FACULTY OF COMPUTING
& INFORMATION TECHNOLOGY

KING ABDULAZIZ UNIVERSITY

كـلـيـة الـحـاسـبـات
وتـقـنـيـة الـمـعـلـومـات

جامعة الـمـلـك عـبـدالـعـزيـز

FCIT
K A U

King Abdulaziz University
DEPARTMENT OF COMPUTER SCIENCE
Faculty of Computing and Information Technology
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MAALIM
Saudi Arabia tour guide

Project ID: Group 5		
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11.9.2022	0.1	Project description	All team members
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Phase 1: Project Description

1.1 Introduction

For many years, Saudi Arabia has depended on oil for its economic power and income and made it a pillar of our economy. However, Saudi Arabia has taken a step forward by creating the 2030 vision, which plans on reducing our dependence on oil and diversifying our resources for income. One example is tourism.

Saudi Arabia's tourism was never taken into consideration since visitation was limited to foreigners for a specific reason only, which was umrah or hajj. Another thing was the lack of media coverage, which led to the stereotypical view that Saudi Arabia is a plain desert. For these reasons, Saudi Arabia has become an undesirable tourist destination.

Finally, our nation is opening its doors to visitors from all around the world to introduce our history and culture to them, changing foreigners' perspectives and stereotypes they've created, and give our citizens the right to appreciate and understand our culture. To help this vision, we plan on creating an application to make tourism around Saudi Arabia inclusive and easy. With our application, visitors and citizens will have a better chance at experiencing and witnessing our history and culture.

1.2 Project description and objectives.

1.2.1 Project description.

We are aiming to create an application that acts as a full-fledged tourism guide and be the user's tour companion. The application will start with taking the user's preferences to make a full plan, suggesting cities to visit, places to stay in, and tourist attractions to see. The software will include the locations as well as people's reviews. Users can create accounts to share their experiences and opinions. Another feature of the application is that each location will include its backstory/history so that people know the significance of it. Users can also search for the backstory of these places using text or pictures.

1.2.2 objectives.

- Our application allows users to create an account and book hotels and resorts.
- Provide a full plan for users based on the users' intake which include cities, tourist attractions, restaurants, festivals, events, and historical places.
- Allow users to share their reviews and opinions about the places they visited.
- Users can also search for the backstory of these places using text or pictures.

1.3 Project's Stakeholders.

Everyone affected by this project is a stakeholder, such as: Saudi tourism, hotels, restaurants, staff, and users.

1.4 Project Goals.

The Maalim application aims to spread and promote Saudi Arabia's culture and beauty to all those interested. Our software will take in all the users' input and suggest the ideal locations based on the user's intake, making tourism much simpler and more fun. Our system will function as a full-fledged tourist guide by mentioning and outlining the history of each landmark and location, which will increase people's understanding and appreciation of our culture.

We seek to accomplish the following:

- Spread Saudi Arabia's culture.
- Make tourism in and around Saudi Arabia more affordable and accessible.
- Encourage both residents and visitors to explore the culture of our nation.

1.6. Scope and Sources of Domain Analysis Information.

An application that serves both IOS and Android devices and offers users a full-fledged tourist guide by suggesting appropriate locations and activities based on user's preferences, mentioning the history of each monument, and sharing their reviews.

The 2030 vision has opened a gate to tourism, and we wanted to take advantage of that and create an app that could benefit from this vision. Some of our resources were the Booking App, Google Maps, and the Ministry of Tourism and Culture.

1.6.1. This system includes:

- Available activities at the user's locations.

- Historical landmarks.

- Restaurant and hotel suggestions.

- Description and history of each monument and location.

- Share reviews of visited locations.

1.6.2. This system excludes:

- Transportation.

- We are not responsible for complaints made to other companies.

Phase 2: Business Requirements Specifications

2.1. Techniques for Gathering Data.

We gathered data by researching and making a survey to get the best amount of data. While looking into Saudi Arabia's numbers and statistics with regard to tourism and history, we have concluded that Saudi Arabia's tourism has expanded significantly, placing it as the 69th most competitive travel and tourism market in the world, thus making our application a magnificent addition and improvement to our community. We've also found out that our country has over 200 museums and over 9,000 historical locations that users can visit.

From the survey results we discovered that the responses varied depending on whether the user wanted to experience a country's traditional products and activities or go to more modern locations like malls. It also revealed that the majority of our users preferred to utilize a system that gave them access to the histories and backstories of locations; one that suggested locations and events based on their preferences; or one that displayed previous users' opinions on a certain organization.

Our system is the ideal all-in-one solution for accommodating both variations in user travel plans and preferences; it provides them with guidance and shortcuts to help them enjoy their trip with the least amount of worry. Thus, contributing to the 2030 vision for culture and tourism.

2.2. Requirements and its types.

2.2.1. Functional requirements:

R1. The system must enable the user to register or log in to the application.

R1.1. The user will register if they don't have an account or log in if they already have an account.

R1.2. The system will ask the user to enter their name, phone number, and email address when registering.

R1.3. The system will ask the user to enter their correct email address and password when logging in.

R2. The system will allow partner organizations and admins to log in.

R2.1. The system shall ask the user to enter their correct email address and password.

R3. The system will ask the user to give their preferences and trip details.

R3.1. The system will display a multiple-choice questionnaire to personalize the suggestions.

R3.2. The user must enter their trip details.

R4. The system must display cities depending on the user's preferences.

R5. The system will display all the different available hotels with their descriptions.

R5.1. The system will display previous ratings and feedback on the hotels.

R6. The system will allow the user to make a reservation in one of the hotels.

R6.1. The system will allow the user to cancel reservations.

R6.2. The system will allow the user to reschedule reservations.

R6.3. The system will allow the user to pay.

R6.3.1. The user must select a payment method (apple pay, credit card or cash upon arrival).

R6.3.2. The system will confirm the payment to the user.

R7. the system will display all the different available activities with their descriptions.

R7.1. The system will display previous ratings and feedback on the activities.

R8. The system will allow the user to make a reservation in one of the activities. (Historical locations, events, restaurants, museums, hiking trips)

R8.1. The system shall allow the user to cancel reservations.

R8.2. The system will allow the user to pay if needed.

R8.2.1. The user must select a payment method (apple pay, credit card or cash upon arrival).

R8.2.2. The system will confirm the payment to the user.

R9. The system will allow the user to view his reservation record.

R10. The system will provide the backstory or history of the visited monument or historical attraction by taking a picture at the location.

R11. The system must solicit the user's feedback on visited locations.

R12. The system will allow the user to log out.

2.2.2. Non-Functional Requirements:

R1. The system will display different interfaces for different users (hotels, tourists…)

R2. The system should provide a user-friendly, clear, and easy to use interface.

R3. The system will be available for both IOS and android systems.

R4. The system will be available in light and dark mode.

R5. The system will support different languages: Arabic, English.

R6. The system response time must not exceed 2 seconds in good internet connection.

R7. the system will be available to all users 24/7.

2.3. Use Case Description.

Create Organization Account

Brief description: The actor must create an organization account to use the program.

Actor: Organization

Precondition: The actor must enter the correct info with a brief description about the organization.

Basic flow of events:

- The actor can open the program from their phone screen.
- The actor log's in to their organization account using a given account from admin.
- The actor change user name and password.
- The actor submits his necessary correct details to the system. (Name, location, phone number, email, service description, offers).
- The account is saved in the system and the profile is created.

Extensions:

- The system fails to create an account.
- The actor filled requirement fields with wrong information.
- The user has already registered.
- The organization did not get an account from the admin.
- The organization is not a partner.

Postcondition: The account must be created to take advantage of the program.

Special requirements:

- To create the account the actor must be connected to the internet.
- The actor must be a partner with the application.

Create Tourist Account
Brief description: The Actor must create an account to use the program.
Actor: Tourist
Precondition: The actor must enter the correct personal information to get into account.
Basic flow of events: • The actor can open the program from their phone screen. • The actor choose "creates account" option. • The actor submits his necessary correct details to the system. (Name, age, phone number, email) • The account is saved in the system and the profile is created.
Extensions: • The system fails to create an account. • The actor filled requirement fields with wrong information. • The user has already registered.
Postcondition: The account must be created to take the advantages of the program.
Special requirements: To create the account the actor must be connected to the internet.

Choose The Destination
Brief description: The Actor must choose the cities or city.
Actor: Tourist
Precondition: The actor must be registered in the system with their account
Basic flow of events: • The actor logs into the system. • The actor chooses the "Destination" option • The actor will enter his preferences through answering a multiple-choice questionnaire • The actor will enter trip duration(dates). • The system must display cities depending on the user's preferences and trip duration. • The actor chooses one or several cities in KSA.
Extensions: • The actor did not fill the questionnaire according to their preferences. • The actor did not enter the trip duration correctly
Postcondition: The actor chooses a city or more to travel to.
Special requirements: To choose the destination the actor must be connected to the internet.

Book A Hotel

Brief description: The actor books a room in a hotel of their choice.

Actor: Tourist

Precondition: The actor must be registered in the system with their account.

Basic flow of events:

- The actor logs into the system.
- The actor chooses the "stay" option.
- The actor will enter the date of arrival, the number of nights their staying, and other specific details.
- The system must display all available hotels depending on the actor's inputs.
- The system must view all hotel ratings and feedbacks
- The actor chooses one or several hotels in the city
- The actor chooses the payment method
- If the payment was through an online method the actor can pay immediately

Extensions:

- The actor did not enter the dates correctly.

Postcondition: The actor books a room.

Special requirements: To book a room the actor must be connected to the internet

Modify Hotel Booking
Brief description: The actor reschedules or change any booking details of the room booking.
Actor: Tourist
Precondition: The actor must be registered in the system with their account.
Basic flow of events: • The actor logs into the system. • The actor chooses the "my bookings" option. • The actor will choose the" edit bookings" option. • The actor will choose a booking to modify • The actor will change their booking • The system displays confirmation message • The actor confirms their selection • The actor will leave the editing page • The room will become available for other actors.
Extensions: • The actor did not book a room.
Postcondition: The actor edits the booking.
Special requirements: To modify the booking the actor must be connected to the internet.

Cancel Hotel Booking
Brief description: The actor cancels the room booking.
Actor: Tourist
Precondition: The actor must be registered in the system with their account.
Basic flow of events: • The actor logs into the system. • The actor chooses the "my bookings" option. • The actor will choose the" edit bookings" option. • The actor will choose a booking to cancel • The system displays confirmation message • The actor confirms their selection • If the actor canceled a paid booking via online method, the system would refund money within 5-7 business days. • The actor will leave the editing page • The room will become available for other actors.
Extensions: • The actor did not book a room.
Postcondition: The actor edits the booking.
Special requirements: To modify the booking the actor must be connected to the internet.

Book An Activity

Brief description: The actor books a ticket for an activity of their choice.

Actor: Tourist

Precondition: The actor must be registered in the system with their account

Basic flow of events:

- The actor logs into the system.
- The actor chooses the "activities" option.
- The actor will enter the date or range of dates
- The system must display all available activities depending on the actor's inputs.
- The system must view all activity ratings and feedbacks
- The actor chooses one or several activities in the city
- The actor chooses the payment method of payment is needed
- If the payment was through an online method the actor can pay immediately if payment is needed

Extensions:

- The actor did not enter the dates correctly.

Postcondition: The actor books in an activity or more.

Special requirements: To book an activity the actor must be connected to the internet.

Share Feedback
Brief description: The actor shares their feedback on a place or organization or activity.
Actor: Tourist
Precondition: The actor must be registered in the system with their account.
Basic flow of events: • The actor logs into the system. • The actor chooses the "visited" option. • The actor chooses a destination that he has already visited. • The actor comments and rates the service or destination. • The actor submits their feedback
Extensions: • The actor did not visit the service or destination.
Postcondition: The actor shares their feedback successfully
Special requirements: To share feedback the actor must be connected to the internet.

Provide Historical Background

Brief description: The actor takes pictures of historical attractions, and the system provides history or backstory.

Actor: Tourist

Precondition: The actor must be registered in the system with their account

Basic flow of events:

- The actor logs into the system.
- The actor chooses the "show me" option.
- The actor takes pictures at historical attractions.
- The actor submits the pictures.
- The system provides backstory and history of the historical attraction.

Extensions:

- The historical attraction is not stored in the system.

- Pictures aren't clear

Postcondition: The actor gets backstory and history of the historical attraction.

Special requirements: for the system to provide history or backstory the actor must be connected to the internet.

2.4. Use case diagram for given problems.
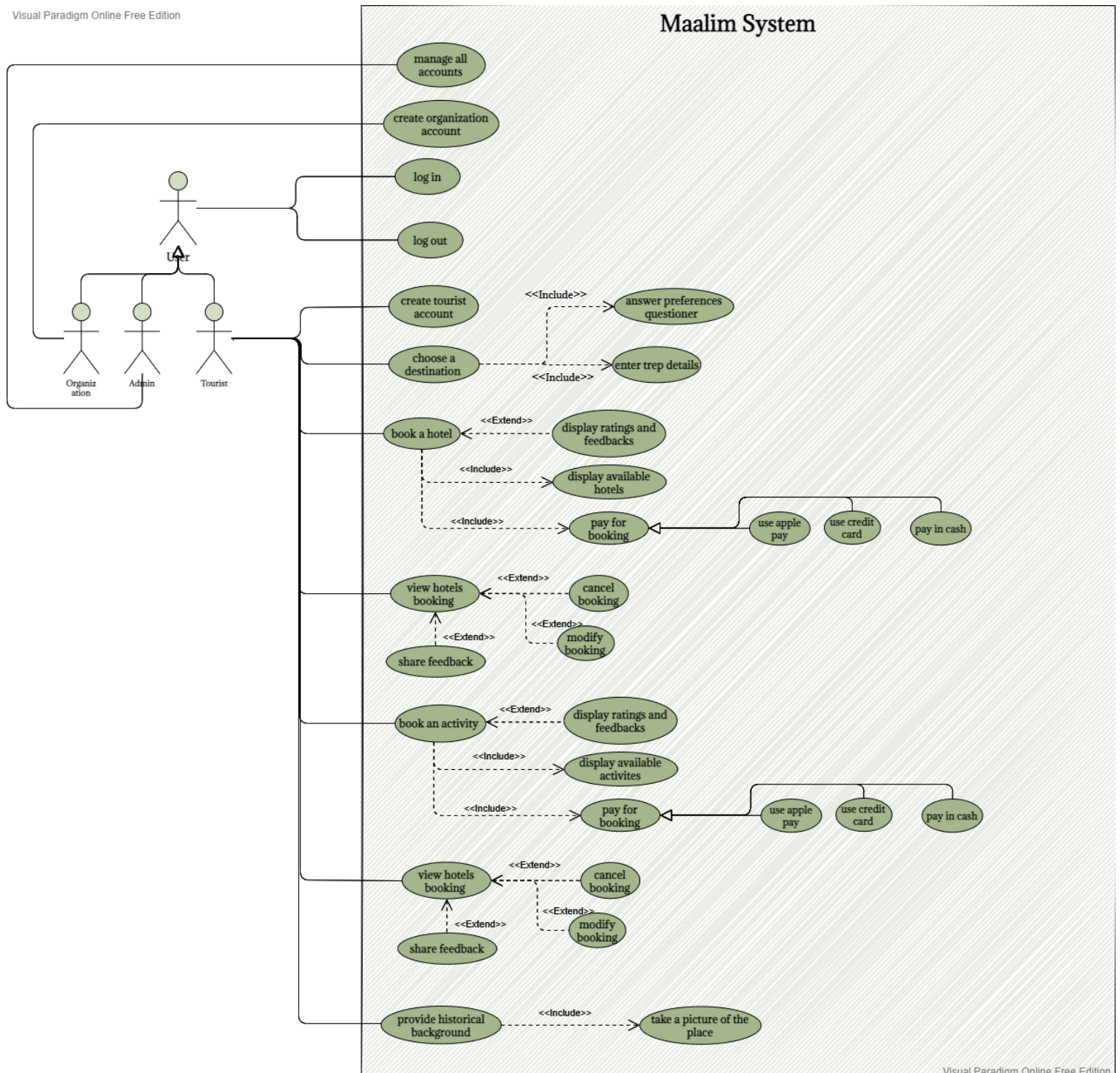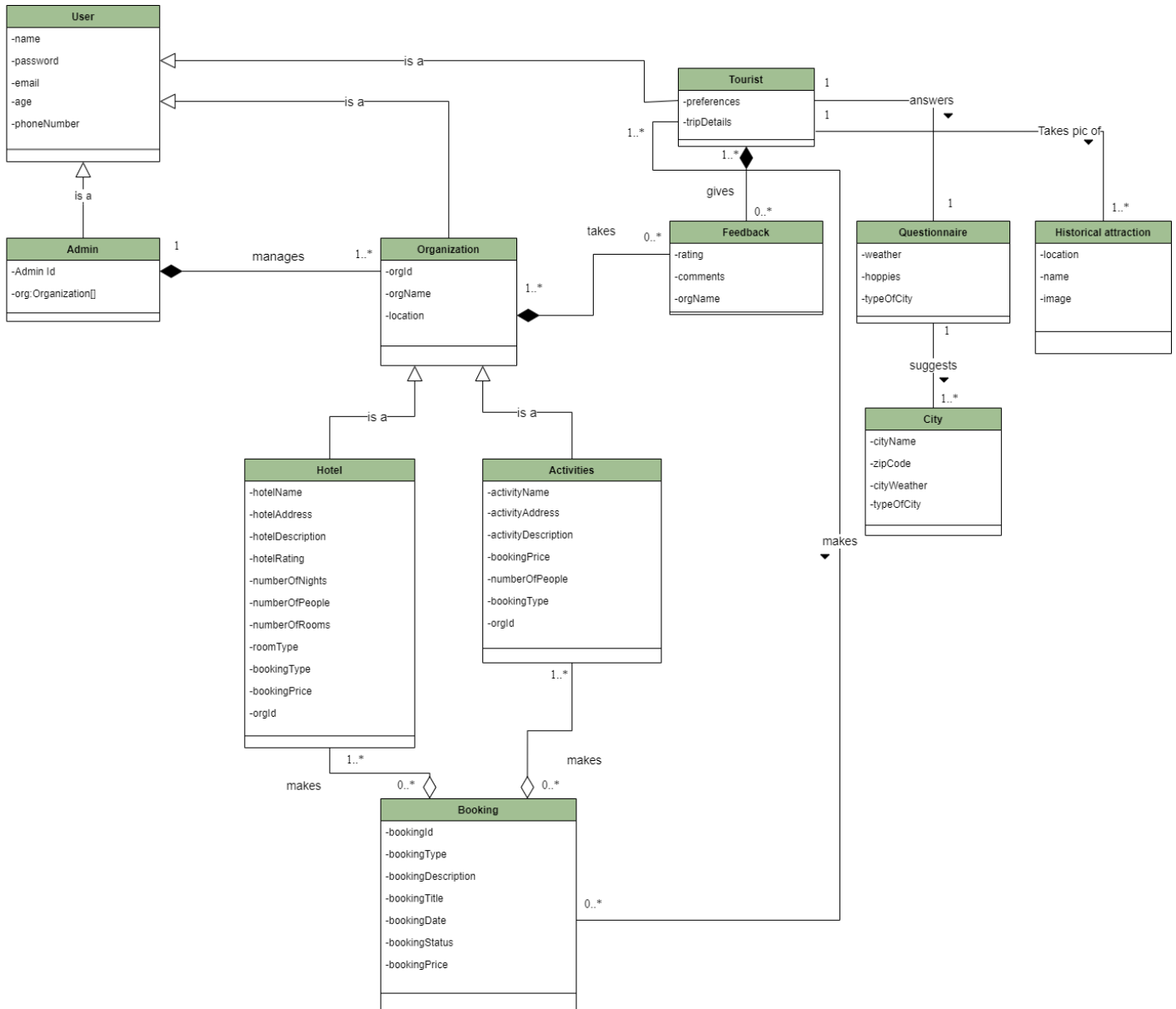
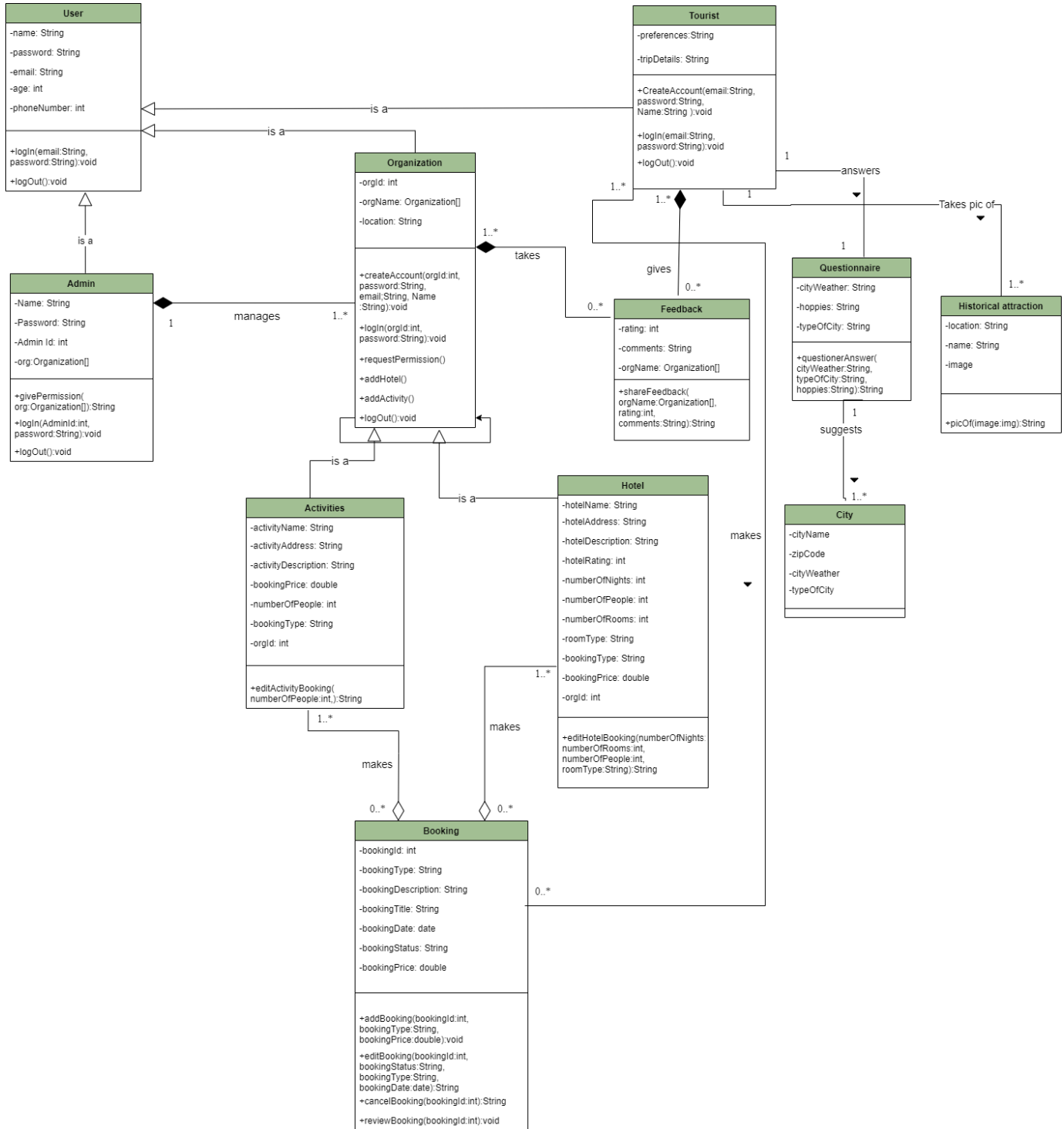## 2.5. Difficulties & Risk analysis in the domain

- Tourism is considered a new area or field for Saudi Arabia.
- Requirements could change through the development process.
- Difficulty in collecting data and resources
- Difficulty in communicating with stakeholders.

Phase3: Software Design and Structuring

3.1. Domain Model

3.2.UML Class Diagram

3.2.1. Association Relationships and Their Multiplicity

1. Between Tourist class and Booking class
   - a tourist can make zero or more bookings
   - a booking can be made by one or more tourists

2. Between Tourist class and Questionnaire class
   - A tourist answers one questionnaire
   - A questionnaire is answered by one tourist

3. Between Tourist class and Historical attraction class
   - A tourist takes a picture of one or more historical attraction
   - A historical attraction was taken a pic of by one tourist

4. Between Questionnaire class and City class
   - A questionnaire suggests one or more cities
   - A city is suggested by one questionnaire

3.2.2 Generalization Relationships

1. Organization class is inherited by Hotel class and Activities class

2. User class is inherited by Organization class and Tourist class

3. Admin class is inherited by User class

3.2.3 Composition Relationships and Their Multiplicity

1. Between Tourist class and Feedback class
   - If there is no tourist, there is no feedback
   - A tourist can give zero or more feedbacks
   - Feedback is given by one or more tourists

2. Between Organization class and Feedback class
   - If there is no organization, there is no feedback
   - An organization takes zero or more feedbacks
   - Feedback is taken by one or more organizations

3. Between Admin class and Organization class
   - If there is no admin, there is no organization

- An admin manages one or more organizations
- An organization is managed by one admin

3.2.4 Aggregation Relationships and Their Multiplicity

1. Between Booking class and Hotel class
   - A hotel has a booking service
   - A hotel makes zero or ore bookings
   - A booking is made by one or more hotels

2. Between Booking class and Activities class
   - An activity has a booking service
   - An activity makes zero or more bookings
   - A booking is made by one or more activities

## 3.3. System Architecture

3.3.1 Type of the System.

This application responds to tourists and admins' requests. It allows them to view and answer cases, make bookings after suggesting all different hotels and activities. It also allows them to submit pictures of a historical location, so it is an interactive system.

3.3.2 Architectural Design.

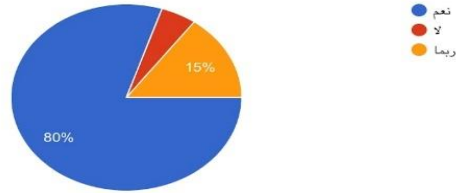N_tier architecture is used with this interactive system.
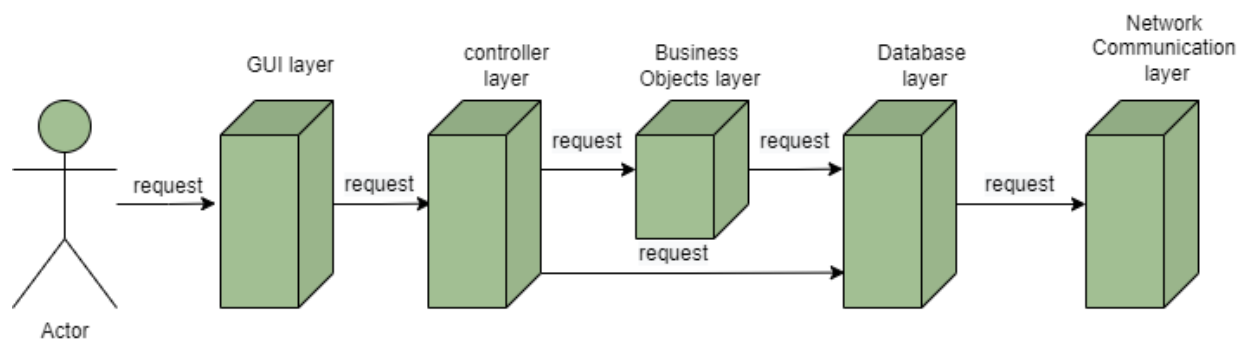
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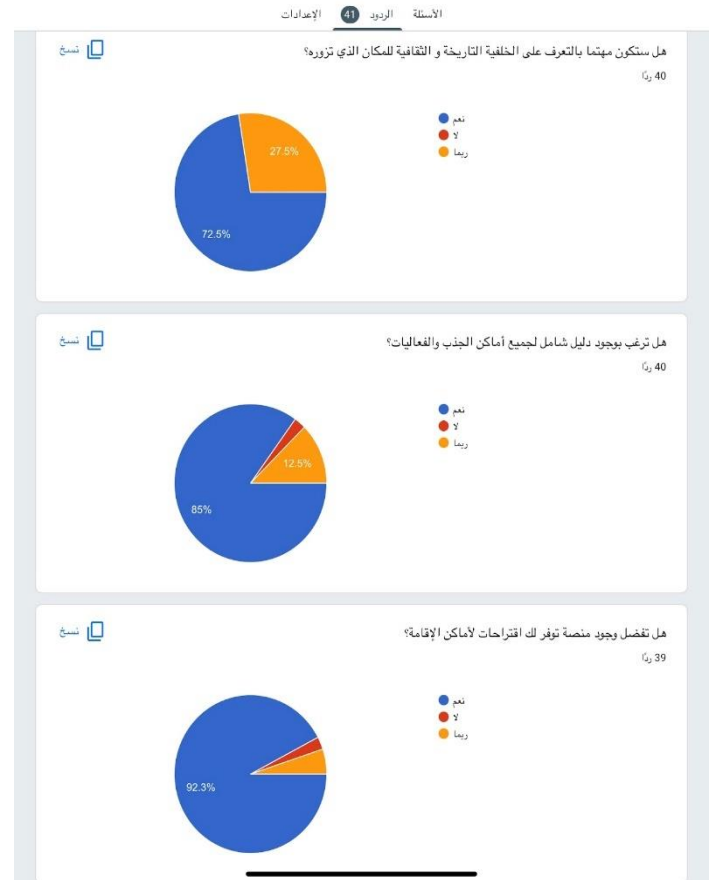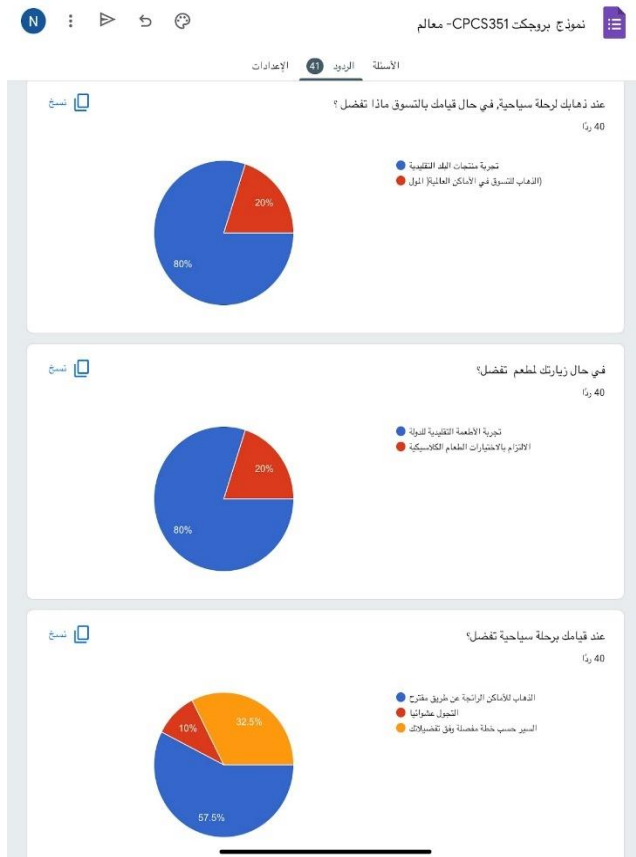
نسخ 🗐

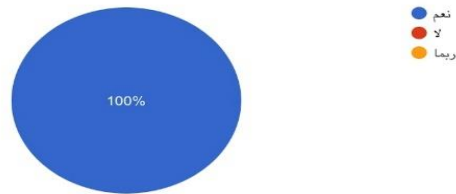هل يجذبك التعرف على تقاليد الدولة وتجربة بعض العادات والاحتفالات؟

40 ردًا

🔵 نعم
🔴 لا
🟡 ربما

15%

80%

نسخ 🗐

هل تعتقد أنه من المفيد وجود تطبيق يوفر كل الميزات أعلاه لسياح المملكة العربية السعودية؟

40 ردًا

🔵 نعم
🔴 لا
🟡 ربما

100%

اذا وجد تطبيق يعمل كمرشد سياحي خلال زيارتك للمملكة ماهي الاقتراحات والخدمات التي تقترح وجودها؟

14 ردًا

يكون فيه خاصية التحدث الى مقيمين في الدوله من نفس الجنسيه عشان يتعرف على الدوله بسهوله

ذكر تفاصيل للاماكن مثل الاسعار وطبيعة المكان

.

التعريف باشهر المعالم والمطاعم والفعاليات

يدرج نفس المناطق الاكثر زيارة من اهل البلد

يكون مرتب الأشياء الأكثر رواجا

ادراج وصف الاماكن غير السياحية .. ممكن ناس مزاجهم أماكن فاضية و رايقة بدون زحمة سياح و لا فعاليات

افضل الاماكن من حيث الطقس والمناظر والتكلفة

ان يكون بعدة لغات