كلية علوم الحاسب والمعلومات
قسم هندسة البرمجيات

King Saud University

College of Computer and Information Sciences

Department of Software Engineering

SWE 444 - Software Construction Laboratory

SAWWAH

Final Report Template

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Abstract

SAWWAH is a mobile application designed to enhance the travel experience in Saudi Arabia by providing both foreign tourists and local residents with a comprehensive platform to explore the country's rich culture, history, and natural beauty. The app addresses common challenges faced by travelers, such as finding reliable recommendations, accessing location-based services, and organizing travel plans efficiently. With personalized travel suggestions, interactive maps, and curated experiences that highlight Saudi Arabia's cultural landmarks, traditional festivals, and local cuisine, SAWWAH aims to offer authentic and meaningful travel experiences. Targeting both international visitors and Saudi citizens, the app fosters cultural exchange and encourages local exploration. By connecting travelers with local businesses, tour operators, and cultural institutions, SAWWAH supports the growth of Saudi Arabia's tourism industry, while contributing to the nation's broader economic and cultural goals. Through its user-friendly features, the app not only simplifies travel planning but also promotes lesser-known destinations, deepening cultural understanding and positioning Saudi Arabia as a prominent global tourism destination.

Introduction

Traveling is often seen as a way to explore new cultures, discover the hidden, and create memorable experiences. However, travelers frequently face challenges such as finding reliable and personalized travel recommendations, accessing location-based services, and organizing travel plan efficiently. These obstacles can decrease the joy of travel, especially for users unfamiliar with the local context. To address this problem, **SAWWAH** was developed as a solution for travelers.

SAWWAH is a mobile application dedicated to promoting tourism within Saudi Arabia, providing both foreign visitors and Saudi citizens with a platform to explore the kingdom's rich culture, history, and natural beauty. The app offers a unique blend of travel planning features, including personalized recommendations, interactive maps, and experiences that highlight Saudi Arabia's cultural landmarks, traditional festivals, local food. The goal is to create meaningful travel experiences that shows the authentic spirit of Saudi Arabia.

The app targets **foreign tourists**, helping them navigate and emerge themselves in Saudi culture, and **local citizens**, encouraging them to rediscover and connect with the diverse regions of their country. Key stakeholders include local businesses, tour operators, and cultural institutions that benefit from engagement with travelers. By decreasing the gap between travelers and local communities, **SAWWAH** supports cultural exchange and contributes to the growth of Saudi Arabia's tourism industry and brings significant value to the travel market by addressing the challenges of travel planning within Saudi Arabia. It simplifies planning, promotes tourism by highlighting fewer known destinations, and adopts cultural understanding. By doing so, SAWWAH not only enhances the travel experience but also supports Saudi Arabia's efforts to position itself as a global tourism destination, contributing to its economic goals.

Technical Details (Platform – Language - Tools)

The SAWWAH project was developed as a mobile application for Android using **Flutter Flow**, a low code using dart language, platform built on the Flutter framework. This platform was chosen for its ability to rapidly design and implement visually appealing, responsive applications without requiring extensive coding expertise. It offered seamless integration with backend services and APIs like Google Maps services, and travel-related functionalities. which was crucial for implementing SAWWAH's key features, Flutter Flow allowed for focusing on delivering a user-friendly experience.

While the primary target platform was Android, we initially aimed to deploy the application on iOS. However, we encountered challenges with iOS integration, particularly with handling permissions, Apple's strict guidelines and the additional configuration requirements for Flutter-based applications on iOS introduced delays during the development process. Debugging these permission issues and ensuring the app meets Apple's policies required additional time and effort. These challenges ultimately led us to prioritize the Android version for the launch.

Despite these issues, the overall experience with Flutter Flow was positive. Its intuitive interface and rich feature environment allowed us to focus on core functionality and design while minimizing development complexity. The result is an Android application meets the needs of travelers.

System Analysis

System architecture

We have chosen the Model-View-Controller (MVC) as the main style for the SAWWAH system [1].

The Model component corresponds to all the data-related logic that the user works with. This can represent either the data being transferred between the View and Controller components or any other business logic-related data. It can add or retrieve data from our database (Firebase)[1].

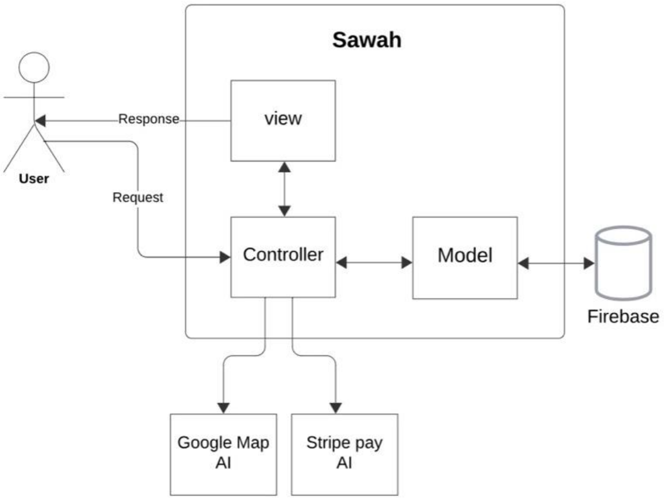
The View component is used for all the UI logic of the application. It generates an interface for the host and another different interface for the user. Views are created by the data, which is collected by the model component, but these data aren’t taken directly but through the controller. It only interacts with the controller.

The controller is the component that enables the interconnection between the views and the model, so it acts as an intermediary. The controller doesn’t have to worry about handling data logic, it just tells the model what to do. It processes all the business logic and incoming requests, manipulates data using the Model component, and interacts with the View to render the final output.

Model-View-Controller (MVC) also handles interactions with external APIs used by our system, such as the Google Maps API and the Stripe pay API.

Using the Model-View-Controller (MVC) architectural pattern can offer us several advantages, since our team is a team of six developers:

Since MVC separates concerns, it's easier to make changes or updates to one part of the application without affecting others. It divides the application into three distinct components—Model, View, and Controller. This separation allows each developer to focus on a specific aspect of the application, improving productivity and making it easier to manage and understand the code.



System database

The system database for SAWWAH application is firebase it is one of the most popular technologies currently on the market, it’s a cloud-based platform made by Google that includes real time data syncing and user authentication, in addition for secure hosting [2].

- Large Community:

Firebase has many benefits that make it a proper choice for database, one of which is its popularity. there are about 1.5M apps based on firebase, which helps developers resolve any problems that they may face during development [2].

- Integration:

since we have decided to use Flutter Flow integration can be done effortlessly so the team can focus on implementing SAWWAH features as quickly as possible.

- Scalability:

In the future we expect the app to grow and be used worldwide and to achieve this goal we must take scalability into consideration; firebase's infrastructure can manage increased number of users without compromising performance.

- Cloud Firestore database:

Firestore's ability to scale efficiently makes it a better choice for SAWWAH since it is expected to grow in both data size and user base. Offering high availability in addition to low latency, client synchronization and offline data access [3].

Final Product Backlog

In this section, the team should describe the status of the features in the original product backlog and the newly added features. You can refer to the example below for better understanding. It is necessary to report every change in product backlog and the status of every feature.

Original product backlog status

ID	Brief Description	Status	Comment
System features			
Host			
1	The host can Sign up using name, email, phone number and password.	Delivered	
2	The host can log in using name, email, phone number and password.	Delivered	
3	The host can display the information of the user (Email / Phone number).	Delivered	
4	The host can create an experience card including (location, description, photo, price, seat limit, age limit, gender) specifying if it is one time activity or scheduling it for multiple dates.	Delivered	
5	The host can display the details of the experience (emails of users who booked their experience, total seats, number of remaining seats)	Delivered	
6	The host can receive notifications when the experience is fully booked.	Not delivered	The host can check the seat availability from the experience details (remaining seats).
7	The host can receive a notification reminder about the experience and the number of attendees.	Not delivered	The host can check the seat availability from the experience details.
8	The host can display their upcoming and past experiences.	Delivered	
9	The host can view ratings on each experience.	Delivered	
10	The host can cancel an experience 10 days ahead.	Delivered	The host can cancel at least 1 day before.
11	The host can recreate an experience that they did without reentering the same details using history.	Delivered	
12	The host can’t create 2 experiences at the same date and time.	Not delivered	The team decided with the stakeholder that the host shall be able to create 2 experiences at the same date and time, if he wants to manage 2 or more experiences at once.
13	The host can logout.	Delivered	
User			
14	The user can sign up using name, email, phone number and password.	Delivered	
15	The user can log in using name, email, phone number, and password.	Delivered	
16	User can view experiences without creating an account.	Delivered	
17	User without an account can book an experience as a guest by only adding phone number and email.	Delivered	The email is mandatory, and the phone number is optional.

18	The user can display available experiences to reserve.	Delivered	
19	The user can reserve an experience by paying for it using stripe.	Delivered	The team and the stakeholder came to a decision that it’s more convenient for the user to pay at the property.
20	The user can chat with other users who booked the same experience.	Delivered	
21	The user can write a review and rate the experience.	Delivered	
22	The user can display the ratings of other users’ experiences.	Delivered	
23	The user can view the details of an experience (location, description, photo, price, seat limit, age limit, gender).	Delivered	
24	The users can view all experiences locations in a map with google maps API	Delivered	
25	The user can reserve a hotel or apartment using booking.	Not delivered	The team and the stakeholder decided to focus the scope of the system on experiences.
26	The user can rent a car using uber.	Not delivered	The team and the stakeholder decided to focus the scope of the system on experiences.
27	The user can cancel a reserved experience only if the experience’s start time is more than 24 hours away.	Delivered	
28	The user can search for a specific experience using search bar.	Delivered	
29	The users can report a problem of an experience.	Delivered	
30	The system can alert users when they try to book 2 experiences at the same time.	Not delivered	The user can book more than 1 experience at the same time if they want to book for themselves and other people.
31	The system can support user authentication via Google Sign-In, allowing users to securely log in using their Google account credentials using firebase API.	Not delivered	The user can only sign in using their email and password.
32	The user can logout.	Delivered	
System			
33	The system can display educational 3 photos introduction and a kickoff for first time users.	Delivered	
34	The system can allow users to change their information as email or phone number.	Delivered	

35	The system can create a profile page automatically for a host that includes bio, their previous and upcoming experiences and their reviews.	Delivered	The host’s profile page includes the host’s name, email, bio, phone number. However, the previous and upcoming experiences, and their reviews are in the host’s home page.
36	The system can allow the host to receive payments through Stripe API.	Not delivered	The team and the stakeholder came to a decision that it’s more convenient for the user to pay at the property.
37	The system can provide a support team for users’ issues.	Delivered	
38	The system can operate partially without internet connection (offline).	Delivered	
Technical features			
39	Install Xcode IDE	Not delivered	Not needed due to change of platform to Android.
40	Install VS IDE	Delivered	
41	Install dart extension in VS code	Delivered	
42	Install flutter extension in VS code	Delivered	
43	Install flutter SDK	Delivered	
44	Configure Flutter Flow	Delivered	
45	Install firebase CLI	Delivered	
46	Firebase authentication using OTP integration	Delivered	
47	Install Git and GitHub desktop	Delivered	
48	Configure GitHub repository	Delivered	
49	Set up simulator	Delivered	Delivered but emulator instead of simulator.
50	Google Map API	Delivered	
52	Payment API	Not delivered	The team and the stakeholder came to a decision that it’s more convenient for the user to pay at the property.
53	Booking API	Not delivered	The team and the stakeholder decided to focus the scope of the system on experiences
54	Install Trello	Delivered	
55	Connect physical IOS mobile device to Xcode	Not delivered	Not needed due to change of platform to Android.
Knowledge acquisition features			
55	Learn dart programming language	Delivered	
56	Learn how to use firebase	Delivered	
57	Learn how to use Flutter Flow development platform	Delivered	
58	Learn how to use google map API	Delivered	

59	Learn how to use stripe payment	Not delivered	The team and the stakeholder came to a decision that it’s more convenient for the user to pay at the property.
60	Learn how to use GitHub	Delivered	

New features added to the product backlog

ID	Description	Status	Comments
1	Hosts and users shall be able to reset their passwords if forgotten, ensuring they can regain access to their accounts securely.	Delivered	The team realized the feature is more useful and preferred to the user.
2	Users shall be able to update their personal information, such as name and phone number, to keep their profile accurate and up-to-date.	Delivered	The team realized the feature is more useful and preferred to the user.
3	Hosts shall be able to set a limit on the number of seats available for their experience. This ensures users cannot reserve more seats than the specified limit.	Delivered	This feature was requested by the stakeholder.
4	Hosts shall be able to update their personal information, such as name and phone number, to ensure their profile reflects accurate details.	Delivered	The team realized the feature is more useful and preferred to the user.
5	Hosts shall be restricted from creating experiences on the same day to allow adequate preparation time and ensure better quality experiences.	Delivered	This feature was requested by the stakeholder.
6	User shall be able to Filter the search based on the category(workshops, food, outdoors)	Delivered	This feature was requested by the stakeholder.
7	User shall be able to receive a notification when they cancel an experience they booked	Delivered	The team realized the feature is more useful and preferred to the user.
8	User shall be able to receive a reminder notification on the same day as the experience they booked	Delivered	The team realized the feature is more useful and preferred to the user.
9	User shall be able to receive a notification when the host he booked an experience with cancels an experience .	Delivered	The team realized the feature is more useful and preferred to the user.

Project Plans

System Features

Sprint no.	Release Date	Features	Description
Sprint 1	25/09/2024	Host Sign-Up	Hosts shall be able to sign up by providing their name, email, phone number, and password, enabling them to create and edit experiences.
		Host Log-In	Hosts shall be able to log in using their email and password, allowing them to manage their created experiences.
		User Sign-Up	Users shall be able to sign up by providing their name, email, phone number, and password, enabling them to reserve experiences.
		User Log-In	Users shall be able to log in using their email and password, allowing them to view and manage their reserved experiences.
		Account Logout	Both hosts and users shall be able to log out from their accounts, ensuring the safety and privacy of their information.
		Password Reset	Hosts and users shall be able to reset their passwords if forgotten, ensuring they can regain access to their accounts securely.
		Display Available Experiences	Users shall be able to view a list of available experiences for reservation, making it easy to explore options.
		Create Experience	Hosts shall be able to create experience cards, including details such as location, description, photo, price, seat limit, age limit, gender, duration, and whether it is a one-time activity or scheduled for multiple dates.
		Recreate Experience	Hosts shall be able to recreate an experience by duplicating a previous listing, saving time and effort by not re-entering the same details.
		Guest View of Experiences	Users shall be able to view experiences without creating an account, allowing them to decide what experiences they want to try.
		Guest Booking	Users shall be able to book experiences as guests by providing their phone number and email, enabling a quick reservation process without account creation.
Sprint 2	16/10/2024	Update User Information	Users shall be able to update their personal information, such as name and phone number, to keep their profile accurate and up-to-date.

		Set Experience Seat Limit	Hosts shall be able to set a limit on the number of seats available for their experience. This ensures users cannot reserve more seats than the specified limit.
		Display User Contact Information to Host	Hosts shall be able to view the email address of users who book their experiences, enabling them to contact users when necessary.
		Update Host Information	Hosts shall be able to update their personal information, such as name and phone number, to ensure their profile reflects accurate details.
		Search for Experiences	Users shall be able to search for specific experiences using a search bar. This feature allows them to find experiences quickly and make reservations more efficiently.
		Display Experience Booking Details to Host	Hosts shall be able to view details of their experience bookings, including the emails of users who booked and the number of remaining seats. This helps them organize their experience effectively.
		Cancel Experience (Host)	Hosts shall have the ability to cancel their listed experiences in case of unforeseen circumstances, ensuring they maintain control over their schedule.
		Email Notification for Experience Cancellation	Users shall receive an email notification when a host cancels an experience they have booked. This ensures users are informed promptly before the scheduled time.
Sprint 3	03/11/2024	Problem Reporting	Users shall be able to report a problem with an experience by providing details of the issue. This will help prevent reoccurrences and ensure better quality experiences.
		View Ratings	Hosts shall be able to view ratings and feedback left by users for each experience. This enables hosts to improve their experiences based on user input.
		Review and Rate Experience	Users who have tried an experience shall be able to write a review and provide a rating. These reviews will be visible to other users for guidance.
		Support Team Management	A dedicated Support team feature shall be implemented to address user issues. Hosts can manage and respond to inquiries or problems through this system, improving user satisfaction.
		Contact Support	Users shall be able to contact the Support team through the system to report issues or seek assistance, ensuring problems are addressed promptly.
		Host Cancellation Notification	Users shall receive a notification when a host cancels an experience they have reserved. This

			keeps users informed ahead of the scheduled time.
		Prevent Same-Day Experience Creation	Hosts shall be restricted from creating experiences on the same day to allow adequate preparation time and ensure better quality experiences.
Sprint 4	23/11/2024	Display Experience Ratings	Users shall be able to view the ratings left by other users on experiences. This feature helps users make informed decisions about whether to reserve an experience.
		View Experiences on Google Maps	Users shall be able to view the locations of all experiences displayed on a map using the Google Maps API. This feature provides an easy way to locate and navigate to the experience venue.
		Chat with Other Participants	Users shall be able to chat with other users who booked the same experience. This allows them to connect and build rapport before attending the experience.
		Cancel Reserved Experience	Users shall be able to cancel a reserved experience only if the experience's start time is more than 24 hours away. This provides users with flexibility while ensuring fairness to the host.
		Filter the search	User shall be able to Filter the search based on the category(workshops, food, outdoors)
		Receive a notification when user cancels	User shall be able to receive a notification when they cancel an experience they booked
		Receive a reminder notification	User shall be able to receive a reminder notification on the same day as the experience they booked

Project Burndown Charts

Sprint 1

Sprint 1 started on the 05/09/2024 and was completed on the 25/09/2024

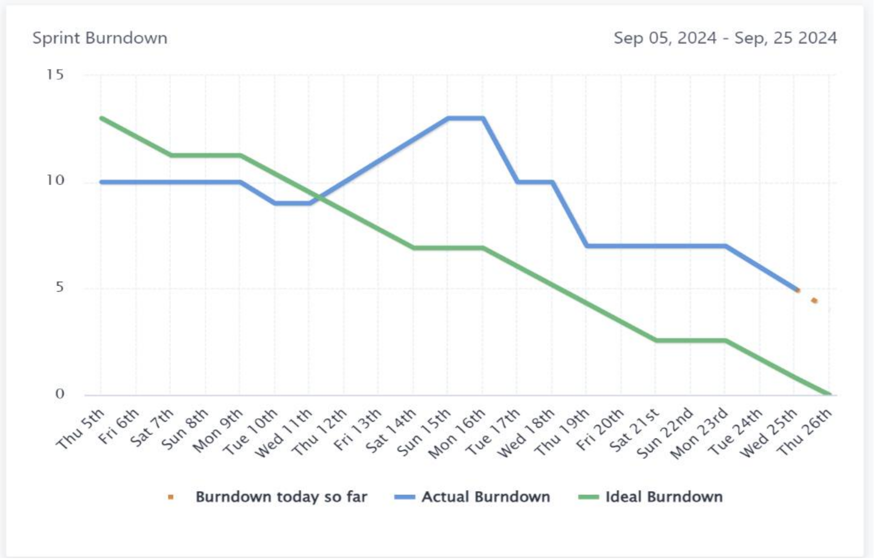


Figure [2] Sprint 1 Burndown chart

Sprint 2

Sprint 2 started on the 26/09/2024 and was completed on the 16/10/2024

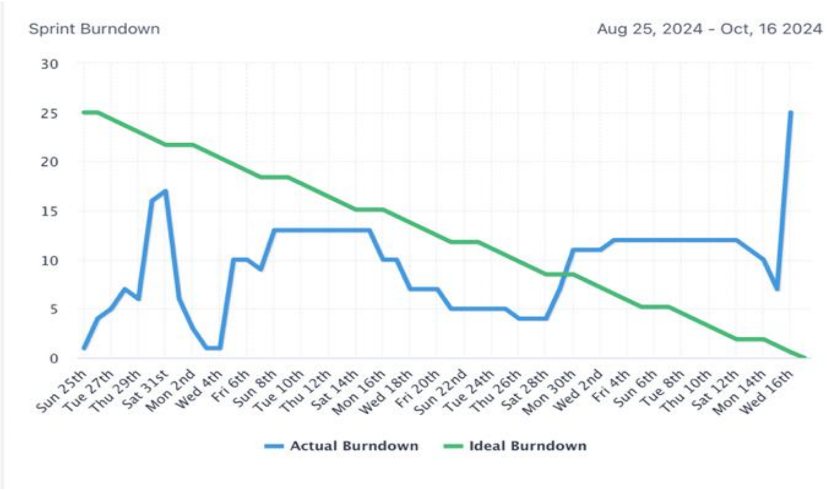


Figure [3] Sprint 2 Burndown chart

Sprint 3

Sprint 3 started on the 17/10/2024 and was completed on the 3/11/2024

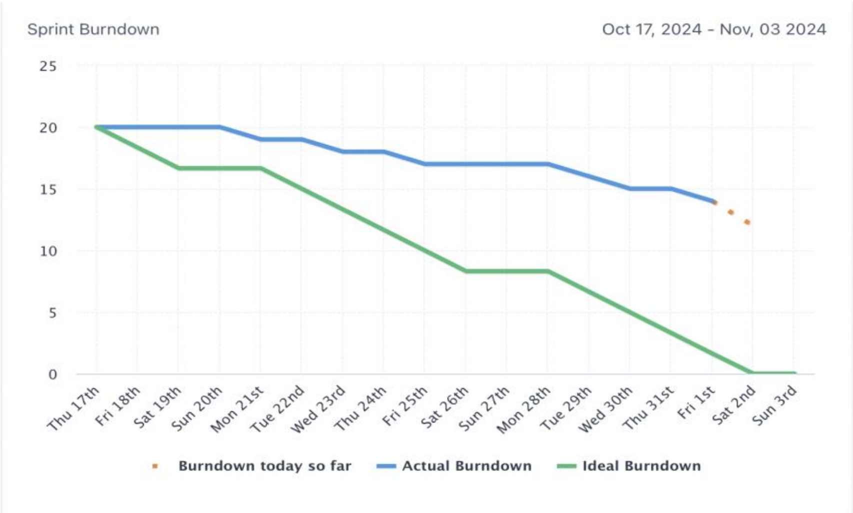


Figure [4] Sprint 3 Burndown chart

Sprint 4

Sprint 4 started on the 04/11/2024 and was completed on the 23/11/2024

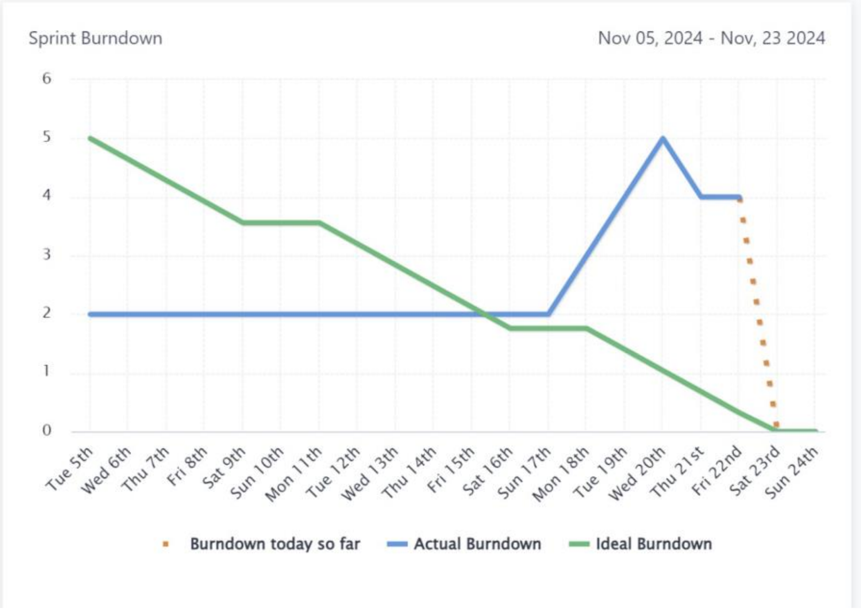


Figure [5] Sprint 4 Burndown chart

Sprint 4 of SAWWAH, starting on November 5th, 2024 marked the project's final phase. The burndown chart shows initial delays due to UI refinements, causing deviations from the Ideal Burndown Midway, a productivity surge helped us catch up, completing all tasks by November 23rd, right on schedule. This final sprint showcased our adaptability, teamwork, and commitment to delivering a polished product, with time for integration and testing before project completion.

Quality Assurance Activates

Throughout the entire project life cycle, we have conducted several quality assurance activities to ensure the highest standards are met. these activities include:

1. System Testing

We start with unit testing, where each of us rigorously tests our functions within feature branches to ensure they work as intended before merging into sprint branches. Once all branches are merged, we conduct system testing to confirm that integrated features work seamlessly together without conflicts. In each sprint, we document one user story in the Testing Plan but ensure that we comprehensively test all user stories. Together, we develop and execute detailed test cases for key functionalities such as login, chatting, viewing experiences, and managing bookings. Our Testing Plan is updated regularly to track progress and ensure full coverage of all features here Test Link.

2. Checklist

As we progress through our agile development journey, our checklist serves as a crucial guiding tool. Carefully designed, it outlines the tasks and goals we aim to complete each sprint. By following it, we ensure no detail is overlooked and every objective is achieved with clarity and efficiency. By the end of each sprint, we're confident that we've met our goals. This systematic approach helps us avoid oversights, reinforces our commitment to consistent results, and ensures accountability throughout the development process.

3. Group Meetings

Meetings are a cornerstone of our quality assurance process, held both online and in person. They foster collaboration and constructive feedback, allowing us to share comments and suggestions in a productive environment. These sessions are vital for setting goals, defining roles, and ensuring project objectives and responsibilities are clear. They act as checkpoints during integration, preventing conflicts and helping us evaluate the system as a whole. Meetings also enable us to track progress, meet deadlines, and maintain high-quality standards. By applying lessons learned, they promote continuous improvement in our processes and strategies. Through active participation and open communication, meetings play a key role in sustaining and enhancing the quality of our work.

4. Teamwork and Review Each Other's work

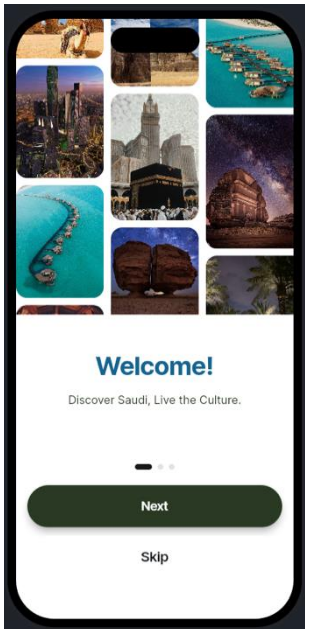
We prioritize peer review and collaboration to ensure high-quality outcomes. Team members regularly review each other's work to catch mistakes and share best practices, promoting continuous learning and improvement. We also collaborate by sharing ideas, dividing tasks, and supporting one another, which enhances efficiency. After reviewing work, we assess feedback and proposed changes as a team to ensure they align with project goals and don't impact other functionalities. This approach fosters teamwork, learning, and consistent delivery of quality products.

5. Sprint Reviews and Retrospective

We use an Agile approach that ensures continuous stakeholder engagement. Weekly meetings with our stakeholder focus on discussing sprint functionalities and gathering feedback on work-in-progress, including the user interface. Detailed notes are taken during these sessions, and our team evaluates proposed changes to assess their impact on the system. This iterative process helps us identify gaps and refine the product early, ensuring a high-quality outcome for each sprint.

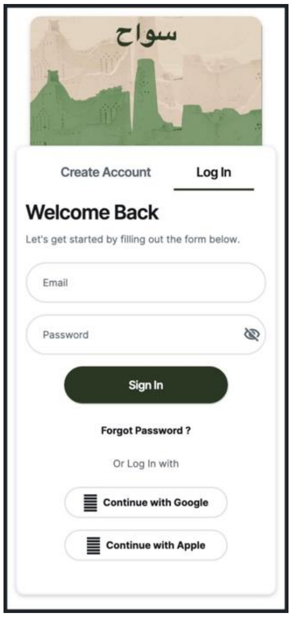
System Screenshots

In this section, provide screenshots of the main system features from Mobile. **Make sure it is clear and well described**



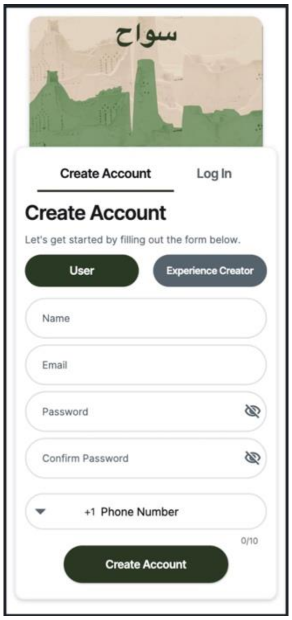
Discover Saudi, Live the Culture.

Figure1. Welcome Page



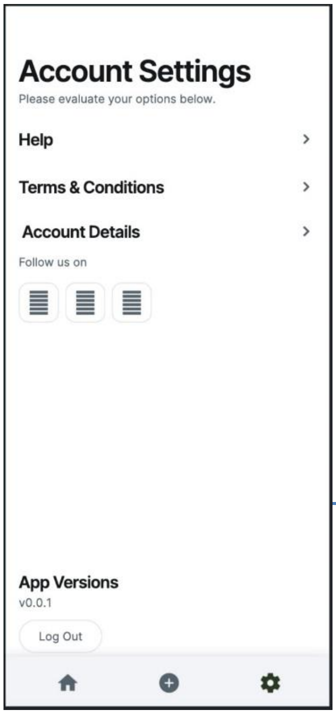
Let's get started by filling out the form below.

Figure2. Log In Page



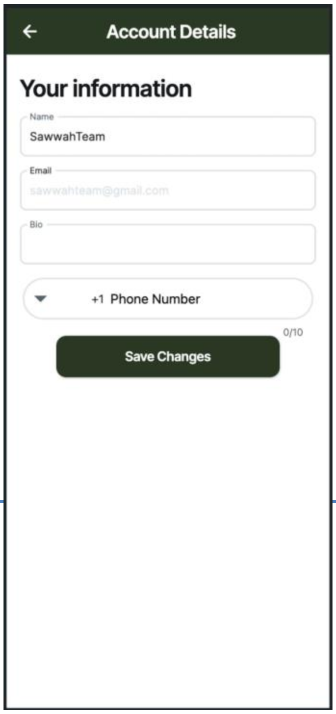
Let's get started by filling out the form below.

Figure3. Sign Up page and Password Validation



Please evaluate your options below.

Figure4. Host Settings

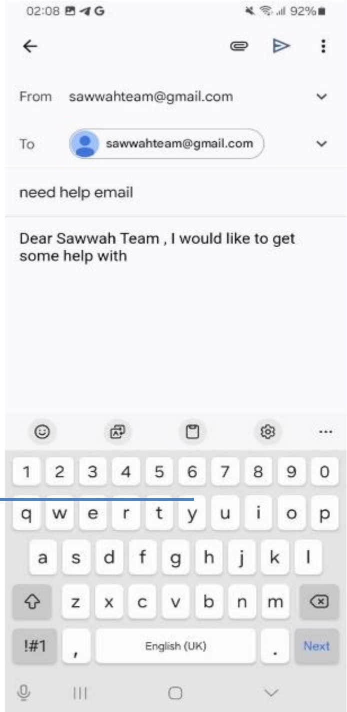


Name: SawwahTeam

Email: sawwahteam@gmail.com

Bio:

Figure5.Host Account Details



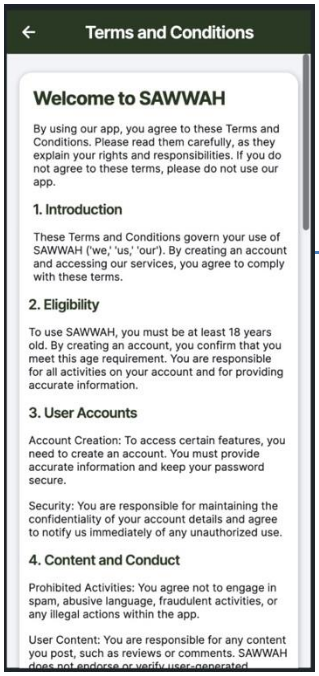
From sawwahteam@gmail.com

To sawwahteam@gmail.com

need help email

Dear Sawwah Team , I would like to get some help with

Figure6. Host contact the Support team for users' issues from Help



Terms and Conditions

Welcome to SAWWAH

By using our app, you agree to these Terms and Conditions. Please read them carefully, as they explain your rights and responsibilities. If you do not agree to these terms, please do not use our app.

1. Introduction

These Terms and Conditions govern your use of SAWWAH ('we,' 'us,' 'our'). By creating an account and accessing our services, you agree to comply with these terms.

2. Eligibility

To use SAWWAH, you must be at least 18 years old. By creating an account, you confirm that you meet this age requirement. You are responsible for all activities on your account and for providing accurate information.

3. User Accounts

Account Creation: To access certain features, you need to create an account. You must provide accurate information and keep your password secure.

Security: You are responsible for maintaining the confidentiality of your account details and agree to notify us immediately of any unauthorized use.

4. Content and Conduct

Prohibited Activities: You agree not to engage in spam, abusive language, fraudulent activities, or any illegal actions within the app.

User Content: You are responsible for any content you post, such as reviews or comments. SAWWAH does not endorse or verify user-generated

Figure7. Terms & Conditions

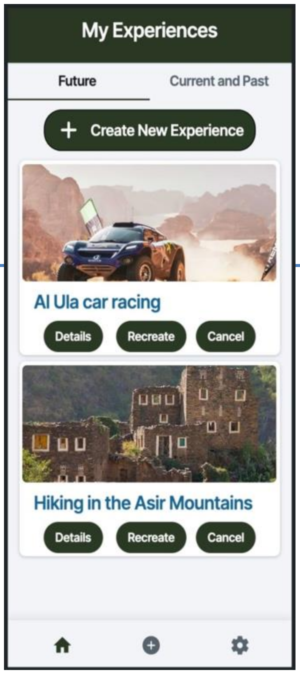
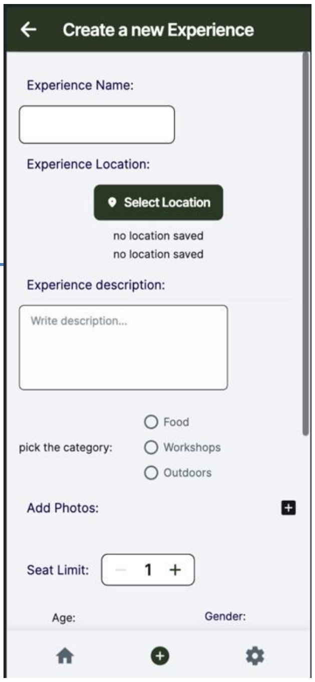


Figure8. Host Home Page



Create a new Experience

Experience Name:

Experience Location:

Select Location

no location saved

no location saved

Experience description:

Write description...

pick the category: ○ Food ○ Workshops ○ Outdoors

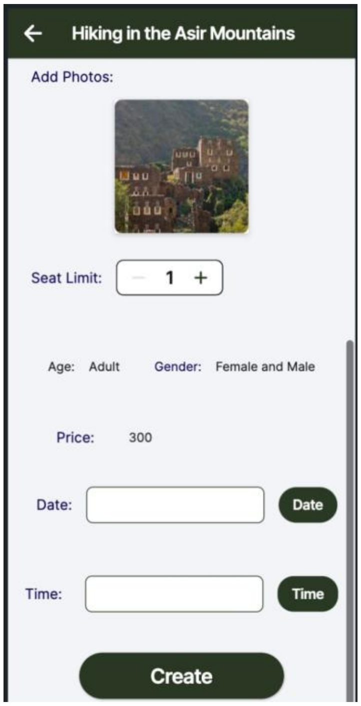
Add Photos:

Seat Limit: − 1 +

Age:

Gender:

Figure9. Create a new Experience Page for the host



Hiking in the Asir Mountains

Add Photos:

Seat Limit: − 1 +

Age: Adult

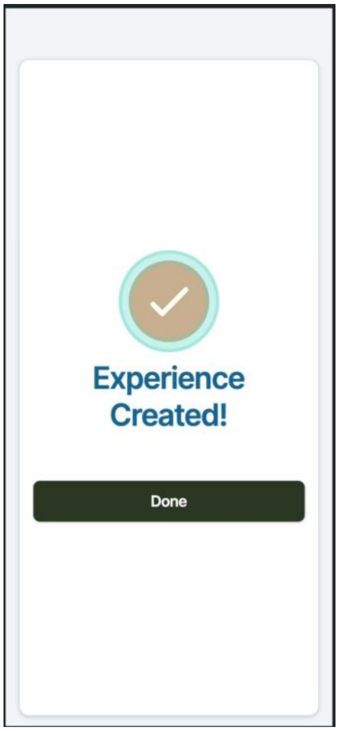
Gender: Female and Male

Price: 300

Date:

Time:

Figure10. Recreate a new Experience Page for the host



Experience Created!

Figure11. Confirmation message for create and recreate

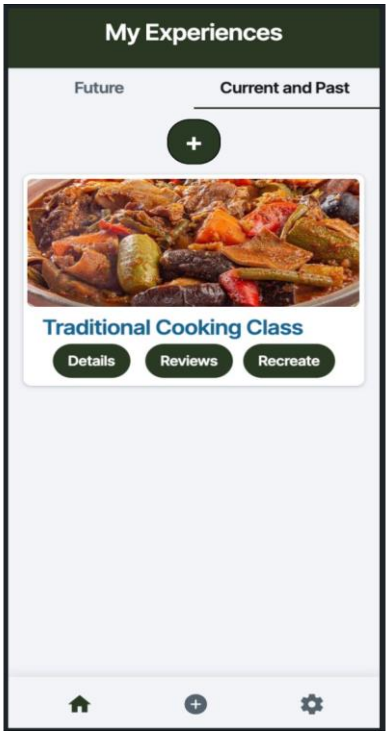
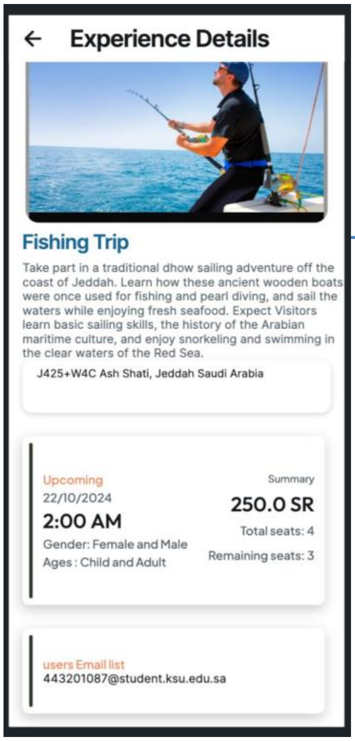


Figure12. Host Past experiences to see reviews



Experience Details

Fishing Trip

Take part in a traditional dhow sailing adventure off the coast of Jeddah. Learn how these ancient wooden boats were once used for fishing and pearl diving, and sail the waters while enjoying fresh seafood. Expect Visitors learn basic sailing skills, the history of the Arabian maritime culture, and enjoy snorkeling and swimming in the clear waters of the Red Sea.

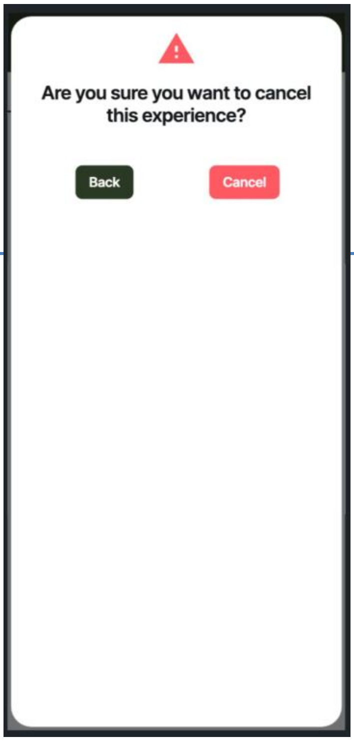
J425+W4C Ash Shati, Jeddah Saudi Arabia

Upcoming
22/10/2024
2:00 AM
Gender: Female and Male
Ages : Child and Adult

Summary
250.0 SR
Total seats: 4
Remaining seats: 3

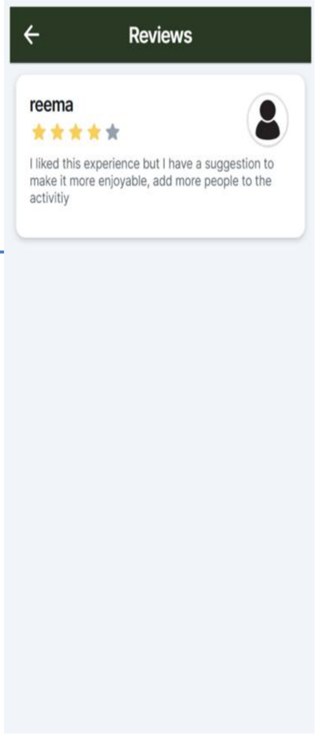
users Email list
443201087@student.ksu.edu.sa

Figure13. Host selects details from the home page then views experience details.



Are you sure you want to cancel this experience?

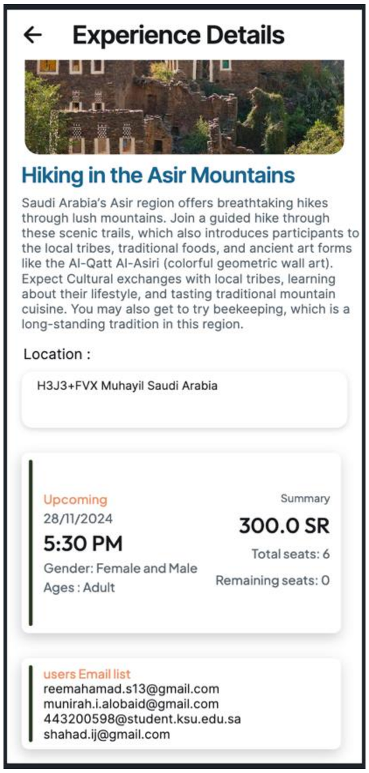
Figure14. Host selects cancel from the home page then gets an alert dialog to confirm the cancellation of an experience.



Reviews

reema
★★★★☆
I liked this experience but I have a suggestion to make it more enjoyable, add more people to the activitiy

Figure18. Host views the reviews and ratings regarding his experience



Experience Details

Hiking in the Asir Mountains

Saudi Arabia's Asir region offers breathtaking hikes through lush mountains. Join a guided hike through these scenic trails, which also introduces participants to the local tribes, traditional foods, and ancient art forms like the Al-Qatt Al-Asiri (colorful geometric wall art). Expect Cultural exchanges with local tribes, learning about their lifestyle, and tasting traditional mountain cuisine. You may also get to try beekeeping, which is a long-standing tradition in this region.

Location :

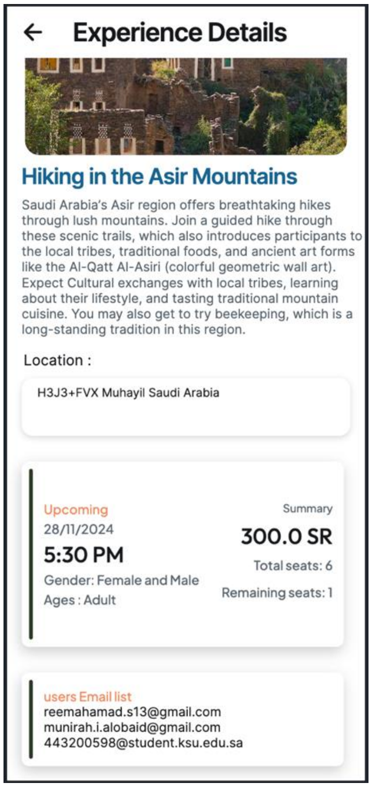
H3J3+FVX Muhayil Saudi Arabia

Upcoming
28/11/2024
5:30 PM
Gender: Female and Male
Ages : Adult

Summary
300.0 SR
Total seats: 6
Remaining seats: 0

users Email list
reemahamad.s13@gmail.com
munirah.i.alobaid@gmail.com
443200598@student.ksu.edu.sa
shahad.ij@gmail.com

Figure16. Host's experience details before a user canceled an experience



Experience Details

Hiking in the Asir Mountains

Saudi Arabia's Asir region offers breathtaking hikes through lush mountains. Join a guided hike through these scenic trails, which also introduces participants to the local tribes, traditional foods, and ancient art forms like the Al-Qatt Al-Asiri (colorful geometric wall art). Expect Cultural exchanges with local tribes, learning about their lifestyle, and tasting traditional mountain cuisine. You may also get to try beekeeping, which is a long-standing tradition in this region.

Location :

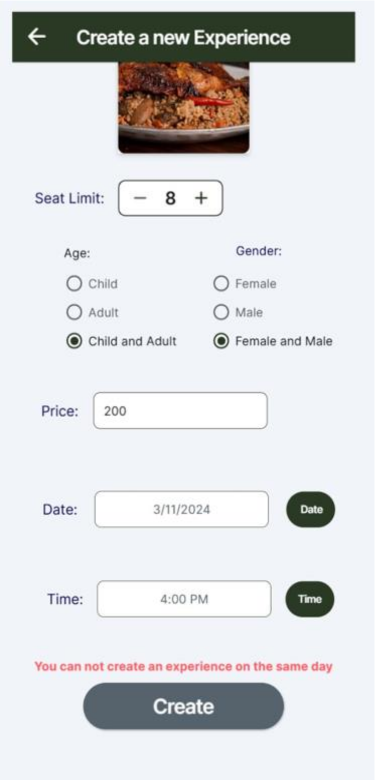
H3J3+FVX Muhayil Saudi Arabia

Upcoming
28/11/2024
5:30 PM
Gender: Female and Male
Ages : Adult

Summary
300.0 SR
Total seats: 6
Remaining seats: 1

users Email list
reemahamad.s13@gmail.com
munirah.i.alobaid@gmail.com
443200598@student.ksu.edu.sa

Figure17. Host's experience details before a user canceled an experience



Create a new Experience

Seat Limit: − 8 +

Age:
○ Child
○ Adult
● Child and Adult

Gender:
○ Female
○ Male
● Female and Male

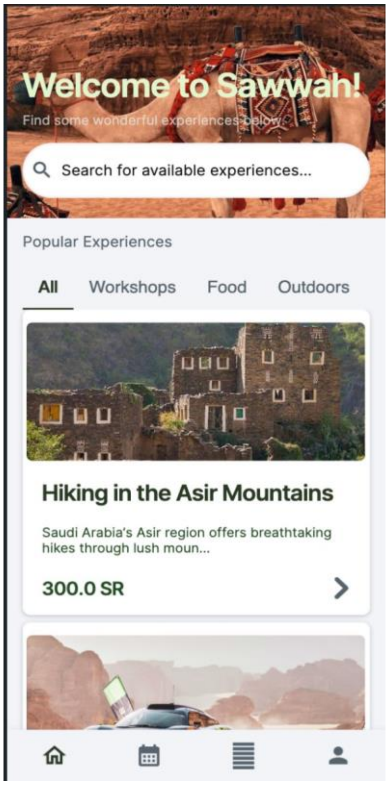
Price: 200

Date: 3/11/2024

Time: 4:00 PM

You can not create an experience on the same day

Figure18. Host prevented from creating an experience on the same day


Welcome to Sawwah!

Find some wonderful experiences below

Search for available experiences...

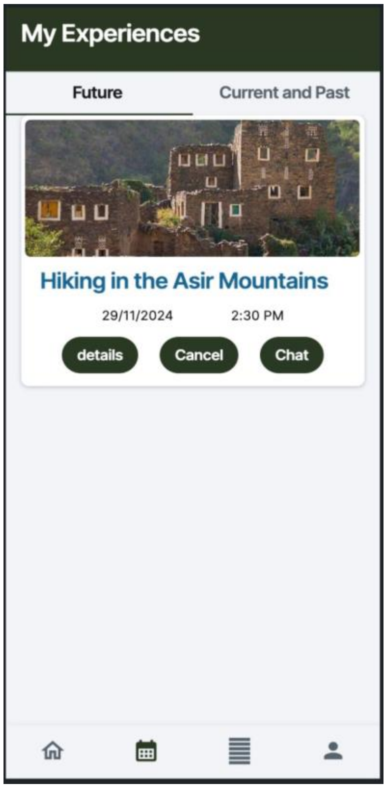
Popular Experiences

Hiking in the Asir Mountains

Saudi Arabia's Asir region offers breathtaking hikes through lush moun...

300.0 SR

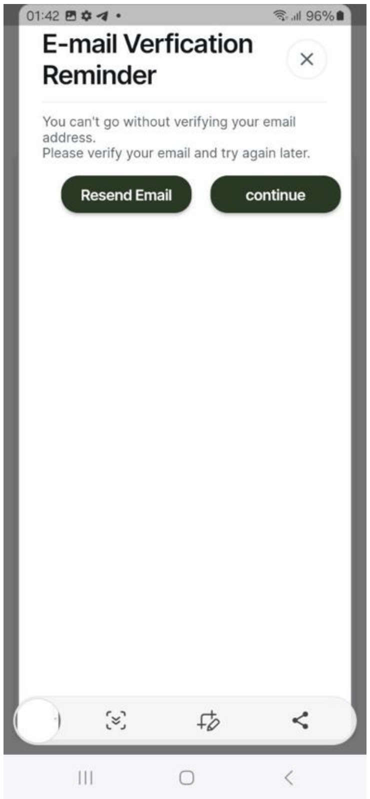
Figure 19. User's Home Page


My Experiences

Hiking in the Asir Mountains

29/11/2024 2:30 PM

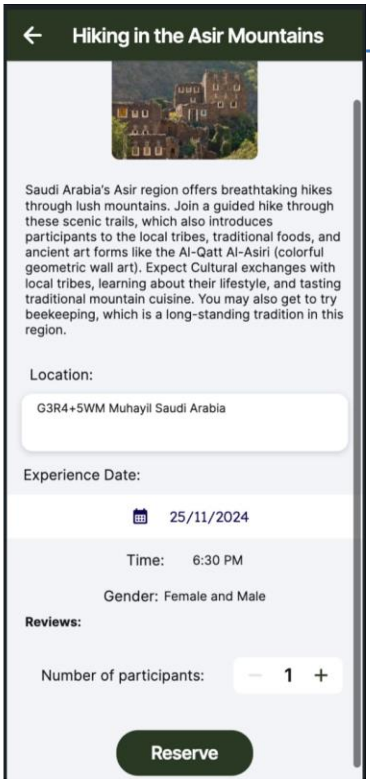
Figure 20. User's experiences


01:42 96%

E-mail Verfication Reminder

You can't go without verifying your email address.
Please verify your email and try again later.

Figure 21. Email Verification Reminder


Hiking in the Asir Mountains

Saudi Arabia's Asir region offers breathtaking hikes through lush mountains. Join a guided hike through these scenic trails, which also introduces participants to the local tribes, traditional foods, and ancient art forms like the Al-Qatt Al-Asiri (colorful geometric wall art). Expect Cultural exchanges with local tribes, learning about their lifestyle, and tasting traditional mountain cuisine. You may also get to try beekeeping, which is a long-standing tradition in this region.

Location:

G3R4+5WM Muhayil Saudi Arabia

Experience Date:

25/11/2024

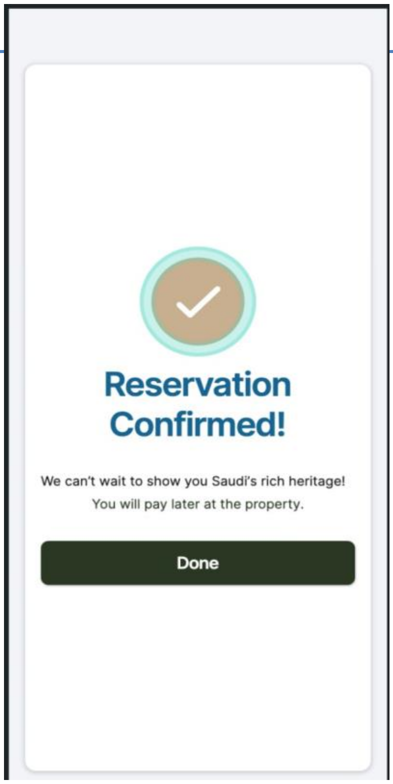
Time: 6:30 PM

Gender: Female and Male

Reviews:

Number of participants: − 1 +

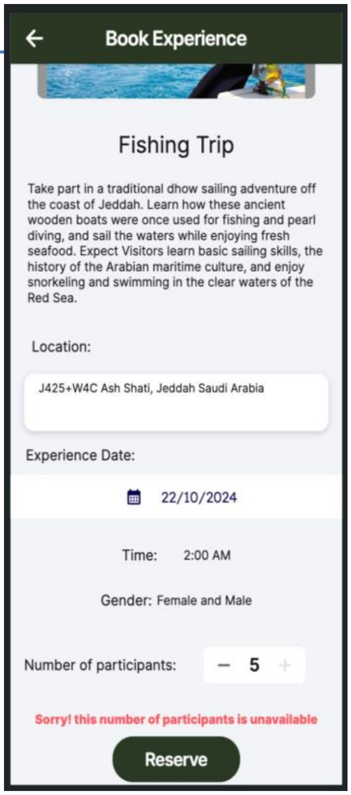
Figure 22. User reserves an experience


Reservation Confirmed!

We can't wait to show you Saudi's rich heritage!

You will pay later at the property.

Figure 23. Reservation confirmation message


Book Experience

Fishing Trip

Take part in a traditional dhow sailing adventure off the coast of Jeddah. Learn how these ancient wooden boats were once used for fishing and pearl diving, and sail the waters while enjoying fresh seafood. Expect Visitors learn basic sailing skills, the history of the Arabian maritime culture, and enjoy snorkeling and swimming in the clear waters of the Red Sea.

Location:

J425+W4C Ash Shati, Jeddah Saudi Arabia

Experience Date:

22/10/2024

Time: 2:00 AM

Gender: Female and Male

Number of participants: − 5 +

Sorry! this number of participants is unavailable

Figure24. User tries to reserve an experience that has no remaining seats equal to the number they inserted.

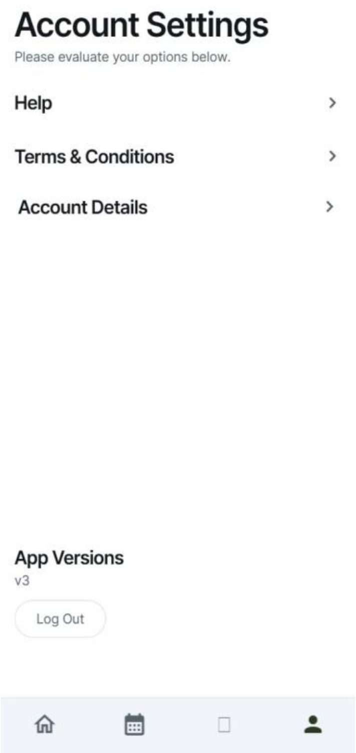
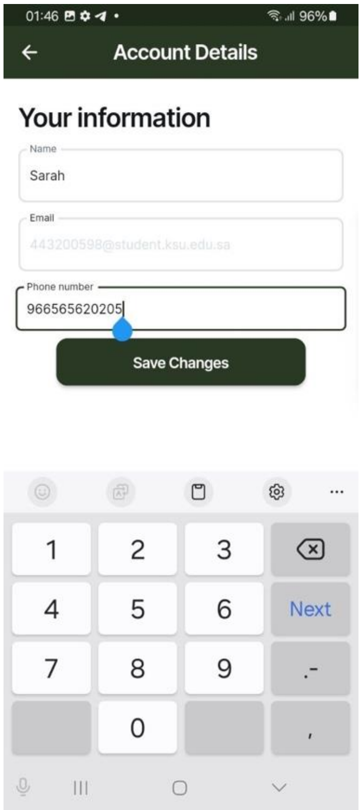


Figure25. User Settings

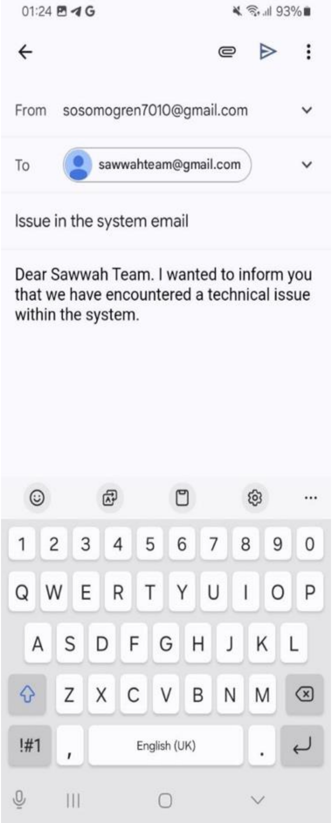


Name: Sarah

Email: 443200598@student.ksu.edu.sa

Phone number: 966565620205

Figure26. User Account Details



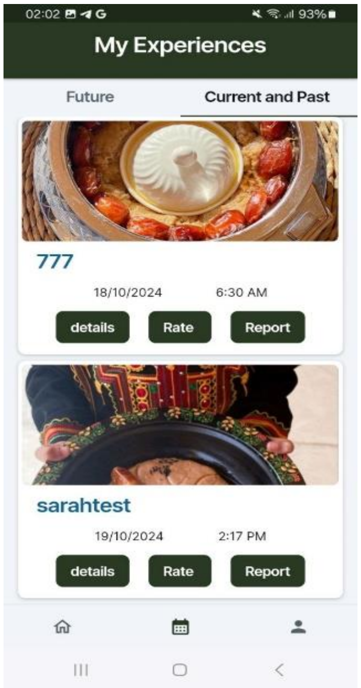
From sosomogren7010@gmail.com

To sawwahteam@gmail.com

Issue in the system email

Dear Sawwah Team. I wanted to inform you that we have encountered a technical issue within the system.

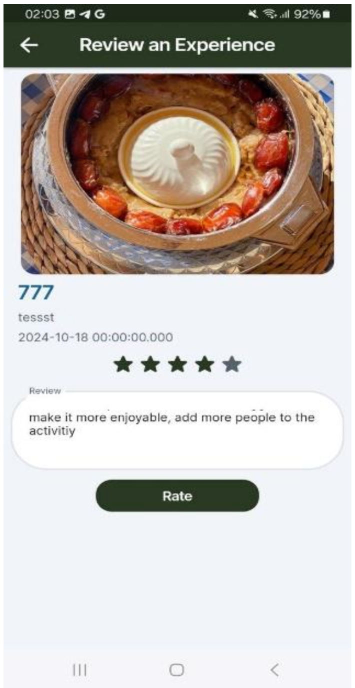
Figure27. User contacts the support team



777 — 18/10/2024 — 6:30 AM

sarahtest — 19/10/2024 — 2:17 PM

Figure28. User writes reviews and rates an experience



777

tessst

2024-10-18 00:00:00.000

Review: make it more enjoyable, add more people to the activitiy

Figure29. User writes reviews and rates an experience

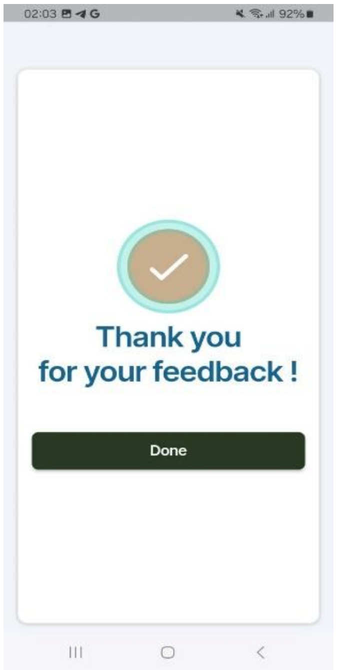


Figure30. User writes reviews and rates an experience

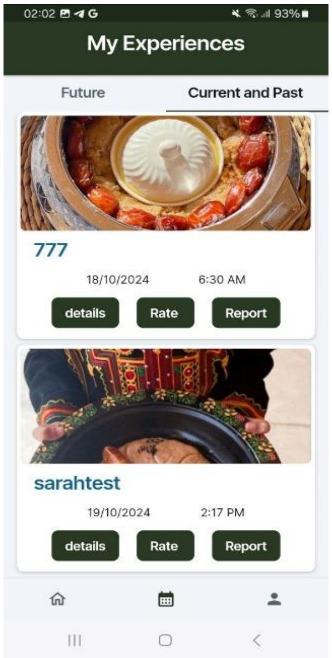
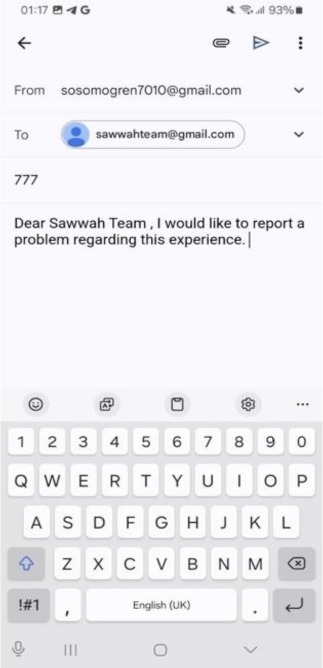


Figure31. User reports a problem to SAWWAH team



From sosomogren7010@gmail.com

To sawwahteam@gmail.com

777

Dear Sawwah Team , I would like to report a problem regarding this experience.

Figure32. User reports a problem to SAWWAH team

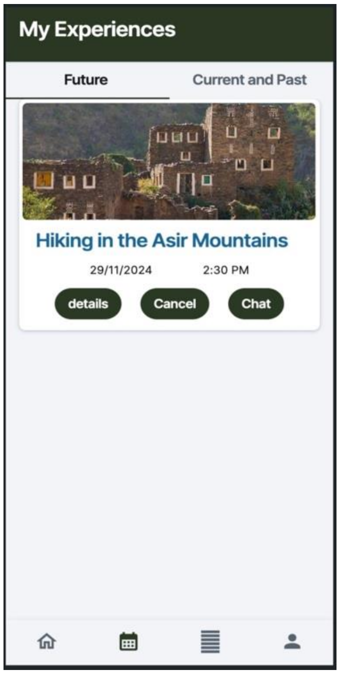


Figure33. User cancels an experience

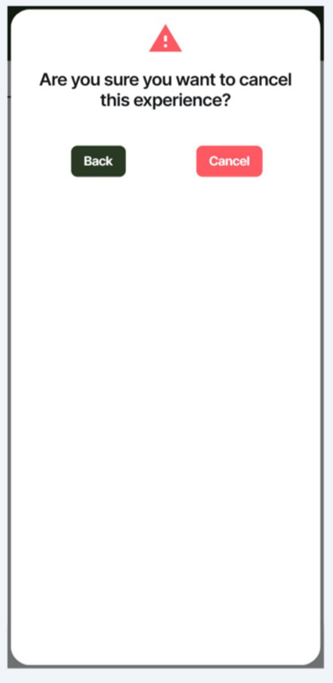
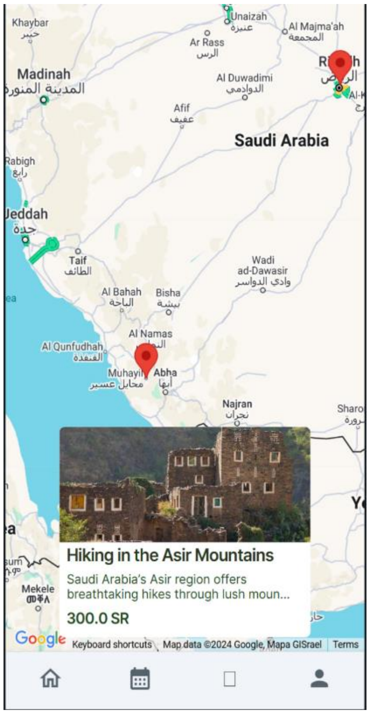

Are you sure you want to cancel this experience?

Figure34. Confirmation message when the user cancels an experience

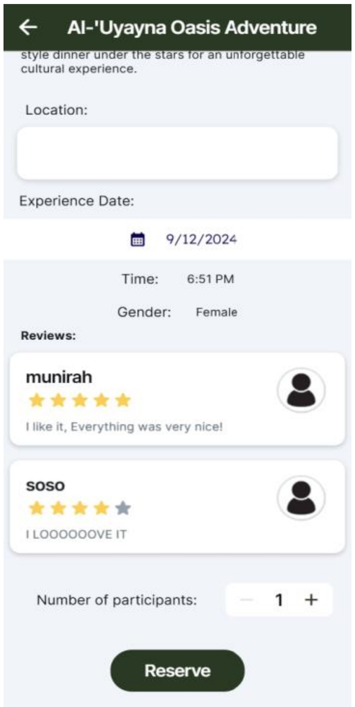


Hiking in the Asir Mountains

Saudi Arabia's Asir region offers breathtaking hikes through lush moun...

300.0 SR

Figure 35. User View available experiences on Google Maps.



Al-'Uyayna Oasis Adventure

style dinner under the stars for an unforgettable cultural experience.

Location:

Experience Date:

9/12/2024

Time: 6:51 PM

Gender: Female

Reviews:

munirah ★★★★★

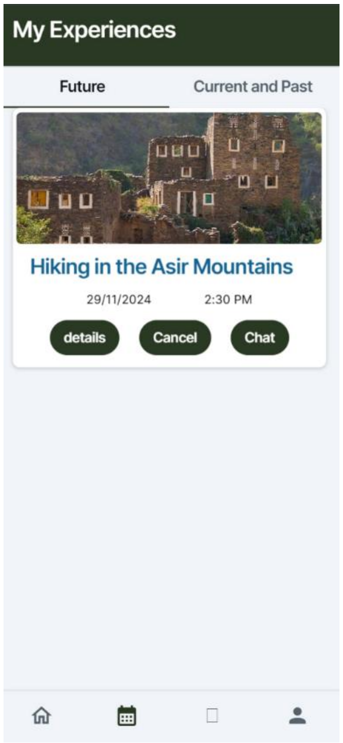
I like it, Everything was very nice!

soso ★★★★☆

I LOOOOOOVE IT

Number of participants: − 1 +

Figure 36. User displays experiences ratings.

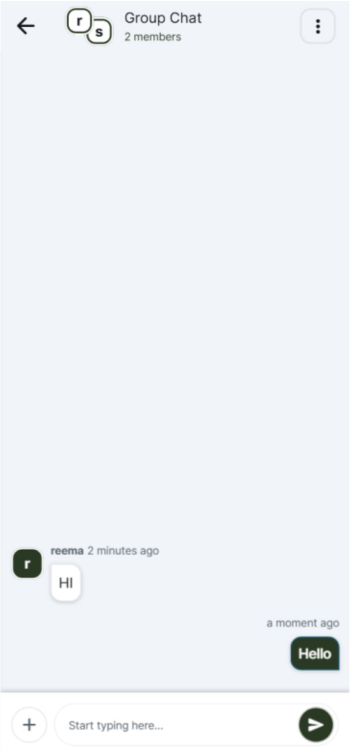


My Experiences

Hiking in the Asir Mountains

29/11/2024 2:30 PM

Figure 37. User Chat with Other Participants.



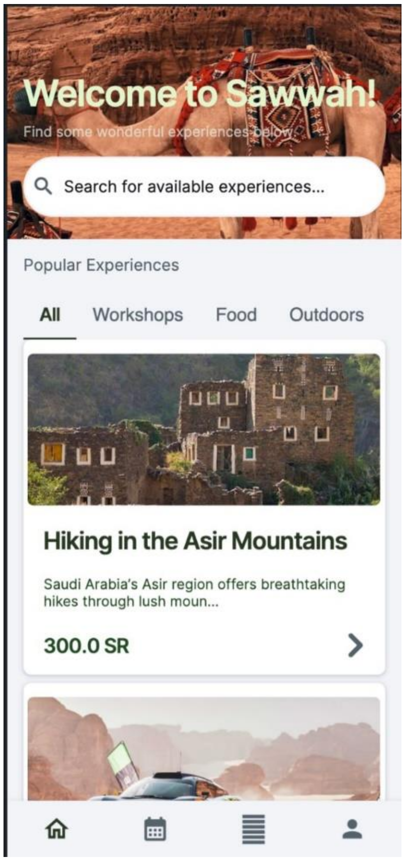
Group Chat
2 members

reema 2 minutes ago
HI

a moment ago
Hello

Start typing here...

Figure 38. User Chat with Other Participants.



Welcome to Sawwah!

Find some wonderful experiences below

Search for available experiences...

Popular Experiences

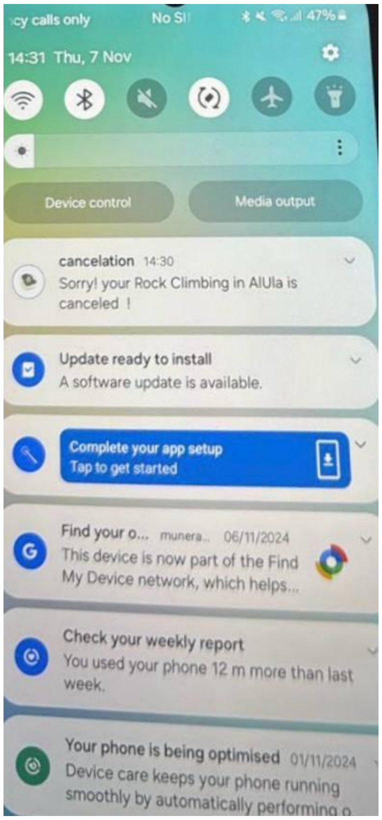
Hiking in the Asir Mountains

Saudi Arabia's Asir region offers breathtaking hikes through lush moun...

300.0 SR

Figure 39. User Filters the search

based on the category(workshops, food, outdoors).



cancelation 14:30
Sorry! your Rock Climbing in AlUla is canceled !

Update ready to install
A software update is available.

Complete your app setup
Tap to get started

Find your o... munera... 06/11/2024
This device is now part of the Find My Device network, which helps...

Check your weekly report
You used your phone 12 m more than last week.

Your phone is being optimised 01/11/2024
Device care keeps your phone running smoothly by automatically performing o

Figure 39. Users shall receive a notification when a host cancels an experience they have reserved.

Acquired Knowledge

Working on the **SAWWAH** project taught us skills in project management, teamwork, and mobile app development. We learned how to plan tasks, set goals, and manage deadlines effectively while improving communication and collaboration within the team. Using Flutter Flow, we gained experience in designing and building a mobile app, integrating features like Google Maps, and addressing platform challenges, especially with Android deployment and iOS permissions. We also developed problem solving skills by working on real world issues and adjusting to unexpected challenges. Additionally, we learned new things about our Country's culture, which helped us create a meaningful and user-friendly app. Overall, the project was a great learning experience that helped us grow both technically and personally.

Future Work

As SAWWAH continues to evolve as a platform for authentic cultural experiences, several key areas have been identified for future development and enhancement:

Enhanced Experience Creation Feature

- Implement an AI-powered suggestion system to help hosts create more engaging experience descriptions easily.
- Add support for multi-day experiences and experience series since some experiences need some training and would be more enjoyable if the user learned it iteratively, like pottery classes for example.
- Batch uploading capability for photos so that the host can share multiple photos of that experience.

Advanced Booking and Payment Features

Payment feature was Made in the initial plan for the project, Due to Stakeholder decision it was replaced with onsite payment for the complexity that was introduced on handling experience cancelation by the host.

- Integration with multiple payment gateways to support various international payment methods.
- Introduction of group booking discounts and loyalty programs so that users can Feel seen and heard then they will get excited using the app.

- Multiple currency viewing so that users can specify where they are from and display prices easily without needing to exchange currency.

Available Experiences Page

- Advanced filtering and search capabilities with multiple criteria (price range, date, available Seats)
- Sorting capability by price so that users can get affordable experiences that suit their budget.

Performance Optimization

- Implement lazy loading for images and content to improve app loading speed, which is a design pattern that delays non-critical or off-screen content loading until it is needed or requested by the user.
- Enhance caching mechanisms for frequently accessed data like booked experiences.
- Implement image compression to reduce storage and bandwidth usage.

Conclusion

In conclusion, SAWWAH is a mobile application designed to enhance the travel experience within Saudi Arabia by providing personalized recommendations, trip planning, and access to the country's rich cultural heritage. Built on the Flutter Flow platform and targeting Android users, the app offers a user-friendly and efficient solution for both foreign visitors and Saudi citizens to explore the kingdom's landmarks, traditions, and hidden places. By addressing challenges like lack of reliable travel resources, **SAWWAH** simplifies travel planning and adopts cultural exchange. The project highlights the potential of technology to promote tourism, connect people to authentic experiences, and support the growth of local communities.

References

[1] "Geeks for Geeks," 8 7 2024. [Online]. Available: https://www.geeksforgeeks.org/mvc-framework-introduction/.

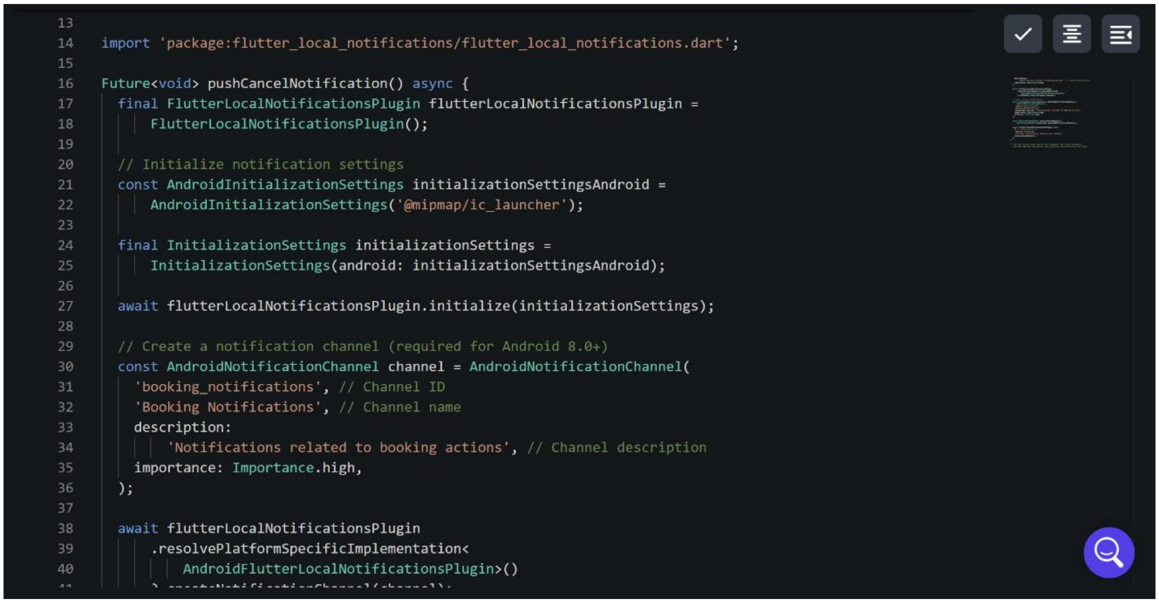
[2] S. Sureka, 7 March 2024. [Online]. Available: https://pangea.ai/resources/should-professionals-use-firebase-pros-and-cons.

[3] "Choose a Database: Cloud Firestore or Realtime Database," 12 August 2024. [Online]. Available: https://firebase.google.com/docs/database/rtdb-vs-firestore.

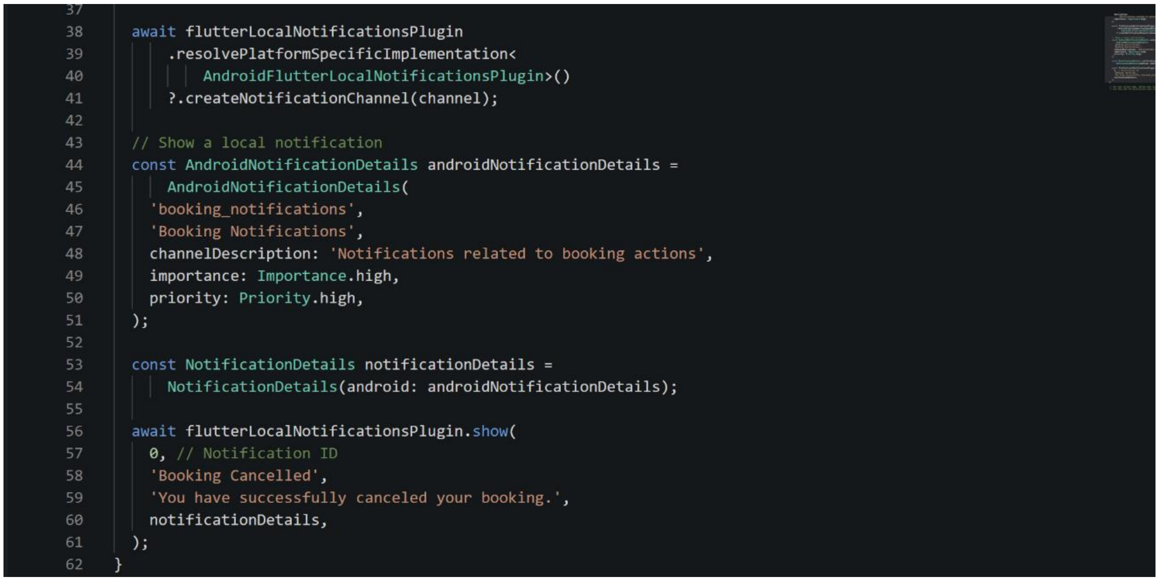
Appendices

Write any additional information or data that supports or extends your report.

The code for pushing the notification to the user using local notification



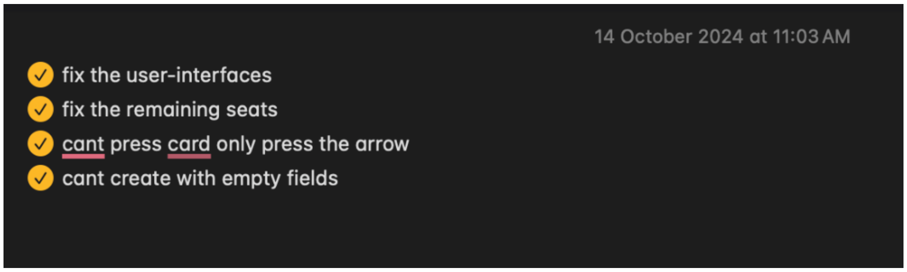
```
import 'package:flutter_local_notifications/flutter_local_notifications.dart';

Future<void> pushCancelNotification() async {
  final FlutterLocalNotificationsPlugin flutterLocalNotificationsPlugin =
      FlutterLocalNotificationsPlugin();

  // Initialize notification settings
  const AndroidInitializationSettings initializationSettingsAndroid =
      AndroidInitializationSettings('@mipmap/ic_launcher');

  final InitializationSettings initializationSettings =
      InitializationSettings(android: initializationSettingsAndroid);

  await flutterLocalNotificationsPlugin.initialize(initializationSettings);

  // Create a notification channel (required for Android 8.0+)
  const AndroidNotificationChannel channel = AndroidNotificationChannel(
    'booking_notifications', // Channel ID
    'Booking Notifications', // Channel name
    description:
        'Notifications related to booking actions', // Channel description
    importance: Importance.high,
  );

  await flutterLocalNotificationsPlugin
      .resolvePlatformSpecificImplementation<
          AndroidFlutterLocalNotificationsPlugin>()
```



```
  await flutterLocalNotificationsPlugin
      .resolvePlatformSpecificImplementation<
          AndroidFlutterLocalNotificationsPlugin>()
      ?.createNotificationChannel(channel);

  // Show a local notification
  const AndroidNotificationDetails androidNotificationDetails =
      AndroidNotificationDetails(
    'booking_notifications',
    'Booking Notifications',
    channelDescription: 'Notifications related to booking actions',
    importance: Importance.high,
    priority: Priority.high,
  );

  const NotificationDetails notificationDetails =
      NotificationDetails(android: androidNotificationDetails);

  await flutterLocalNotificationsPlugin.show(
    0, // Notification ID
    'Booking Cancelled',
    'You have successfully canceled your booking.',
    notificationDetails,
  );
}
```

Checklist

An example of one of our checklists that we used in sprint 2

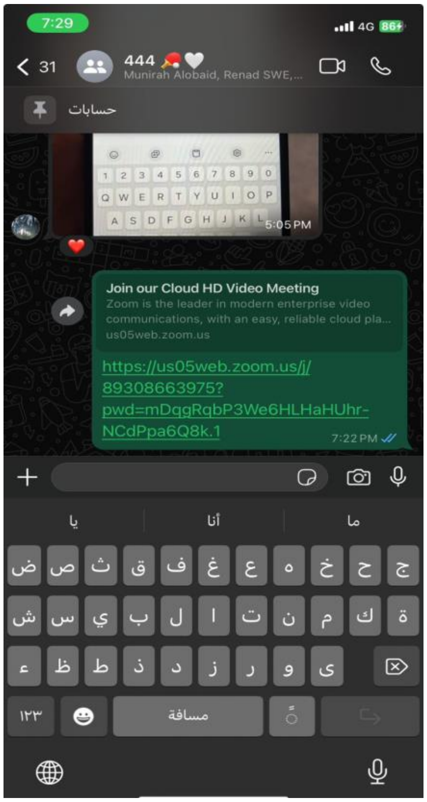


14 October 2024 at 11:03 AM

- ✓ fix the user-interfaces
- ✓ fix the remaining seats
- ✓ cant press card only press the arrow
- ✓ cant create with empty fields

Group Meetings

An example of one of our Group Meetings



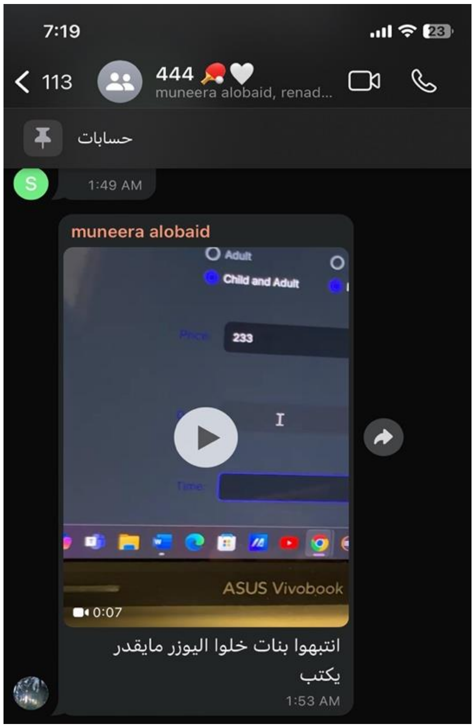
Join our Cloud HD Video Meeting
Zoom is the leader in modern enterprise video communications, with an easy, reliable cloud pla...
us05web.zoom.us

https://us05web.zoom.us/j/89308663975?pwd=mDqgRqbP3We6HLHaHUhr-NCdPpa6Q8k.1

7:22 PM

Teamwork and Review Each Other's work

A sample of notes from a review and retrospective meeting focused on peer review.



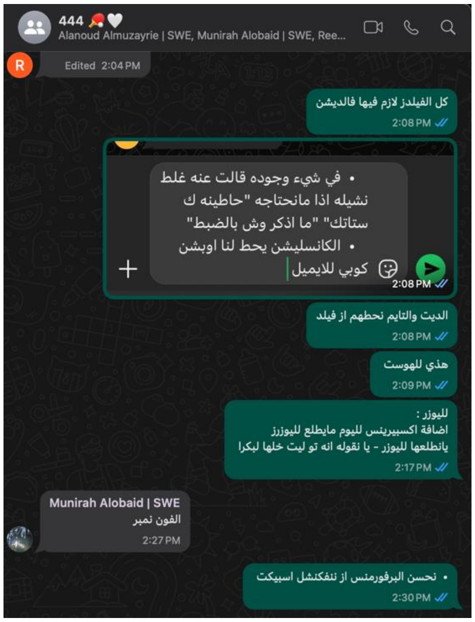
muneera alobaid

انتبهوا بنات خلوا اليوزر مايقدر
يكتب

1:53 AM

Sample notes for review and retrospective meeting

A sample notes for one of the review and retrospective meeting with our stakeholder.



كل الفيلدز لازم فيها فالديشن
2:08 PM

- في شيء وجوده قالت عنه غلط
نشيله اذا مانحتاجه "حاطينه ك
ستاتك" "ما اذكر وش بالضبط"
- الكانسليشن يحط لنا اوبشن
كوبي للايميل

2:08 PM

الديت والتايم نحطهم از فيلد
2:08 PM

هذي للهوست
2:09 PM

لليوزر :
اضافة اكسبيرينس لليوم مايطلع لليوزرز
يانطلعها لليوزر - يا نقوله انه تو ليت خلها لبكرا
2:17 PM

Munirah Alobaid | SWE
الفون نمبر
2:27 PM

- نحسن البرفورمنس از ننفكنشل اسبيكت

2:30 PM