جامعة بيرزيت

BIRZEIT UNIVERSITY

Software Engineering
COMP433

Group Project

Group Name: OutOfIndex

Phase 3

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Section: 1

Simon Asmar; 1162643

Scenario Analysis (Project No.9 Flight Booking)

A scenario for booking a flight

Initial assumption: The user has searched for a flight and is ready to book it.

Normal: The user clicks the check-in luggage button and then chooses one of two options “10kg” or “23kg.” The user repeats this step again making the amount of luggage check-in 2, which is the maximum.

The user then fills in a form with the correct information about his/her full name, gender, date of birth, and an optional text field for their email address.

After that, the user goes through the payment process, if that is successful an e-ticket is displayed for the user to be saved or printed. The user also gets a pdf copy of the e-ticket sent to their email address.

What can go wrong?

Alternative: The user does not provide their email address. Everything should go on normally since that part is optional.

Error: The payment process is unsuccessful. The user shall go through the payment process again, entering the correct information in all the fields in order for it to be successful.

Error: The user does not fill in all required fields in the booking form. The system should show them an error and shall not let them go to the next step before filling the fields.

Other Activities: When a user enters the flight booking page, the system must temporarily reserve a seat on the flight for him/her so that they don’t lose it by the time they fill in the form.

System state on completion: All the information provided in the flight booking form and payment form are saved in the database and the flight is booked.

Sabry Alawy; 1162074

Scenario Analysis (Project No.9 Flight Booking)

A scenario for Transactions (Payments) :

Initial assumption: The user has searched for a flight and is ready to book it and he\she is in the **Payment** windows.

Normal: the user chooses from different types of payments: PayPal, VisaCard, or MasterCard, that has different data requirements from each other, which the user must fill to complete the booking process.

After that, when the user clicks on specific button(atomically, not concurrently with other users - we can solve it by adding control switches devices that work as queues to prevent losing data and good preforms -), The entered information will be checked from the bank/Company database, by checking the validity of the entered account and whether the balance is enough for the transaction, and the money transfer from the entered account to the company bank account, and this request of user data and the payment will be saved .

What can go wrong?

Alternative: The user must fill all the requirements that are in the specific payment type, next.

Error: If the account is not found in the bank database then the system shall indicate this error to the user and the transaction will be cancelled out.

Error: If the balance is not enough then the system shall indicate this error to the user and the transaction will be cancelled out.

Error: If a flight gets cancelled the money gets refunded to the same account that the payment was made by.

Error: The user does not fill in all required fields in the booking form. The system should show them an error and shall not let them go to the next step before filling the fields.

Other Activities: When a user clicks the confirmation button, If the queue - that is collect the waiting data to be checked or saved - is full the system shall indicate this error to the user and the transaction will be cancelled out.

System state on completion: All the information provided in the payment form are saved in the database and the money transferred to the correct account.

Laith Marzouka; 1160827
Phase Three: Task 3.3
<u>Scenario Analysis (Project No.9 Flight Booking)</u>

A scenario for a customer searching for a flight (UR:4; SR:4.2)

Initial assumption: The customer enters the website and wants to consult a suitable flight for his next trip.

Normal: The customer first chooses from a checkbox if he/she wants this trip to be one way where he/she just travels to a place or a round-trip in which he/she chooses another flight to return as well (round-trip option is checked as default). Then, the customer will search from a search field input -which contains all cities- the city he/she wants to travel from, then from another search field input chooses the city where he/she wants to travel to. After that, the customer chooses from a date field input the date of the wanted flight. In case that the customer chose a round trip, he/she fills another date field input with the return date. Finally, the customer fills another two fields, first is a number-field input in which he/she chooses the number of passengers travelling. Second, chooses the cabin class from a combo field (first class, business class, economy class).
After successfully filling all of the above fields and choosing the find flight button, the system shows all flights from-to the designated cities in the indicated days and have available seats from the selected cabin class. The flights with tickets on sale will be listed first, the order of the remaining flights will be based on time/price correspondence.
When A flight is chosen to be consulted, All details of the flight will be displayed (Flight number, date & time of departure/arrival, Duration of flight, price of the ticket, number of seats available, meals). If the trip is a round-trip, then two flights will be displayed in full details as mentioned.

Alternative: No direct flights exist from-to the designated locations. Transit trips should be displayed if possible. The transit flights connect the city of departure to

the city of arrival. More than one transit flight may be applied, a single transit flight is indicated as a stop.
When the flight is chosen, the information about the transit flights will also be displayed in full details.

Alternative: The customer chooses to search by a filter (filters are located at the side of the screen):
By price: a checkbox input is selected whether to order flights by price from highest to lowest or from lowest to highest.
By the time of departure: A time interval input that can be selected and only the flights that departure at this time interval will appear.
By the time of arrival: A time interval input that can be selected and only the flights that arrive at this time interval will appear.
By the duration of the trip: A number-field input to select the maximum hours of the trip. Only the trips with a duration less than the selected hours will be displayed.
By the number of stops: A number-field input to select the maximum number of stops in the trip. Only the trips with stops less than the selected will be displayed.
Combination of filters: more than one filter of the filters mentioned above is used. Only the flights that meet all filters' conditions will be displayed.

Error: The customer missed out to fill a field or more in the searching for a flight procedure. The system should mark out these empty fields to the customer and ask him/her to fill it. Otherwise, the search will not be carried on.

Error: The customer chooses the return date -for a round-trip- before the date of the departure. The system should mark out this to the customer and not accept the search before correction.

Error: No flights exist from/to the designated location for the given dates. The system should indicate to the customer that no such flight is available at the moment.

Other Activities: The system must ask the customer to refresh the search after every five minutes to keep the integration in the system since prices/dates of flights change constantly.

System state on completion: A search record will be added to the database including the departure country, arrival country, date of departure, date of return if applicable, and the date of the search.

Layth Abufarhah; 1162636

Scenario Analysis (Project No.9 Flight Booking)

A scenario for user system registration

Initial assumption: the customer who concerned in booking flights is entered to the website and intending to register as a user.

Normal: user enters to the website, and he doesn’t have an account in the system, then from the login page he clicks on the register button and the system should redirect the user to the registration page.
In the registration page the user should follow a series of prompts from the system to enter information about him/herself, full name, gender, date of birth, email address and password.

What can go wrong?

Alternative: a user enters an invalid data , the system should not get the inputs and notify the user about this to re-fill the fields by showing an alert.

Alternative: a user enters information which is already on the database, the system should not register the user and notify him/her about this to re-fill the fields by showing an alert.

Other Activities: The system can verify the email address entered by sending a verification link to the email.

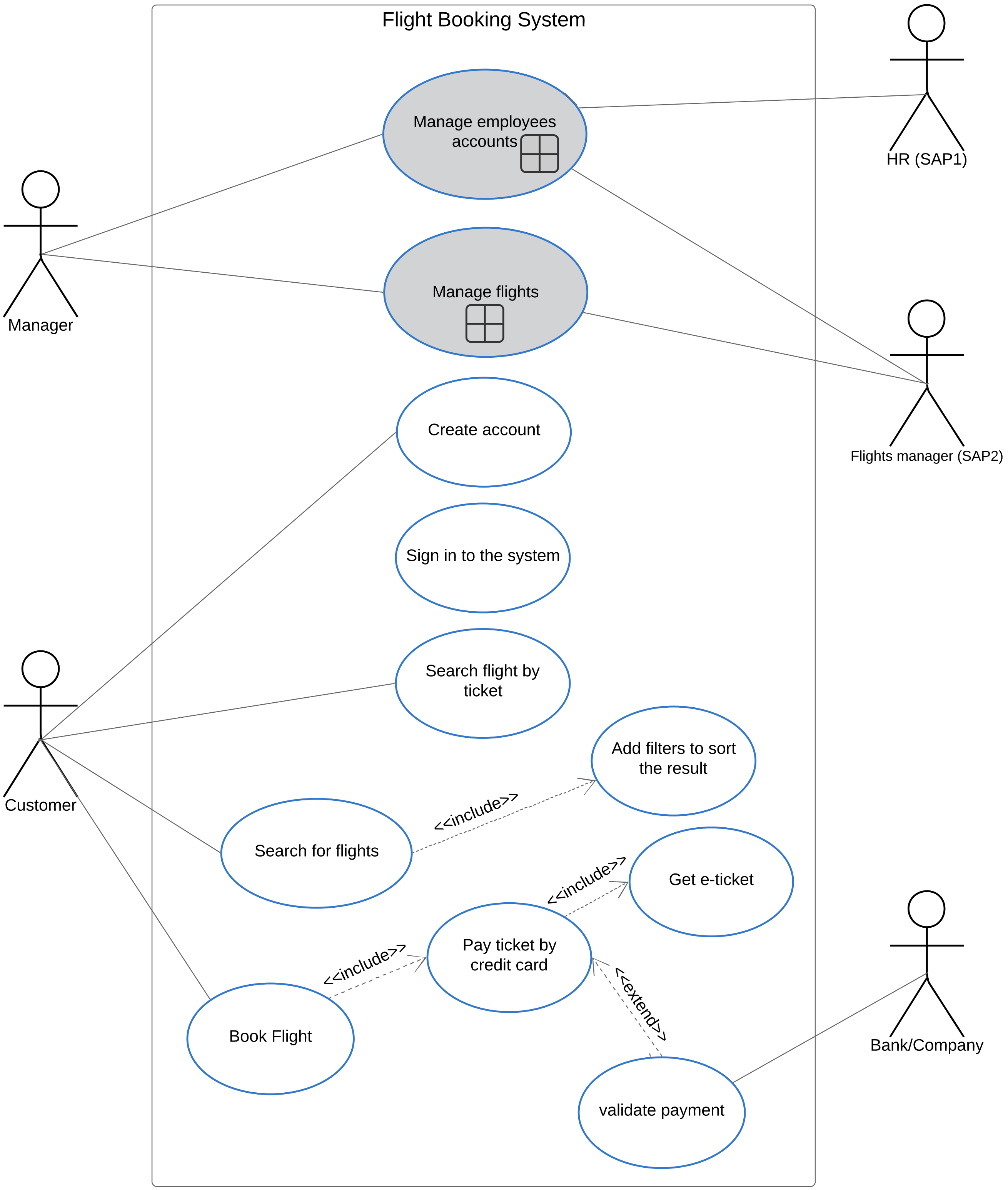
System state on completion: User logged in, all information entered in the database and user should be redirected to the main page.

ACTOR	**Semantics/Description**
Manager	This actor represents someone who is an employer of the flight company, that can manage employees/flights information, and add/edit/view job titles
HR employee ‘SAP1’	This actor represents someone who is an employee of the flight company, that can view, add, and edit employees’ information
Flights managing employee ‘SAP2’	This actor represents someone who is an employee of the flight company, that can view, add, edit flights’ information
Customer	This actor represents someone no matter registered or not, that makes use of the website features by searching and booking flights
Bank	This actor represents an external system which verifies customers’ accounts and complete payment transactions.

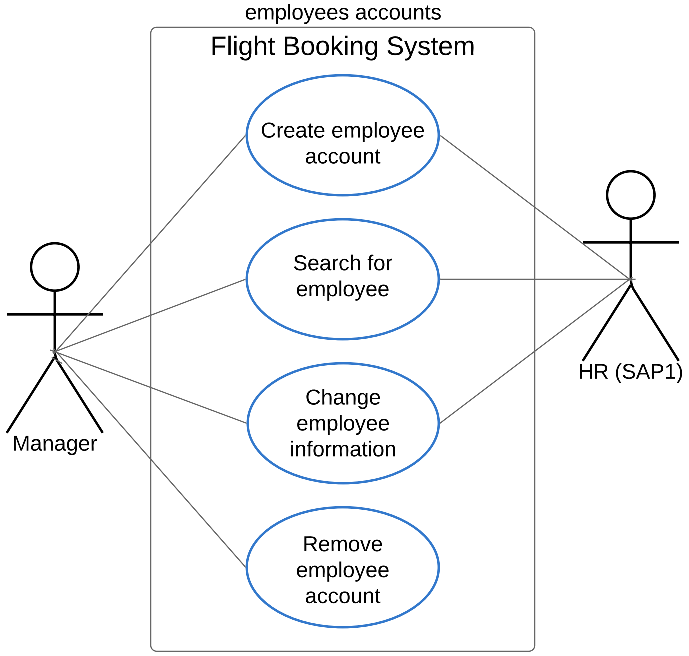
Flight Booking System (Overall use cases)

Simon Asmar, Sabry Alawy, Laith Marzouka, Layth Abufarhah
1162643 1162074 1160827 1162636

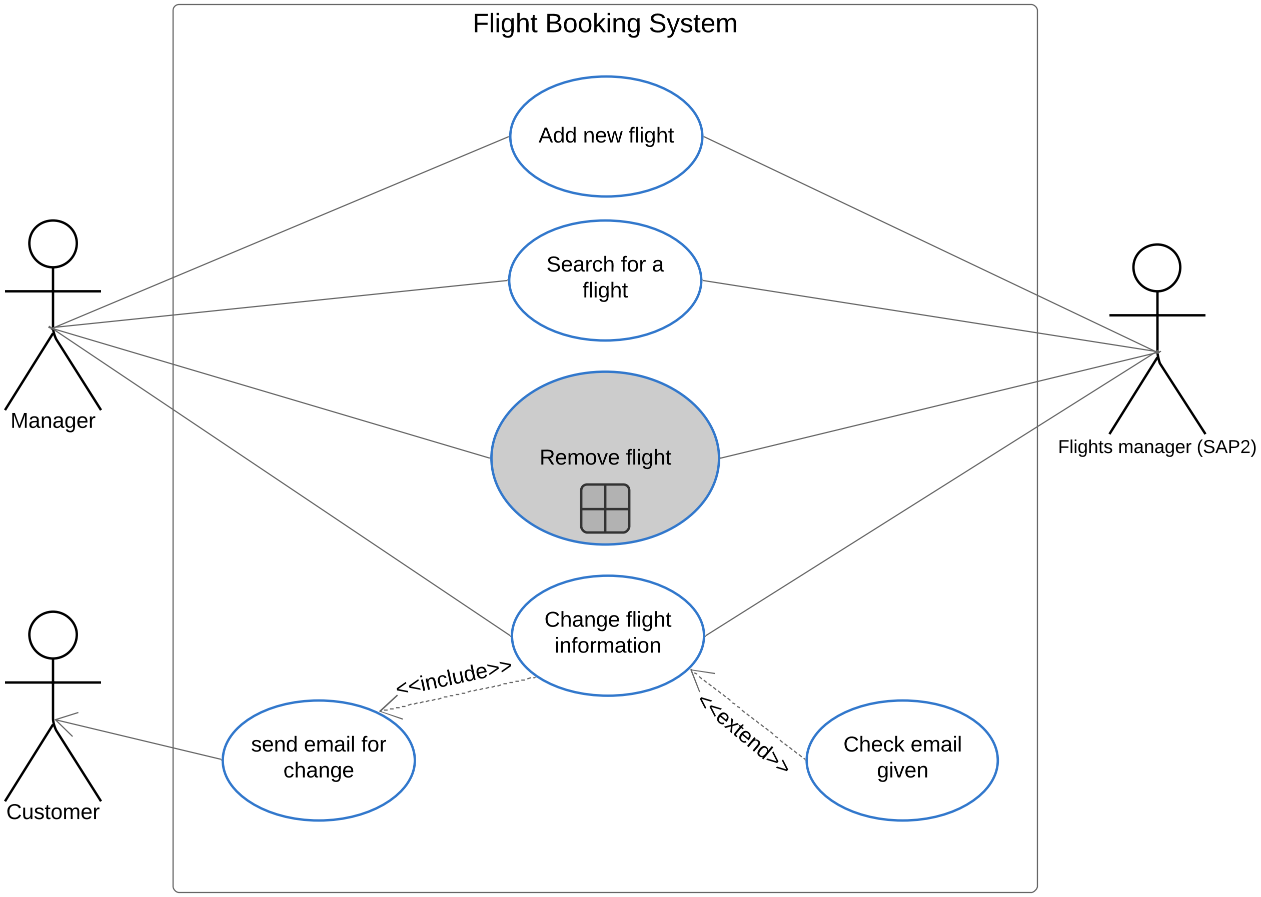
Top-Level: Overall system use case



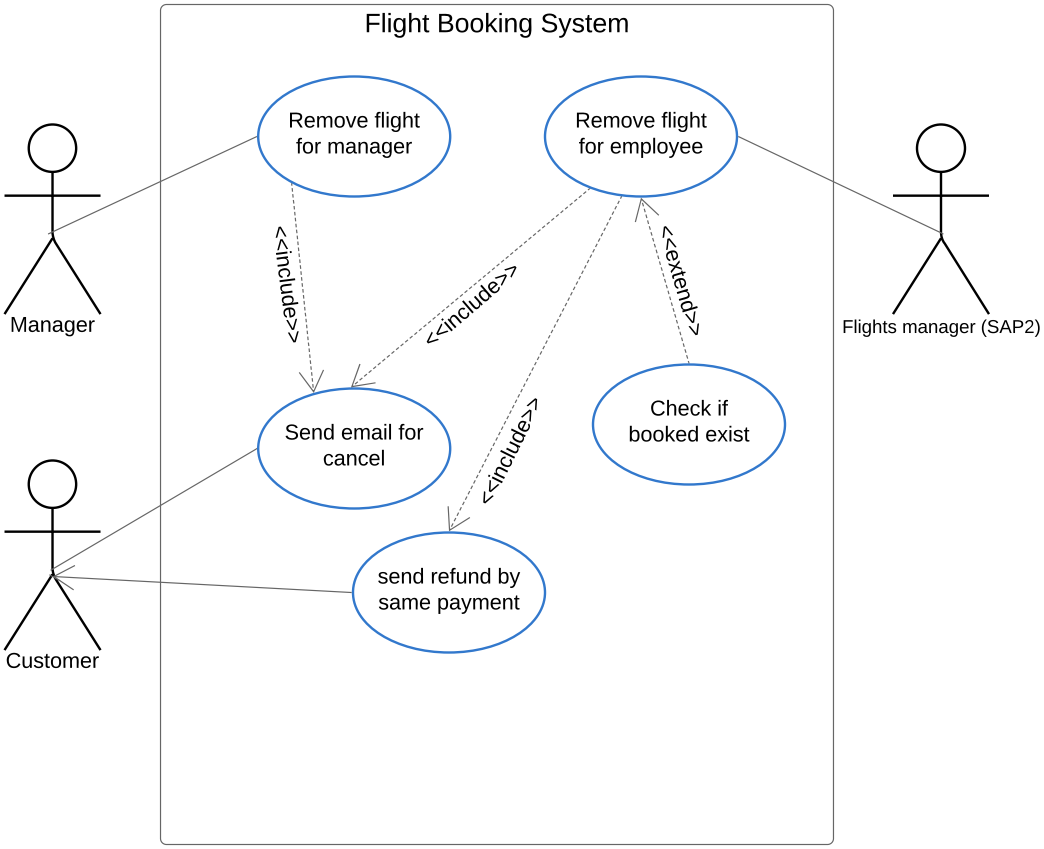
1st Level; use case: Manage employees accounts



1st Level; use case: Manage flights



2st Level; use case: Remove flights



Simon Asmar; 1162643
Detailed Description on Use Case (Project No.9 Flight Booking)

Flight Booking System: Book Flight

Actors	Customer
Description	Customer may book a flight that is not fully booked.
Pre-conditions	1. The customer searched for the flight based on the date and location. 2. The flight is available (not fully booked).
Sequence/Flow of Events	1. The customer chooses the number of luggage (max 2). 2. The customer chooses one of two weight options for each luggage (10kg & 25kg). 3. If not logged in the customer fills in a form with personal information manually. If the customer is logged in this form is filled automatically. 4. The customer goes through the payment process. 5. If the customer goes through the payment process successfully an e-ticket is displayed for the customer and a pdf copy of it is sent to their email if it was given, if not successful the customer must go through the payment process again.
Data	Luggage information (quantity and weight), customer information (full name, gender, date of birth, and [optional] email address).
Stimulus/Trigger	User command issued by the customer.
Post-conditions/ Response	1. The system has updated the number of available seats on the flight, if successful. 2. Customer information and e-ticket added to the database, if successful.
Comments	No comment

Phase Three: Task 3.2 - Sabry Alawy, 1162074

Detailed Description on Use Case (Project No.9 Flight Booking)

Flight Booking System: Book Flight

Actors	Customer, Bank/Company.
Description	Customer wants to pay for the ticket
Pre-conditions	1. The customer searched for the flight based on the date and location. 2. The flight is available (not fully booked). 3. Finishing the first requirement for booking.
Sequence/Flow of Events	1. the user choose from different types of payments:PayPal, VisaCard, or MasterCard. 2. the user must fill the requirement fields to complete the booking process 3. The entered information will be checked from the bank/Company database. 4. Checking the validity of the entered account and whether the balance is enough for the transaction . 5. If the balance is not enough then the system shall indicate this error to the user and the transaction will be cancelled out. 6. If the account is not find in the bank database then the system shall indicate this error to the user and the transaction will be cancelled out . 7. If a flight gets cancelled the money gets refunded to the same account that the payment was made by. 8. The user does not fill in all required fields in the booking form. The system should show them an error and shall not let them go to the next step before filling the fields.
Data	1. For visa card and master card customer information (full name,card number, date of exp., cvc). 2. For paypal check if valid account .
Post-conditions/ Response	All the information provided in the payment form are saved in the database and the money transferred to the correct account.
Comments	No comment

Laith Marzouka; 1160827

Detailed use case: Search for Flights (UR:4; SR:4.2)

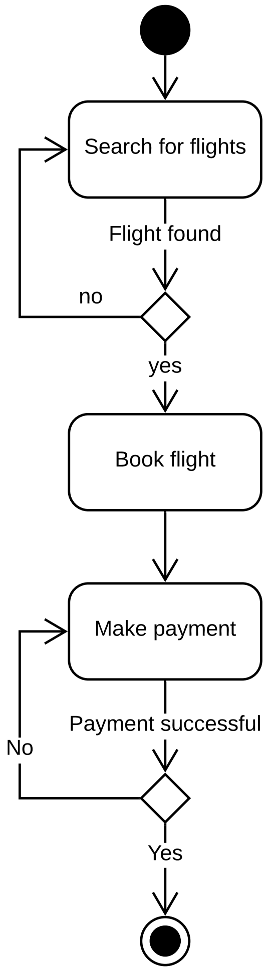
Actors	Customer
Description	A customer may search for a flight based on the destinations and dates
Pre-conditions	none
Sequence/Flow of Events	1. The customer chooses whether the trip is going to be one-way or round trip. 2. The customer chooses the cities of both departure and arrival. 3. The customer chooses the date of departure. 4. If the trip is a round trip type then the customer chooses the return date as well. 5. The customer chooses the number of travellers and the cabin class. 6. The customer presses the search button. 7. The customer may choose filters to sort the search result. 8. The results can be sorted by price, time, duration, the number of stops, and a combination of any of the latter filters.
Data	Flights’ information (number, price, time, destination, duration, meal).
Stimulus/Trigger	User command issued by the customer.
Post-conditions/ Response	The system saves the search parameters (locations, dates) to the database.
Comments	Any user whether registered or not may search for any flight.

Layth Abufarhah; 1162636

Detailed use case: user system registration

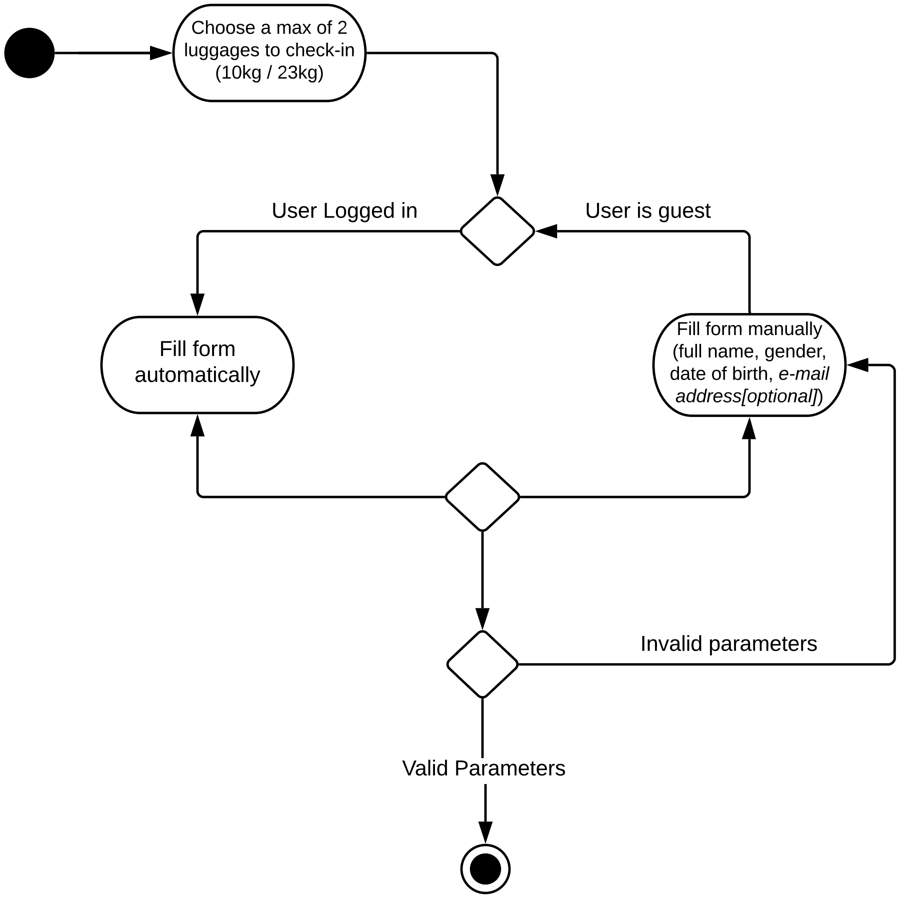
Actors	Customer
Description	A customer may register as a user in the system
Pre-conditions	The customer doesn’t have an account.
Sequence/Flow of Events	1. The customer enters to the website. 2. The customer clicks on the registration button. 3. The customer enters all information required. 4. The customer confirms the entered information. 5. The customer verifies the email address.
Data	User’s information (full name, gender, date of birth, email address and password).
Stimulus/Trigger	User command issued by the customer.
Post-conditions/Response	The system saves the user’s information to the database.
Comments	Email address shall be verified.

Overall Activity Diagram



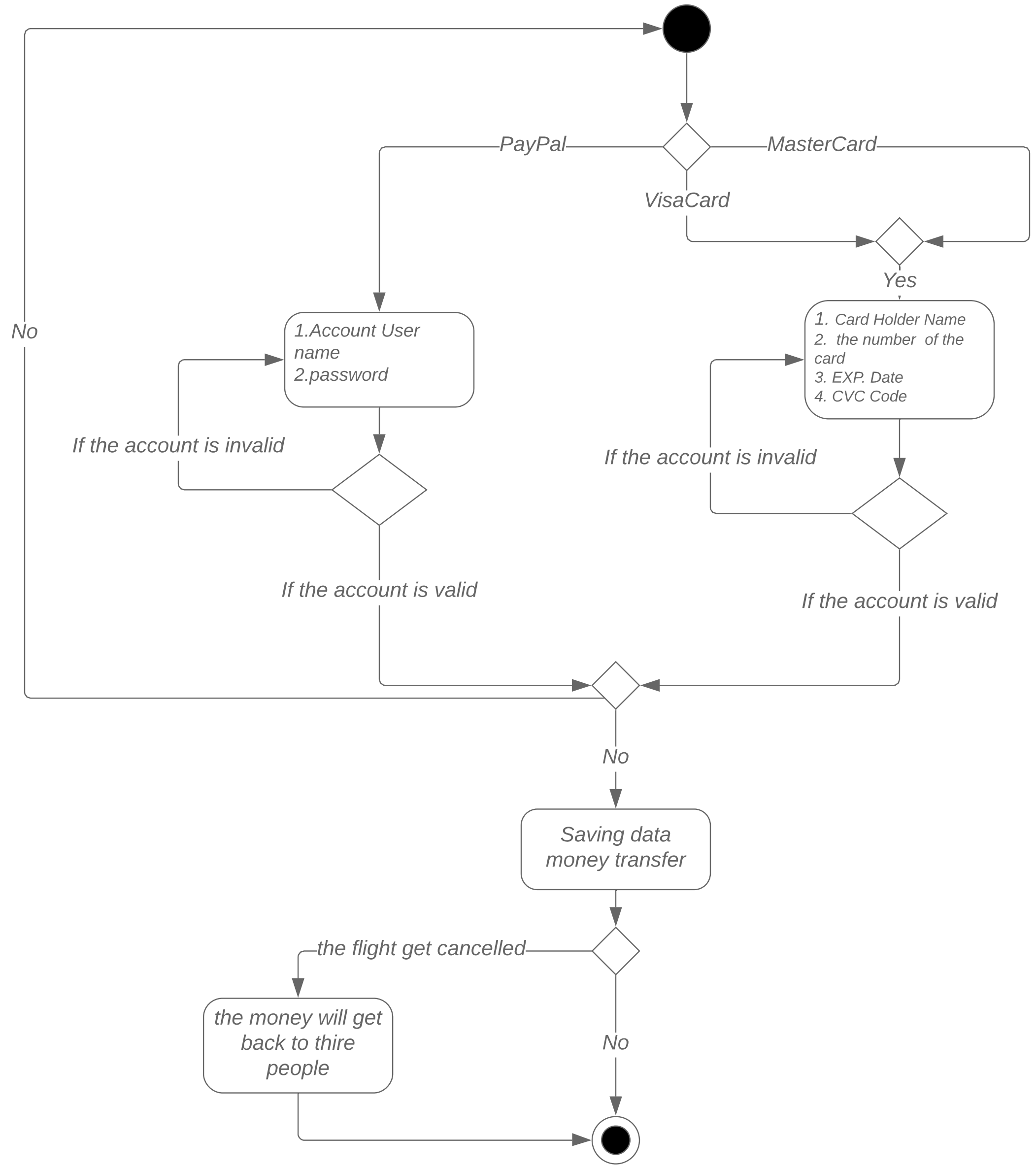
Filling Flight Booking Form UML

Simon Asmar, 1162643


Choose a max of 2 luggages to check-in (10kg / 23kg)
User Logged in
User is guest
Fill form automatically
Fill form manually (full name, gender, date of birth, *e-mail address[optional]*)
Invalid parameters
Valid Parameters

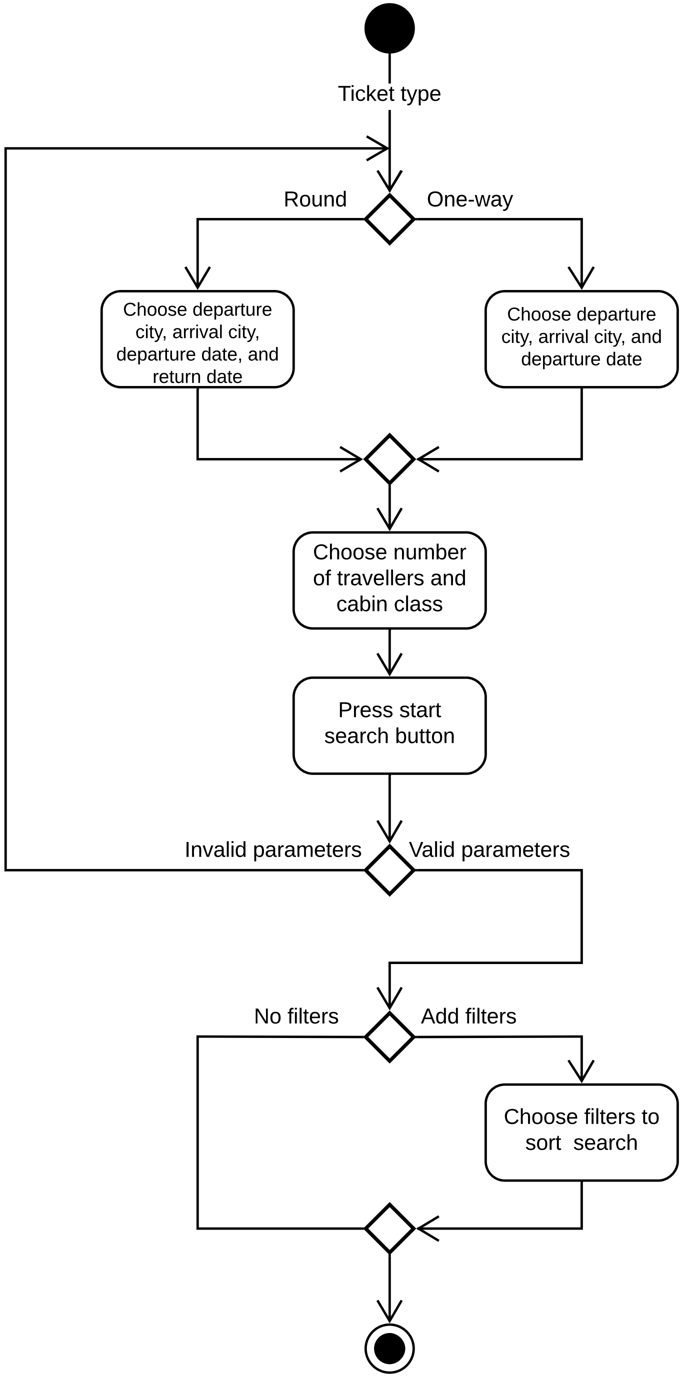
activity diagram Sabry

Sabry Alawy | November 30, 2019



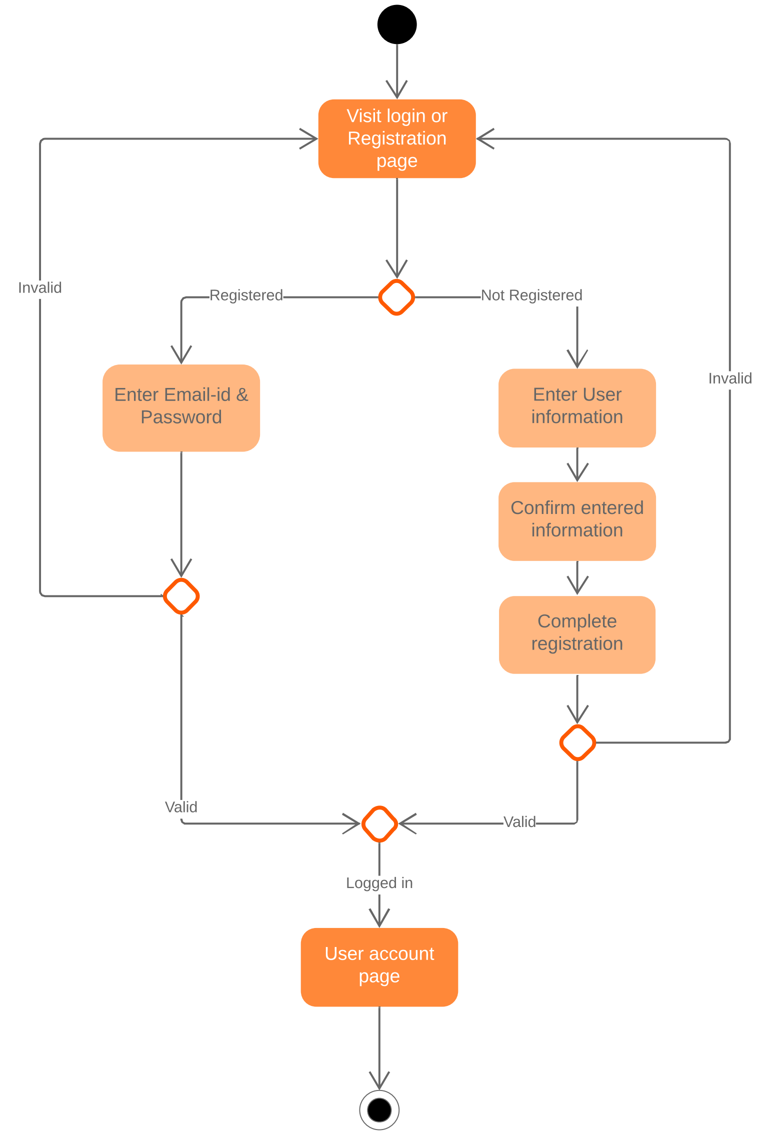
Search for Flights Activity Diagram

Laith Marzouka


Ticket type
Round
One-way
Choose departure city, arrival city, departure date, and return date
Choose departure city, arrival city, and departure date
Choose number of travellers and cabin class
Press start search button
Invalid parameters
Valid parameters
No filters
Add filters
Choose filters to sort search

Activity Diagram
User Registration

Layth Abufarhah | November 30, 2019



Visit login or Registration page
Invalid
Registered
Not Registered
Invalid
Enter Email-id & Password
Enter User information
Confirm entered information
Complete registration
Valid
Valid
Logged in
User account page