

1. Team:

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2. Title: Flight Reservation Application

3. **Project Summary:** This application enables users to reserve an airplane booking for travel on specified date and between specified airports. Customers can input details of their desired itinerary and pick a one-way or round trip desired flight. Then the reservation is confirmed by an online payment by means of debit or credit card. Customers are initiated by email through the system.

4. Project Requirements:

- **Business requirements:**
None
- **Functional Requirements:**

ID	Requirement	Topic Area	Actor	Priority
FR-001	Register and add customer details to database at sign up	Signup	Customer	High
FR-002	Authenticate user or admin based on entered password	Login	Customer	High
FR-003	Customer specifications for reservation must be matched to flight database for displaying results	Search	Customer	High
FR-004	Accept or reject payment to process customer booking	Reserve/Book	Customer	High
FR-005	Generate and send boarding pass to customers upon online check-in	Check-in	Customer	Medium
FR-006	Automatically update flight database based on customer or Admin booking or cancellation	Database	Customer, Admin	high
FR-007	Passenger details must be matched and returned from database after admin query	Database	Admin	High

- **Non-Functional Requirements**

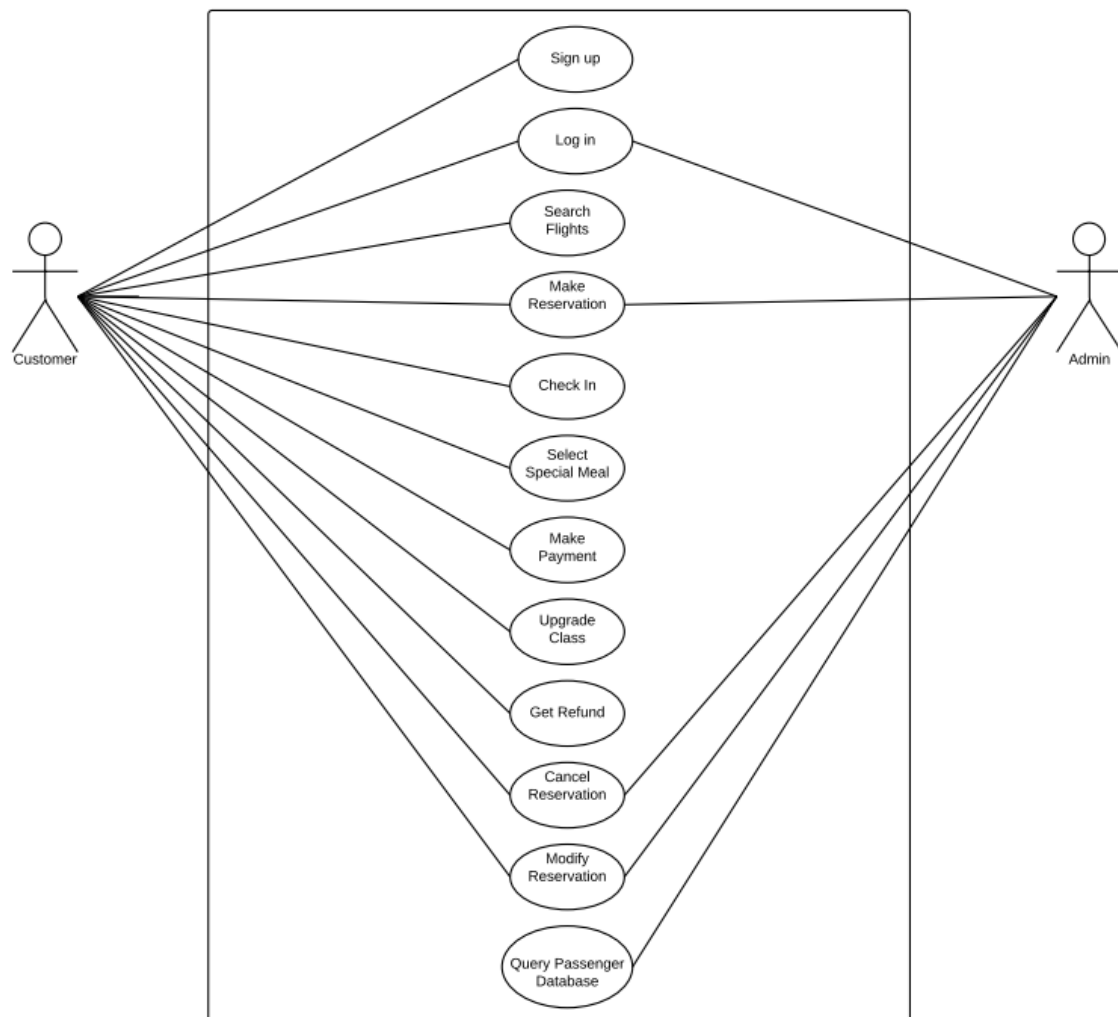
ID	Requirement	Topic Area	Actor	Priority
NFR-001	All the logs related to searching and booking the flights are saved.	Log	Customer	High
NFR-002	All the passwords are hashed for the security purpose.	Hashing	Customer	High

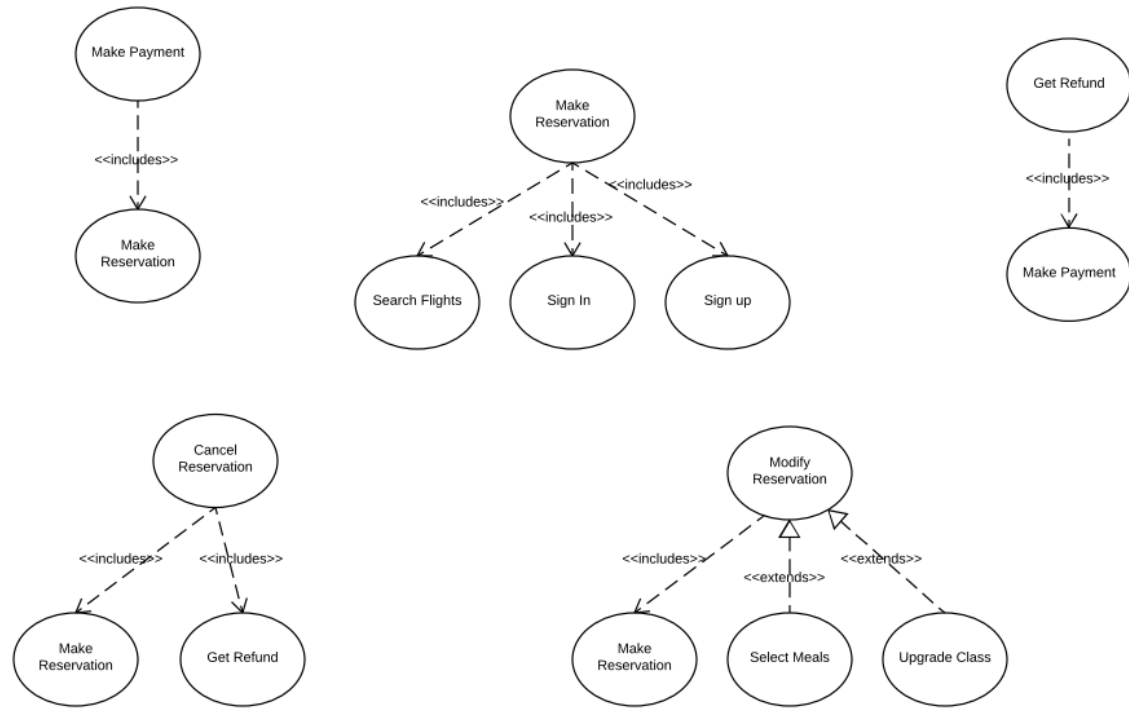
- User Requirements:

ID	Requirement	Topic Area	Actor	Priority
UR-001	A customer should be able to sign up for the application	Sign up	Customer	High
UR-002	A customer should be able to login to make a reservation	Login	Customer	High
UR-003	A customer should be able search for flights	Search	Customer	High
UR-004	A customer should select flight to make reservation	Reserve/Booking	Customer	High
UR-005	A customer can also cancel an existing reservation before the journey	Cancellation	Customer	Medium
UR-006	A customer should be able to select a seat for their reservation if they wish	Selection	Customer	Low
UR-007	A customer should be able modify their booking (dates & Class); may entail extra charge and is dependent on availability	Modification	Customer	Medium
UR-008	A customer can also check-in using the app	Check-in	Customer	Low
UR-009	Administrator can cancel a reservation(s) if necessary	Modification	Admin	Medium
UR-010	Administrator can make a booking for someone who doesn't use the application	Reserve/Booking	Admin	Medium
UR-011	Administrator has the ability to look up and print passenger details if necessary	Query	Admin	Medium
UR-012	Customers can request special meal types and in-flight entertainment	Special Request	Customer	Low
UR-013	Customers can buy extra check-in bag privileges	Special Request	Customer	Low
UR-014	Customers can book multi-city routes	Reserve/Booking	Customer	Medium
UR-015	Customer can view deals or offers available on certain routes	Deals	Customer	Low
UR-016	Customer can earn frequent flyer points to upgrade class	Deals	Customer	Low

5. Use Cases

- Use Case Diagrams





- Use Case Documents

Use Case ID	UC-04		
Use Case Name	Making Reservation		
Description	Searching and booking flight		
Actors	Customer		
Pre-Conditions	Log in by Actors, Sign up by Customer		
Post-Conditions	Reservation is added to the database and flight database is updated to show the seat(s) is booked		
Frequency	Often		
Flow of Events		Actor Actions	System Response
	1.	Customer inputs dates and airports and searches for flights	Provides matches results from database
	2.		Display all the matching results
	3.	Customer selects best match	Provides intimation to make payment
	4.	Customer selects payment method and enters details	Accepts payment based on entered details
	5.		Intimate customer about matches
Variations			
Exceptions	After Step 1., intimate customer if no matches are found; After step 4, if the payment details are invalid, payment is rejected		
Notes and Issues			
Developer Notes			

Use Case ID	UC-13		
Use Case Name	Query passenger list and cancel booking		
Description	Admin can lookup a passenger's booking along with details and cancel		
Actors	Admin		
Pre-Conditions	Admin should log in		
Post-Conditions	The flight database is updated and customer is intimated about cancellation; Update is reflected in search		
Frequency	Rarely, under special circumstances		
Flow of Events		Actor Actions	System Response
	1.	Enter specific passenger details	Search database for the particular passenger
	2.		Display the details of the passenger(s) satisfying the details.
	3.	Selects the reservation among listed to cancel	Process cancellation selected
	4.		Intimate the admin by displaying message; Intimate customer by email
Variations			
Exceptions	After Step 1., if the passenger queried doesn't exist in the database, return error message to admin.		
Notes and Issues			
Developer Notes			

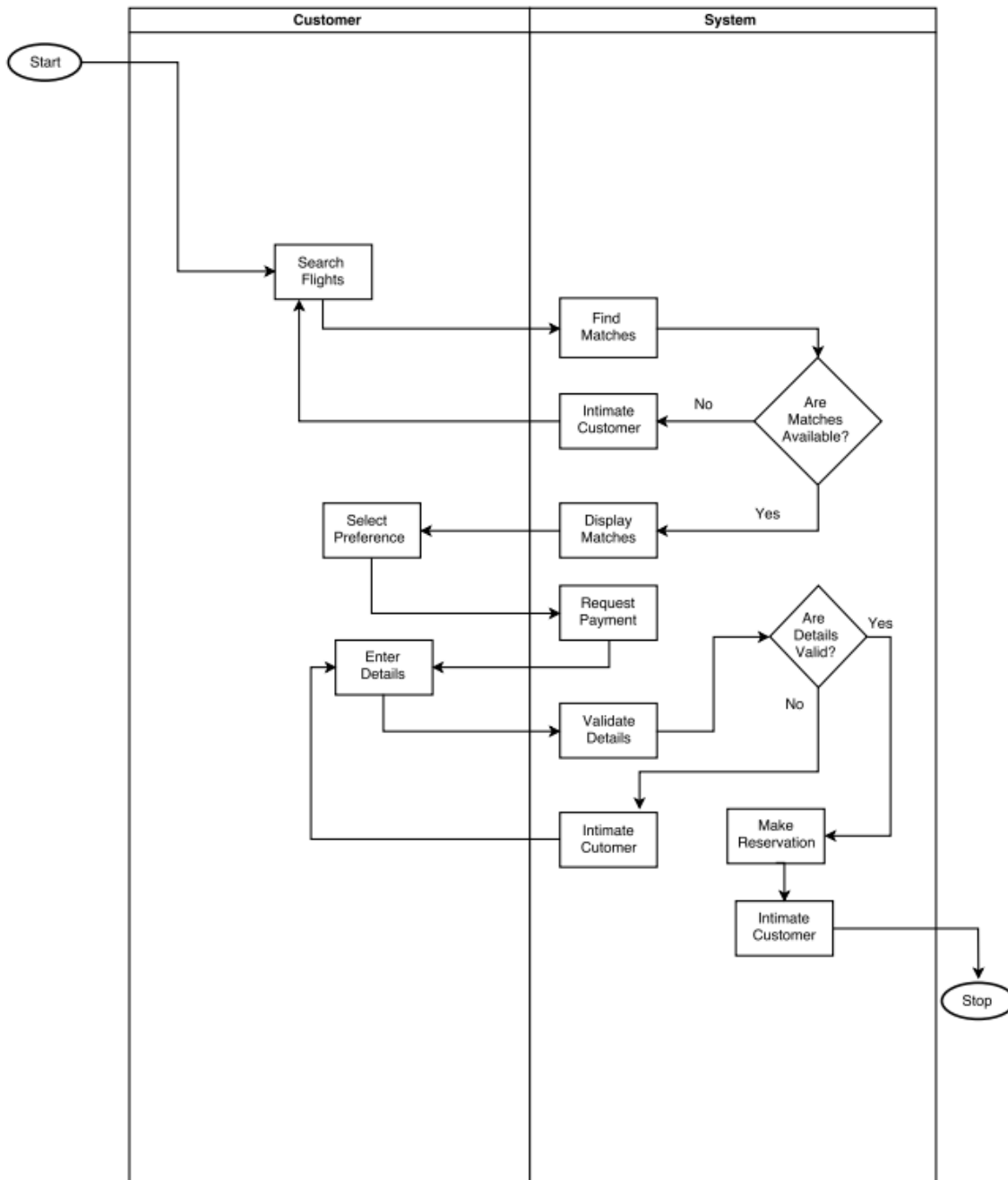
6. Activity Diagram

- **Activity Diagram for making reservation**

Req ID: UR-003, UR-004, UR-010, Fr-003, FR-004, FR-006

Use Case ID: UC-04

Use Case Name: Making Reservation **Use Case Description:** Customer makes reservation for passengers after searching for flights, selecting preference and making payment.

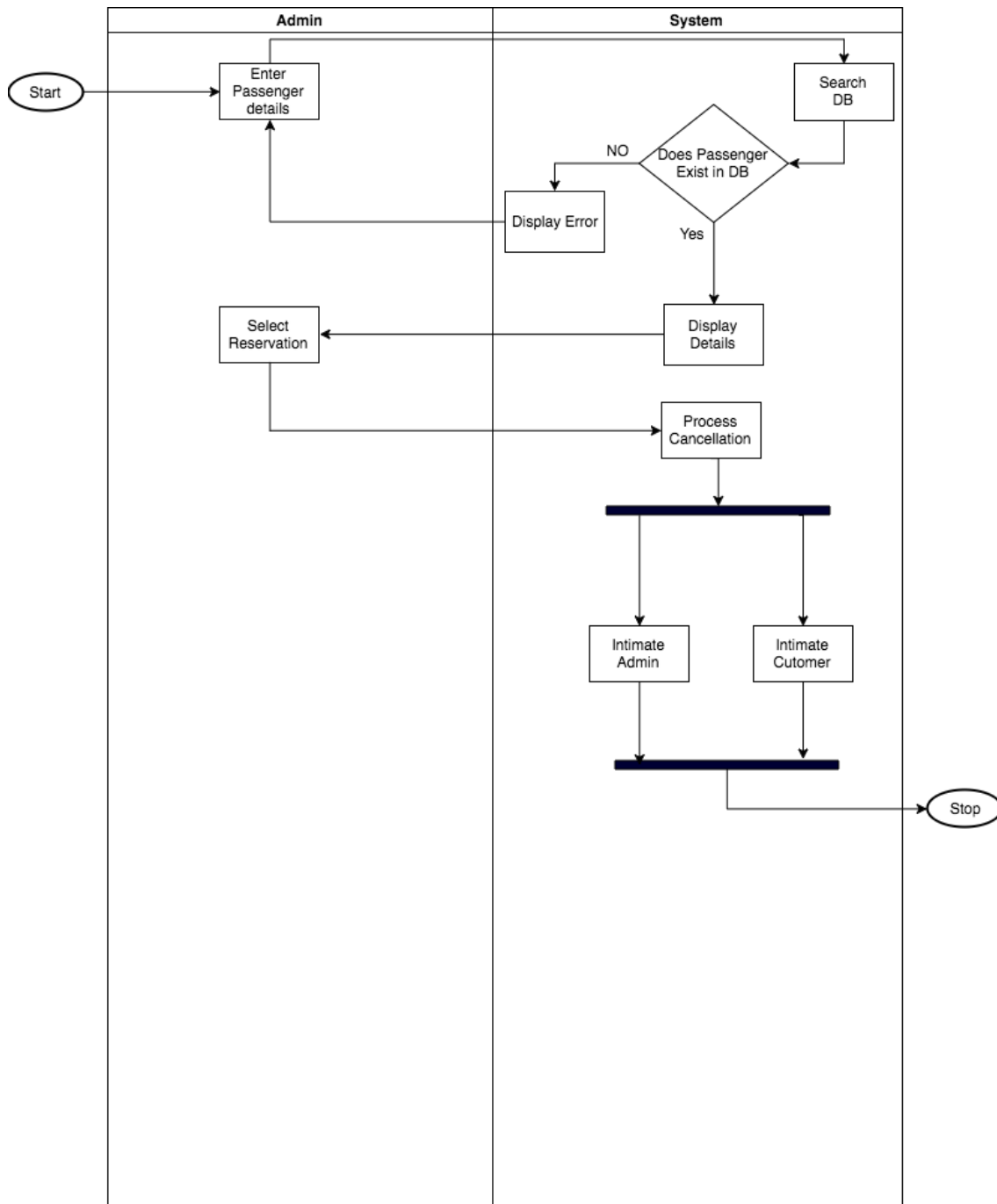


- **Activity Diagram for admin query cancel**

Req ID: UR-000, UR-011, FR-006, FR-007

Use Case ID: UC-04

Use Case Name: Admin Query Cancel **Use Case Description:** Admin queries the database and cancels the passenger's booking selected by entering passenger details. Requires verification that actor is indeed admin.



7. Data Storage:

We will be using Oracle database along with the Hibernate framework to run queries i.e., to store the data into DB and to fetch details from DB. For every class in the class diagram, we are expecting to create an associated Model class.

8. UI Mockups

FLIGHT RESERVATION SYSTEM

Already have an account? Hit 0 to login, 1 to Signup 0

Enter your email ID:

xyz@ooad.edu

Enter the password: xxxxxx

Successful Log In

Obtaining Details from Customer

Input your flight requirements:

Is it one-way or round trip journey? (hit 0 for one way, 1 for round trip) 0

Enter the departure date (mm/dd/yyyy): 10/17/2017

How many passengers are travelling? 1

Would you like to travel Economy (0) or Business(1) : 0

Enter the origin (eg: XXX) ? DEN

Enter the destination (eg: XXX) ? LAX

Select Seats

Please select one of the following seats:

1,2,13,15,18,20

20

Your seat has been reserved successfully.

Results for Flight Preference: (10/17/2017)

1. UA : DEN - LAX ; dep : 6:30 am, arrives : 8 am
2. DA : DEN - LAX ; dep : 8:30 am, arrives : 10 am
3. UA : DEN - LAX ; dep : 1:15 pm, arrives : 2:45 am
4. SW : DEN - LAX ; dep : 12:30 pm, arrives : 2 pm

Enter the choice number (Invalid numbers will be rejected): 4

Welcome Admin!!

Would you like to make (0) or cancel (1) a reservation? 0

Enter the email ID of the customer you want to query and cancel: defh@ood.phg

Below is the reservation detail of the above passenger Jane Doe:

1. UA : DEN - LAX ; dep : 6:30 am, arrives : 8 am

Enter the reservation number you want to cancel from
above above: 1

Passenger booking successfully cancelled!
An email has been sent to the corresponding email address
intimating the passenger about the changes.

9. User Interactions

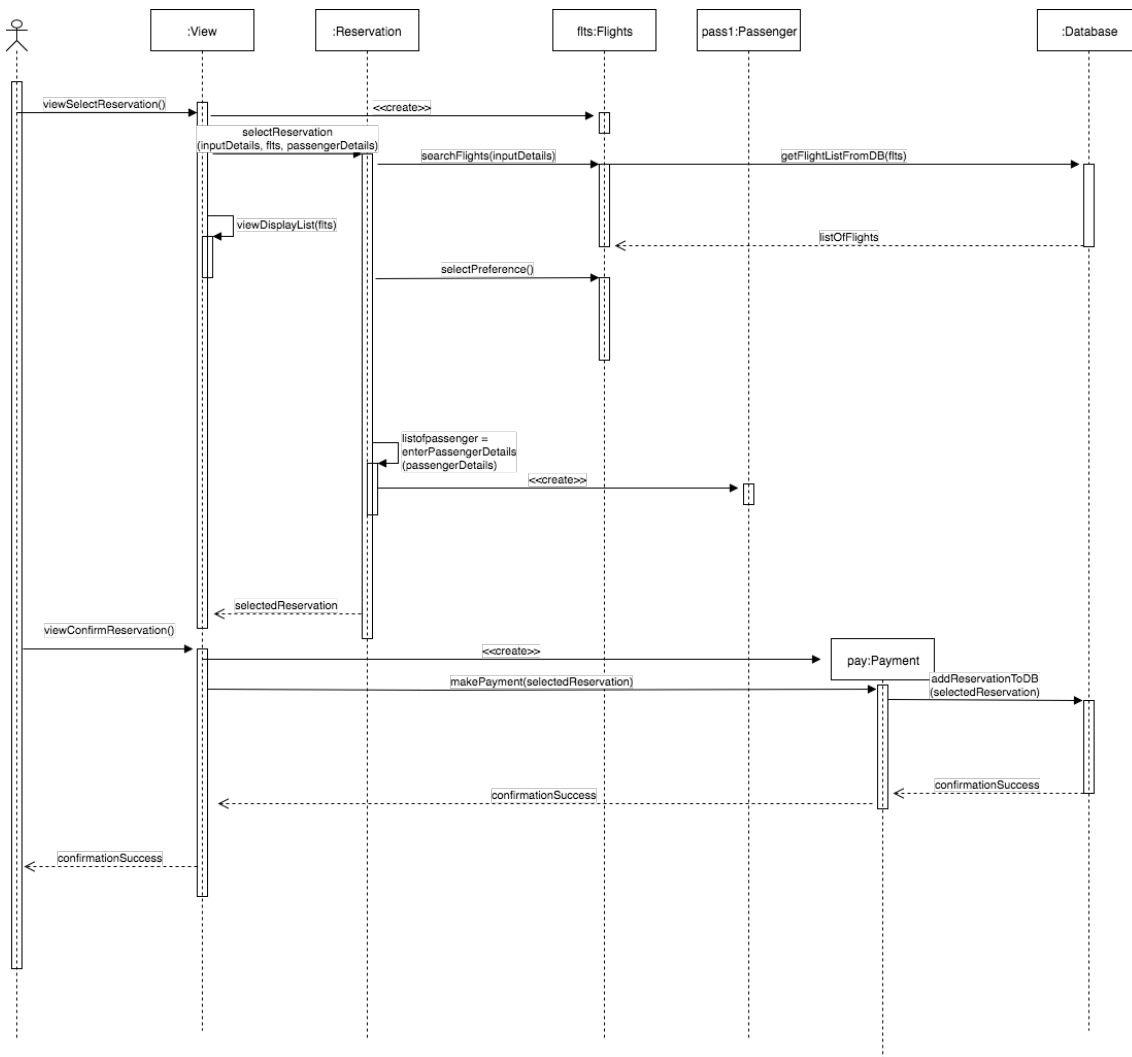
- **Sequence Diagram for making reservation**

Req ID: UR-003, UR-004, UR-010, Fr-003, FR-004, FR-006

Use Case ID: UC-04

Use Case Name: Making Reservation **Use Case Description:** Customer makes reservation for passengers after searching for flights, selecting preference and making payment.

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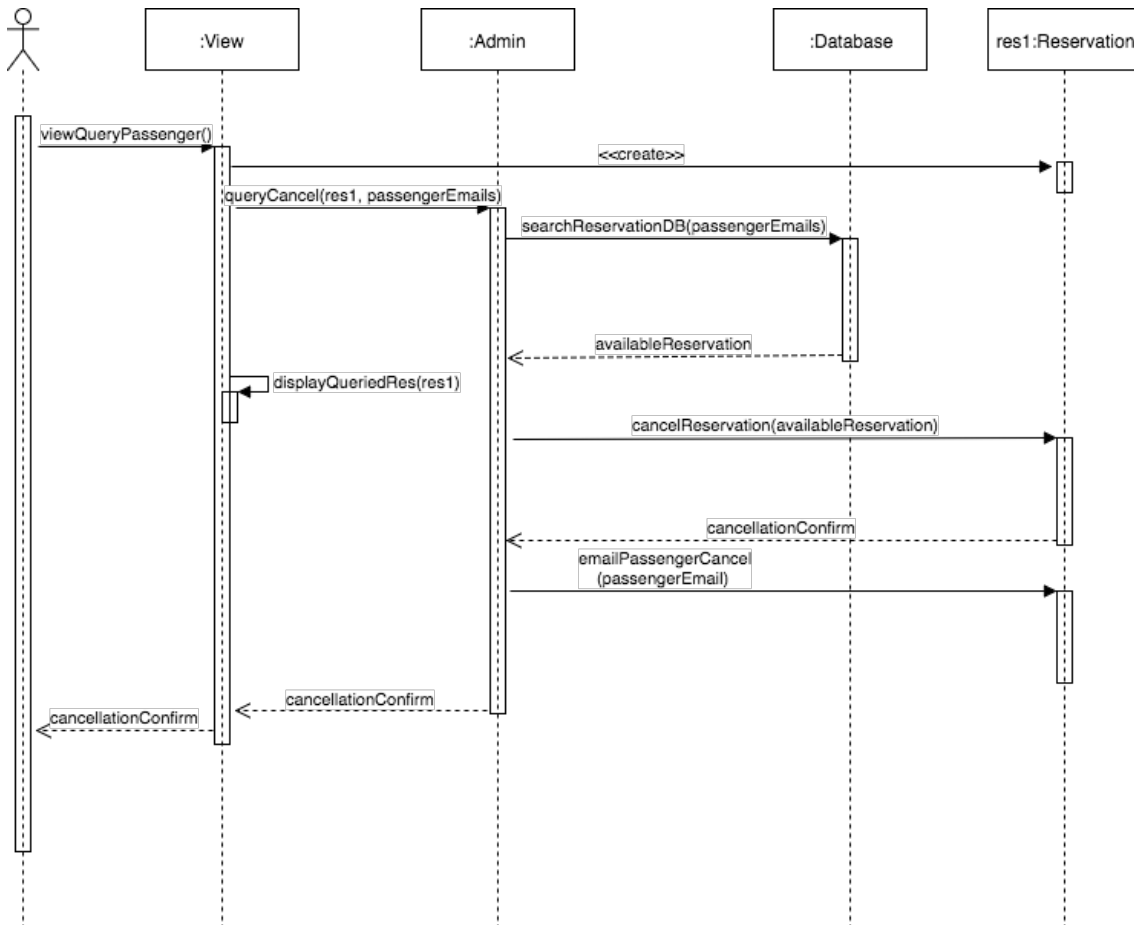


- **Sequence Diagram for admin query cancel**

Req ID: UR-000, UR-011, FR-006, FR-007

Use Case ID: UC-04

Use Case Name: Admin Query Cancel **Use Case Description:** Admin queries the database and cancels the passenger's booking selected by entering passenger details. Requires verification that actor is indeed admin.



10. Class Diagram

