DECEMBER 24, 2022

Software engineering - CSCI313

Dr. Walaa

Eng. Rameez

Travel agency management system
INSIDE OUT AGENCY

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1. Introduction

1.1. Purpose

In this document, we describe the software requirement for a desktop application. Generally, it is the implementation of travel agency System. As a part of this application, we will implement the application using C# language and SQL server.

Travel agency can do research and plan your whole vacation, they know how to get the job done, keeping your specifications and dates in mind. The advantage of travel agency booking software is faster service, and availability. The travel software solutions allow stronger customer relationship management, transaction recording, and reservation duties which can be completed excellently. It works as a centralized reservation system.

1.2. Scope of the project

We are going to create a travel agency desktop application. It allows the travel agents book the lowest available fares and to research alternate itineraries in order to provide the lowest appropriate fares, which satisfies the client requirements. The Travel Agent(s) must be knowledgeable in preparing special fares, restricted fares, discounted fares, and group fares for use whenever appropriate.

1.3. Technologies needed

- C#
- SQL database server
- .NET framework

1.4. Intended Audience

- Travelling agencies
- Suppliers

1.5. Travel agency Stakeholders

- customer
- Hotels
- Travel agencies
- Database administrators
- Security managers
- Developer of the software
- Tourists

- Suppliers
- Employees
- Tourism organizations and operators
- Transportation companies

1.6. Overview of the document

The travel agents' companies who will use the system will be able to login and signup. Travel Agency Software is a widely used travel-based travel software that manages and automates sales, bookings, operations, and finances for inbound and outbound tour operators, travel agencies, online travel agencies, and travel companies to manage their itinerary creation, package customization, and booking to create a large portfolio of travel products like hotels, flights, transfers, and activities to increase bookings.

2. Overall Description

2.1. Product Perspective

- "Inside out Agency" is a desktop application, and an independent system with a proper user interface.
- Our travel agent software significantly assists travel companies in meeting their objectives. It ensures price effectiveness, transaction speed, and transaction accuracy.
- Until this moment, our system has only one type or category of users, which is the travel agencies users and the companies that have several functionalities that can benefit from our software.
- Some of the advantages of our software is faster services and 24 hours availability, "Inside out Agency" works as a centralized reservation system.
- The system uses a standardized and integrated database that contains all the information. It is installed on windows operating system.

2.2. User Characteristics

There is only one type of users can interact with the system which are users of the travel agency.

- The users of the travel agency are able to assist customers in choosing their destination, transportation by booking accommodations, car rentals, flights, cruises, trains, buses and tours and, in addition to costing and pricing of tour package.

2.3. Operating environment

The system will be installed on windows OS versions 7 or higher. Therefore, the application may easily be used anytime indoors or outside on any devices that support this version of the windows OS. We use the Windows operating system for development.

2.4. Constraints

The system is constrained by the Internet connection because the application constantly retrieves data from the database in order to search for the lowest appropriate fares that satisfy the client's requirements, which must all be done via the Internet for the application to work.

2.4.1-Software constraints

- Languages used are C# and SQL database server

2.5. Assumptions and Dependencies

Our project is a (Travelling agency management system) used by suppliers and travelling agencies. It is a desktop application that will be installed in Windows:

This system depends on SQL database server to have wide variety of hotels, transportation companies and other databases required to manage sales, bookings, operations and finances.

Specifying the time and dates of using the management system is so critical because the system will be making transportation plans and bookings, vacations plan for the user. As a result, mentioning the exact date of the required service is so important for both the user and the system.

3. Interfaces

3.1. System interface

Firstly, the user should see the main page when open the desktop application. (Figure 1)

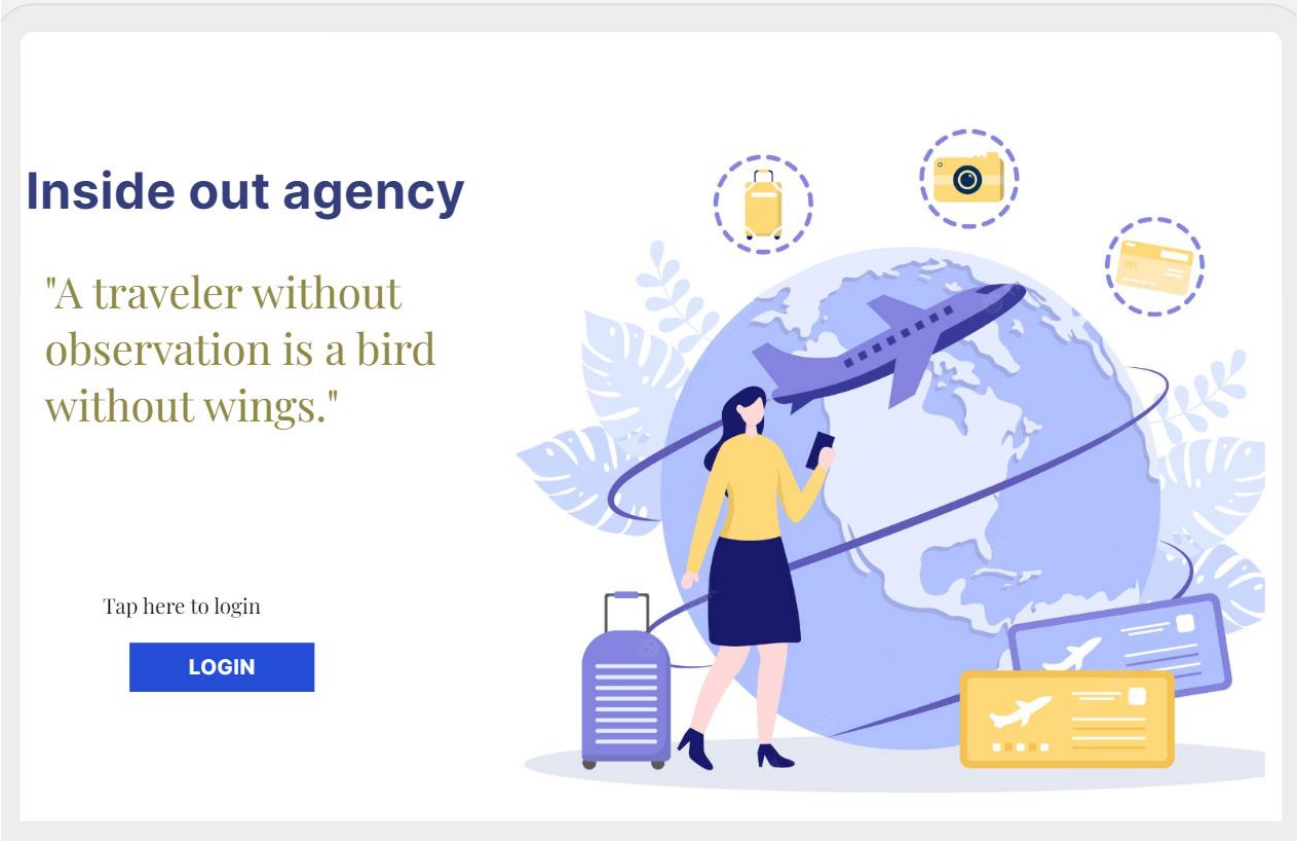


Figure 1

After the user clicks login, the login page will appear to get user's data and login. (Figure 2)

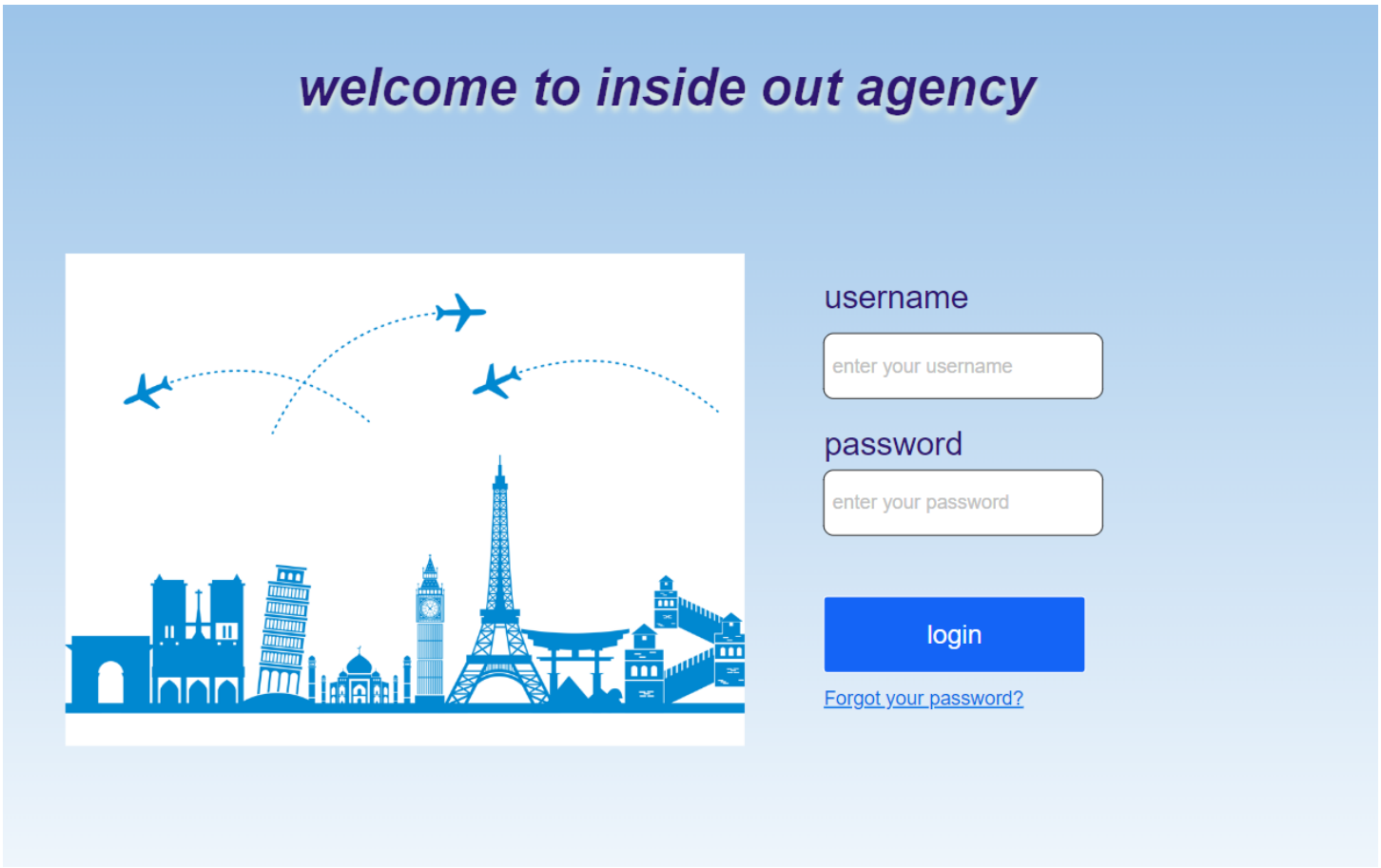


Figure 2

Secondly, after the user logged in, he will see the home page of inside out agency. (Figure 3) the homepage contains all of the application features. First the dashboard that include the progress of trips and the agency generally like total sales, orders and visits.

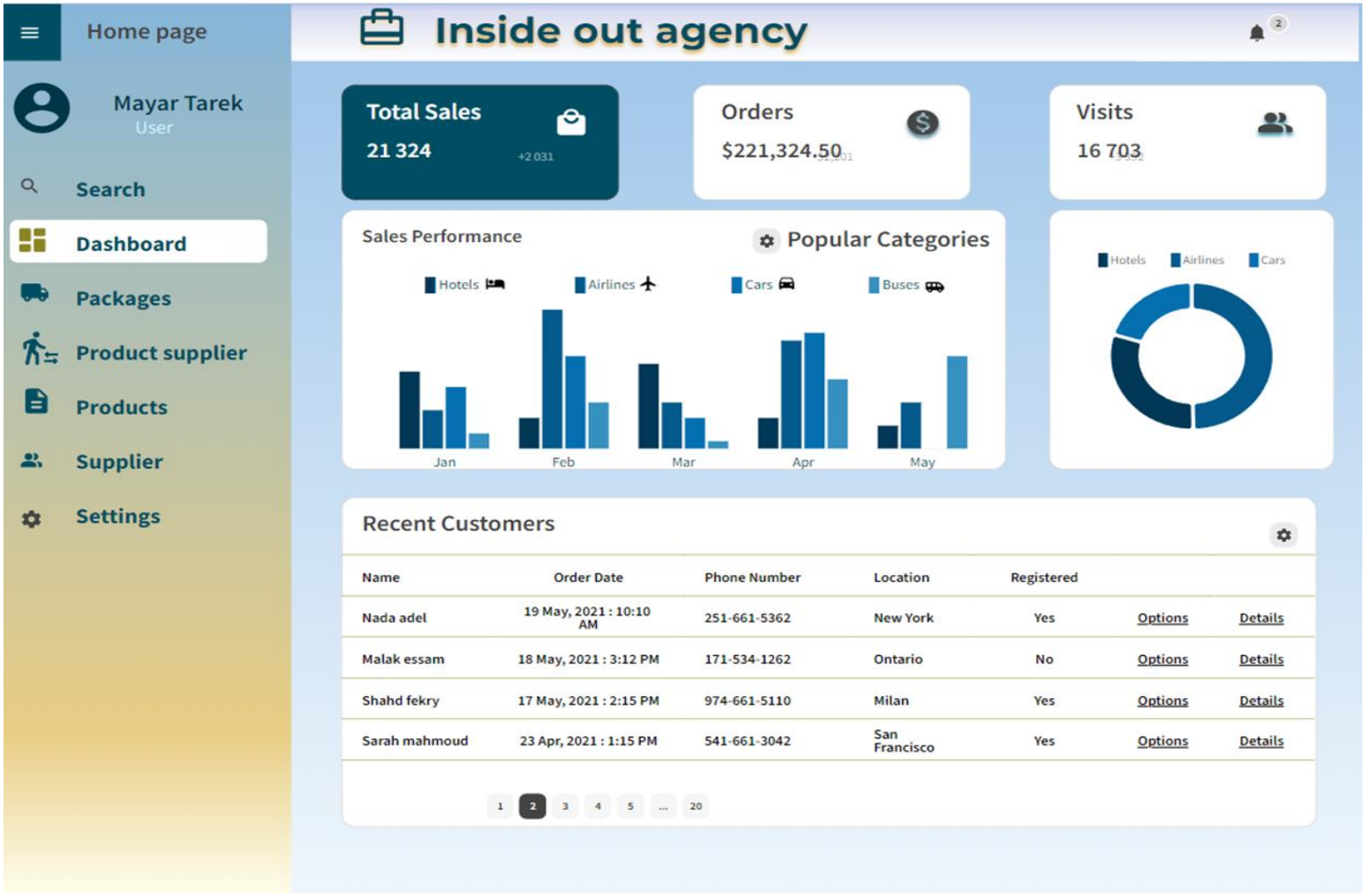


Figure 3

3.2. Software interface

The travel agency system is a desktop application that will be developed under the technologies of C# and SQL Server databases. system runs on Any Windows desktop system interacts with the database in server side. The system must communicate with database to get the data for the whole application. To build and run the app on Windows.NET framework will be used

4. Functional requirements

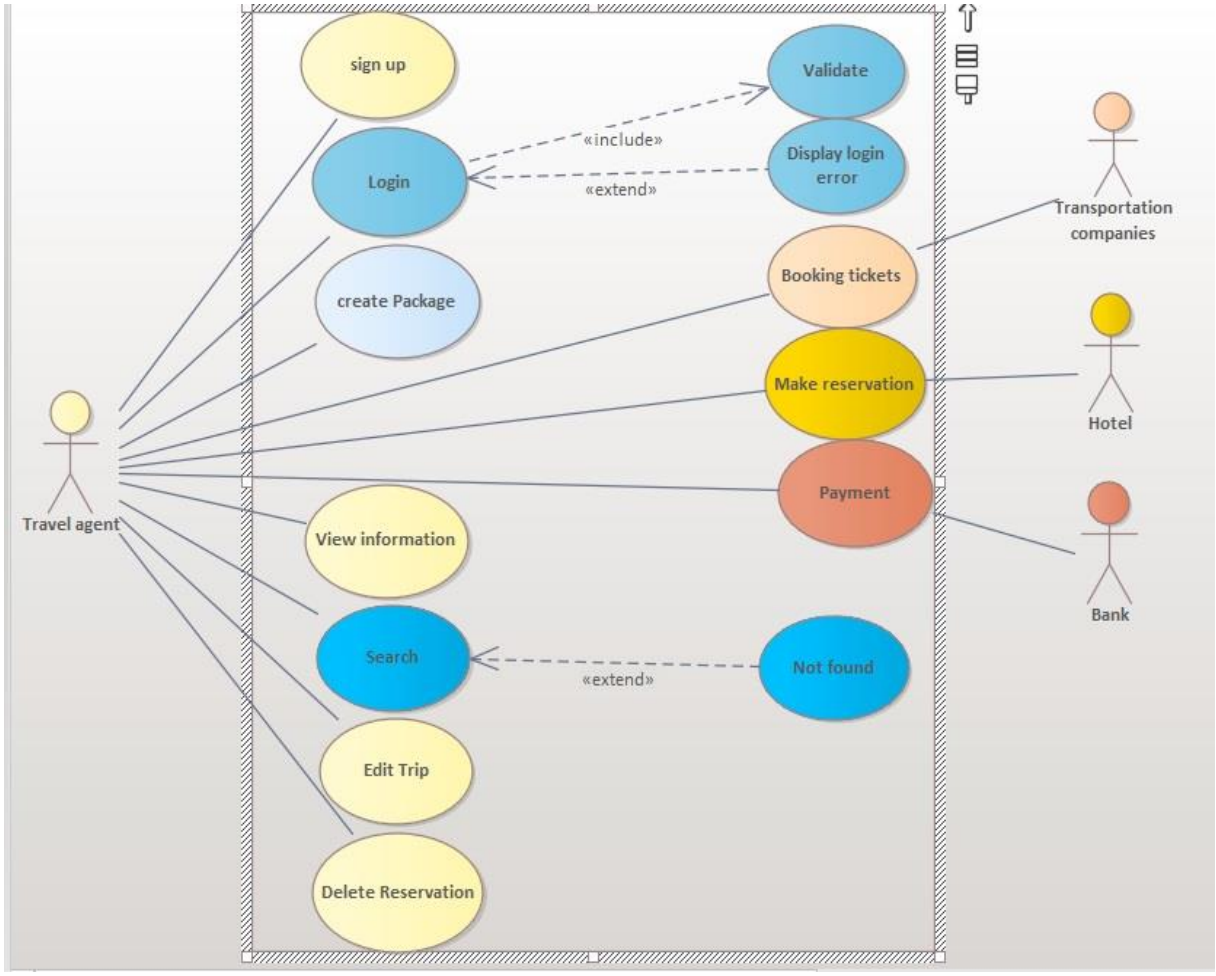
- **Registration:** The user must register, set up an account.
- **Login:** user should log in using username and password.
- **Record information in database**: The system gathers information on the clients' personal characteristics (name, address, phone number and age)
- **Customer view:** system allow user (travel agent) to view customer details.
- **User access:** The travel agent can view or locate information about hotels and tourism attractions.
- **Choose Trip:** The system must enable travel agent to choose between round-trip, one-way, and multiple destination journeys.
- **Search (city, airport code):** For the locations of departure and arrival, System enables the travel agent to search either by the city name or airport code.
- **Search about airlines:** The System enables the travel agent to choose any number of airlines. the system will list all airlines serving the specified departure and destination if no airline preference is supplied.
- **Booking**: The System enables the travel agent to book a flight, hotel, and car all at one.
- **Create package:** The System can create new packages of trips to different destinations with different prices.
- **Make reservation:** travel agent (user) should be able to make reservation
- **Edit trip:** The System can edit any details about the trip.
- **Delete reservation:** travel agent should be able to delete any reservation.
- **Payment:** system should ask user to enter credit card information.

5. Non-functional requirements

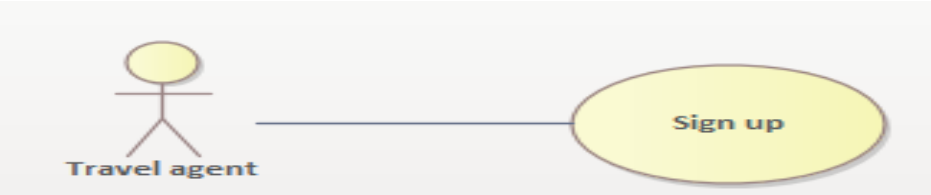
Nonfunctional requirement	Metric
Database Security	• An unauthorized person shouldn't be able to access the database, cannot read and write the information. • It should maintain the security of the customer's payment method.
Reservation Requirement	• The travel agency management system should reserve a package to the customer in no more than 30 days prior to the project reservation.
Reliability	• The travel agency management system should provide a reliable environment for the customer. • The user should be able to upload or delete any packages with no errors. System failure should be not more than 3 times a year.
Usability	• The system should be user-friendly for the different types of customers.
Availability	• The travel agency management system should be available almost 24 hours for the customer to be able to choose any package at any time.
Maintainability	• System should be able to change and add features in future.
Performance	• System shouldn't load more than 2 seconds to open different pages (response time)

6. Diagrams

6.1. Use Case diagram

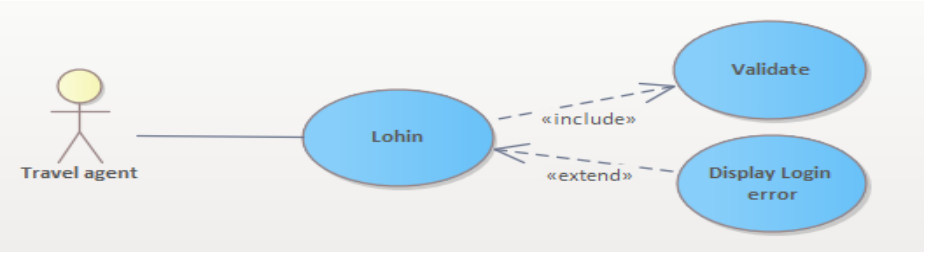


6.1.1 Use Case 01 – Sign up



Use case name	Sign up
Actors	User (Travel agent)
Main success scenario	1. The system gives the user the option to enter the username and password or create a new account. 2. The user (Travel agent) selects on create a new account. 3. The system makes the user enter the registration information, username, password, etc. 4. The user fills the required information. 5. User clicks on the submit button. 6. System checks if the username is valid. 7. System verifies information and create a new account.
Exception	4a. The user clicks on the submit button without providing the required information. 6a. The username user entered is invalid (already exist).
Actions	4.1 The system shows the user an error alert. 4.2 The user fills the required information. 6.1 System makes the user to enter another username. 6.2 User enters a unique username and register successfully.

6.1.2 Use Case 02 – Login



Use case name	Login
Actors	User (Travel agent)
Main success scenario	1. The system will display the login page to the user.

	2. The user (Travel agent) will enter his username and password successfully. 3. The user will click on the login button to login to the system. 4. The system checks the validity of the username and password and logs them to the system.
Exception	2b. The user entered an invalid username and password.
Actions	2b 1.1 System will display error message to the user and asks him to reenter the correct username and password. 2b 1.2 The user will reenter his username and password successfully or will cancel the operation.

6.1.3 Use Case 03 – Create Package

Use case name	Create Package
Actors	User (Travel agent)
Main success scenario	1. The travel agency user will login to the system. 2. After logging into the system successfully the user will have access on the available methods, the user will click on the “create package” button. 3. The system will open a new form to the user. 4. The user will then be able to choose a collection of features to add to the package 5. After the user finishes this process, he clicks on “package completed” button. 6. The system will display a new package added to the previous packages successfully.
Exception	4c. User selected a feature in his package that is not available at the moment
Actions	4c 1.1 The system will display an error message to the user “not available now”. 4c 1.2 The user selects another available feature and creates the package successfully.

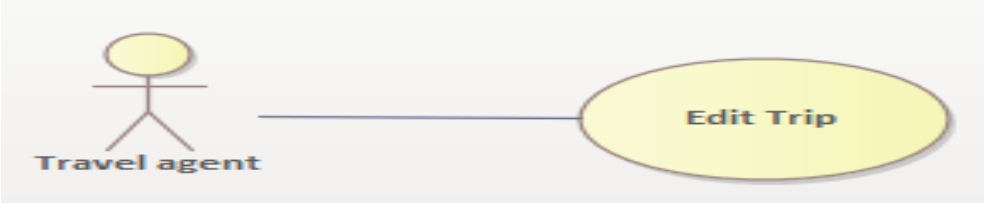
6.1.4 Use Case 04 – View information

Use case name	View information
Actors	User (Travel agent)
Main success scenario	1. The travel agency user will login to the system. 2. After logging into the system successfully, the user will click on the "view information" button. 3. The system will display all of the information related to the packages and hotels and all the other features on the screen. 4. After viewing the information, the user can go back to the main page.

6.1.5 Use Case 05 – Search

Use case name	Search
Actors	User (Travel agent)
Main success scenario	1. Travel agency user will login. 2. After logging into the system successfully, the user will click "Search" button. 3. The system will display the search bar, so the user can search for details. 4. The user will type the name of (city, airport code, etc.) to know the location of departure and arrival. 5. The system will display all the details.
Exception	4a. The user searched for unavailable airline.
Actions	4a 1.1. The system will display other available options.

6.1.6 Use Case 06 – Edit trip



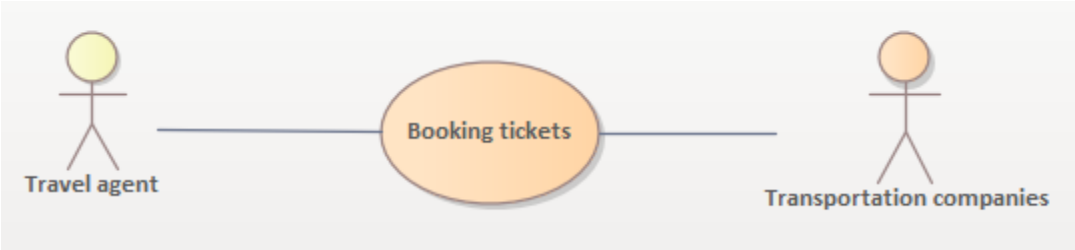
Use case name	Edit Trip
Actors	User (Travel agent)
Main success scenario	1. Travel agency user will login. 2. After logging into the system successfully, the user will click “Edit Trip” button. 3. The system will open a form so the user can edit, and ask the user to choose what to edit. 4. The user choose what he would like to change. 5. The system checks if there are any previous trips. 6. If found, The system will make the user confirm the changes. 7. The user will confirm the changes. 8. After confirming, The system will save all the changes and update changes in the database.
Exception	5. No trips are saved previously.
Actions	5a. The system displays “No trips to be edited” and ask the user to exit to add trips so he can edit.

6.1.7 Use Case 07 – Delete Reservation

Use case name	Delete Reservation
Actors	User (Travel agent)
Main success scenario	1. Travel agency user will login. 2. After logging into the system successfully, the user will click “Delete Reservation” button. 3. The system will open a form so the user can delete a reservation, and ask the user to choose what to delete. 4. The user choose what he would like to delete.

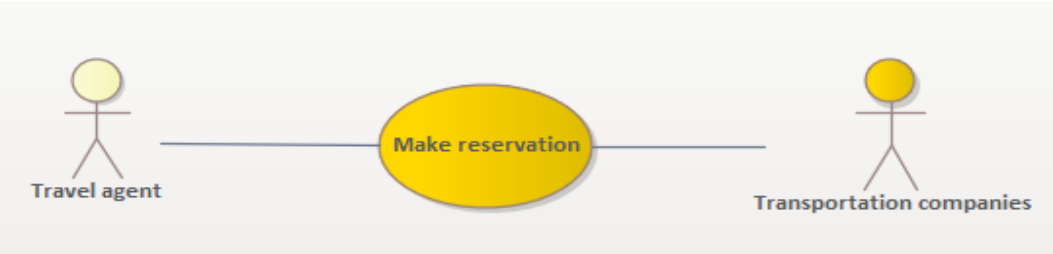
	5. The system checks if the reservation is found or not. 6. If found, The system will make the user confirm the deletion process. 7. The user will click “confirm” button. 8. After confirming, The system will save all the changes and update changes in the database.
Exception	5. The reservation is not found.
Actions	5a. The system will display “not found” message and ask the user to enter an existed reservation.

6.1.8 Use Case 08 – Booking Tickets



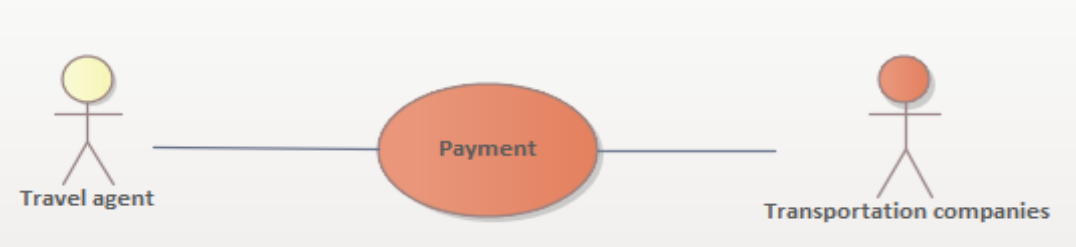
Use case name	Booking tickets
Actors	Transportation companies, travel agent
Main success scenario	1. System will check if login data is valid and if so, system will display main page. 2. User will click on book tickets. 3. System will display all trips. 4. User will choose specific booking date and time. 5. System will check with transportation companies if there are available tickets in that time. 6. A message will be shown to user that tickets is booked.
Exception	no available tickets at the time the user chose, system will display an error message
Actions	The system will ask the user to choose another ticket or the user will cancel the operation.

6.1.9 Use Case 09 – Making reservation



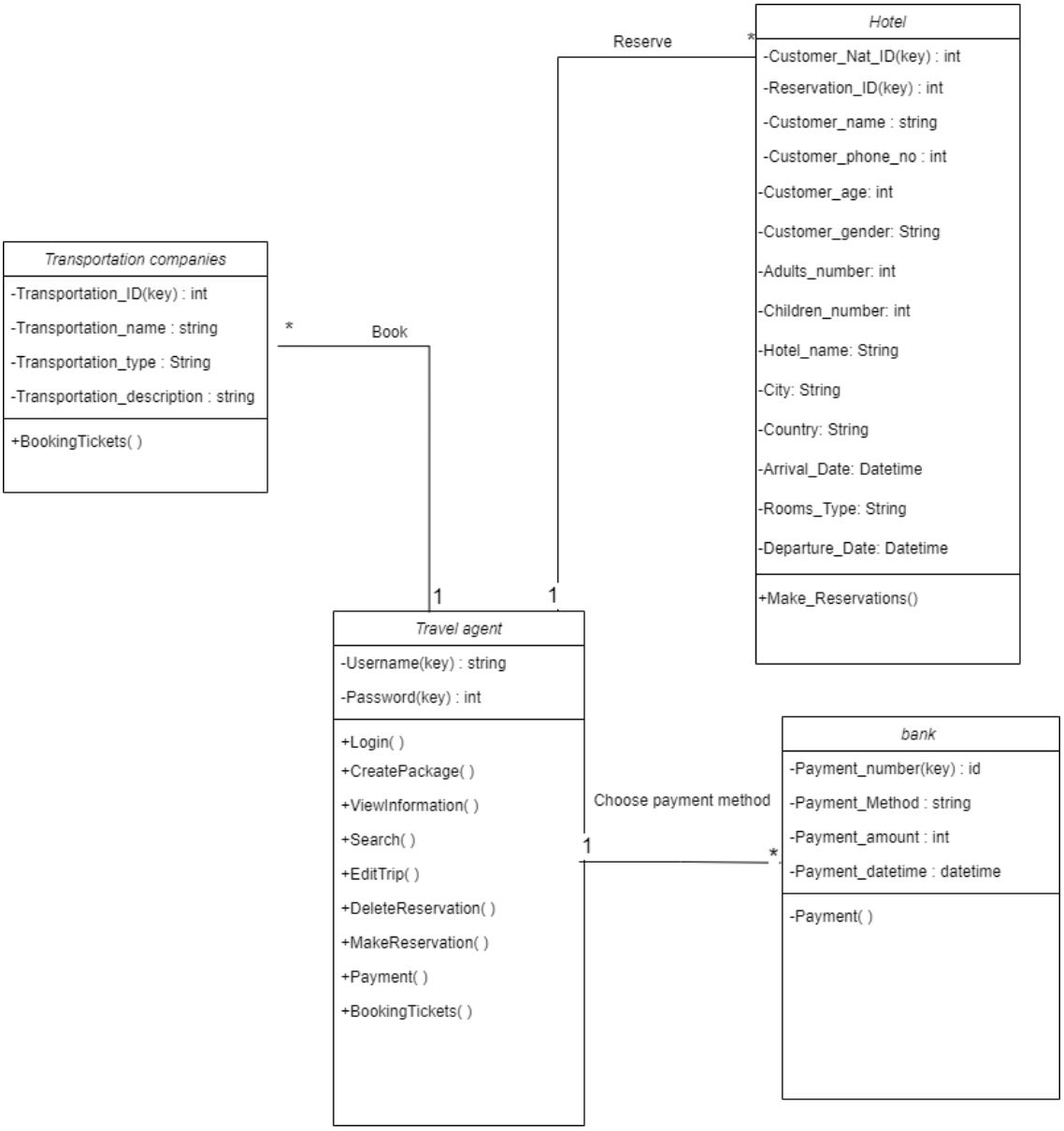
Use case name	Making reservation
Actors	Hotel, travel agent
Main success scenario	1. System will check if login data is valid and if so, system will display main page. 2. User will click on make a reservation. 3. System will display all hotels in database. 4. User will choose hotel. 5. System will ask the user to choose reservation details and date User will enter date. 6. System will check with the hotel if there are available room in that time. 7. A message will be shown to user that tickets is booked.
Exception	6a. If there are no available rooms at the time the user chose system would display an error message.
Actions	The system will ask the user to choose another room or the user will cancel the operation.

6.1.10 Use Case 010 – Payment



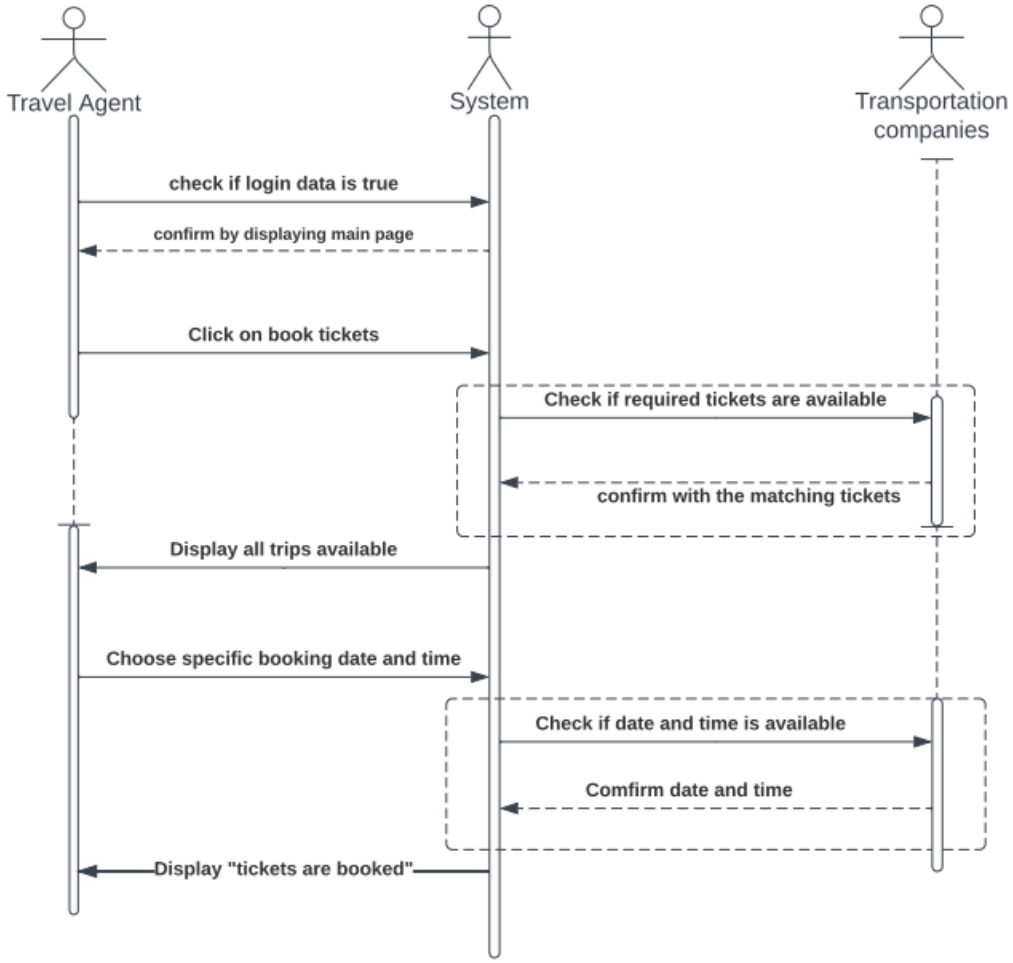
Use case name	Payment
Actors	Bank, travel agent
Main success scenario	1. System will ask the user to choose a payment method. 2. User will choose credit card. 3. System will ask user to enter card details (card number, expiry date, cvv). 4. User will enter card details. 5. User will enter place order. 6. System will check data validity with the bank. 7. Bank will send conformation message that data is valid. 8. System will send to bank to withdraw the money amount. 9. Bank will check if there is enough amount of money and update user's account with new balance. 10. System will display payment completed.
Exception	3a. User enters invalid card details. 9a. User does not have enough balance In his account.
Actions	Payment is cancelled, process terminated.

6.2. Class Diagram



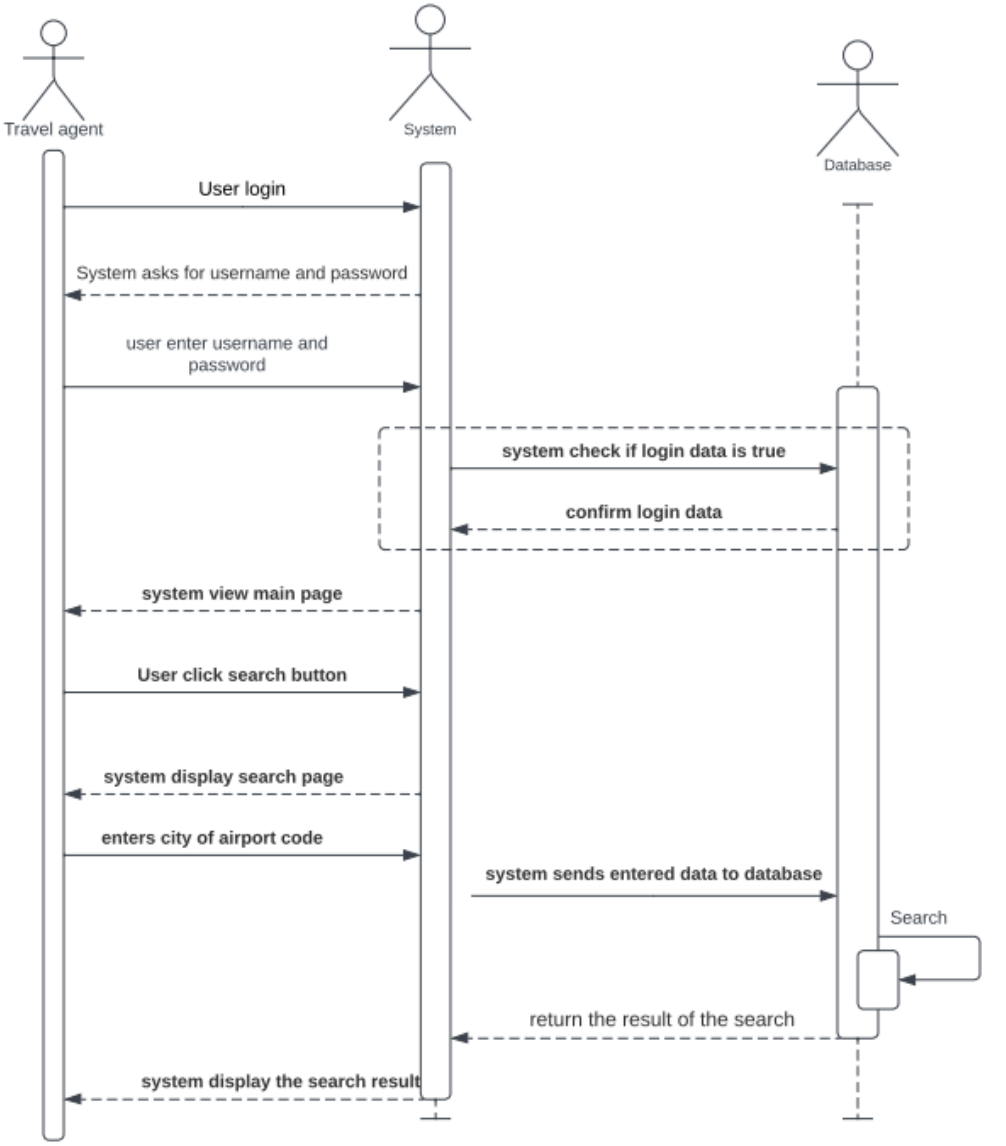
6.3. Sequence diagrams

6.3.1. Booking ticket diagram



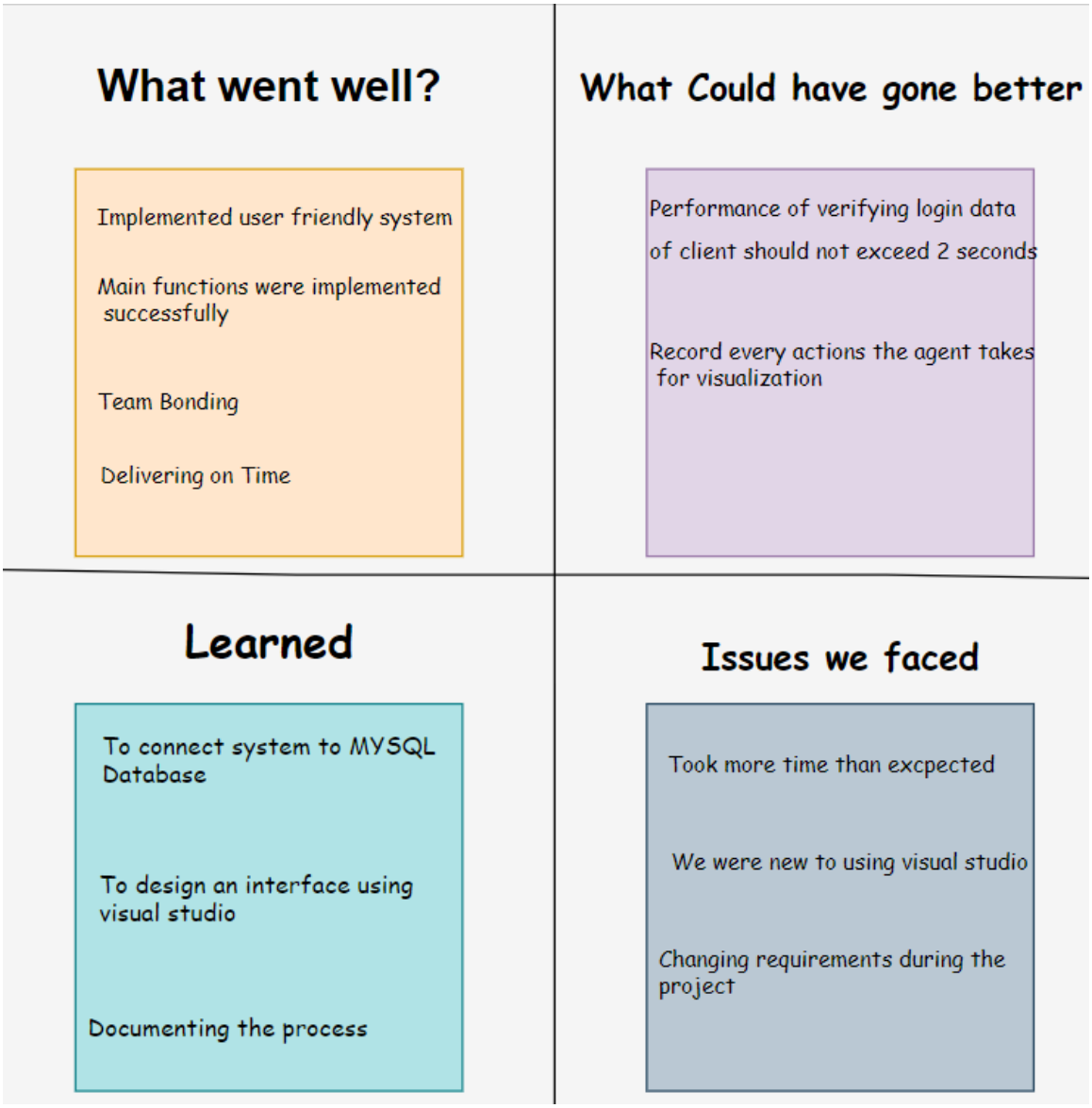
Booking a ticket sequence diagram

6.3.2. Search diagram



Search sequence diagram

6.4. Scrum retrospective



7. Test cases

Test Case ID: 1
Test Priority (Low/Medium/High): Med
Module Name: Booking hotel reservation
Test Title: Verify valid booking
Description: Test the booking process

Test Designed by: Nada Adel
Test Designed date: 22/12/2022
Test Executed by: Nada Adel
Test Execution date: 24/12/2022

Pre-conditions: User has access username and password

Dependencies:

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to access account	Username = Admin	User should be able to login and access his account.	Login successfully to the system.	Pass	
2	Provide username	Password = admin123	User should be able to make hotel reservation after filling all reservation fields successfully.	Add hotel reservation.		
3	Provide password	Hotel Name = Hilton	User should be able to receive an error message if there any missing fields.			
4	Click on login button	City, Country = Alexandria, Egypt				
5	Click on Hotel button	Reservation ID = 1				
6	Fill reservation fields (ex. Hotel name, customer personal info, type of room, etc….)	Arrival Date = 3/12/2022				
7	Click on Add button	Departure Date = 22/12/2022				
		Rooms Type = Double				
		Customer Name = Nada				
		Phone Number = 01266432468				
		National ID=302411202255429				
		Gender = Female				
		Adults = 2				
		Children = 1				

Post-conditions:
User is validated with database and successfully access his account and able to add hotel reservation. The account session details are accessed in database and new record is added into the database.

Test Case ID: 2
Test Priority (Low/Medium/High): Med
Module Name: Search hotel package reservation
Test Title: Verify valid search
Description: Test the search function

Test Designed by: Shahd Fekry
Test Designed date: 22/12/2022
Test Executed by: Shahd Fekry
Test Execution date: 24/12/2022

Pre-conditions: User has access username and password and data exist in the system that the user can search for.

Dependencies:

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to access account		User should be able to login and access his account.	Login successfully to the system.	Pass	
2	Provide username	Username = Admin				
3	Provide password	Password = admin123	User navigated to the dashboard successfully	User can view the dashboard successfully	pass	
4	Validate hotel search button is visible on screen.					
5	Verify that the “Reservation_Id” field is present.		User can be able to search for a package by the reservation id		pass	
6	Write the id of reservation required to search for its hotel data.	Reservation_Id = 1				
7	Validate valid “Reservation_Id”		The id exist in the database so the user can search for it in the system	The Reservation_Id user entered exists in the database	pass	
8	Click in the search button		User should be able to view all of the hotel package data that has the unique reservation id of 1.	User successfully view the hotel package of Id = 1	pass	

Post-conditions:
User is validated with database and successfully access his account and able to search for a hotel package to view of the information related to the entered id.

Test Case ID: 3
Test Priority (Low/Medium/High): Med
Module Name: Delete hotel reservation
Test Title: Verify working delete action
Description: Test the deletion of hotel reservation

Test Designed by: Malak Essam
Test Designed date: 22/12/2022
Test Executed by: Malak Essam
Test Execution date: 24/12/2022

Pre-conditions: User has access username and password

Dependencies:

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to access account		User should be able to login and access his account.	Login successfully to the system.	Pass	
2	Provide username	Username = Admin				
3	Provide password	Password = admin123				
4	Click on login button		User should be able to receive an error message if there any missing fields.	User can view his dashboard successfully	pass	
5	Click on delete reservation button					
6	Provide reservation ID	Reservation ID = 1				
7	Click on delete button		User should be able to delete hotel reservation after providing a valid reservation ID successfully.	Reservation of given ID is deleted from database	pass	

Post-conditions:
User is validated with database and successfully access his account and able to delete hotel reservation.

Test Case ID: 4
Test Priority (Low/Medium/High): Med
Module Name: Create Package
Test Title: Verify Package with Valid trip details
Description: Test the creation of travel package

Test Designed by: Mayar Tarek
Test Designed date: 22/12/2022
Test Executed by: Mayar Tarek
Test Execution date: 24/12/2022

Pre-conditions: User entered valid trip details

Dependencies:

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to Login page		User should be able to see login page.			
2	Provide username and password	Username = Admin Password = admin123	User should be able to receive an error message if there any missing fields.	Login successfully to the system.	Pass	
3	Click on package button		User should be able to see package page			
4	Provide user to choose Arrival and departure date	Arrival Date = 3/12/2022 Departure Date = 22/12/2022				
5	Provide user to choose City, country	City, Country = Jeddah, Saudi Arabia			Pass	
6	Provide user with valid transportation details	Transportation way = airplane	User should be able to reserve airplane	User reserve a valid airplane time	Pass	
7	Provide user with valid hotel	Hotel = Safwa hotels	User should be able to receive an error message if there are no valid hotels	Although Safwa hotels has available rooms at this time the system shows error message	Fail	

Post-conditions:
The user is validated with the database and can successfully access his account, but he is unable to create the package because of error in reserving hotel.

Test Case ID: 5
Test Priority (Low/Medium/High): Med
Module Name: Clear data of hotels reserved
Test Title: Verify valid data clear
Description: Test the clear function

Test Designed by: Sarah Elmaasarawii
Test Designed date: 22/12/2022
Test Executed by: Sarah Elmaasarawii
Test Execution date: 24/12/2022

Pre-conditions: User has valid username and password, and data to be viewed/Cleared.
Dependencies:

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Navigate to login page		User should be able to login to access his account			
2	Provide valid username	Username= Admin				
3	Provide valid password	Password =admin123				
4	Click on Login button		System will view error message if there is any wrong/missing data	Login successfully to the system	Pass	
5	Click “Hotel” button			Hotel name and further details will be viewed. For example: city, country, reservation ID.	Pass	
6	Click “Clear” button		Last data entered by the user will disappear.	Data disappeared	Pass	

Post-conditions:
User is validated with database and successfully login to his account and to clear last entered data on the screen.