

IT 320 Course Project
Semester-2, 1446H



Software Product Release

Phase 4: Sprint 2

< Bawsalah >

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1 Chapter 1: Introduction

The travel and tourism industry plays a pivotal role in connecting people to new cultures, experiences, and destinations worldwide. In recent years, the Gulf region, with cities like Dubai, Doha, and Riyadh, has emerged as a key global travel hub, attracting millions of visitors each year. This growth is evident in the 42.8% increase in tourist arrivals by the end of 2023, driven by major events like Expo 2020 in Dubai and the FIFA World Cup 2022 in Qatar.[1][2][3]

However, despite this rapid growth, travelers face significant challenges in accessing accurate and valuable information about these destinations. The fragmented nature of available resources often leads to confusion about local customs, language, currency, top attractions, and ideal visiting seasons. Travelers can find themselves spending hours searching for reliable information across various platforms.

To address this issue, we present "Bawsalah", a comprehensive, user-friendly website designed to serve as a travel guide for the Gulf region. Unlike generic travel platforms, "Bawsalah" focuses on providing locally relevant curated content, allowing travelers to confidently navigate the region's cities.

The significance of a technological solution like "Bawsalah" is far-reaching, both locally and globally. For the Gulf region, it is critical to enhance the tourism experience, supporting local businesses, and contributing to the growing tourism sector. On a global level, it streamlines travel planning, making the Gulf region more accessible to international visitors and helping to position it as a top-tier tourist destination.

This document explores a key challenge in the travel and tourism industry within the Gulf region and presents "Bawsalah" as a solution. It provides an overview of the website's features, its impact on regional tourism, and the product vision. Additionally, it outlines the product roadmap, project objectives, and scope, along with an introduction to the development team, including the Product Owner, Developers, and Stakeholders. Finally, references for further reading are included.

1.1 The Problem

In this section, we will discuss our problem, the obstacles users are faced with and what we aim to diminish.

Planning a trip can be overwhelming and time consuming, travelers often struggle to organize their trips efficiently especially when visiting a city for the first time. It can be hard and time consuming to find useful details like the top restaurants, hotels, and attractions. For instance, a tourist visiting Qatar for the first will spend hours switching between several websites to look for the perfect beach resort, best brunch spots, and souvenir shops to visit, this rigorous research process is bound to cause them unnecessary stress. And although there are many websites for travelers such as TripAdvisor, they don't provide enough cultural information or optimal scheduling periods for travelers.[4]

1.2 The Solution

In this section, we will discuss the solution to the problem that was discussed previously. Our solution is a website named “Bawsalah”.

“Bawsalah” is a website that allows users to choose the best accommodations, discover hidden gems, taste the best cuisines, and immerse themselves in new cultures, all within one click. The website focuses on destinations across Arab states of the Persian Gulf, it aims to enable users to personalize their planning experience taking into consideration each cities ideal visiting season, history, and useful details to keep in mind when traveling. “Bawsalah” saves time and reduces stress for travelers as well as creates a smoother planning process and a more enjoyable, efficient travel experience.

1.3 The Product

1.3.1 Product Vision

In this section, we will define the product vision for our Gulf travel platform, highlighting the goals we aim to achieve by developing and deploying the solution.

For curious and adventurous travelers who are seeking to explore the Gulf region fully and authentically and want a seamless, personalized experience while traveling. "Bawsalah" is a comprehensive travel information website dedicated solely to the Gulf region. That provides curated itineraries and local insights. Unlike global travel platforms like TripAdvisor, our product focuses specifically on delivering culturally immersive experiences tailored to the unique destinations of the Gulf.

1.3.2 Product Roadmap

In this section, we will outline the roadmap for "Bawsalah," demonstrating the timeline for product development and delivery, as shown in figure 1-1.



Figure 1-1 Product Roadmap

1.3.3 Objectives

In this section, we will present the objectives related to the development of the “Bawsalah” website, including product, project, and learning objectives. These objectives represent the goals we aim to achieve by the end of this project.

Product Objectives (customer focus-value):

In this objective, we will explain how we solve the problem and talk about the benefits and features we want to give to the users:

- Users can save time and effort because of simplified the search process.
- Users can register as a new user and log-in\out of the system.
- Users can add, edit, or delete posts to their accounts
- Users can add and delete their preferred destinations to their favorite list.
- Users can filter their search results.

Project Objectives (solution focus-plan):

In this objective, we will show the steps to developing our website ' Bawsalah ':

- Conduct Interviews and questionnaires, as well as check user requirements.
- Collect and clean data about destinations and tourist attractions.
- Design The user interface.
- Develop and program the website.
- Test the website.

Learning Objectives (student focus):

- Learn how to work effectively as a Scrum team and understand key roles.
- Apply agile practices like sprint planning, stand-ups, and retrospectives.
- Use Jira to manage tasks and track project progress.
- Improve team communication and collaboration skills.
- Gain practical experience in web development and PHP.
- Learn to manage and use databases for storing information.
- Develop strong problem-solving, critical thinking, and time management skills.

1.3.4 Scope

In this section, we will outline our project's scope and limitations.

"Bawsalah" is a web-based platform that aims to simplify city exploration by providing handy information for travelers. In our project, we focus on creating a website that supports desktop and mobile browsers and ensures accessibility for a global audience. It supports the English language as it is the most widespread language and focuses exclusively on destinations within the Arab states of the Persian Gulf.

It is important to note that features related to bookings or reservations are outside our current scope but may be explored in future iterations. Likewise, enhancements such as multi-language support or platform integrations are not included in this phase but remain potential areas for future expansion.

1.4 The Scrum Team

Table 1-1 Define the Scrum Team Members

Scrum Team	
Product Owner	Hatoun Almogherah
Developers	Hatoun Almogherah Ghena Almogayad Danyh Alotaibi Maha Alnassar Maha Albakr
Scrum Master (SM)	Dr. Nouf Alromaih
Stakeholders	Dr. Nouf Alromaih

8 Chapter 2: Domain Analysis

8.1 Background

In this section, we will provide an overview of the background and key concepts related to Bawsalah.

Bawsalah is a digital travel guide designed for the Gulf region, falling under the travel and tourism industry. Understanding tourism management is essential for catering to traveler needs, promoting destination marketing, and supporting local economies. Additionally, cultural knowledge of the Gulf region's traditions and social norms ensures that travel guidance is both accurate and respectful. To enhance user experience, the website's navigation structure must be intuitive, organizing content into categories such as accommodations, restaurants, and attractions [5]. Advanced search filters further streamline the process by allowing users to quickly find relevant options based on specific criteria [6]. Bawsalah addresses key travel challenges, including scattered information, lack of personalized recommendations, and cultural barriers, by offering customized itineraries and cultural insights, making travel in the Gulf more accessible, efficient, and enjoyable.

Terminology:

1. **Accommodation:** A place where travelers stay during their trip, such as hotels, resorts, guesthouses, or vacation rentals.
2. **Itinerary:** A planned schedule of travel activities, including accommodations, attractions, and dining options.
3. **Tourist Attraction:** A place of interest where visitors go, such as historical sites, museums, theme parks, or natural wonders.
4. **Seasonal Tourism:** Travel is influenced by the best time to visit a destination based on weather, events, or cultural activities.
5. **Hidden Gems:** Lesser-known places that offer unique and authentic experiences.
6. **Heritage Tourism:** Traveling to explore historical and cultural sites.
7. **Immersive Travel:** A travel style focused on deep cultural experiences, such as engaging with locals, festivals, and traditions.
8. **Desert Safari:** A popular Gulf region activity featuring dune bashing, camel rides, and Bedouin-style experiences.

9. **Luxury Travel:** High-end travel experiences, including private villas, yacht rentals, and premium shopping destinations.
10. **Best Time to Visit:** Information on ideal travel seasons based on weather, festivals, and peak tourist periods.

8.2 Literature Review

In this section we conducted market research to identify competitors and analyze their strengths and limitations. Below is a summary of the findings, followed by a comparison table and a detailed analysis of how "Bawsalah" stands out.

Competitor 1: Lonely Planet [7]

Description: A global travel platform offering destination guides, travel tips, and user-generated content.

Strengths:

- Covers a vast number of destinations worldwide.
- Provides offline maps and mobile-friendly features.
- Expert-written articles with general travel advice.

Limitations:

- Lacks deep cultural insights specific to the Gulf region.
- No personalized itinerary planning for niche interests.
- Information can be outdated or too generic for Gulf travelers.

Competitor 2: World Travel Guide [8]

Description: A travel resource offering destination overviews, visa information, and cultural tips.

Strengths:

- Structured format with practical travel information (e.g., visa, weather).
- Covers a wide range of destinations globally.

Limitations:

- Lacks interactive features like trip customization.
- No detailed local insights or cultural experiences for Gulf travelers.
- Not user-friendly for niche or region-specific travel planning.

Competitor 3: TripAdvisor [9]

Description: A leading travel platform with comprehensive reviews, easy booking, and multilingual support.

Strengths:

- Extensive user-generated content with reviews and ratings.
- Supports multiple languages, making it accessible to a global audience.
- Covers a wide range of destinations worldwide.
- Includes currency conversion for pricing, helping travelers estimate costs easily.
- Provides booking options for flights, cruises, and rental cars.

Limitations:

- Overwhelming amount of information, making it difficult to navigate.
- Lacks region-specific content tailored for Gulf travelers.
- No focus on cultural insights or local experiences in the Gulf.

Competitor 4: Gulf Spring Holidays [10]

Description: A travel agency offering vacation packages and trip planning services for international destinations.

Strengths:

- Provides all-in-one travel packages, including flights, accommodations, and guided tours.
- Simplifies the booking process with ready-made travel plans.
- Offers group travel deals for families and corporate clients.

Limitations:

- Does not cover Gulf destinations or regional experiences.
- Offers fixed travel plans with minimal customization.
- Focuses on mainstream destinations without cultural depth.
- Supports only Arabic, restricting access for non-Arabic speakers.

Table 2-2 Literature View

Feature	Lonely Planet	World Travel Guide	TripAdvisor	Gulf Spring Holidays	Bawsalah
Gulf-Specific Focus					✓
Local Cultural Insights		✓			✓
Currency conversion	✓		✓		
Filtering System			✓		✓
Reservations		✓		✓	
Worldwide Access	✓	✓	✓	✓	✓
Favorite List	✓		✓		✓
User Profile	✓		✓		✓
Recommendations			✓	✓	
Language Support	✓		✓		

This analysis compares "Bawsalah," a Gulf-focused travel platform, with competitors like Lonely Planet, World Travel Guide, TripAdvisor, and Gulf Spring Holidays, evaluating key features to understand its unique value proposition.

Key Observations:

Bawsalah differentiates itself through its exclusive focus on the Gulf region, offering tailored content that ensures relevance and accuracy for travelers. Unlike global platforms like Lonely Planet and TripAdvisor, which provide broad coverage, Bawsalah delivers in-depth insights specific to Gulf destinations.

Local cultural insights are another strength of Bawsalah. While platforms like Lonely Planet and World Travel Guide recognize the importance of cultural knowledge, Bawsalah goes further by providing detailed information on Gulf customs and traditions, making it a more immersive resource for travelers.

The platform also enhances user experience through a filtering system, similar to TripAdvisor, allowing travelers to refine their search based on personal preferences. Additionally, personalization features such as user profiles and favorite lists enable users to organize their travel plans more effectively, increasing engagement and satisfaction.

Unlike competitors that integrate booking options, Bawsalah prioritizes unbiased information by not offering reservations. While this ensures credibility, platforms like TripAdvisor and Gulf Spring Holidays provide a more streamlined experience by combining information with booking services. Adding currency conversion and multilingual support could further enhance Bawsalah's accessibility for international travelers.

Competitive Advantages of "Bawsalah":

A major strength of Bawsalah is its niche expertise in Gulf travel, addressing a gap that larger platforms overlook. By focusing exclusively on this region, Bawsalah can provide highly specialized and reliable content. Additionally, its curated approach ensures that users receive high-quality information without the overwhelming volume of data found on platforms like TripAdvisor.

Potential Areas for Development:

To further enhance its value, Bawsalah could incorporate user-generated content, such as reviews and ratings, to provide diverse perspectives. Expanding features like currency conversion and language support would make the platform more accessible to a global audience. Additionally, forming partnerships with local businesses could introduce reservation options, creating a more comprehensive travel experience while maintaining credibility.

Conclusion:

By leveraging its Gulf-specific expertise, curated content, and user-friendly approach, Bawsalah has the potential to become the leading travel platform for the region. Addressing key areas for growth will further solidify its position and ensure it meets the evolving needs of travelers seeking authentic Gulf experiences.

9 Chapter 3: Requirements Engineering

9.1 Requirements Elicitation and Analysis

In this section, we will discuss key phases of the requirements engineering process. We documented and elicited requirements using techniques like user interviews and questionnaires.

Based on participants' interview responses, it is clear that travelers face several challenges that impact their experience when visiting the Gulf countries. One of the main issues mentioned is the dispersion of travel information and the difficulty of finding a comprehensive and up-to-date guide in one place. This forces travelers to search across multiple sources, consuming a significant amount of time. Some participants also highlighted the challenge of verifying the authenticity of online reviews and ratings, as well as difficulties in finding suitable transportation.

Regarding the main factors in choosing a destination, budget ranked as the top priority, followed by safety, healthcare, and local culture, along with weather conditions and available activities.

When it comes to trip planning, participants noted that the most time-consuming aspect is searching for suitable accommodations and tourist activities. They spend a considerable amount of time comparing hotels and various attractions to find the best options.

In terms of cultural influences, participants emphasized the importance of understanding local customs and traditions, ensuring they research laws and etiquette to avoid any uncomfortable situations. Many also noted a strong cultural similarity between their home countries and the Gulf countries.

As for memory collection, many participants expressed interest in a digital tool for organizing and documenting their travel experiences. Such a feature would allow them to revisit and relive special moments in the future.

Regarding improvements for *Bawsalah*, participants emphasized the importance of the platform offering transparent information about local culture to enhance the travel experience, while also noting the value of having reliable reviews. They also suggested adding an estimated cost calculator for trips and incorporating local guides to assist travelers.

To ensure the project's quality, a **seven-question survey** was conducted, receiving **32 responses**, with the following results:

- **Gulf countries visited** (*Figure 3-8 Answer (1)*): Qatar ranked first with 21 votes, followed by Saudi Arabia with 19 votes. The UAE and Bahrain each received 16 votes, Kuwait had 10, and Oman had 2 votes. Additionally, two participants had never visited any Gulf country.
- **Purpose of the visit** (*Figure 2-8 Answer (2)*): The majority, **84.4%**, traveled for tourism and entertainment, **6.3%** visited family and friends, **3.1%** traveled for work, and **6.2%** for other reasons.
- **Trip planning methods** (*Figure 5-8 Answer (3)*): **50%** relied on recommendations from family and friends, followed by **40.6%** who used travel websites, while **3.1%** used travel agencies. The remaining percentage included various other sources, such as social media.
- **Preferred activities** (*Figure 6-8 Answer (4)*): Shopping ranked first with **29 votes**, followed by events and festivals (**18 votes**), cultural and historical tourism (**17 votes**), beach and water activities (**13 votes**), and adventure and sports in last place with **7 votes**.
- **Availability of tourism information** (*Figure 7-8 Answer (5)*): **59.4%** of participants reported spending a long time searching for sufficient travel information, **28.1%** found information quickly, and **12.5%** were unable to find any relevant information.

- **Use of travel websites for Gulf region tourism (Figure 8-8 Answer (6)):** **50%** had previously used a website for travel research, while **50%** had never done so.
- **Desired suggestions feature on the platform (Figure 9-8 Answer (7)):**
 - **24 votes** for information on famous tourist attractions.
 - **21 votes** for cultural landmarks and local traditions, as well as essential travel tips for each country.
 - **19 votes** for unique and exciting activities.

In summary, during the user research and analysis process, we began by gathering qualitative insights through user interviews to identify the key challenges travelers face when visiting the Gulf countries. To complement this, we conducted a questionnaire with 32 participants to collect quantitative data on travel preferences, planning methods, and desired features. The findings highlighted major concerns such as the dispersion of travel information, difficulty in verifying reviews, and challenges in finding suitable transportation. Additionally, we analyzed the primary factors influencing destination choices and the most time-consuming aspects of trip planning.

Based on these insights, we outlined key improvements for the *Bawsalah* platform, including the need for reliable reviews, cultural information, and a cost estimation tool. Although most of these features are not part of the initial implementation, they represent potential future enhancements that could be integrated into the platform later to better meet travelers' needs. The collected data will continue to guide the platform's development, ensuring its continuous improvement in line with user expectations.

9.2 System Users

This section briefly describes the standard users of our platform, detailing their background, experience, and level of technical expertise.

Our platform is designed for a singular category of user—travelers—who use it to discover destinations and organize their journeys. Through our platform, users can discover attractions, accommodations, and cultural experiences throughout the Gulf region.

Language: Our platform is primarily in English, so users should be comfortable reading and writing in English.

Educational Background: There are no specific educational requirements; users come from a diverse of backgrounds, as long as they are reasonable adults.

Technical Knowledge: A basic understanding of how to use online tools is all that is required. Users should be able to navigate the website, explore its functionalities.

Experience with Similar Platforms: It's anticipated that users have some familiarity with online travel platforms or other similar services, although previous experience is not a rigorous requirement.

Interest in Travel: Users should have a genuine interest in discovering new destinations, learning about local cultures, and planning their trips in a way that's easy and enjoyable.

Internet Access: A reliable internet connection is essential to access the platform, browse travel information, and fully utilize the available features.

Age Group: The platform is open to anyone aged 16 and above, ensuring that users are responsible and capable of making informed decisions.

Gender Inclusivity: Our platform is designed to be inclusive and welcoming to users of all genders.

Travel Preferences: Whether they are solo travelers, families, business travelers, or groups.

9.3 Use Case Diagram

In this section, we present the Use Case Diagram, which provides a visual representation of the interactions between users (actors) and the system. This diagram helps in understanding how different stakeholders interact with *Bawsalah* and defines the core functionalities required to meet user needs.

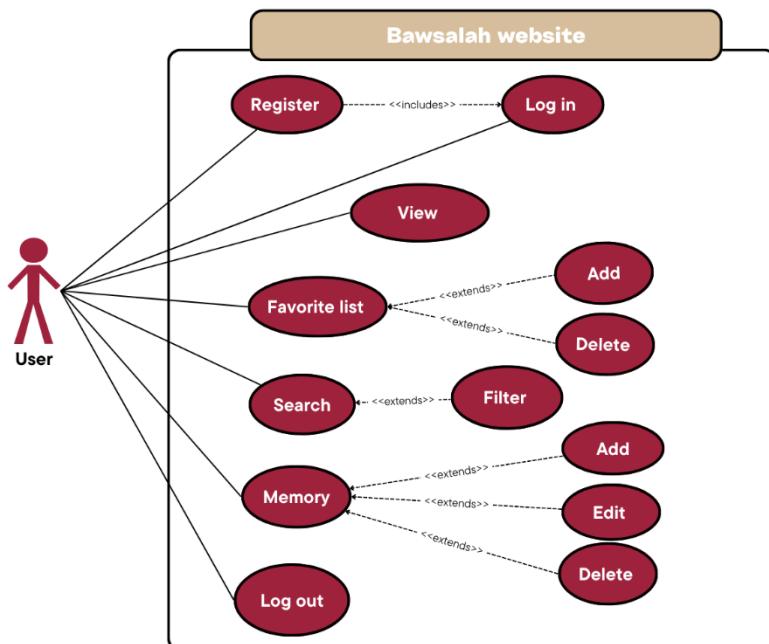


Figure 2-3 Use Case Diagram

9.4 Product Backlog

In this section, we introduce the Product Backlog, which is a prioritized list of tasks and features required for the project. It consists of Product Backlog Items (PBIs), which represent functionalities that provide value to users. Each PBI includes a description, size, type, and acceptance criteria, ensuring clarity and prioritization.

Table 3-3 Product Backlog

PBI (user story)	Size (Story points)	Type (Feature, defect, technical work, knowledge acquisition)	Acceptance Criteria (The conditions of satisfaction that must be met for that item to be accepted)
As a new traveler, I want to register for an account so that I can save my travel plans and preferences.	3	Feature	<p>The registration form must include the following fields: Full Name, Email, Password, and Confirm Password.</p> <p>The password must meet security requirements: a minimum of 8 characters, at least one uppercase letter, one lowercase letter, one number.</p> <p>The system should validate email format.</p> <p>If any required field is left blank, an error message should appear.</p> <p>Upon successful registration, users should be redirected to the login page.</p>
As a traveler, I want to log into my account so that I can access and manage my travel plans.	3	Feature	<p>Users must log in using their registered email and password.</p> <p>If an incorrect password is entered, an error message should be displayed: "Invalid email or password."</p> <p>Users should remain logged in until they manually log out.</p>

			Upon successful login, users should be redirected to the homepage.
As a traveler, I want to log out of my account so that I can end my session.	2	Feature	<p>A "Log Out" button should be accessible from the user profile page.</p> <p>Clicking "Log Out" should immediately end the session and redirect the user to the main page.</p> <p>Users should see a confirmation prompt: "Are you sure you want to log out?"</p> <p>Logged-out users should not be able to access saved travel plans without logging in again.</p>
As a traveler, I want to privately add pictures to my profile so that I can keep track of beautiful memories.	2	Feature	<p>Users should be able to upload pictures to their Memories section.</p> <p>Pictures should be stored privately and not visible to other users.</p> <p>The system should support common image formats.</p> <p>Users should be able to add a caption (optional) for each picture</p> <p>Once the user successfully uploads a post, it should be displayed in their memory section.</p>
			Users should be able to edit captions of

<p>As a traveler, I want to be able to edit my memories section so that I keep them up to date.</p>	<p>2</p>	<p>Feature</p>	<p>previously uploaded pictures. Users should be able to edit existing pictures with new ones. Once the user successfully edits their memory, the edited version should be displayed in their memory section.</p>
<p>As a traveler, I want to delete memories so that I can get rid of unwanted memories.</p>	<p>2</p>	<p>Feature</p>	<p>Users should be able to delete individual pictures from their Memories section. A confirmation prompt should appear before deleting it, asking: "Are you sure you want to delete this memory? This action cannot be undone", If the user confirms, the memory should be permanently removed, If the user cancels the prompt, no changes should occur. After deletion, the memory should no longer be displayed in the memory section.</p>
<p>As a traveler, I want to add items to my</p>			<p>Users must be logged in to add items to their favorite list. Clicking the "Add to Favorites" button should save the item to the user's favorite list.</p>

<p>favorite list so that I can easily access them later.</p>	2	<p>Feature</p>	<p>The favorite list should remain available across sessions for logged-in users.</p> <p>The favorite list should display the item's name and image.</p> <p>Adding an item should be completed within 1 second.</p>
<p>As a traveler, I want to remove items from my favorite list so that I can manage my saved destinations efficiently.</p>	1	<p>Feature</p>	<p>Users should be able to remove an item from their favorite list by clicking the "Remove from Favorites" button.</p> <p>The removal should be reflected immediately without requiring page refreshment.</p> <p>If no items are saved, a message should appear: "You have no favorite items yet."</p> <p>Removing an item should be completed within 1 second.</p>
<p>As a traveler, I want to search for travel destinations so that I can quickly find relevant information.</p>	2	<p>Feature</p>	<p>The search bar should be available on the homepage.</p> <p>Users should be able to search by destination</p> <p>The system should display relevant results based on the search term.</p> <p>If no results are found, a message should appear: "No results found."</p>

<p>As a traveler, I want to filter the search results based on my preferences so that I can quickly find destinations that match my interests.</p>	4		<p>Feature</p> <p>Users should be able to filter results by category (e.g., restaurants, accommodations, attractions) and location.</p> <p>Filters should be applied instantly without requiring a page refresh.</p> <p>If no results match the selected filters, a message should appear: "No results found based on your selected filters."</p> <p>Users should be able to apply multiple filters simultaneously.</p> <p>A "Clear Filters" button should reset all selected options.</p>
<p>As a traveler, I want to view detailed information about cities so that I can learn more about them and make informed decisions on whether to visit.</p>	2		<p>Feature</p> <p>The city page should display the city name, description, location, cultural information, and images.</p>
<p>As a traveler, I want to view my memories so that I can revisit and reflect on my travel experiences.</p>	1		<p>Feature</p> <p>Users should have access to a "Memories" section in their profile.</p> <p>Opening the "Memories" section should display all saved memories.</p> <p>Each memory should display a detailed view that includes the image and the user's caption.</p>

<p>As a traveler, I want the website to be accessible on my device so that I can plan my trips from anywhere.</p>	<p>5</p>	<p>Feature</p>	<p>All features should work with touch-based and mouse-based interactions. The website must be compatible with major browsers such as Chrome.</p>
<p>As a traveler, I want the website to be easy to navigate so that I can find the information I need effortlessly.</p>	<p>5</p>	<p>Feature</p>	<p>A clear navigation bar should be available at the top of the page. Icons and labels must be clear and distinguishable. The design must be consistent across all pages.</p>

10 Chapter 4: System Design and Development

10.1 System Architecture

In this section, we will outline the system architecture for the "Bawsalah" platform. The success of a travel website is largely determined by its architecture, which ensures smooth interactions between different components of the system.

For a project like Bawsalah, which aims to serve as an intuitive travel guide for the Gulf region, we have chosen a Client-Server Architecture, which is a widely used model for web applications and offers several advantages in terms of scalability, performance, and security.

Why Client-Server Architecture?

Separation of Concerns: The user interface (client-side) is separate from the business logic and data management (server-side), which simplifies updates and maintenance.

Scalability: It allows the server to handle multiple clients simultaneously without performance loss.

Security: Sensitive data is securely stored on the server, enhancing data protection and access control.

Efficiency: Centralized management of data and business logic on the server improves overall application performance.

Future Scalability: It facilitates the easy addition of new features and expansions.

High-Level Overview of System Partitioning

Client-Side Components

The client side provides the interface through which users interact with the platform, including:

User Interface (UI): This is the visual part of the application that is accessed by travelers through web browsers. It enables travelers to register, log in, search for destinations, filter results, view detailed destination information, and manage their profiles.

Session Management (Frontend): This module handles user registration, login, and logout functionalities.

Search and Filter: This allows users to search for travel destinations and apply filters based on their category preferences.

Favorites and Memories: Users can save destinations to their favorite list and add memories by uploading photos, which can later be edited or deleted.

Server-Side Component

The server side handles data processing and storage, including:

Web Server: This handles all incoming requests from the client side and sends the appropriate responses back to the client.

Database: The database stores all the necessary data, such as user profiles, travel destination information.

Business Logic: Handles user interactions and updates, ensuring smooth platform functionality.

Authentication & Authorization (Backend): Verifies users' identities.

This architecture ensures smooth operations for "Bawsalah" while offering scalability, security, and ease of future enhancements.

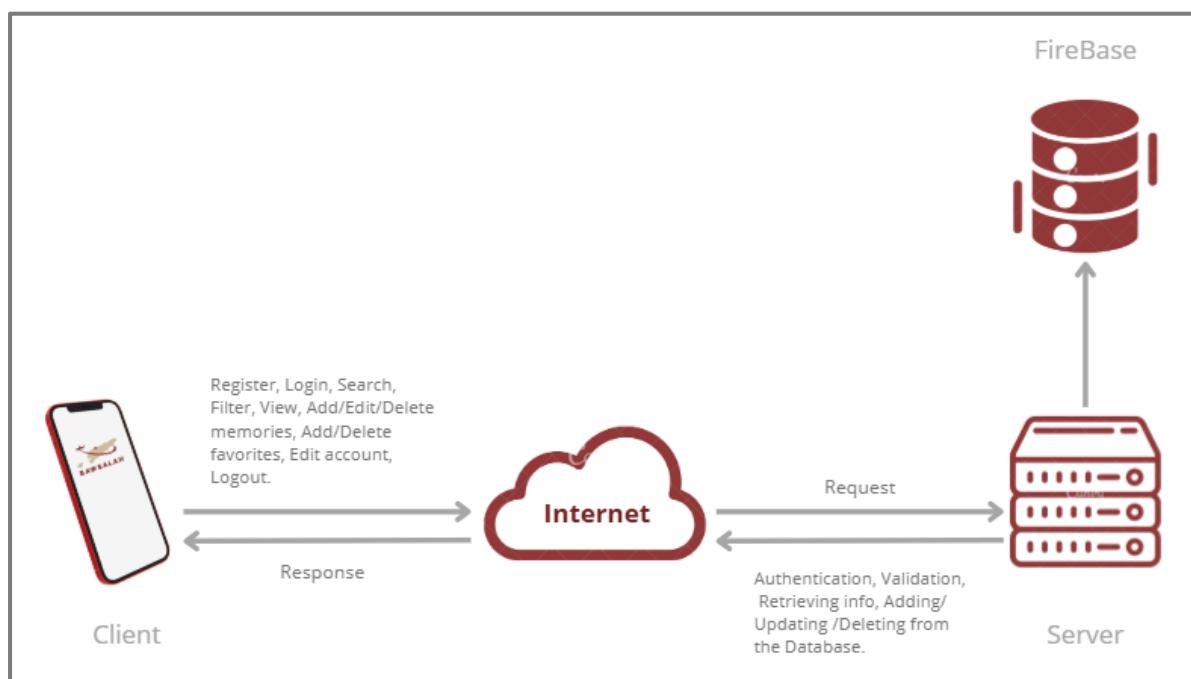


Figure 3-4 System Architecture of Bawsalah

10.2 Class Diagram

In this section, we present the Class Diagram of our website, detailing its core classes, attributes, methods, and relationships. It serves as a blueprint for the system's structure and organization, guiding the object-oriented design and implementation. By illustrating class interactions, the diagram ensures clear and efficient software architecture for better system management and scalability.

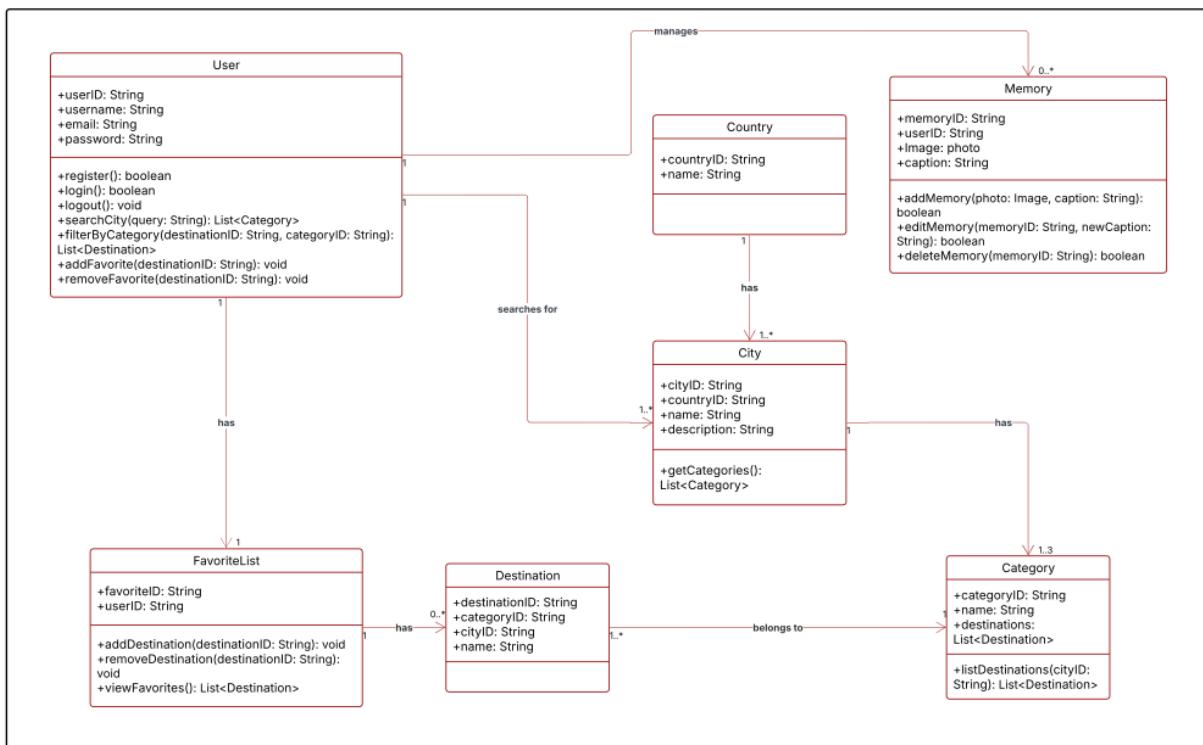


Figure 4-4 Class Diagram of Bawsalah website

10.3 Data Design

In this section, we will focus on the design of a data system, emphasizing three key components: the **ER Diagram**, the **Schema**, and the **Data Dictionary**. The ER Diagram outlines the entities, their attributes, and the relationships among them within the database. The Schema defines the database structure, detailing the tables and their interrelations. The Data Dictionary acts as a comprehensive catalog, offering in-depth descriptions of the entities, attributes, and relationships present in the system. Collectively, these components ensure that the system's data is well-organized and readily accessible for effective use and analysis.

- **ER**

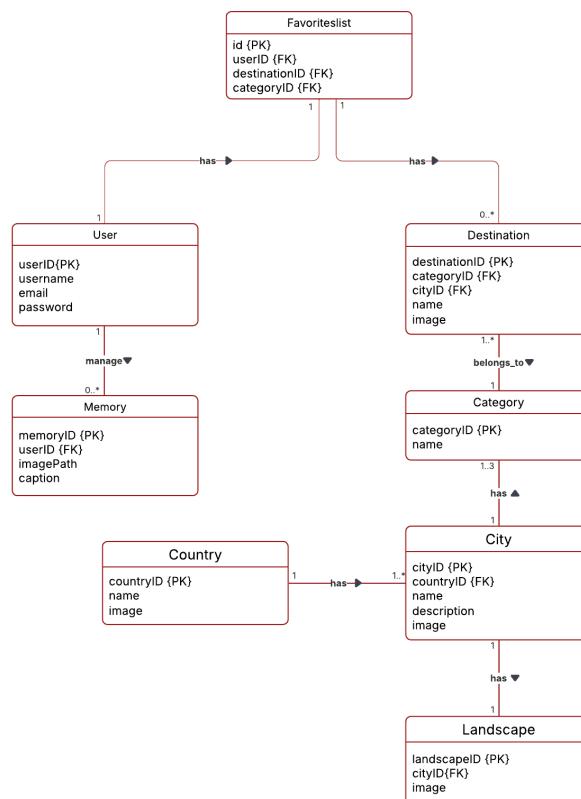


Figure 5-4 ER Diagram of Bawsalah website

- **Schema**

User (userID, username, email, password)

Primary key: userID

Memory (memoryID, userID, imagePath, caption)

Primary key: memoryID

Foreign Key: userID

FavoriteList (id, userID, destinationID, categoryID)

Primary key: id

Foreign Key: userID

Foreign Key: destinationID

Foreign Key: categoryID

Country (countryID, name, image)

Primary key: countryID

City (cityID, countryID, name, description, image)

Primary key: cityID

Foreign Key: countryID

Landscape (landscapeID, cityID, image)

Primary key: landscapeID

Foreign Key: cityID

Category (categoryID, name)

Primary key: categoryID

Destination (destinationID, categoryID, cityID, name, image)

Primary key: destinationID

Foreign Key: categoryID

Foreign Key: cityID

- **Data Dictionary**

- Data Dictionary shows description of **all entities**

Table 4-4 Data Dictionary (entities)

Entity Name	Description	Aliases	Occurrence
User	Represent users who can save favorite places and create memories	-	A user can have exactly one favorite list. A user can manage none or several memories.
Destination	Represents travel destinations that users can search about it.	-	A destination can belong to one category.
Memory	Represents memories users have of places.	-	The memory is uniquely associated with one user.
FavoriteList	Tracks which place users have saved as favorites	-	A favorite list is uniquely associated with one user. A favorite list from zero to many places
Category	Groups destinations into different types	-	A category can have zero to many destinations.
City	Represents a group of cities	-	A city has one to three categories A city belongs to one country The city has One landscape
Country	Represents a group of country	-	The country has one to many cities.
Landscape	Show a group of picture for the city		One Landscape belongs to only one city.

- Data Dictionary showing description of **all relationships**

Table 5-4 Data Dictionary (relationships)

Entity Name	Multiplicity	Relationship	Entity Name	Multiplicity
User	1..1 1..1	Has Manage	FavoriteList Memory	1..1 0.. *
Category	1..1 1.. 3	Has Has	Destination City	1.. * 1.. 1
Destination	0.. *	Has	FavoriteList	0.. 1
City	1..1 1..*	Has Has	Landscape Country	1..1 1..1

- Data Dictionary showing description of **all attributes**

Table 6-4 Data Dictionary (attributes)

Entity Name	Attribute	Description	Data Type	Length	NLls	Multi Value	Default Value	Range	PK	FK
User	userID	Unique identifier for each user (auto generate)	int	11	N	N	N		Y	
	username	name of the user	varchar	255	N	N	N			
	email	User's email address	varchar	255	N	N	N			
	password	password for user authentication	varchar	255	N	N	N			
	memoryID	Unique identifier for each memory (auto generate)	int	11	N	N	N		Y	

	userID	Unique identifier for each user (auto generate)	int	11	N	N	N			Y
Memory	imagePath	An image of the memory	varchar	255	N	N	N			
	caption	caption of the memory	text	-	Y	N	Y			
	categoryID	Unique identifier for each category	int	11	N	N	N			Y
Category	name	Name of the category	varchar	50	N	N	N			
	destinationID	Unique identifier for each destination	int	11	N	N	N			Y
Destination	categoryID	Unique identifier for each category	int	11	N	N	N			Y
	cityID	Unique identifier for each city	int	11	N	N	N			Y
	name	name of the destination	varchar	60	N	N	N			
	image	An image of the destination	varchar	255	N	N	N			
FavoriteList	id	Unique identifier for each favorite entry (auto generate)	int	11	N	N	Y			Y
	userID	Unique identifier for each user (auto generate)	int	11	N	N	Y			Y
	destinationID	Unique identifier for each destination	int	11	N	N	N			Y
	categoryID	Unique identifier	int	11	N	N	N			Y

		for each category							
Country	countryID	Unique identifier for each country	int	11	N	N	N		Y
	name	name of the country	varchar	60	N	N	N		
	image	An image of country	varchar	255	N	N	N		
City	cityID	Unique identifier for each city	int	11	N	N	N		Y
	countryID	Unique identifier for each country	int	11	N	N	N		Y
	name	name of the city	varchar	50	N	N	N		
	description	Description of the city	text	-	N	N	N		
	image	An image of city	varchar	255	N	N	N		
Landscape	landscapeID	Unique identifier for each landscape	int	11	N	N	N		Y
	cityID	Unique identifier for each city	int	11	N	N	N		Y
	image	An image of landscape	varchar	255	N	N	N		

10.4 Component Design

In this section, we will discuss the design of three components of our system: **Upload Memory**, **Edit Memory**, and **Delete Memory**. These components form the core functionality of the user's interaction with the "Memories" section of the application. We will provide pseudocode for each function, along with UML diagrams to represent the flow and structure of each component.

- **Upload Memory:**

Definition:

The user should be able to add a new image and optionally caption it to his/her profile by uploading it as a memory.

Construction:

Inputs: image, text.

Precondition: User must be signed in.

Postcondition: The image is saved to the database and displayed in the “Memories” section of the user’s profile.

Pseudocode:

BEGIN

 IF user selects an image THEN

 PROMPT user to add an optional caption

 STORE image and caption in secure storage

 SAVE image/ caption metadata (file path, caption, user ID) in the database

 DISPLAY uploaded image in the user's "Memories" section

 ENDIF

END

Activity Diagram:

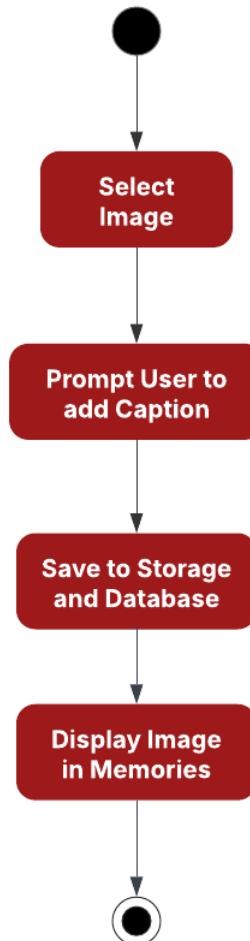


Figure 6-4 Activity Diagram for Upload Memory

- **Edit Memory:**

Definition:

The user should be able to edit existing images or captions in memories on his/her profile.

Construction:

Inputs: image, text.

Precondition: user must be signed in; user must have at least one memory uploaded to the profile.

Postcondition: The updates are saved to the database and displayed in the “Memories” section of the user’s profile.

Pseudocode:

BEGIN

IF user selects a memory to edit **THEN**

PROMPT user to modify caption or replace the image

IF new image is provided **THEN**

UPDATE image in storage

UPDATE metadata in the database

IF new caption is provided **THEN**

UPDATE caption in storage

UPDATE caption in the database

ENDIF

DISPLAY updated memory in the user's "Memories" section

ENDIF

END

State Diagram:

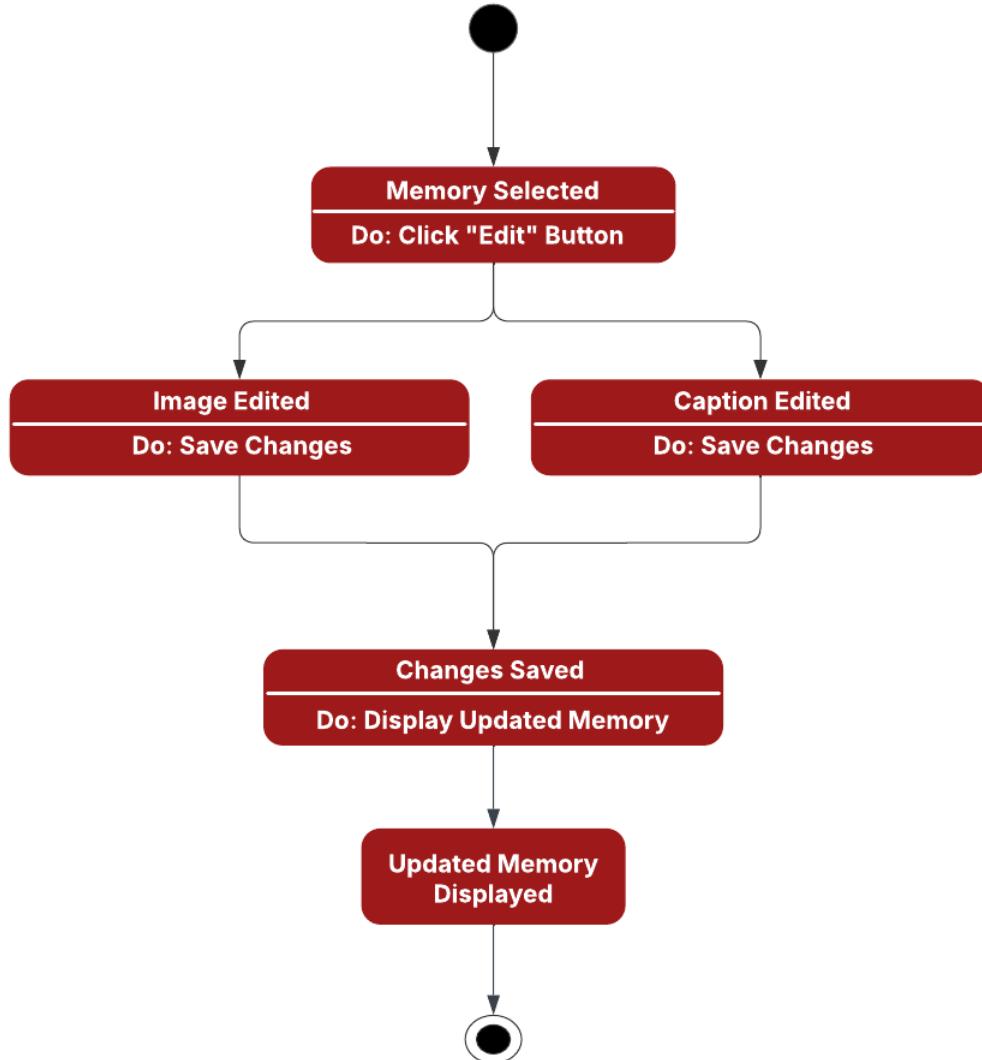


Figure 7-4 State Diagram for Edit Memory

- **Delete Memory:**

Definition:

The user should be able to delete a memory from his/her profile.

Construction:

Precondition: user must be signed in; user must have at least one memory uploaded to the profile.

Postcondition: the memory is deleted from the database and user's profile and therefore no longer visible.

Pseudocode:

```

BEGIN
    IF user selects a memory to delete THEN
        DISPLAY deletion confirmation prompt
        IF user confirms deletion, THEN
            DELETE image and metadata from storage and database
            REMOVE memory from the "Memories" section
        ENDIF
    ENDIF
END
  
```

State Diagram:

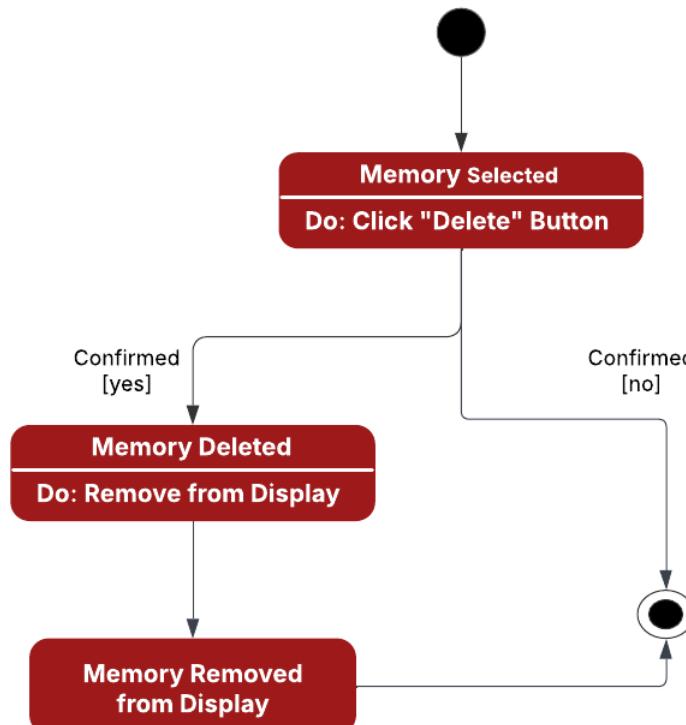


Figure 8-4 State Diagram for Delete Memory

10.5 Interface Design

In this section we will concentrate on the design of our system's interface. We will begin by using a site map to outline the structure of the website, highlighting the flow between screens and illustrating the overall architecture of the interface. Additionally, we will provide a link to GitHub to offer a deeper understanding of the interface's functionality. To emphasize our user-centered approach, we will present six UX guidelines that were applied to each interface and integrated into the design process of our website.

- **Site Map**

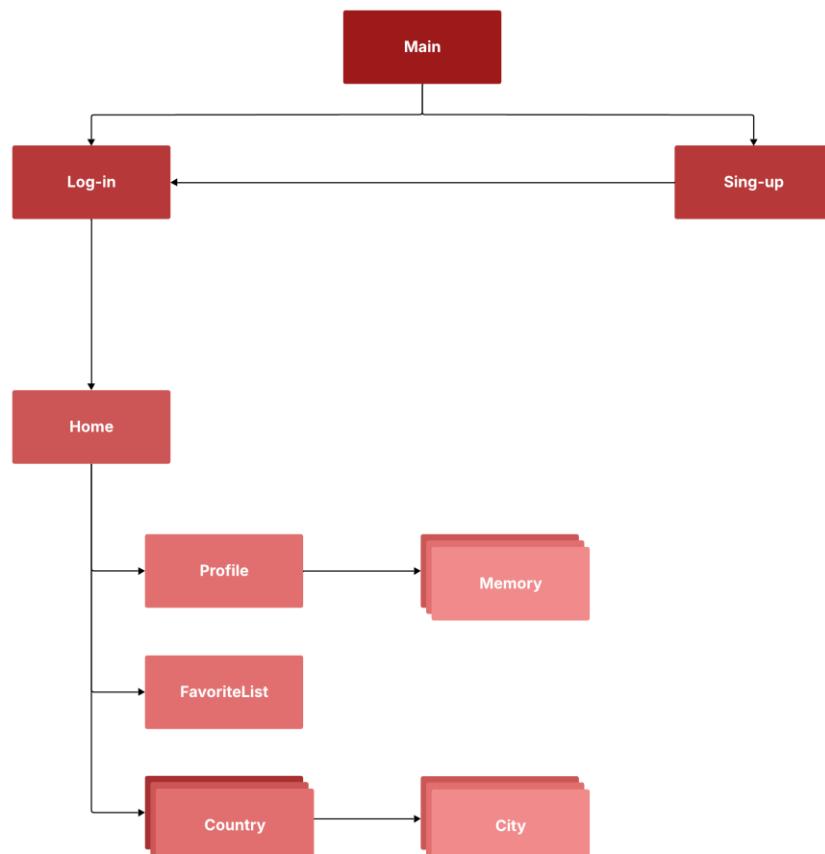


Figure 9-4 Site Map

- **UX Guidelines implemented for each interface**

- **Consistent Design**

The design should be uniform in terms of colors, fonts, and buttons across all pages of the website. This ensures a seamless and harmonious user experience.

- **Easy Navigation**

Navigating through the website should be clear and intuitive, enabling users to quickly access the information they need. We provide clear labels for navigation options like icons

- **Simplicity and Clarity**

The design of the site will be simple and organized, clearly presenting information without unnecessary elements. Making it easier for users to find what they are looking for.

- **User-Centered Design**

The design of the site will be based on studying the needs of users to ensure practical and easy experience. The information will be presented in a way that helps users make decisions quickly and efficiently.

- **Content-Focused Approach**

We will present the content in a clear and easy-to-read way, with attractive images and concise and useful texts. This ensures that users can get the required information quickly and without complications.

- **Error Handling**

Avoid errors as much as possible by validating user input. When errors occur, informational error messages will be displayed explaining the problem.

- **GitHub link**

<https://github.com/MAN-74/Bawsalah>

- **Jira link**

<https://ghenaalmogayad.atlassian.net/jira/software/projects/SCRUM/boards/1>

11 Chapter 5: Testing

This chapter focuses on testing the final version of the system to make sure everything works as expected. After the design and development phases, testing plays a key role in checking whether the system is reliable, easy to use, and ready for real-world use. Here, we go through the different types of tests that were carried out, the tools and methods used, and the results that came from them. The aim is to confirm that the system performs well, handles errors properly, and delivers smooth experience for users. Any issues discovered during this phase are discussed along with how they were fixed, helping to ensure the system is stable and ready to go live.

11.1 User Story Acceptance Testing

This section focuses on user story acceptance testing, which ensured that each feature met the real needs and expectations of travelers using the platform. The main goal was to confirm that every user story was successfully implemented based on its acceptance criteria. We identified key user stories including sign-up, login/logout, memory management (add, edit, delete), favorites (add/remove), search and filter, and viewing destinations and memories. Each story was matched with specific acceptance criteria and tested accordingly. Testing was carried out with real users from our target audience in a simulated environment. We observed how they interacted with the platform and checked whether each feature performed as expected. Both functional and non-functional features like responsiveness and ease of navigation were tested thoroughly. The following table outlines each user story along with its acceptance criteria, test cases, and results.

Table 7-5 User Story Acceptance Testing

Sprint Number	PBI (user story)	Acceptance Criteria (The conditions of satisfaction that must be met for that item to be accepted)	Test cases(s)	Pass?	Comments
2	As a new traveler, I want to register for an account so that I can save my travel plans and preferences.	<p>The registration form must include the following fields: Full Name, Email, Password, and Confirm Password.</p> <p>The password must meet security requirements: a minimum of 8 characters, at least one uppercase letter, one lowercase letter, one number.</p> <p>The system should validate email format.</p> <p>If any required field is left blank, an error message should appear.</p> <p>Upon successful registration, users should be redirected to the login page.</p>	<ol style="list-style-type: none"> Click on the Sign Up option from the main page. Fill in the signup fields with a name, duplicate email, invalid password, and leave one field blank. Click the Sign Up button. Verify that an appropriate error message is displayed. Fill in all fields with valid input. Verify that the account is created, a message saying "Signup successful!" is shown, and the user is redirected to the login page. 	Yes	-
2	As a traveler, I want to log into my account so that I can access and	<p>Users must log in using their registered email and password.</p> <p>If an incorrect password is entered, an error message should be displayed: "Invalid email or password."</p> <p>Users should remain logged in until they manually log out.</p>	<ol style="list-style-type: none"> Click on the Log In option from the main page. Fill in the login fields with an invalid email and incorrect password. Click the Log In button. Verify that an appropriate error message is displayed. Fill in all fields with valid input. 	Yes	-

	manage my travel plans.	Upon successful login, users should be redirected to the homepage.	6. Verify that the user is authenticated, a message saying " Login successful " is shown, and the user is redirected to the home page.		
2	As a traveler, I want to log out of my account so that I can end my session.	<p>A "Log Out" button should be accessible from the user profile page.</p> <p>Clicking "Log Out" should immediately end the session and redirect the user to the main page.</p> <p>Users should see a confirmation prompt: "Are you sure you want to log out?"</p> <p>Logged-out users should not be able to access saved travel plans without logging in again.</p>	1. Click on the Logout button from the profile page. 2. Verify that a confirmation message is displayed with two options: 'OK' and ' Cancel '. 3. Click the ' Cancel ' option in the pop-up message. Verify that the pop-up disappears, and the user remains logged into their account. 4. Click the Logout button again. 5. Click the ' OK ' option in the pop-up message. Verify that the user is logged out, redirected to the main page, and no longer has access to the website. 6. Attempt to access a restricted page within the website. 7. Verify that the session has expired, and the user is required to log back in.	Yes	-
		<p>Users should be able to upload pictures to their Memories section.</p> <p>Pictures should be stored privately and not visible to other users.</p>	1. Click on the Your Memory button from the profile page. 2. Verify that the Memories section opens, showing the option to upload a new picture.		

2	<p>As a traveler, I want to privately add pictures to my profile so that I can keep track of beautiful memories.</p>	<p>The system should support common image formats.</p> <p>Users should be able to add a caption (optional) for each picture</p> <p>Once the user successfully uploads a post, it should be displayed in their memory section.</p>	<ol style="list-style-type: none"> 3. Click the Upload button. 4. Select an image file from your device. 5. <i>(Optional)</i> Enter a caption for the memory. 6. Click the Submit button. 7. Verify that the uploaded picture and caption appear in the Memories section, and that the picture is only visible to the current user (not accessible from other profiles). 8. Log out and log back in. 9. Navigate to the Memories section again and verify that the previously uploaded picture(s) and caption(s) are still available to the same user. 	Yes	-
2	<p>As a traveler, I want to be able to edit my memories section so that I keep them up to date.</p>	<p>Users should be able to edit captions of previously uploaded pictures.</p> <p>Users should be able to edit existing pictures with new ones.</p> <p>Once the user successfully edits their memory, the edited version should be displayed in their memory section.</p>	<ol style="list-style-type: none"> 1. Click on the Your Memory button from the profile page. 2. Verify that the Memories section opens and displays the list of previously uploaded memories. 3. Click on the Edit button for the memory you want to update. 4. When prompted, choose an option: 	Yes	-

			<ul style="list-style-type: none"> • Type 1 to edit the caption • Type 2 to replace the photo <p>5. If option 1 (Edit Caption) is selected:</p> <ul style="list-style-type: none"> • A second prompt appears showing the current caption. • Enter the new caption text and confirm. • Verify that the page reloads, and the updated caption is displayed. <p>6. If option 2 (Replace Photo) is selected:</p> <ul style="list-style-type: none"> • A file dialog opens automatically. • Select a new image file. • After the image is successfully uploaded, verify that the memory is updated, and the new image is visible in the same card. <p>7. Log out and log back in.</p> <p>8. Navigate to the Memories section again and verify that all edited changes (caption and/or photo) persist.</p>		
		<p>Users should be able to delete individual pictures from their Memories section.</p>	<p>1. Click on the Your Memory button from the profile page.</p>		

2	As a traveler, I want to delete memories so that I can get rid of unwanted memories.	<p>A confirmation prompt should appear before deleting it, asking: "Are you sure you want to delete this memory? This action cannot be undone", If the user confirms, the memory should be permanently removed, If the user cancels the prompt, no changes should occur.</p> <p>After deletion, the memory should no longer be displayed in the memory section.</p>	<ol style="list-style-type: none"> 2. Verify that the Memories section opens and displays all previously uploaded pictures and captions. 3. Locate the memory you want to delete and click the Delete button associated with it. 4. Verify that a confirmation prompt appears with the message: "Are you sure?" 5. Click Cancel in the confirmation prompt. 6. Verify that the memory is not deleted and remains visible in the Memories section. 7. Click the Delete button again. 8. Click OK in the confirmation prompt. 9. Verify that the memory is permanently removed from the Memories section. 10. Log out and log back in. 11. Navigate to the Memories section and verify that the deleted memory no longer appears. 	Yes -
2	As a traveler, I want to add	<p>Users must be logged in to add items to their favorite list.</p> <p>Clicking the "Add to Favorites" button should save the item to the user's favorite list.</p>	<ol style="list-style-type: none"> 1. Ensure that the user is logged in to the application. If not, log in with valid credentials. 2. Navigate to an item that you want to add to your favorites. 3. Click the "Add to Favorites" button associated with the item. 	Yes

	items to my favorite list so that I can easily access them later.	<p>The favorite list should remain available across sessions for logged-in users.</p> <p>The favorite list should display the item's name and image.</p> <p>Adding an item should be completed within 1 second.</p>	<ol style="list-style-type: none"> 4. Verify that the item is immediately added to the Favorites list without noticeable delay (within 1 second). 5. Navigate to the Favorites page. 6. Verify that the Favorites section shows the recently added item, including the item's name and image. 7. Log out and log back in to ensure the Favorites list persists across sessions. 8. Verify that the item is still present in the Favorites section after logging back in. 		-
2	As a traveler, I want to remove items from my favorite list so that I can manage my saved destinations efficiently.	<p>Users should be able to remove an item from their favorite list by clicking the "Remove from Favorites" button.</p> <p>The removal should be reflected immediately without requiring page refreshment.</p> <p>If no items are saved, a message should appear: "You have no favorite items yet."</p> <p>Removing an item should be completed within 1 second.</p>	<ol style="list-style-type: none"> 1. Ensure that the user is logged in to the website and has items in their Favorites list. 2. Navigate to the Favorites section where previously added items are displayed. 3. Locate an item in the Favorites section and click the "Remove from Favorites" button associated with it. 4. Verify that: <ul style="list-style-type: none"> • The item is immediately removed from the Favorites list without noticeable delay (within 1 second). • The item is no longer visible in the Favorites section. 	Yes	-

			<ol style="list-style-type: none"> 5. If there are no items left in the Favorites section, verify that the following message appears: <i>"No favorite [category name] yet."</i> 6. Add a new item to the Favorites list and repeat the process to verify the Remove from Favorites functionality again. 7. Log out and log back in to ensure that the Favorites list is updated (removed items no longer appear). 	
2	As a traveler, I want to search for travel destinations so that I can quickly find relevant information.	<p>The search bar should be available on the homepage.</p> <p>Users should be able to search by destination</p> <p>The system should display relevant results based on the search term.</p> <p>If no results are found, a message should appear: "No results found."</p>	<ol style="list-style-type: none"> 1. Ensure that the user is on the homepage of the website. 2. Locate the search bar prominently displayed on the homepage. 3. Enter a valid destination name (e.g., "Ashar Tented Resort") into the search bar. 4. Click the Search button. 5. Verify that: <ul style="list-style-type: none"> • The system displays relevant search results within 1 second. • The results include the entered destination (e.g., "Ashar Tented Resort"). 6. Enter an invalid or non-existent destination (e.g., "abcd") into the search bar. 	Yes

			<p>7. Click the Search button.</p> <p>8. Verify that:</p> <p>9. The system displays the message: "No results found."</p> <p>10. No irrelevant results are shown in the search results section.</p>		
2	As a traveler, I want to filter the search results based on my preferences so that I can quickly find destinations that match my interests.	<p>Users should be able to filter results by category (e.g., restaurants, accommodations, attractions) and location.</p> <p>Filters should be applied instantly without requiring a page refresh.</p> <p>If no results match the selected filters, a message should appear: "No results found based on your selected filters."</p> <p>Users should be able to apply multiple filters simultaneously.</p> <p>A "Clear Filters" button should reset all selected options.</p>	<p>1. Ensure that the user is on the search results page after entering a search term.</p> <p>2. Locate the filter options for:</p> <ul style="list-style-type: none"> • Category (e.g., Accommodations) • Location (e.g., Oman) <p>3. Select one category (e.g., Cafés & Restaurants) and one location (e.g., Saudi Arabia).</p> <p>4. Click the Search button</p> <p>5. Verify that:</p> <ul style="list-style-type: none"> • The search results are updated instantly (within 1 second). • Only results matching the selected filters are displayed. • The system displays results that match both filters. 	Yes	-

			<ul style="list-style-type: none"> • No page refresh occurs during filtering. <p>6. Apply a combination of filters that yield no matching results.</p> <p>7. Click the Search button</p> <p>8. Verify that:</p> <ul style="list-style-type: none"> • The system displays the message: "<i>No results found.</i>" • No irrelevant results appear in the search results. <p>9. Click the Close button.</p> <p>10. Verify that the result modal is dismissed successfully.</p>		
2	As a traveler, I want to view detailed information about cities so that I can learn more about them and make informed decisions on whether to visit.	The city page should display the city name, description, location, cultural information, and images.	<p>1. Ensure that the user is on the city page.</p> <p>2. Click on a city name from the Countries page (e.g., "Riyadh").</p> <p>3. Verify that the system navigates to the city detail page.</p> <p>4. On the city detail page, verify the presence of the following elements:</p> <ul style="list-style-type: none"> • The city name (e.g., Riyadh) • A brief and informative description of the city • The location (e.g., Central Saudi Arabia) 	Yes	-

			<ul style="list-style-type: none"> • Cultural information. • One or more images representing the city. <p>5. Confirm that the page loads correctly, with: All content elements visible.</p>		
2	As a traveler, I want to view my memories so that I can revisit and reflect on my travel experiences.	<p>Users should have access to a "Memories" section in their profile.</p> <p>Opening the "Memories" section should display all saved memories.</p> <p>Each memory should display a detailed view that includes the image and the user's caption.</p>	<p>1. Click on the "Your Memory" button from the profile page.</p> <p>2. Verify that the "Memories" section opens and displays the saved memories.</p> <p>3. Verify that each memory in the list shows:</p> <ul style="list-style-type: none"> • A full image associated with the memory • The caption written by the user 	Yes	-
2	As a traveler, I want the website to be accessible on my device so that I can plan my trips from anywhere.	<p>All features should work with touch-based and mouse-based interactions.</p> <p>The website must be compatible with major browsers such as Chrome.</p>	<p>1. Access the website from a desktop/laptop (for mouse-based or touch-based interactions).</p> <p>2. Verify that all website features work seamlessly with:</p> <ul style="list-style-type: none"> • Mouse interactions (e.g., clicking, hovering, scrolling) • Touch interactions (e.g., tapping, pinch-to-zoom, swiping) 	Yes	-

			<p>3. Verify that the website is compatible with major browsers:</p> <ul style="list-style-type: none"> Open the website in Chrome and ensure all features are functional. Optionally, test the website in other major browsers (e.g., Firefox, Safari) and confirm that all features are working as expected. 		
2	As a traveler, I want the website to be easy to navigate so that I can find the information I need effortlessly.	<p>A clear navigation bar should be available at the top of the page.</p> <p>Icons and labels must be clear and distinguishable.</p> <p>The design must be consistent across all pages.</p>	<p>1. Access the website and confirm that the navigation bar is present at the top of the page on all pages.</p> <p>2. Verify that the icons and labels in the navigation bar are:</p> <ul style="list-style-type: none"> Clear and easy to understand Distinguishable from one another (icons should be unique and labels should be self-explanatory) <p>3. Navigate through different pages of the website and verify that:</p> <ul style="list-style-type: none"> The navigation bar design remains consistent (same layout, style, and positioning) across all pages. <p>4. Test the usability of the navigation bar:</p> <ul style="list-style-type: none"> Click on the different sections 	Yes	-

			<p>and verify that the correct page is loaded.</p> <ul style="list-style-type: none"> • Ensure that the navigation experience is seamless and intuitive. 		
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11.2 Integration Testing

In this section, we will use integration testing to examine how individual components in the Bawsalah application interact when combined into a complete system.

Integration testing is performed after unit testing and focuses on validating the interaction between different modules of the system. It is conducted every time a new feature or component is added, to ensure that the integrated system behaves as expected and that the user experience remains smooth and consistent.

This type of testing helps confirm that all components — such as user authentication, destination browsing, favourites, search, and memory management — communicate properly and that data flows accurately between them. It verifies that the system provides a cohesive, seamless experience from login to logout, and across all feature transitions.

5.2.1 Integration Hierarchy

In this sub-section, we present the Bawsalah integration hierarchy diagram, which illustrates the order and structure in which components are connected and tested during the integration phase.

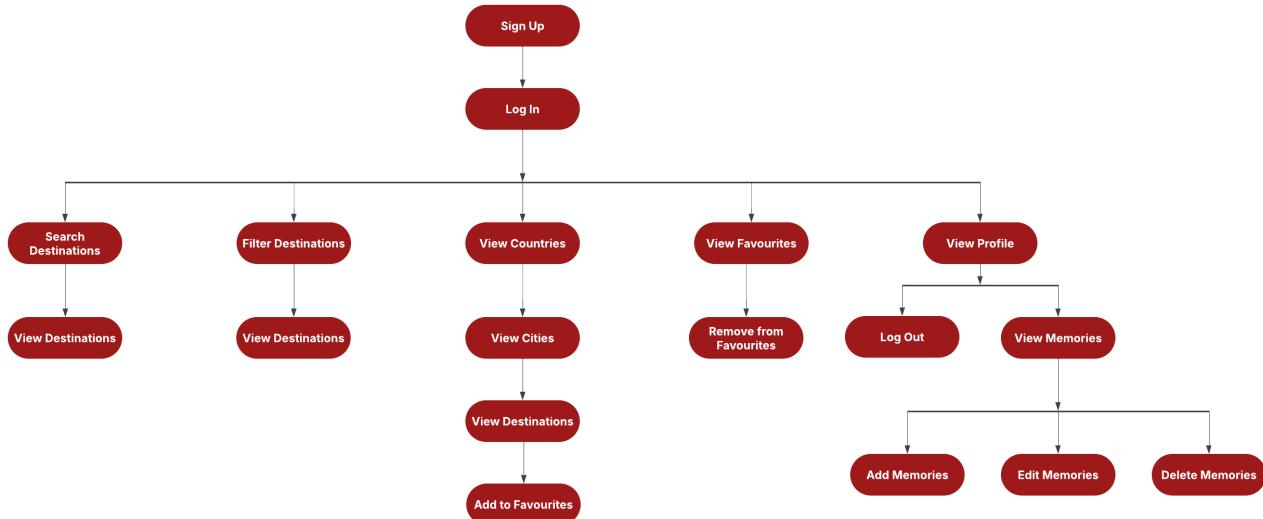


Figure 10-5 Integration hierarchy

The diagram shows how users begin by signing up and logging in, then navigate through features like viewing countries, cities, and destinations. It also includes parallel flows such as searching or filtering destinations, adding them to favourites, managing personal memories from the user profile, and logging out. Each component builds on previous ones, demonstrating a layered integration approach across the application.

5.2.2 Integration Testing Plan

In this sub-section, we provide the integration testing plan table, which outlines how components were tested in relation to one another. For each new feature added to the system, its interaction with existing modules was verified through practical test cases.

Table 8-6 Integration Testing

System Components	New Component	Test cases(s)	Pass?	Comments
- Sign up to the system	Log in to the system	1. A user signed up to the system successfully. 2. The user logged in to the system.	Yes	-
- Sign up to the system	View countries	1. The logged-in user viewed countries.	Yes	-

- Log in to the system				
- Sign up to the system - Log in to the system - View countries	View cities	1. The user clicked to see more countries. 2. A list of countries and the cities in them was displayed.	Yes	-
- Sign up to the system - Log in to the system - View countries - View cities	View destinations	1. The user selected a city. 2. Available destinations in that city were displayed.	Yes	-
- Sign up to the system - Log in to the system - View countries - View cities -View destinations	Add to favorites	1. The user clicked “Add to favorites” on a destination. 2. The destination was added to favorites.	Yes	-
- Sign up to the system - Log in to the system -View destinations	Search destinations	1. The user entered a destination keyword. 2. Matching destinations were displayed.	Yes	-
- Sign up to the system - Log in to the system	Filter destinations	1. The user applied a filter by category or country. 2. A list of matching destinations was displayed.	Yes	-

-View destinations				
- Sign up to the system - Log in to the system - Add to favorites	View favorites	1. The user opened the Favorites page. 2. Saved destinations were displayed.	Yes	-
- Sign up to the system - Log in to the system -View favorites	Remove from favorites	1. The user clicked “Remove from favorites” on a destination. 2. The destination disappeared from the page.	Yes	-
- Sign up to the system - Log in to the system	View profile	1. The user accessed the profile page from the navigation bar.	Yes	-
- Sign up to the system - Log in to the system -View profile	View memories	1. The user clicked on “Your Memory”. 2. All uploaded memories were displayed.	Yes	-
- Sign up to the system - Log in to the system - View memories	Add memories	1. The user clicked the upload icon. 2. A memory was added successfully.	Yes	-
- Sign up to the system - Log in to the system - View memories	Edit memories	1. The user clicked on “Edit” button on a memory. 2. The user chose whether to edit a caption or an image of a memory. 3. The memory was updated accordingly.	Yes	-

- Add memories				
- Sign up to the system - Log in to the system - View memories - Add memories - Edit memories	Delete memories	1. The user clicked on “Delete” button on a memory. 2. The memory disappeared from the page.	Yes	-
- Sign up to the system - Log in to the system -View profile	Log out	1. The user clicked on “Log Out”. 2. The session ended, and the user was redirected to the index page.	Yes	-

This approach ensures that both the data flow and user navigation operate correctly at every level. As shown in Table 8-6, all the system components have passed their integration tests successfully, confirming that Bawsalah delivers a fully functional and well-integrated experience to its users.

11.3 User Acceptance Testing

In this section, we present User Acceptance Testing the stage of testing where real users from the target audience evaluate the system in real-world scenarios. This process ensures the platform meets both functional and business requirements, while confirming that it performs effectively and intuitively for end users.

we selected a group of participants who matched the defined user profile for the Bawsalah platform: users aged 16 and above, with a basic understanding of online tools, an interest in travel and Gulf destinations, and comfort using English-language web applications. All users had access to reliable internet and were familiar with similar travel platforms. The testing environment was quiet and distraction-free to ensure focus.

Test Execution Process

The test was conducted in a quiet environment where participants were given five to seven minutes to explore the platform freely. They then followed a predefined scenario covering all key features such as sign-up, search, filters, favorites, memories, and logout.

No assistance was given during the test to observe natural user interaction. After completing the tasks, each participant filled out the questionnaire to evaluate usability, functionality, and overall satisfaction. Responses were collected and analyzed to assess platform performance.

Demographics of Participants

Age Groups:

The majority of participants, around 60%, are in the 16–25 age group. Additionally, 30% fall within the 26–35 range, while the remaining 10% are above 35 years old. This distribution provides a good spread across different adult age groups. (*Figure 17-5 UAT Q1*)

Gender Distribution:

The participant demographics indicate a gender distribution of approximately 60% female and 40% male. This shows a balanced representation that reflects a diverse user base. (*Figure 18-5 UAT Q2*)

Interest in Travel in the Gulf Region:

80% of participants expressed a strong interest in travel and exploring Gulf destinations, and 20% had an interest in exploring the Gulf Region aligning directly with the platform's target audience. (*Figure 19-5 UAT Q3*)

Questionnaire Results

In this section, we present the users' feedback after completing the test scenario on the *Bawsalah* platform. The participants responded to a structured questionnaire designed to evaluate key features and usability factors. Below is a breakdown of their responses with insights and interpretations.

Sign-Up Process

As shown in the graph, 80% of users found the sign-up process very easy, while 20% rated it easy. No confusion or difficulty was reported, indicating a smooth and intuitive account creation process. (*Figure 20-5 UAT Q4*)

Login/Logout Experience

All participants (100%) described the login and logout process as smooth and effortless. This demonstrates reliable functionality and clear design for the authentication system. (*Figure 21-5 UAT Q5*)

Navigation

100% of users stated that the navigation bar and layout helped them find what they needed easily. This reflects a well-structured and user-friendly interface. (*Figure 22-5 UAT Q6*)

Search Functionality

70% of users rated the search function as very effective, and 30% as effective. These results confirm that users were able to find relevant destinations without difficulty. (*Figure 23-5 UAT Q7*)

Filtering Options

As shown in the graph, 90% of participants stated that the filtering options always helped them narrow down search results based on their interests, while 10% responded with often. These results indicate that the filtering system is highly effective and meets user expectations. No participants reported any negative experience, suggesting that the feature is both visible and easy to use. (*Figure 24-5 UAT Q8*)

Destination Content

All participants (100%) agreed that the destination pages were both informative and culturally relevant, supporting the platform's goal of promoting cultural understanding. (*Figure 25-5 UAT Q9*)

Favorites Feature

100% of users reported the favorites feature worked flawlessly, with no delays or issues. This confirms that the add/remove functionality is stable and effective. (*Figure 26-5 UAT Q10*)

Memories Management

Again, 100% of users described managing memories (add/edit/delete) as super easy and had no difficulties. This reflects a smooth and intuitive feature design. (*Figure 27-5 UAT Q11*)

System Performance

Every participant (100%) rated the system as fast and responsive throughout the session. No lag or performance concerns were noted. (*Figure 28-5 UAT Q12*)

Visual Design

100% of users described the design as visually excellent—clean, clear, and easy to use. This shows strong alignment with modern UI expectations. (*Figure 29-5 UAT Q13*)

Overall Satisfaction

80% of participants stated the platform exceeded their expectations, while 20% said it met their expectations. This reinforces the platform's success in delivering on its goals. (*Figure 30-5 UAT Q14*)

11.4 Discussion

We tested the Bawsalah platform through different types of testing like User Acceptance Testing (UAT), integration testing, and by checking how well it met non-functional requirements (NFR). Overall, the platform performed well and hit the goals we aimed for.

From a functionality and usability standpoint, users gave great feedback. They found the platform easy to use, smooth to navigate, and visually clear. In the UAT phase, all the user stories passed without major issues—things like signing up, logging in and out, uploading and managing memories, searching and filtering places, and saving favorites all worked as expected. Users were able to do everything on their own without needing help, which means the system is intuitive and beginner friendly.

A lot of people especially liked the ability to save and revisit memories and mark favorite places. These personal touches made the experience more enjoyable and meaningful. The design also got good reviews for being consistent, simple, and using visuals that felt culturally relevant. Navigation made sense and users felt like they always knew where they were going on the site.

From the development side, working with Agile and Scrum really helped us stay on track. We used tools like GitHub and JIRA to manage tasks and keep the code organized.

All the feedback we got was positive. UAT participants said the platform either met or went beyond their expectations. The platform also ran smoothly and reliably.

That said, we did find a few areas to improve:

- **Scalability:** If we get more users or want to add features like booking or live suggestions, we'll need to expand the system.

- **Security:** We want to add things like two-factor authentication, HTTPS, and better privacy policies.
- **Inclusivity:** Features like multi-language support, accessibility tools, and maybe even an offline mode would make Bawsalah even more useful to more people.

In short, the platform got great results. It works well, people like using it, and it's heading in a great direction for the future.

6 Chapter 6: Conclusion and Future Work

In conclusion, in light of the rapid growth of the tourism sector in the Gulf countries, the "Bawsalah" project stands out as an innovative and effective digital solution aimed at simplifying the travel planning experience by providing reliable and comprehensive content for travelers interested in visiting the region. The platform has successfully provided users with accurate and tailored information about Gulf cities in a simplified and user-friendly manner, significantly saving time and effort, especially amidst the scattered and numerous current tourism sources.

Despite the challenges faced by the team during the development process, such as the difficulty in accessing reliable local content and ensuring information accuracy, in addition to the necessity of designing a user interface that caters to various user demographics, "Bawsalah" was able to overcome these obstacles successfully. The project has made a tangible contribution to enhancing the travel experience for visitors both inside and outside the region, reflecting its role in promoting local cultural awareness and facilitating the access of international tourists to the Gulf region.

While there were some limitations in the initial phase of the platform, such as the absence of direct booking features or integration with external platforms, "Bawsalah" remains a significant contribution in offering a digital platform that focuses on local tourism and cultural identity. The development process has also helped the team enhance their skills in various areas, including project management using the Scrum framework, applying Agile methodologies, and acquiring technical skills in software development, database management, critical thinking, and teamwork.

Regarding the future, the ambitious plans include expanding the content to cover more Gulf cities, adding interactive features like ratings, supporting multiple languages to cater to a wider audience, and developing a mobile application that provides more comprehensive experience. The team also aims to leverage artificial intelligence technologies to offer personalized suggestions based on user interests and behaviors within the platform.

In conclusion, the "Bawsalah" project represents more than just an academic endeavor; it is a promising initiative that aims to redefine the digital tourism experience in the Gulf region. By providing a reliable and modern tool, it helps travelers explore the treasures of the region with confidence and ease, enhancing the region's tourism appeal on a global scale and placing it on the digital tourism map.

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ChatGPT – Grammer check, rephrase, and research assistance

8 Appendix

8.1 Interview

In this section, we will present the interviews conducted with five individuals interested in travel and tourism, aged 16 and above. The goal of these interviews is to understand user preferences and needs, helping us enhance the website and provide a better experience that meets their expectations and facilitates their trip planning efficiently

Interview Questions:

Introduction Question:

Can you tell me a bit about yourself and your travel habits?

Follow-up: What type of destinations do you usually prefer?

Main Questions:

1- What are the key factors you consider when choosing a place to visit?

2- What's the most time-consuming part of planning a trip?

3- What are the biggest challenges you face when searching for travel information about Gulf countries?

4-When planning a trip to Gulf countries, how do cultural aspects such as local customs, traditions, and social norms influence your travel decisions?

5-How do you feel about having a feature that allows you to collect your memories in One place?

Closing Question:

Any final thoughts or suggestions on what should be included in Bawsalah to make it the best Gulf travel resource?

Interview's Transcriptions:

The interview transcriptions hold significant value as they provide a detailed record of the conversations between the interviewees and interviewers. Also include essential information like Names of the participant, interview location, date and time, objectives of the interview, agenda, observations made during the interview. Each transcription also presents intro questions, five main questions and closing question including the answers.

Table 9-8 Online Interview (1)

Online Interview (1)	
Interviewee: Nada	Interviewer: Maha Alnassar
Location: Saudi Arabia-Online Zoom Meating	Appointment Date: 12-Feb-2025 Start Time: 4:00PM End Time: 4:40:30PM
Objectives: Collection information about some challenges people may face when they plan to travel to GULF country.	Reminders: The interviewee had to visit the gulf countries many times.
Agenda: Introduction Background in project Overview of interview Topic to be covered Permission to record Introduction question Question 1 Question 2 Question 3 Question 4 Question 5 Closing question Summary of major points Questions from interviewee Closing	Approximate Time: 3min 4min 3min 1min 30sec 3min 4min 3min 2min 3min 2min 4min 2min 3min 3min
General Observations: The interviewee was excited to answer the questions.	
Topic not covered: Due to time constraints, we were unable to discuss more about our web site.	

Interviewee: Nada	Date: 12-Feb-2025
Questions:	Notes:
<p>Can you tell me a bit about yourself and your travel habits?</p> <p>Follow-up: What type of destinations do you usually prefer?</p>	<p>Answer:</p> <p>I'd say I'm quite adventurous. I like to explore different cultures and learn about different people. When I travel, I prefer to explore cities by walking around the streets.</p> <p>I like to explore different destinations on each trip. I really plan to go and learn about somewhere new. However, most of my trips are to Gulf countries because I don't have long vacations.</p> <p>Observations:</p> <p>The interviewee talked about her favorite destination, which is the golf country, because she does not have long vacations.</p>
<p>Q1: What are the key factors you consider when choosing a place to visit?</p>	<p>Answer:</p> <p>The main thing I consider before choosing a travel destination is whether it respects Islamic traditions and allows me to wear my full hijab. I also care about the place, its diversity and the variety of activities available. I enjoy shopping, walking, and exploring different cultures. So, I prefer a destination that would provide me with everything at once.</p> <p>Observations:</p> <p>The interviewee prefers places that suit her full Islamic hijab, and she also enjoys walking around the city she visits.</p>
<p>Q2: What's the most time-consuming part of planning a trip?</p>	<p>Answer:</p> <p>Choosing a hotel can be tough because there are so many different neighborhoods, each offering something unique. It's hard to decide which area is the best to stay in. I think this is the hardest part—once I figure it out, everything else will just fall into place.</p>

	<p>Observations:</p> <p>The challenge that the interviewee faces while planning his trips is finding the right hotel and the right place. He believes that once this problem is solved, everything will become easy.</p>
Q3: What are the biggest challenges you face when searching for travel information about Gulf countries?	<p>Answer:</p> <p>There isn't a reliable source that provides comprehensive information about all the activities available in each country.</p> <p>Observations:</p> <p>One of the biggest challenges that she faces in Gulf countries is to find comprehensive information about all activities available.</p>
Q4: When planning a trip to Gulf countries, how do cultural aspects such as local customs, traditions, and social norms influence your travel decisions?	<p>Answer:</p> <p>It doesn't really affect or influence my decisions much because there isn't a huge difference between where I'm from and other Gulf countries. The differences are minor, and I can adjust to them easily.</p> <p>Observations:</p> <p>The interviewee sees there is not much different in cultural between her country (Saudi Arabia) and the gulf countries.</p>
Q5: How do you feel about having a feature that allows you to collect your memories in One place?	<p>Answer:</p> <p>Yes, I would like to have this kind of feature because it would allow me to have a special album for each trip.</p> <p>Observations:</p> <p>The interviewee seemed excited about this feature, and we can understand that she loves documenting memories of the areas she visited.</p>

Any final thoughts or suggestions on what should be included in Bawsalah to make it the best Gulf travel resource?	<p>Answer:</p> <p>I need information about activities throughout the entire month, not just for this week. It would be helpful if the program provides updated details for everything happening throughout the month, and before the month ends, I'd like to receive information for the next month.</p> <p>Observations:</p> <p>One of the suggestions she made was to see all the activities for a long period of time. It is clear that she suffered from the problem of not having enough information on events in the areas she visits.</p>
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Table 10-8 Online Interview (2)

Online Interview (2)	
Interviewee: Sara	Interviewer: Maha Albakr
Location: Saudi Aribia-Online Zoom Meating	Appointment Date: 14-Feb-2025 Start Time: 6:00PM End Time: 6:27:02PM
Objectives: Collection information about some challenges people may face when they plan to travel to GULF country.	Reminders: The interviewee had to visit one of the gulf countries.
Agenda: Introduction Background in project Overview of interview Topic to be covered Permission to record Introduction question Question 1 Question 2	Approximate Time: 3min 4min 3min 2min 30sec 2min 1.31min 1.30min

Question 3	42sec
Question 4	1min
Question 5	58sec
Closing question	1.11min
Summary of major points	2min
Questions from interviewee	2min
Closing	3min

General Observations:

The interviewee was busy, so we did a quick interview.

Topic not covered:

Due to time constraints, we were not unable to discuss more about our web site.

Interviewee: Sara	Date: 14-Feb-2025
Questions:	Notes:
Can you tell me a bit about yourself and your travel habits?	Answer: I am a passionate traveler who loves exploring and learning about the customs, traditions, and cultures of different people. Traveling is a way for me to experience new things and broaden my perspective."
Follow-up: What type of destinations do you usually prefer?	Observations: When I plan a trip, my priority is to travel to a new destination that offers a cultural or natural attraction, along with strong infrastructure that enhances the experience.
Q1: What are the key factors you consider when choosing a place to visit?	Answer: Safety comes first—the country's security reputation, the nature of the people, and whether they are welcoming, hospitable, and cooperative. The weather also plays a significant role in choosing a destination. After that, I consider the historical landmarks and the natural beauty of the country. Observations:

	<p>The key factors that the interviewee focus on are safety, the nature of the people and the weather.</p>
<p>Q2: What's the most time-consuming part of planning a trip?</p>	<p>Answer: Usually, choosing the destination and accommodation takes up the most time.</p> <p>Observations: The interviewee spends most of her time choosing the destination and accommodation.</p>
<p>Q3: What are the biggest challenges you face when searching for travel information about Gulf countries?</p>	<p>Answer: Clear reviews of accommodation, especially for family-friendly stays, are a challenge. Additionally, the information available is often too general and not specific enough.</p> <p>Observations: One of the challenges the interviewees face when searching for accommodation is the lack of clear and detailed reviews, which makes it difficult to determine the suitability of accommodation for families' needs.</p>
<p>Q4: When planning a trip to Gulf countries, how do cultural aspects such as local customs, traditions, and social norms influence your travel decisions?</p>	<p>Answer: Cultural aspects don't have a huge impact on my decisions because the Gulf region shares many similarities with my own culture. This makes traveling there more comfortable and familiar. However, knowing more about local customs and traditions could still be interesting, especially for first-time visitors.</p> <p>Observations: The interviewee sees there is not much different in cultural between her country (Saudi Arabia) and the gulf countries.</p>

<p>Q5: How do you feel about having a feature that allows you to collect your memories in One place?</p>	<p>Answer: I think it's a beautiful and enjoyable idea! Having a dedicated feature to collect and revisit travel memories would add a personal touch to the platform.</p> <p>Observations: The interviewee likes this feature and thinks it will add a personal touch.</p>
<p>Any final thoughts or suggestions on what should be included in Bawsalah to make it the best Gulf travel resource?</p>	<p>Answer: One of the priorities when planning a trip is setting a budget, especially for families. It would be great to work on this aspect, even if it's just an approximate estimate. Of course, prices can change depending on circumstances, but providing an approximate cost is very encouraging when choosing a destination.</p> <p>Observations: The interviewee believes that offering an approximate cost calculation feature will help improve the travel experience.</p>

Table 11-8 Online Interview (3)

Interview (3)	
Interviewee: Rami	Interviewer: Ghena
Location: Saudi Aribia –face to face	Appointment Date: 15-Feb-2025 Start Time: 12:00PM End Time: 12:28:20PM
Objectives: Collection information about some challenges people may face when they plan to travel to GULF country.	Reminders: The interviewee had to visit one of the gulf countries.
Agenda: Introduction Background in project Overview of interview Topic to be covered Permission to record Introduction question Question 1 Question 2 Question 3 Question 4 Question 5 Closing question Summary of major points Questions from interviewee Closing	Approximate Time: 2min 3min 2min 1min 20sec 2min 3min 3min 2min 1min 2min 4min 1min 1min 1min
General Observations: The interviewee was excited to answer the questions.	
Topic not covered: Due to time constraints, we were not unable to discuss more about our web site.	
Interviewee: Rami	Date: 15-Feb-2025
Questions:	Notes:

<p>Can you tell me a bit about yourself and your travel habits?</p> <p>Follow-up: What type of destinations do you usually prefer?</p>	<p>Answer:</p> <p>I am 43, married, and a dad to three kids, two boys and a girl. Life is busy between work, family, and all the activities my kids are involved in, but I try to make time for travel when I can.</p> <ul style="list-style-type: none"> - I look for convenience, good accommodations, and something that keeps the kids entertained. We usually go for places that are kid friendly but still enjoyable for my wife and me like beaches, national parks, or cities with good museums and activities for all ages. <p>Observations:</p> <p>The interviewee prefers the destinations that are suitable for adults and children</p>
<p>Q1: What are the key factors you consider when choosing a place to visit?</p>	<p>Answer:</p> <p>I always make sure the place is safe for families, has decent healthcare, and it is easy to get around with kids. I have to make sure there is something for everyone. I try not to break the bank on every trip, so I look at costs, flights, accommodation, activities, and meals.</p> <p>Observations:</p> <p>The key factors that he focuses on are safety, cost, healthcare.</p>
<p>Q2: What's the most time-consuming part of planning a trip?</p>	<p>Answer:</p> <p>I have to make sure the place works for both adults and kids. That means searching for hotels or resorts that are family friendly. Booking flights, figuring out airport transfers, rental cars take a lot of time.</p> <p>Observations:</p> <p>The interviewee spends a lot of time searching for places suitable for the family.</p>

<p>Q3: What are the biggest challenges you face when searching for travel information about Gulf countries?</p>	<p>Answer: A lot of travel blogs and websites focus on luxury experiences or business travel, but finding guides for family friendly activities can take some digging.</p> <p>Observations: The interviewee finds it difficult to find suitable recommendations for families</p>
<p>Q4: When planning a trip to Gulf countries, how do cultural aspects such as local customs, traditions, and social norms influence your travel decisions?</p>	<p>Answer: Cultural aspects play a big role in my travel decisions. I want to make sure we are respectful of local customs while also having a smooth and enjoyable experience.</p> <p>Observations: The interviewee seeing the cultural play a big role in the travel experience</p>
<p>Q5: How do you feel about having a feature that allows you to collect your memories in One place?</p>	<p>Answer: I think that would be a great feature, especially for someone like me who travels with family. Having a centralized place to store and organize memories would make things a lot easier. We take hundreds of photos and videos, but they end up separated on different devices.</p> <p>Observations: The interviewee likes this feature because he takes a lot of photos and videos, but he cannot gather them into one place.</p>
<p>Any final thoughts or suggestions on what should be included in Bawsalah to make it the best Gulf travel resource?</p>	<p>Answer: A section for local recommendations from residents and cultural tips beyond the usual tourist attractions. A do's don'ts guide for each country, including etiquette, dress codes, and social norms in a clear simple way. Festivals and events calendar to highlight major cultural, religious, and entertainment events across the Gulf.</p>

Observations:

Among the advantages that the interviewee would like to see is a section for local recommendations from the population, as well as a guide to the culture of each country and their belief, as well as an evaluation of festivals and events throughout the Gulf.

Table 12-8 Online Interview (4)

Online Interview (4)	
Interviewee: Layan	Interviewer: Danyh
Location: Online Zoom Meating	Appointment Date: 11-Feb-2025 Start Time: 4:00PM End Time: 4:41:30PM
Objectives: Collection information about some challenges people may face when they plan to travel to GULF country.	Reminders: The interviewee had to visit the gulf countries many times.
Agenda: Introduction Background in project Overview of interview Topic to be covered Permission to record Introduction question Question 1 Question 2 Question 3 Question 4 Question 5 Closing question Summary of major points Questions from interviewee Closing	Approximate Time: 3min 4min 3min 1min 30sec 3min 4min 3min 2min 3min 3min 4min 2min 3min 3min
General Observations: The interviewee was excited to answer the questions.	
Topic not covered: Due to time constraints, we were unable to discuss more about our web site.	
Interviewee: Layan	Date: 11-Feb-2025
Questions:	Notes:
Can you tell me a bit about yourself and your travel habits?	Answer: I'm Layan, I'm 21 years old, and I love traveling and exploring new places. I love experiencing different cultures, especially through local food and interacting with the locals.
Follow-up: What type of destinations do you usually prefer?	Usually, I travel two to three times a year, and I prefer trips that combine adventure and

	<p>relaxation. I usually prefer to plan my trips in advance.</p> <p>Observations:</p> <p>The interviewee loves relaxation and adventure destinations</p>
<p>Q1: What are the key factors you consider when choosing a place to visit?</p>	<p>Answer:</p> <p>Budget, safety, local culture, weather, local activities and events.</p> <p>Observations:</p> <p>The key factors that she focuses on are Budget, safety, local culture, weather, local activities and events.</p>
<p>Q2: What's the most time-consuming part of planning a trip?</p>	<p>Answer:</p> <p>The most time-consuming part of planning a trip is researching the best places to stay and tourist activities. I spend a lot of time comparing hotels or apartments, reading reviews, and trying to find a suitable location that is close to important landmarks.</p> <p>Observations:</p> <p>The part that she spends time on is researching the best places to stay and activities.</p>
<p>Q3: What are the biggest challenges you face when searching for travel information about Gulf countries?</p>	<p>Answer:</p> <p>The biggest challenges I face when searching for travel information about Gulf countries are Dispersion of tourist information, I find that tourist information is often spread across multiple locations, making it difficult to have a comprehensive, up-to-date guide in one place. And sometimes I have a hard time knowing if the ratings and reviews are honest.</p>

	<p>Observations:</p> <p>The biggest challenges that she faces when searching for travel information in gulf countries are 1-the information in spread its website 2- she does not know if the ratings and reviews are honest.</p>
<p>Q4: When planning a trip to Gulf countries, how do cultural aspects such as local customs, traditions, and social norms influence your travel decisions?</p>	<p>Answer:</p> <p>Customs and traditions usually play a big role in my travel decisions. I always make sure to research local rules and customs so I can be respectful of the culture and avoid any inappropriate situations.</p> <p>Observations:</p> <p>The interviewee thinks knowing culture is important when you travel to other countries, so she spends time researching about the traditions and culture.</p>
<p>Q5: How do you feel about having a feature that allows you to collect your memories in One place?</p>	<p>Answer:</p> <p>I would be so excited to have a feature like this! The idea of allowing you to collect photos sounds great. It will be an excellent way to organize photos and special moments from every trip.</p> <p>Observations:</p> <p>The interviewee liked this idea, and she thinks it is grate for saving the moment</p>
<p>Any final thoughts or suggestions on what should be included in Bawsalah to make it the best Gulf travel resource?</p>	<p>Answer:</p> <p>Yes, I hope that the site provides honest reviews, evaluations, and information about the country's culture.</p> <p>Observations:</p> <p>The interviewee suggests providing an honest review and proven information about the gulf countries' cultures.</p>

Table 13-8 Online Interview (5)

Online Interview (5)	
Interviewee: Lana	Interviewer: Hatoun
Location: Online Zoom Meating	Appointment Date: 12-Feb-2025 Start Time: 6:00PM End Time: 6:29:30PM
Objectives: Collection information about some challenges people may face when they plan to travel to GULF country.	Reminders: The interviewee had to visit one of the gulf countries.
Agenda: Introduction Background in project Overview of interview Topic to be covered Permission to record Introduction question Question 1 Question 2 Question 3 Question 4 Question 5 Closing question Summary of major points Questions from interviewee Closing	Approximate Time: 2min 2min 2min 1min 30sec 3min 4min 1min 2min 3min 2min 2min 2min 1min
General Observations: The interviewee was excited to answer the questions.	
Topic not covered: Due to time constraints, we were unable to discuss more about our web site.	
Interviewee: Lana	Date: 12-Feb-2025
Questions:	Notes:

<p>Can you tell me a bit about yourself and your travel habits?</p> <p>Follow-up: What type of destinations do you usually prefer?</p>	<p>Answer:</p> <p>Good evening, my name is Lana. I love traveling because it allows me to explore new places and learn about different cultures.</p> <p>I prefer traveling to cities with beautiful natural landscapes and waterfronts.</p> <p>Observations:</p> <p>The interviewee likes destinations with natural landscapes and waterfronts.</p>
<p>Q1: What are the key factors you consider when choosing a place to visit?</p>	<p>Answer:</p> <p>The most important factors for me are cost, safety, and the friendliness of the locals.</p> <p>Observations:</p> <p>The interviewee focuses on the cost, safety and friendliness of the locals.</p>
<p>Q2: What's the most time-consuming part of planning a trip?</p>	<p>Answer:</p> <p>The most time-consuming part is researching hotels, car rentals, activities, and the most popular places to visit.</p> <p>Observations:</p> <p>The interviewee spends more time researching to prepare for the trip, like searching for hotels and cars to rent and search for some activities and places.</p>
<p>Q3: What are the biggest challenges you face when searching for travel information about Gulf countries?</p>	<p>Answer:</p> <p>One of the main challenges is finding reliable transportation options.</p> <p>Observations:</p> <p>The interviewee had a challenge with finding reliable transportation options.</p>

<p>Q4: When planning a trip to Gulf countries, how do cultural aspects such as local customs, traditions, and social norms influence your travel decisions?</p>	<p>Answer: I enjoy learning about new cultures, and I often buy traditional clothing or historical souvenirs to immerse myself in the local experience.</p> <p>Observations: The interviewee thinks the culture is important and she loves to buy things related to the culture of the country that she visits.</p>
<p>Q5: How do you feel about having a feature that allows you to collect your memories in One place?</p>	<p>Answer: That would be amazing! Having a dedicated space to store all my travel memories from different countries would make it so much easier to organize and cherish them.</p> <p>Observations: The interviewee likes this feature, and we can understand that she loves documenting memories of the countries that she visited.</p>
<p>Any final thoughts or suggestions on what should be included in Bawsalah to make it the best Gulf travel resource?</p>	<p>Answer: Bawsalah should include detailed guides on local attractions, insider tips from travelers, recommendations on cultural experiences, and a section for real traveler reviews. Having a feature for easy itinerary planning and local event updates would also be very helpful!</p> <p>Observations: The interviewee suggested that Bawsalah should include guides on local attractions, also recommendations on cultural experiences, and a section for real traveler reviews, and feature for easy itinerary planning and local event updates.</p>

8.2 Questionnaires

In this section we will represent all the questionnaire-related supplements, including the questionnaire questions, and a representation of the responses.[11]

Questionnaires Questions:

1-Which Gulf country have you visited?

- Saudi Arabia
- United Arab Emirates
- Qatar
- Bahrain
- Kuwait
- I did not visit yet

2-What was the main purpose of your visit?

- Tourism & leisure
- Business
- Visiting family & friends
- Other

3-How did you plan your trip?

- Through travel websites
- Through a travel agency
- Based on recommendations from family/friends
- Other

4-What type of activities did you enjoy the most during your visit?

- Cultural & historical tourism
- Shopping in malls & markets
- Beaches & water activities
- Events & festivals
- Adventure & sports activities
- Other

5-Did you find enough information about tourist attractions before or during your trip?

- Yes, it was easily available
- Somewhat, I had to search a lot
- No, the information was unclear or unavailable
- Other

6-Have you ever used a website to get information about tourism in the Gulf region?

- Yes
- No

7-What features would you like to see in a website dedicated to Gulf tourism?

- Popular tourist attractions
- Cultural landmarks and local traditions
- Essential travel tips for each country
- Other

Questionnaires Answer:

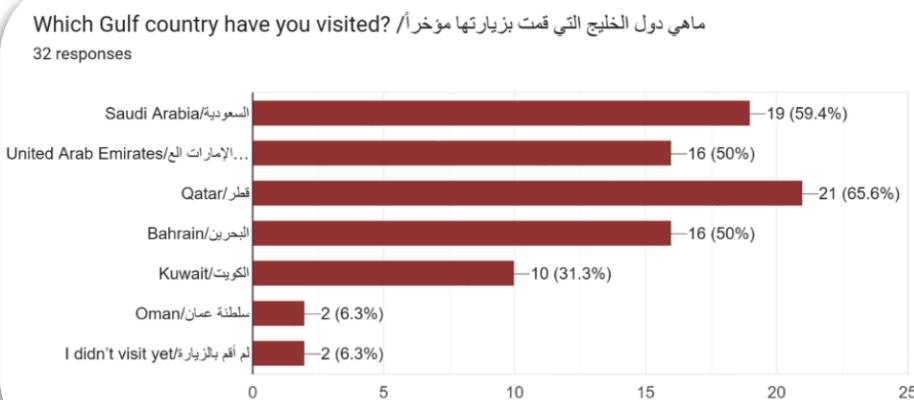


Figure 11-8 Answer (1)

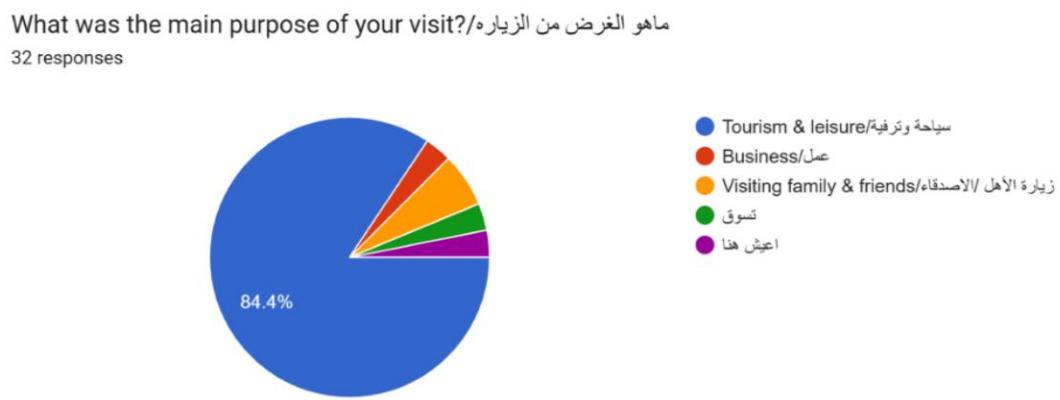


Figure 12-8 Answer (2)

How did you plan your trip?/كيف قمت بالخطيط لرحلتك؟

32 responses



Figure 13-8 Answer (3)

What type of activities did you enjoy the most during your visit?/ما نوع الأنشطة التي استمتعت بها أكثر خلال زيارتك؟

32 responses

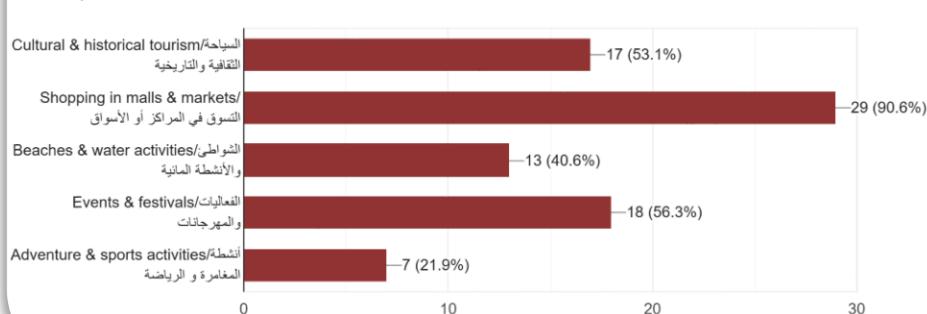


Figure 14-8 Answer (4)

هل وجدت معلومات/هل وجدت معلومات
كافية عن مناطق الجذب السياحي قبل أو أثناء رحلتك؟

32 responses

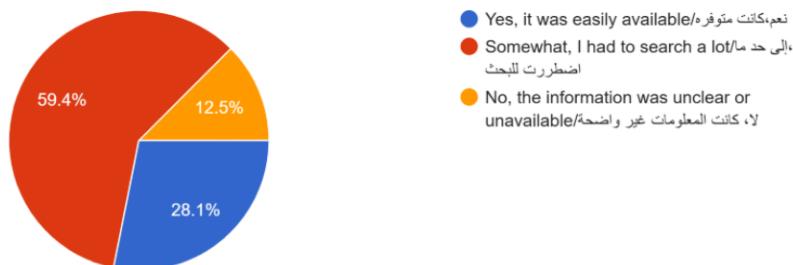


Figure 15-8 Answer (5)

هل سبق لك أن/Have you ever used a website to get information about tourism in the Gulf region?
استخدمت موقعًا إلكترونياً للحصول على معلومات حول السياحة في منطقة الخليج؟

32 responses

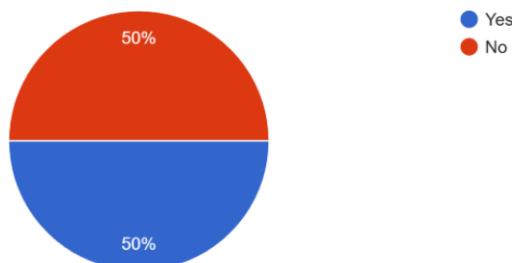


Figure 16-8 Answer (6)

ما هي الميزات التي ترغب في/What features would you like to see in a website dedicated to Gulf tourism?
رؤيتها في موقع إلكتروني مخصص للسياحة الخليجية؟

32 responses

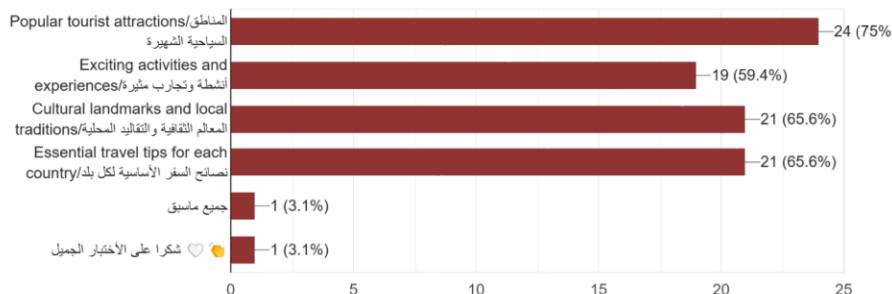


Figure 17-8 Answer (7)

User Acceptance Testing Questionnaire Questions:

This section includes the full list of questionnaire questions and visual summaries of participant responses. The data was collected using a Google Form and reflects user feedback on the platform's usability, performance, and features. [12]

1. What is your age?

- Under 16
- 16–25
- 26–35
- Above 35

2. What is your gender?

- Male
- Female

3. Are you interested in traveling in the Gulf Region?

- Yes, very interested — I love exploring the Gulf
- Yes, somewhat — I'd like to explore more
- Neutral — I don't mind either way
- Not really — I prefer other regions
- No interest at all

4. How easy was the sign-up process for you?

- Very easy
- Easy
- A bit confusing
- Difficult

5. How was your experience registering and logging into and out of the platform?

- Smooth and effortless
- Took a bit of time, but worked
- Faced minor issues
- Couldn't log in or out properly

6. The navigation bar and layout helped me find what I needed easily.

- Yes, everything was easy to find
- Mostly clear, with a few minor issues
- Took me a while to figure things out
- I found it confusing or hard to use

7. The destination search function worked effectively and returned relevant results.

- Very Effective
- Effective
- Neutral
- Ineffective
- Very Ineffective

8. The filtering options helped me narrow down results based on my interests.

- Always
- Often
- Sometimes
- Rarely
- Never

9. Were the destination pages informative and culturally relevant?

- Yes, both helpful and culturally spot-on
- Helpful, but could be more culturally tailored
- Basic info only
- Irrelevant or unclear

10. How well did the favorite list feature (add/remove) work for you?

- Worked flawlessly
- Worked, but not very intuitive
- Had some bugs or delays
- Didn't work properly

11. How easy was it to manage your travel memories (add, edit, delete)?

- Super easy — no issues at all
- Took a little trial and error
- Had issues doing it
- Extremely Difficult

12. How was the platform's speed while you browsed, searched, and interacted?

- Fast and responsive throughout
- Mostly fast, occasional lag
- Average speed
- A bit slow
- Very slow or unresponsive

13. The visual design of the website was consistent, clear, and user-friendly.

- Visually excellent — clear, clean, and easy to use
- Looked good overall, just a few small issues
- It was okay, but could be more polished
- Felt cluttered or hard to navigate
- Didn't like the design at all

14. The overall experience met my expectations for a Gulf-region travel planning platform.

- Exceeded Expectations
- Met Expectations
- Neutral

- Fell Short
- Disappointed

User Acceptance Testing Questionnaire Answers:

What is your age? ما هو عمرك؟

10 responses

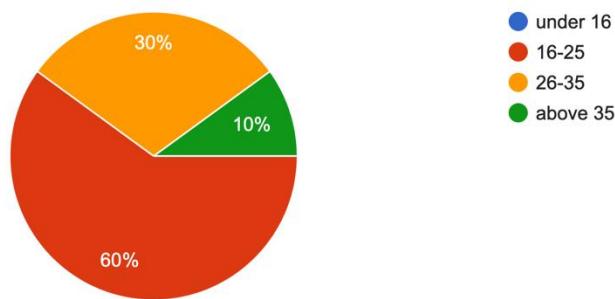


Figure 18-5 UAT Q1

What is your gender? ما هو جنسك؟

10 responses

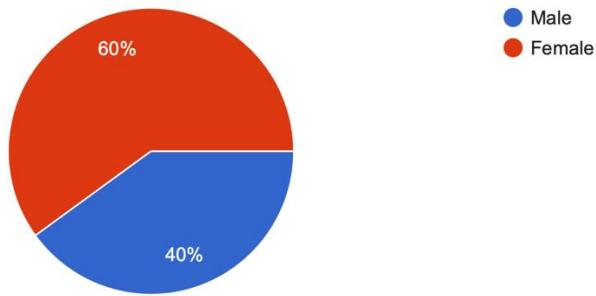


Figure 19-5 UAT Q2

Are you interested in traveling in the Gulf Region?

10 responses

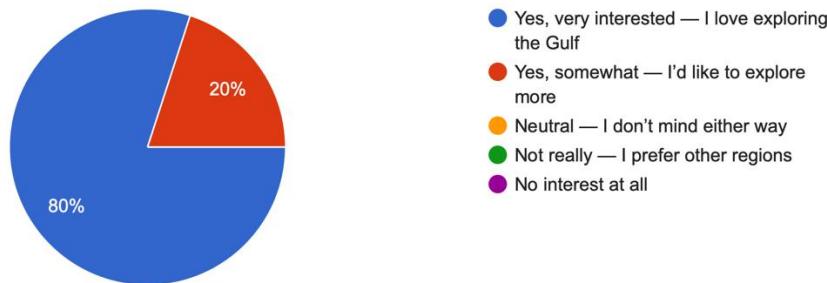


Figure 20-5 UAT Q3

ما مدى سهولة عملية التسجيل (إنشاء حساب جديد) بالنسبة لك؟

10 responses

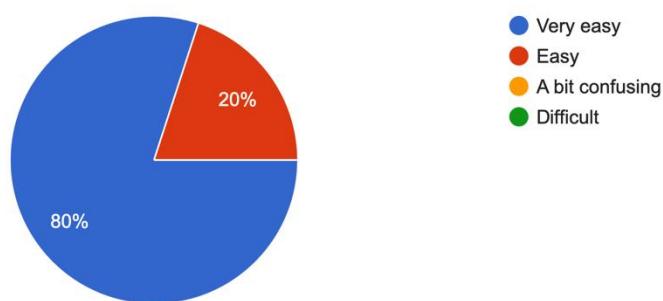


Figure 21-5 UAT Q4

How was your experience registering and logging into and out of the platform? كيف كانت تجربتك في

التسجيل، تسجيل الدخول، وتسجيل الخروج من المنصة؟

10 responses

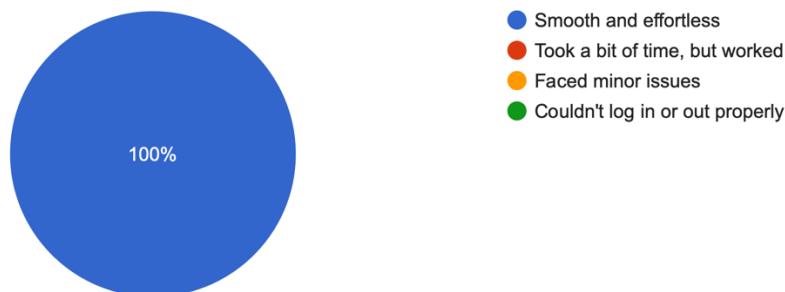


Figure 22-5 UAT Q5

The navigation bar and layout helped me find what I needed easily. ساعدني شريط التنقل وتصميم الموقع في

الوصول إلى ما أحتاجه بسهولة

10 responses

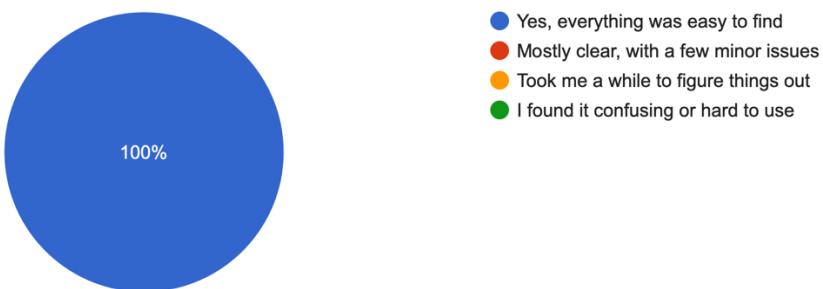


Figure 23-5 UAT Q6

The destination search function worked effectively and returned relevant results. عملت ميزة البحث عن

الوجهات بشكل فعال وقدمت نتائج مناسبة

10 responses

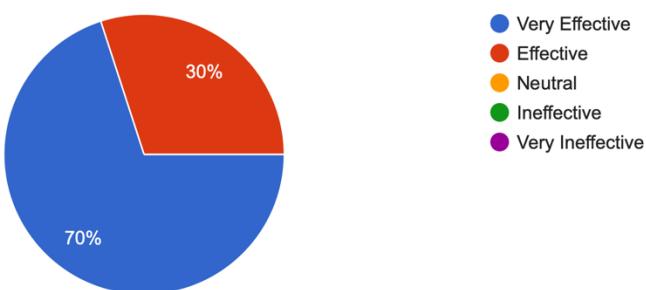


Figure 24-5 UAT Q7

The filtering options helped me narrow down results based on my interests. ساعدتني خيارات التصفية في

تضييق نتائج البحث بناءً على اهتماماتي

10 responses

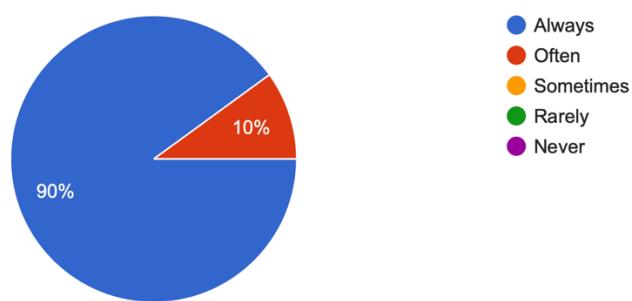


Figure 25-5 UAT Q8

Were the destination pages informative and culturally relevant? هل كانت صفحات الوجهات مفيدة وذات صلة

ثقافياً؟

10 responses

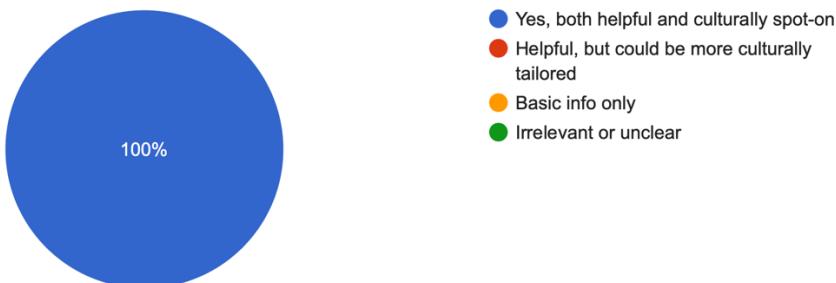


Figure 26-5 UAT Q9

كيف كانت تجربتك مع ميزة قائمة المفضلة (add/remove) work for you?

(الإضافة/الإزالة؟)

10 responses

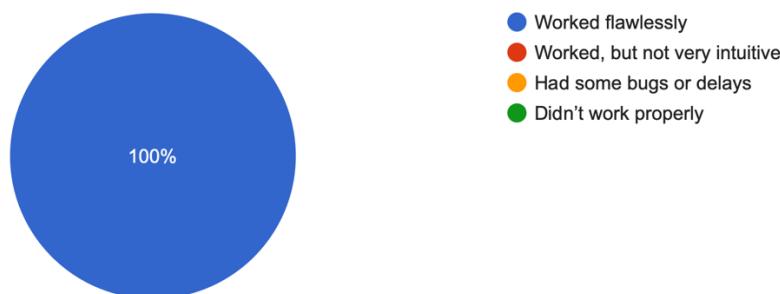


Figure 27-5 UAT Q10

ما مدى سهولة إدارة ذكريات السفر الخاصة (add, edit, delete)?

بك (إضافة، تعديل، حذف)?

10 responses

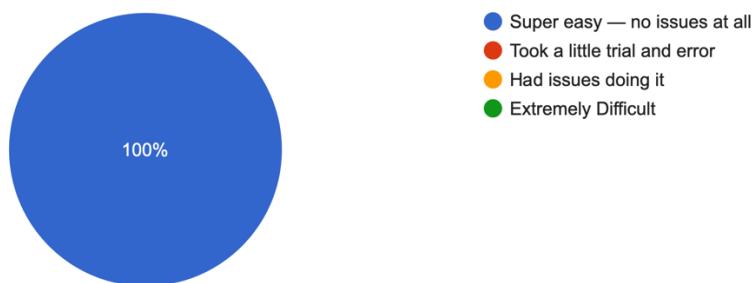


Figure 28-5 UAT Q11

كيف كانت سرعة المنصة أثناء التصفح، والبحث، واستخدام الميزات؟

10 responses

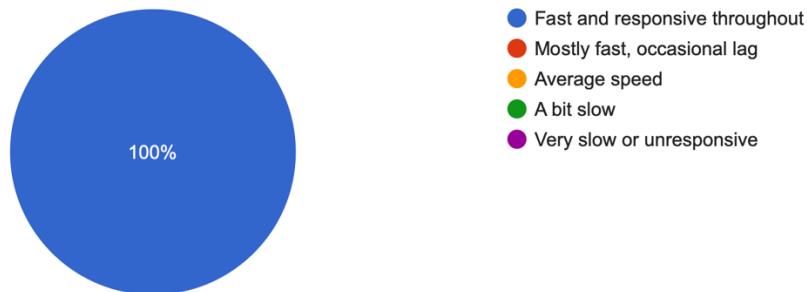


Figure 29-5 UAT Q12

كان التصميم البصري للموقع متناسقاً، واضحاً، وسهل الاستخدام

10 responses

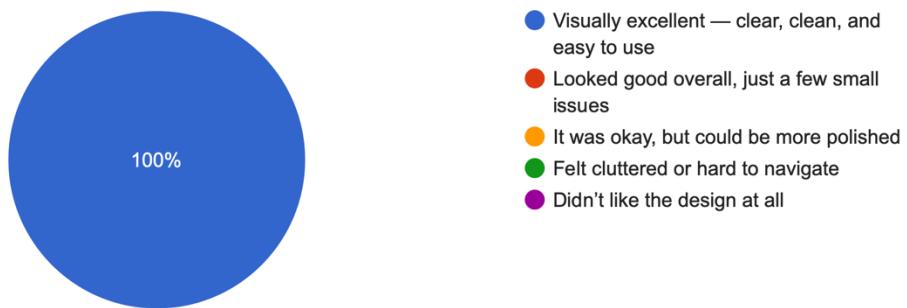


Figure 30-5 UAT Q13

التجربة العامة The overall experience met my expectations for a Gulf-region travel planning platform.

كانت مرضية وتنماشى مع توقعاتي لمنصة تخطيط سفر خاصة بمنطقة الخليج

10 responses

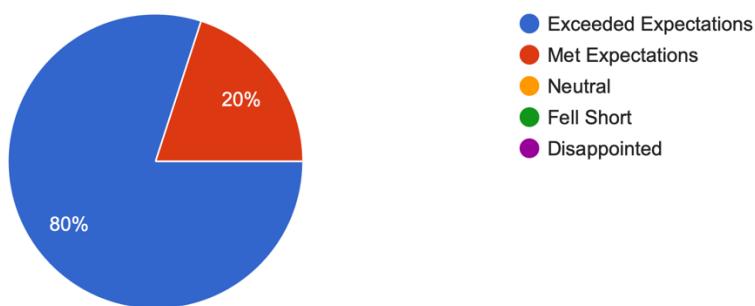
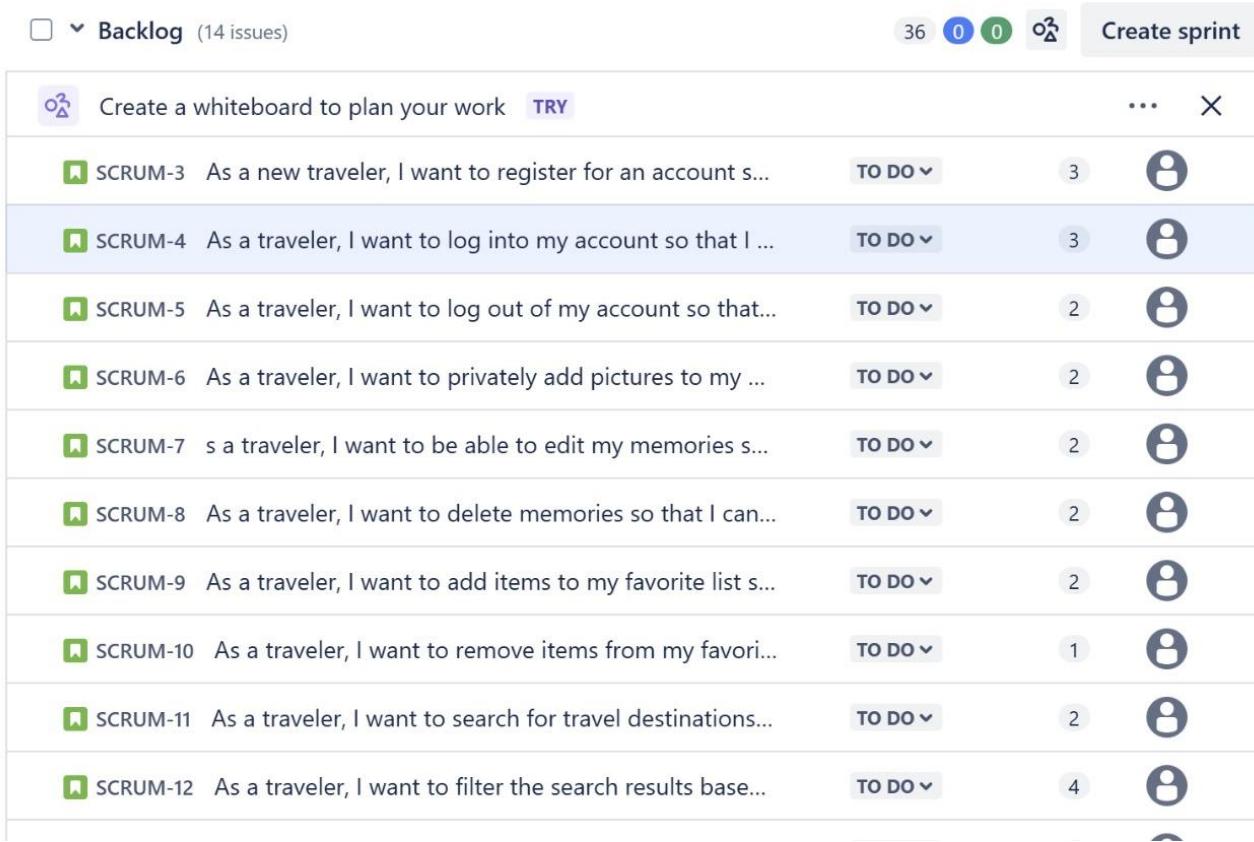


Figure 31-5 UAT Q14

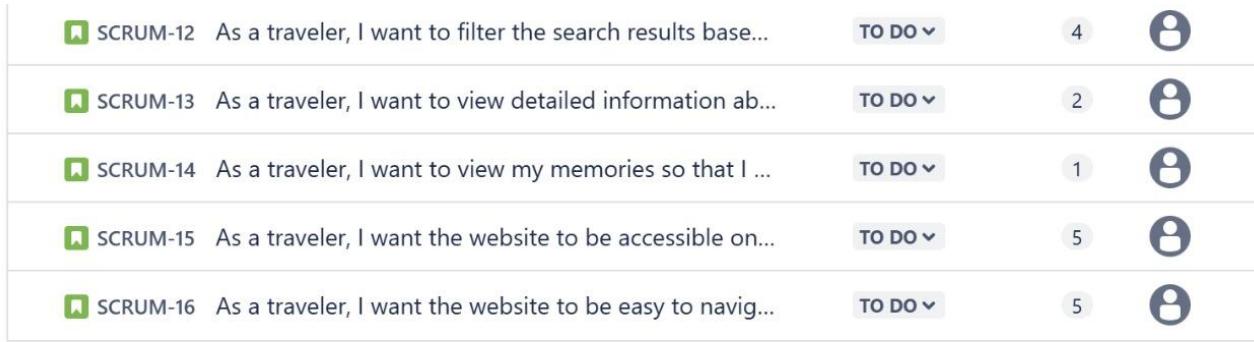
8.3 JIRA



The screenshot shows a Jira Scrum backlog with 14 issues listed under the 'Backlog' tab. The backlog items are:

- SCRUM-3 As a new traveler, I want to register for an account ... (Status: TO DO, Priority: 3)
- SCRUM-4 As a traveler, I want to log into my account so that I ... (Status: TO DO, Priority: 3)
- SCRUM-5 As a traveler, I want to log out of my account so that... (Status: TO DO, Priority: 2)
- SCRUM-6 As a traveler, I want to privately add pictures to my ... (Status: TO DO, Priority: 2)
- SCRUM-7 s a traveler, I want to be able to edit my memories s... (Status: TO DO, Priority: 2)
- SCRUM-8 As a traveler, I want to delete memories so that I can... (Status: TO DO, Priority: 2)
- SCRUM-9 As a traveler, I want to add items to my favorite list s... (Status: TO DO, Priority: 2)
- SCRUM-10 As a traveler, I want to remove items from my favori... (Status: TO DO, Priority: 1)
- SCRUM-11 As a traveler, I want to search for travel destinatio... (Status: TO DO, Priority: 2)
- SCRUM-12 As a traveler, I want to filter the search results base... (Status: TO DO, Priority: 4)

Figure 32-8 Jira Scrum (1)



The screenshot shows a continuation of the Jira Scrum backlog with issues from SCRUM-12 to SCRUM-16.

- SCRUM-12 As a traveler, I want to filter the search results base... (Status: TO DO, Priority: 4)
- SCRUM-13 As a traveler, I want to view detailed information ab... (Status: TO DO, Priority: 2)
- SCRUM-14 As a traveler, I want to view my memories so that I ... (Status: TO DO, Priority: 1)
- SCRUM-15 As a traveler, I want the website to be accessible on... (Status: TO DO, Priority: 5)
- SCRUM-16 As a traveler, I want the website to be easy to navig... (Status: TO DO, Priority: 5)

+ Create issue

Figure 33-8 Jira Scrum (2)