayed: information saved successfully01:53 PM	pass



SPRINT 2



Sprint 2

2.1 Requirement specification:

2.1.1 Story Backlog

Component Name: Daily Travel Plan Display

Story Name: View Daily Plans Story

Sequence No: 004

Story Short Description: Users can view a day-by-day itinerary for their trip, including suggested activities and restaurants for each day, along with viewing details of each plan.

Component Name: Travel Preferences Selection

Story Name: Add new plan

Sequence No: 005

Story Short Description: user goes back to the preferences page to select new travel preferences to generate a new plan.

Component Name: Travel Plan Editing

Story Name: Edit Plan Story

Sequence No: 006

Story Short Description: The system shall enable users to edit their daily travel plans by selecting activities and restaurants from a predefined list or by adding their own choices.

Component Name: Travel Plan Download

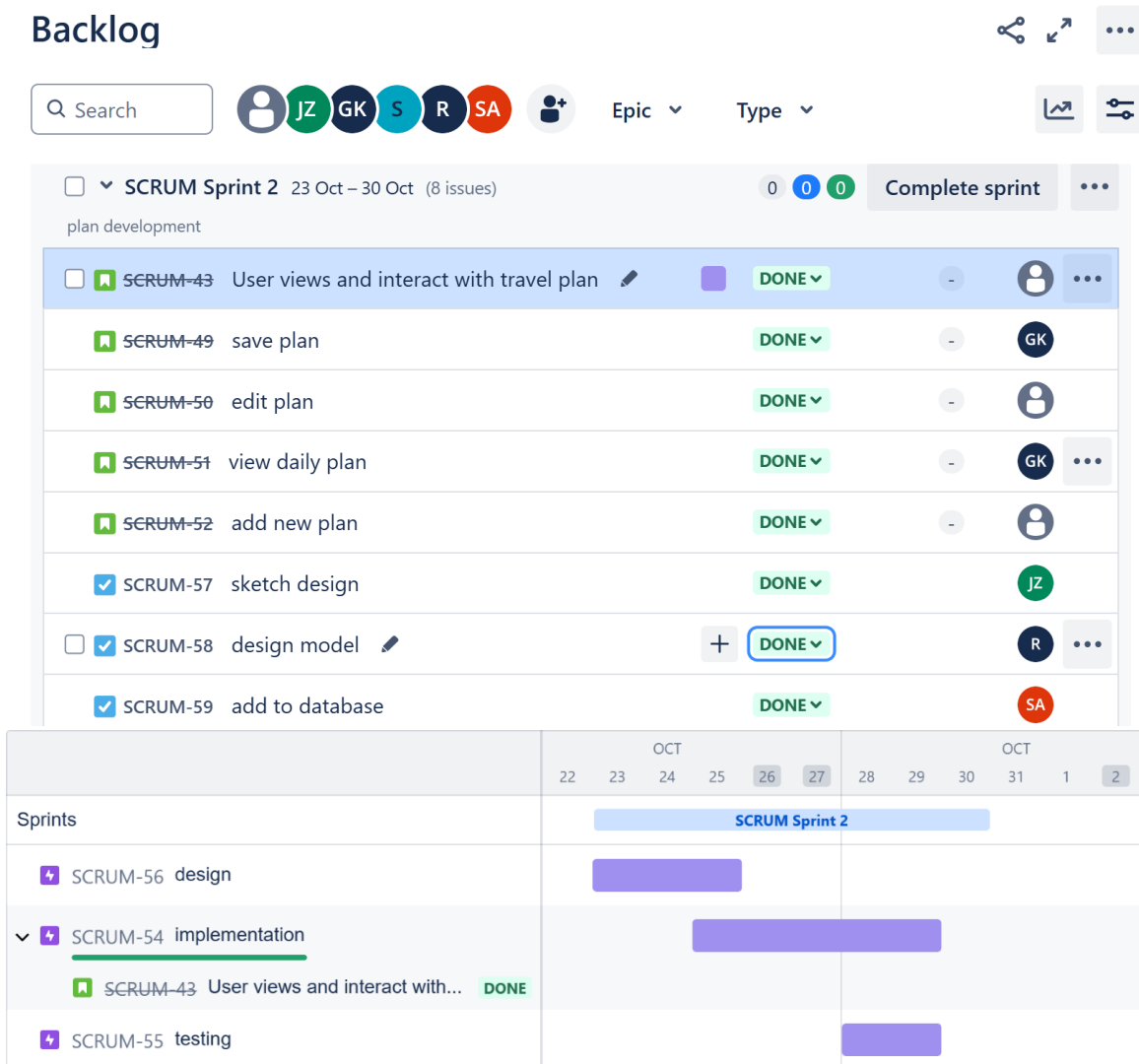
Story Name: Save Plan Story

Sequence No: 008

Story Short Description: The system shall provide users with the option to download their generated travel plans to their device.

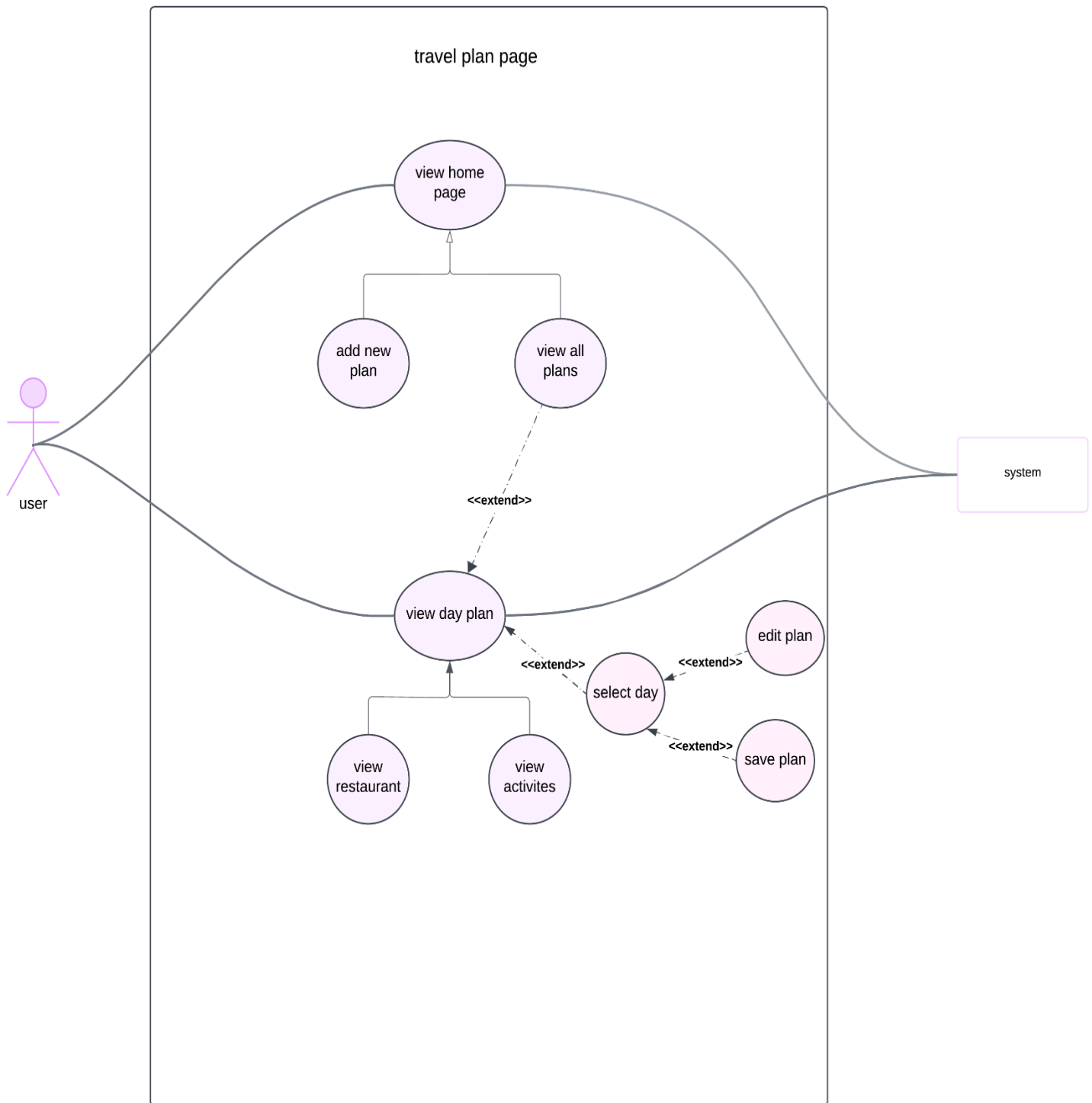
2.1.2 Work Breakdown Structure

Backlog

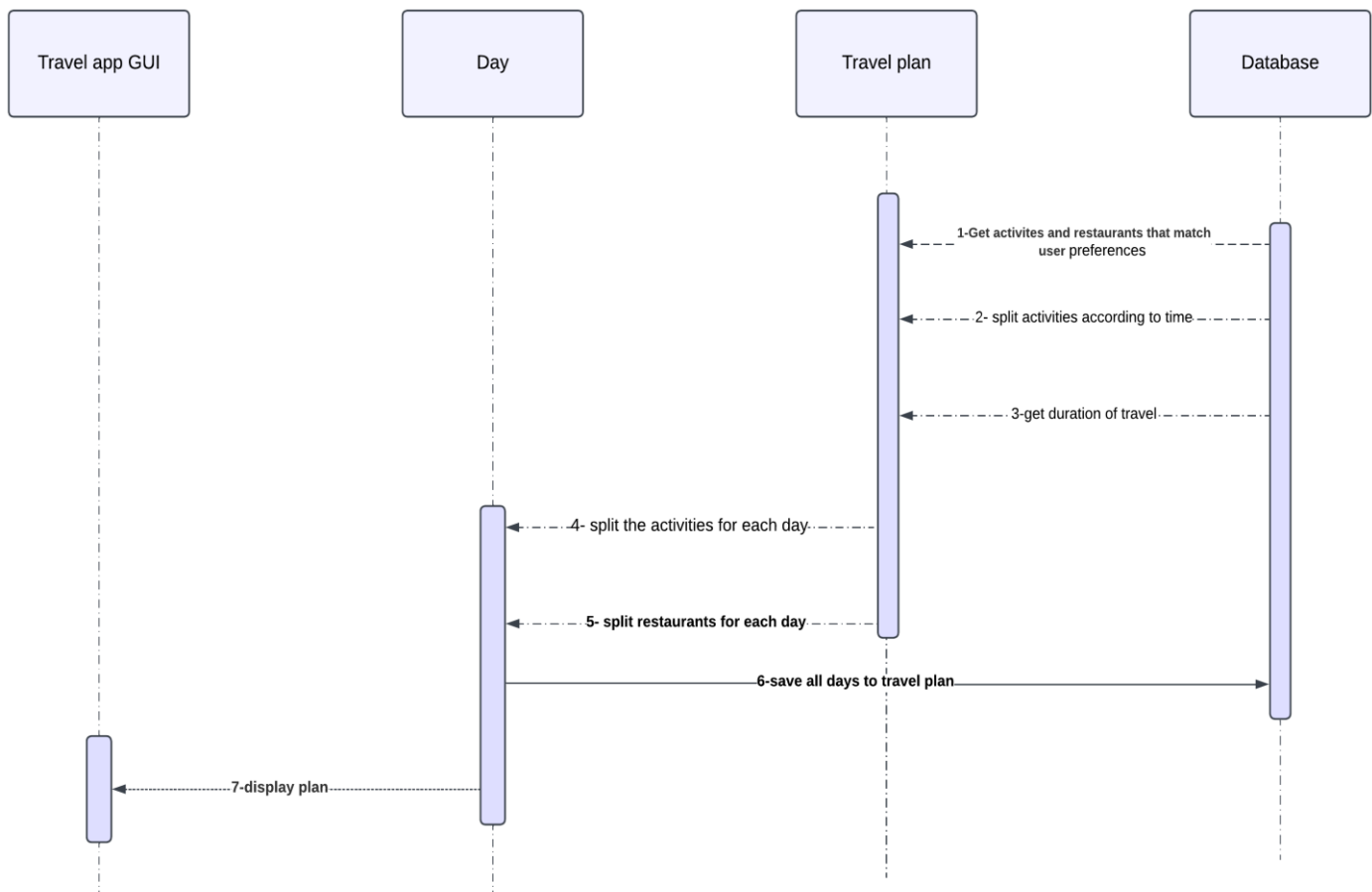


2.2 Design:

2.2.1 Use case Diagram



2.2.2 Sequence Diagram: Create daily plan



2.3 Implementation:

Below is the link to the Github Repository containing all the code files related to sprint 2.

<https://github.com/TravelAgentApp/Terhal>

2.4 meeting Details:

Sprint Meeting(s)

Project Name: Terhal

Project Members: Jana Zakai, Reem Khalid, Sahar Adel, Gharam Khalil, Sara Al-shehri, Suad Anees

Sprint #2 Stand up Meeting – [27 October- 2024]

Sprint Duration: 2 weeks

Scrum Master: Jana

Pair Programmers: Data Storage (Sahar-Sara) / interfaces (Gharam-Suad) / Code (Jana)

Component Name	Story Sequence Number	Use Cases (e.g., functionalities)
Daily Travel Plan Display	004	user views a day by day plan for their trip
Travel Preferences Selection	005	user goes back to the preferences page to select new travel preferences
Travel Plan Editing	006	user chooses activities and restaurants from the list or adds their own choice of activities or restaurants for the day
Data Storage	007	Travel Plan Data Management
Travel Plan Download	008	user downloads plan to their device

Follow-up meeting questions:

1. What has been completed since the last meeting?
2. What are you going to be working on next?
3. Do you have any issues/impediments?
4. What design elements will we prioritize to ensure ease of navigation for users?
5. How will we manage and store the data for travel plans?
6. Who will be responsible for each component of the project?
7. What testing methods will we implement to validate the functionalities?
8. Are there any additional features that users have requested that we should consider?

Scrum's Master comments based on the above questions:

I appreciate everyone's hard work on the travel plan display feature. It's vital to maintain transparency about completed tasks. As we progress, please outline your next steps to stay aligned and manage dependencies. Let's prioritize user experience for intuitive navigation and finalize our data management approach with a robust solution. Lastly, we need to clarify responsibilities for each component to ensure clear focus areas.

2.5 Testing

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Verify that users can view the daily travel plan display.	Users see a complete day-by-day itinerary with activities and restaurants for each day of the trip.	pass
TC002	Check the ability to return to the preferences page to add a new plan	Users can navigate back to the preferences page and update the plan page successfully.	pass
TC003	Test the editing functionality for daily plans	Users can modify their daily plans by selecting from a list or adding their own activities and restaurants	pass
TC004	Confirm that users can download their travel plans	Users can download their travel plans	pass
TC005	Ensure that all components work together seamlessly.	Users can complete a full cycle: set preferences, view plans, edit activities, and download the final plan without errors.	pass
TC006	Ensure that the number of days in the daily plan matches the user's selected duration of travel	User receives a plan with the number of days the user has set for the trip	pass
TC007	Check that the daily plan of the corresponding city is displayed	User views the plan of the city the user clicked with the title as the name of the city	pass



SPRINT 3



Sprint 3

3.1 Requirement specification:

3.1.1 Story Backlog

Component Name: hotel information

Story Name: View hotel information

Sequence No: 009

Story Short Description: user can view hotel information that best fit their preferences of the cities with the generated travel plans.

Component Name: flight information

Story Name: View flight information

Sequence No: 010

Story Short Description: user can view flight information that best fit their preferences of the cities with the generated travel plans.

Component Name: explore

Story Name: explore

Sequence No: 011

Story Short Description: the user can explore activities and restaurants posted by other users and interact with the posts via comments and likes and view the user's travel plan.

3.1.2 Work Breakdown Structure

Projects / Terhalakom

Backlog



Search

Avatar icons: JZ, GK, S, SA, R, SA, and a group icon.

Epic ▾ Type ▾

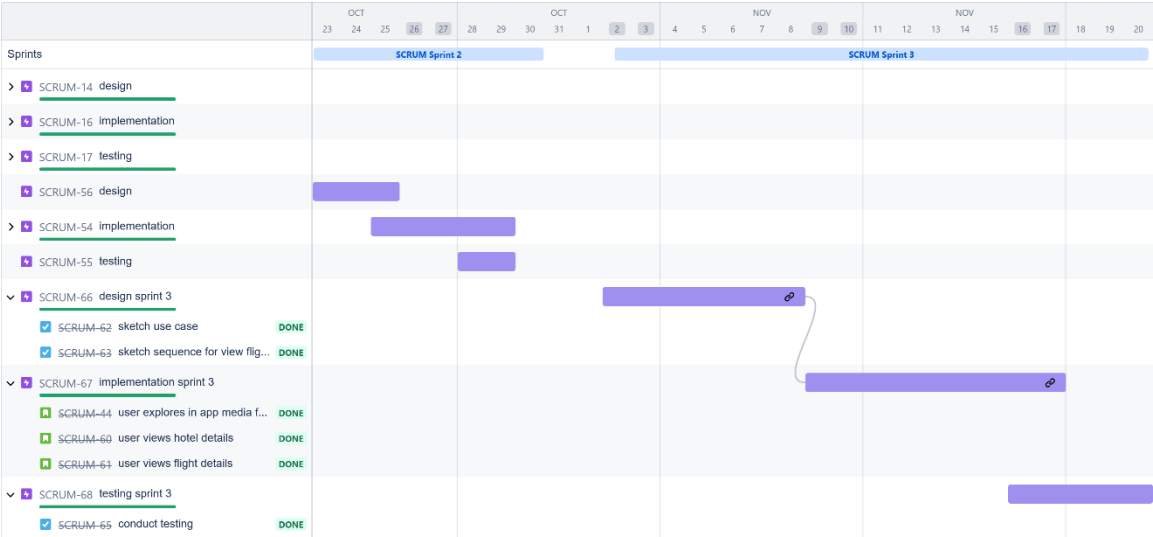


☐ ▾ SCRUM Sprint 3 2 Nov – 20 Nov (6 issues)

000 Complete sprint

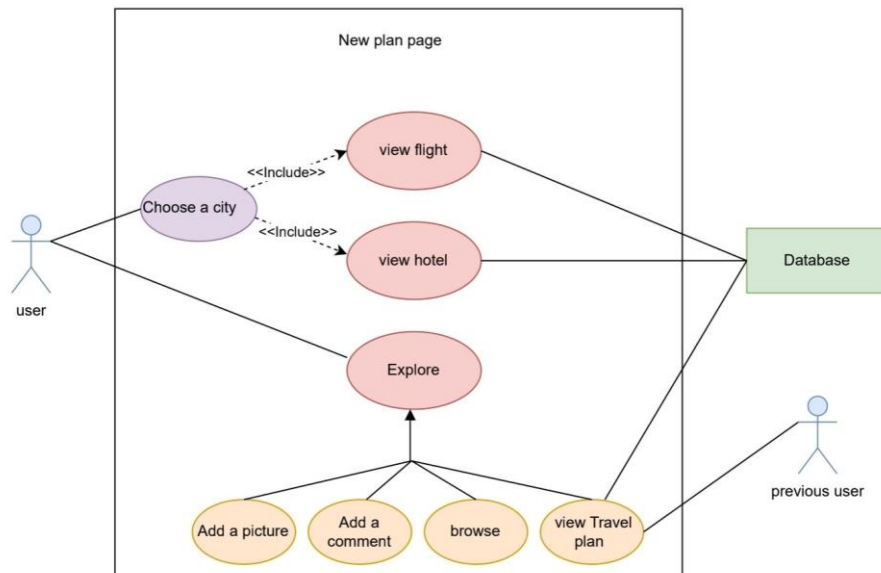
SCRUM-69	user explores in app media feed	TO DO ▾	-	SA
✓ SCRUM-64	sketch sequence for view hotel details	DONE ▾	-	JZ
SCRUM-70	user views hotel information	DONE ▾		S
SCRUM-71	use views flight information	DONE ▾		SA
✓ SCRUM-72	conduct testing	DONE ▾		
✓ SCRUM-73	sketch use case	DONE ▾		GK

+ Create issue

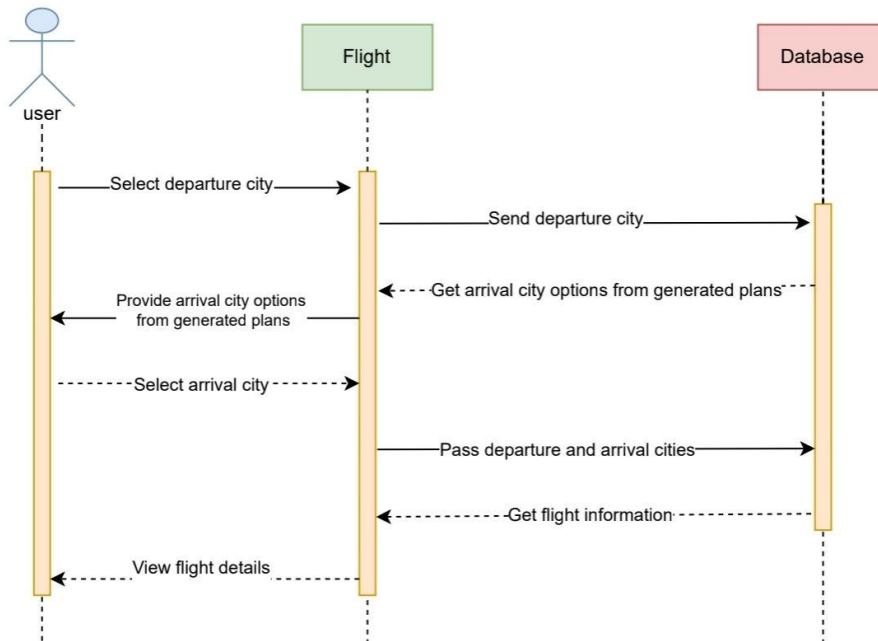


3.2 Design:

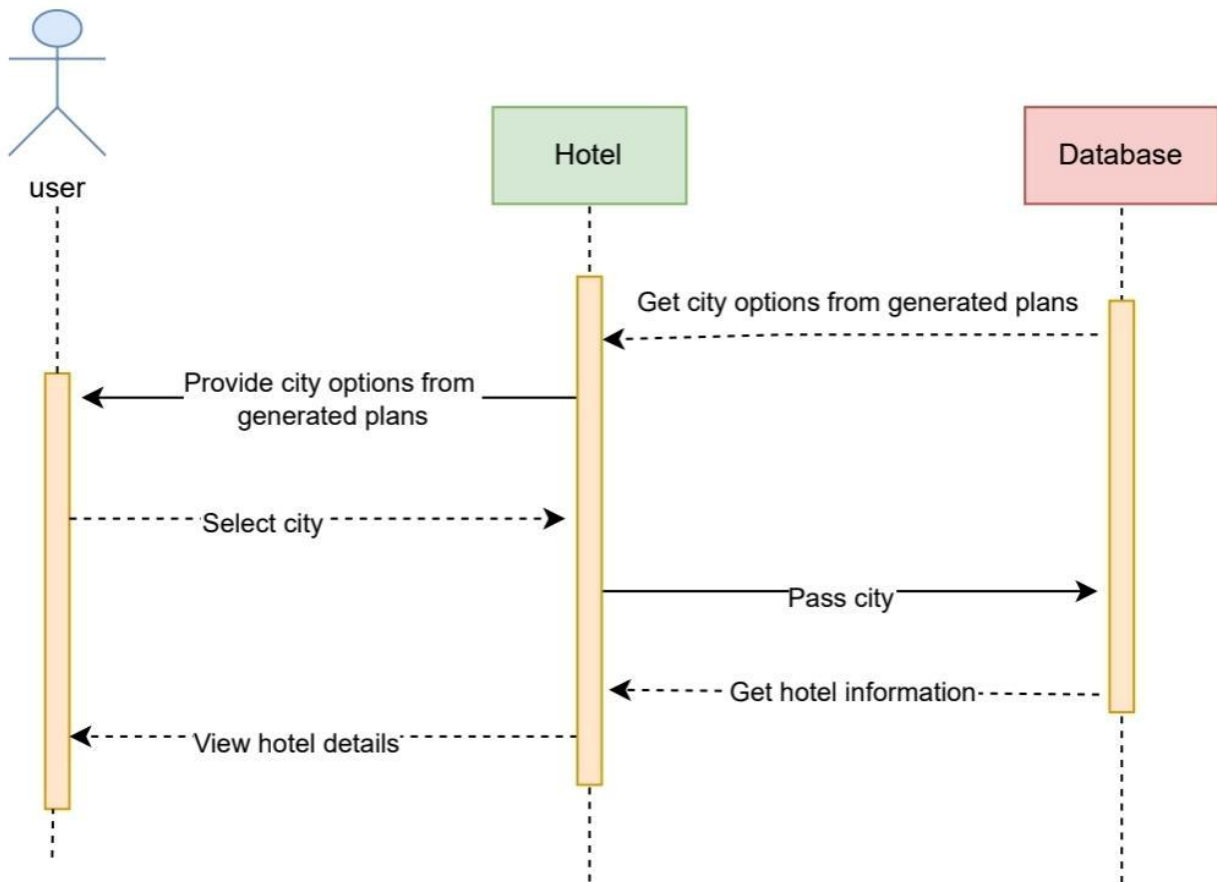
3.2.1 Use case Diagram



3.2.2 Sequence Diagram: display flight information



3.2.3 Sequence Diagram: display hotel information



3.3 Implementation:

Below is the link to the Github Repository containing all the code files related to sprint 3.

<https://github.com/TravelAgentApp/Terhal>

3.4 meeting Details:

Sprint Meeting(s)		
Project Name: Terhal Project Members: Jana Zakai, Reem Khalid, Sahar Adel, Gharam Khalil, Sara Al-shehri, Suad Anees		
<hr/>		
Sprint #3 Stand up Meeting – [27 October- 2024]		
<u>Sprint Duration:</u> 2 weeks		
<u>Scrum Master:</u> Jana		
<u>Pair Programmers:</u> flight (Suad), hotel (Sahar), explore (Sara)		
Component Name	Story Sequence Number	Use Cases (e.g., functionalities)
View hotel information	009	user can view hotel information that best fit their preferences of the cities with the generated travel plans.
View flight information	010	user can view flight information that best fit their preferences of the cities with the generated travel plans
explore	011	the user can explore activities and restaurants posted by other users and interact with the posts via comments.
<hr/>		
<u>Follow-up meeting questions:</u>		
<ol style="list-style-type: none">1. What has been completed since the last meeting?2. What are you going to be working on next?3. Do you have any issues/impediments?4. What design elements will we prioritize to ensure ease of navigation for users?5. How will we manage and store the data for travel plans?6. Who will be responsible for each component of the project?7. What testing methods will we implement to validate the functionalities?8. Are there any additional features that users have requested that we should consider?		
<u>Scrum's Master comments based on the above questions:</u>		
<ul style="list-style-type: none">- Add pictures to the plans page- Make plans page more user friendly		

3.5 Testing

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Verify that users can view the hotel information only for the selected city	When a user selects a specific city from the travel plan, the application displays hotel information relevant to that city only. No hotel details for other cities should be visible.	pass
TC002	Verify that users can only view the city names that have a generated travel plan for hotel options.	The application should only list city names in the hotel options for cities that already have an associated travel plan. Cities without a travel plan should not be shown in the hotel selection list.	pass
TC003	Verify that users can view the flight information only for the selected cities for departure and arrival	When users select departure and arrival cities, the application should display flight information specific to those cities only. Flight information for cities that are not selected should not be visible.	pass
TC004	Verify that users can only view city names of arrival flights that have a generated travel plan.	The arrival flight options should only list cities that have an existing travel plan. Cities without a travel plan should not appear as options for arrival flights.	pass
TC005	Verify that the user can navigate through the uploaded pictures in the explore section	User moves through the saved images in the explore section successfully	pass
TC006	Verify that the user can add comments to the pictures	User adds comments successfully and view their comments	pass
TC007	Verify that the user can view the plan of the user that uploaded the picture	User clicks on view plan and navigates successfully to the user's plan	pass

4. Lessons Learned

4.1 Donts:

- Start implementation before design
- Not setting standard for documentation and code organization
- Will cost the team time to refactor the code and understand what is happening

4.2 key takeaways:

- Scrum methodology for development: ensures there is a product in every period
- Story backlog : defines the scope of the project
- design allows all members to be on the same page and results in seamless implementation
- Writing user stories for each functionality allows for clear way for implementation

5. Future enhancements and conclusion:

To make Terhal more accessible and scalable, a significant future enhancement is transforming it into a web-based application. This move will allow for a more realistic implementation, reaching a broader audience with easier access across different devices without the need for installations. Additionally, expanding the scope of the app will open the door to more diverse travel experiences, such as incorporating detailed regional guides, cultural events, and collaborative trip planning features to cater to larger groups and families. The expansion will also support more personalized services, such as exclusive Saudi experiences and seasonal offerings.

Another vital area for enhancement is the interface. A refined and more user-friendly interface will enhance the overall experience, making interactions smoother, visually appealing, and intuitive for users of different age groups and technological comfort levels. These enhancements will ultimately ensure that Terhal offers a comprehensive, engaging, and seamless journey-planning experience, putting users' needs at the forefront and helping them discover Saudi Arabia in the way they desire.