

Flight Scheduler

OOP Project Fall 2017

A. Team:

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B. Title: Flight Scheduler

C. Project Summary: A Flight scheduler for an airport that allows interaction from passengers, airline personnel and airport administrators. When complete the scheduler should handle all aspects of reserving and scheduling flights while allowing users to view all flight related information (e.g. gate, time window).

Project Requirements

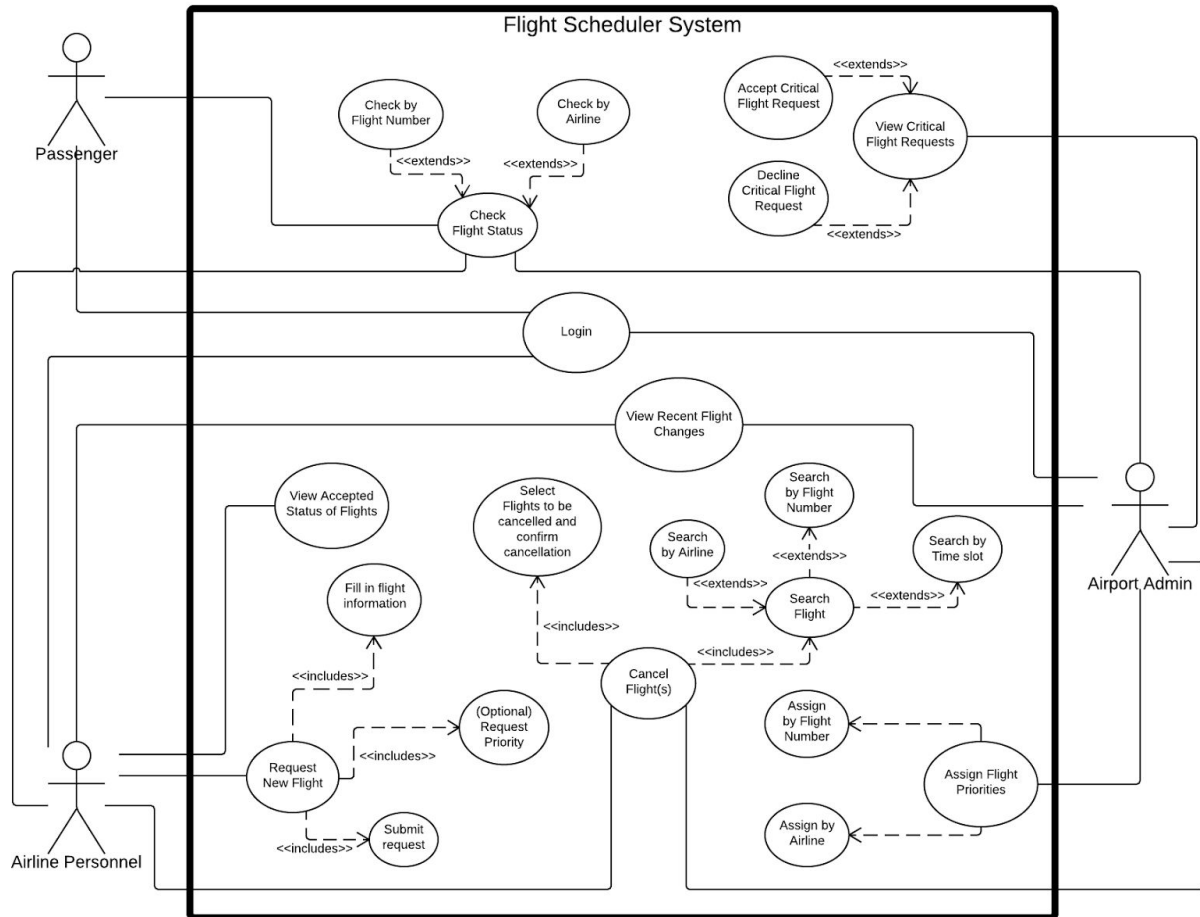
Note: There are no Business Requirements.

User Requirements				
ID	Requirement	Topic Area	Actor	Priority
PAS - 001	Login via Guest user	Authentication	Passenger	1
PAS - 002	Lookup flight status via airline name	Search	Passenger	2
PAS - 003	Lookup flight status via flight number	Search	Passenger	2
AIR - 001	Login as particular airline	Authentication	Airline	1
AIR - 002	View status of all flights	Search	Airline	3
AIR - 003	Can request to add flight of their own	Request	Airline	2
AIR - 004	Can view the accepted status of their own flights	Request/Search	Airline	2
AIR - 005	Can cancel their own flights	Cancellation	Airline	3
PORT - 001	Login as airport admin	Authentication	Airport	1
PORT - 002	Can view the status of all flights	Search	Airport	3
PORT - 003	Can cancel any flight	Adjustment/ Cancellation	Airport	2
PORT - 004	Priority can be added to a specific airline	Priority	Airport	4
PORT - 004	Can cancel flights in a time window	Cancellation	Airport	2
PORT - 005	Can cancel time window groundings	Cancellation	Airport	3

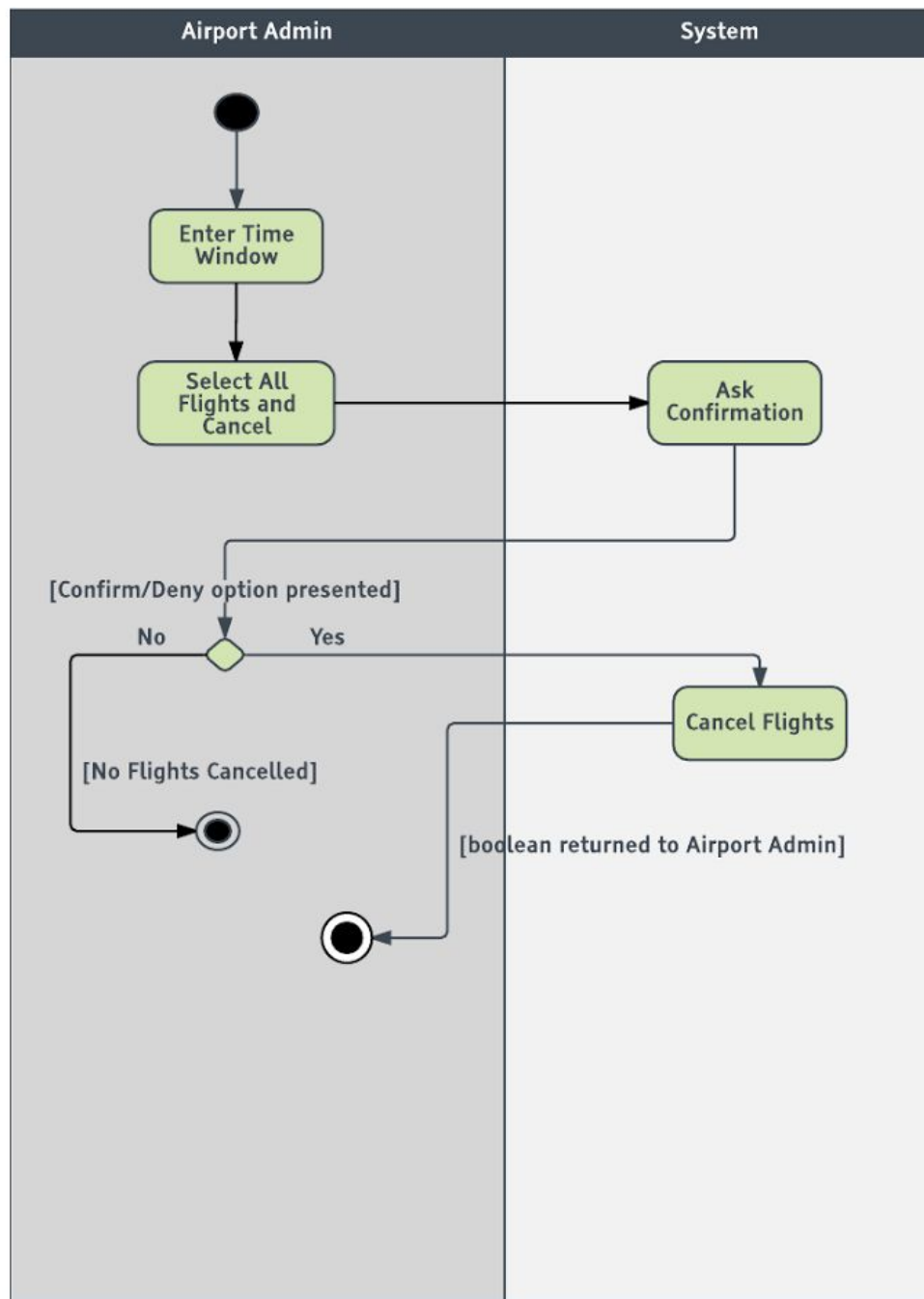
Non-Functional Requirements				
ID	Requirement	Topic Area	Actor	Priority
NFUN - 001	Actions warranting a response use a new page	Usability/Views	Airport/Airline/ Passenger	2
NFUN - 002	One user can interact with the system at a time	Usability/Users	Airport/Airline/ Passenger	1
NFUN - 003	Works on small datasets (<500MB)	Reliability/ Database	Airport/Airline/ Passenger	2
NFUN - 004	Will return the result of any action within 15 seconds	Performance	Airport/Airline/ Passenger	2
NFUN - 005	Developed with the intent of being used on non-mobile platforms (OSX, Windows, Linux)	Supportability	Airport/Airline/ Passenger	1

Extra Requirements (If time to do so)				
ID	Requirement	Topic Area	Actor	Priority
EX - 001	Multiple users can interact with the system at once	Usability/Users	Airport/Airline/ Passenger	2
EX - 002	Emergency landing procedures	Usability/ Performance	Airport/Airline/ Passenger	3
EX - 003	Passengers have their own login information	Authentication	Passenger	1
EX - 004	Passengers are notified about changes to their flights	Notification/ Usability/Users	Passenger/ Airline	4

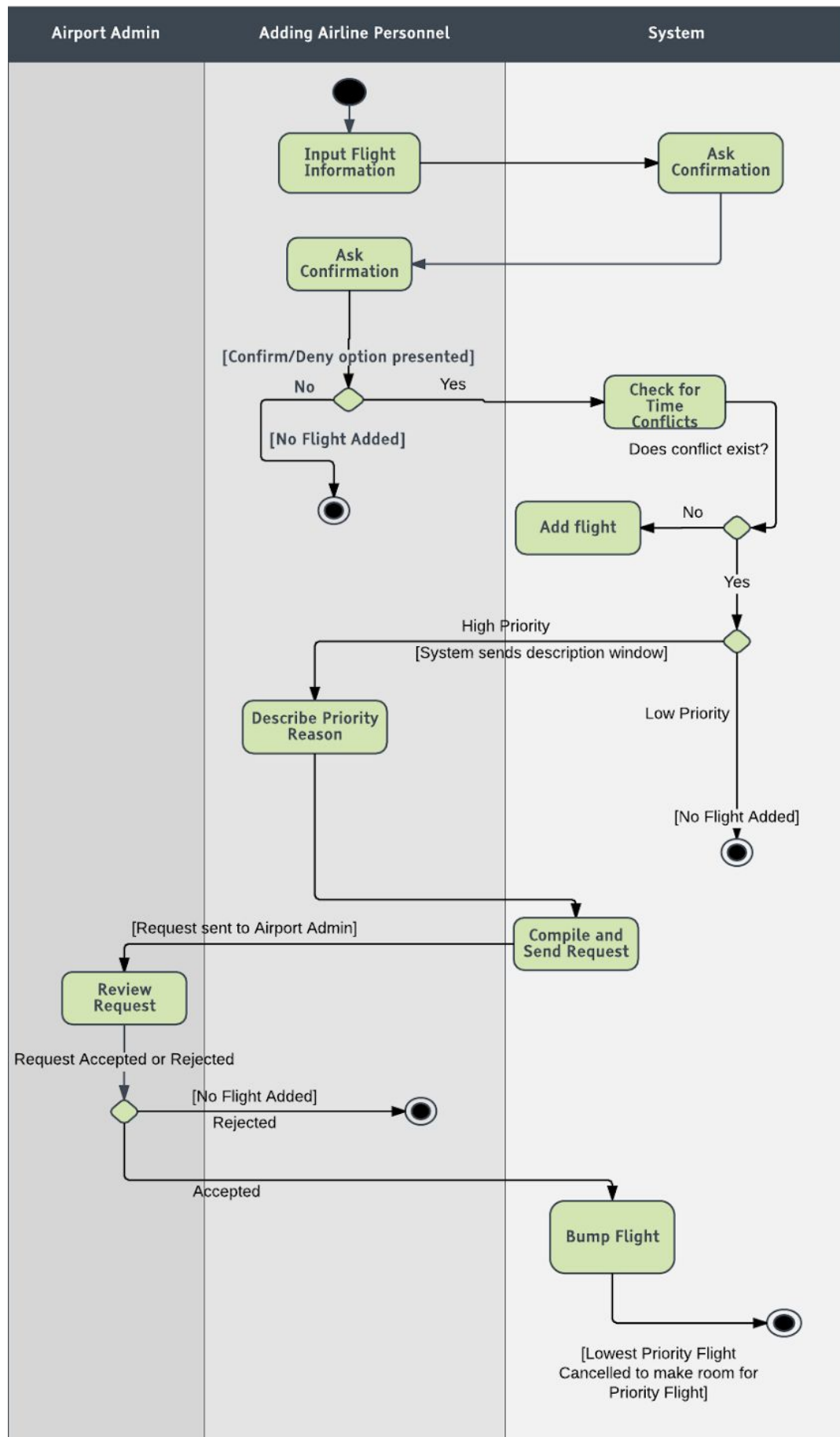
Use Case Diagram



Activity Diagram for PORT-004



Activity Diagram for AIR-003



UI Mockups

Log In Page

Log In

Username

JohnDoe

Password

Log In

Passenger's View - Search

Passenger's View of Flight Schedule

Flights

Flight #:

Q

Search

Time:

:

to

:

Date:

05/06/2015

data

Airline:

Departure/Arrival:

Both

List of Flights

☐ Flight A-123

☐ Flight U-882

☐ Flight B-123

☐ Flight C-123

☐ Flight D-123

Airline Personnel - Search

Airline's View of Flight Schedule

Flights

Add Flight

Cancel Flights

Flight Requests

Recent Changes

Flight #:

Q

Search

Time:

:

to

:

Date:

05/06/2015

data

Airline:

Departure/Arrival:

Both

List of Flights

☐ Flight A-123

☐ Flight U-882

☐ Flight B-123

☐ Flight C-123

☐ Flight D-123

Airline Personnel - Add Flight

Airline's View of Flight Schedule

Flights

Add Flight

Cancel Flights

Flight Requests

Recent Changes

Time:

:

to

:

Date:

05/06/2015

data

Departure/Arrival:

Select

Model #:

Departure Location:

Arrival Location:

☐ Critical Priority

Request

Airline Personnel - Cancel Flight

Airline's View of Flight Schedule

Flights

Add Flight

Cancel Flights

Flight Requests

Recent Changes

Flight #:

Q

Search

Time:

:

to

:

Date:

05/06/2015

data

List of Flights

☐ Select All

☐ Flight A-123

☐ Flight U-882

☐ Flight B-123

☐ Flight C-123

☐ Flight D-123

Cancel Flight

Airline Personnel - Flight Requests

Airline's View of Flight Schedule

Flights

Add Flight

Cancel Flights

Flight Requests

Recent Changes

Flight #:

Q

Search

Time:

:

to

:

Date:

05/06/2015

data

List of Flights

☐ Flight A-123 Critical - REJECTED

☐ Flight U-882 Critical - Approved

☐ Flight J-882 - Approved

Petition to Change

Airline Personnel - Recent Changes

Airline's View of Flight Schedule

Flights

Add Flight

Cancel Flights

Flight Requests

Recent Changes

Flight U-123 Approved

Airport Admin - Search

Airport Admin's View of Flight Schedule

Flights

Cancel Flights

Flight Request

Recent Changes

Flight #:

Q

Search

Time:

:

to

:

Date:

05/06/2015

data

Airline:

Departure/Arrival:

Both

List of Flights

☐ Flight A-123

☐ Flight U-882

☐ Flight B-123

☐ Flight C-123

☐ Flight D-123

Airport Admin - Recent Changes

Airport Admin's View of Flight Schedule

Flights

Cancel Flights

Flight Requests

Recent Changes

Flight #:

Q

Search

Time:

:

to

:

Date:

05/06/2015

data

Airline:

List of Flights

☐ Select All

☐ Flight A-123

☐ Flight U-882

☐ Flight B-123

☐ Flight C-123

☐ Flight D-123

Cancel Flight

Airport Admin - Flight Request

Airline's View of Flight Schedule

Flights

Add Flight

Cancel Flights

Flight Requests

Recent Changes

Flight #:

Q

Search

Time:

:

to

:

Date:

05/06/2015

data

List of Flights

☐ Flight A-123 Critical - REJECTED

☐ Flight U-882 Critical - Approved

☐ Flight J-882 - Approved

Petition to Change

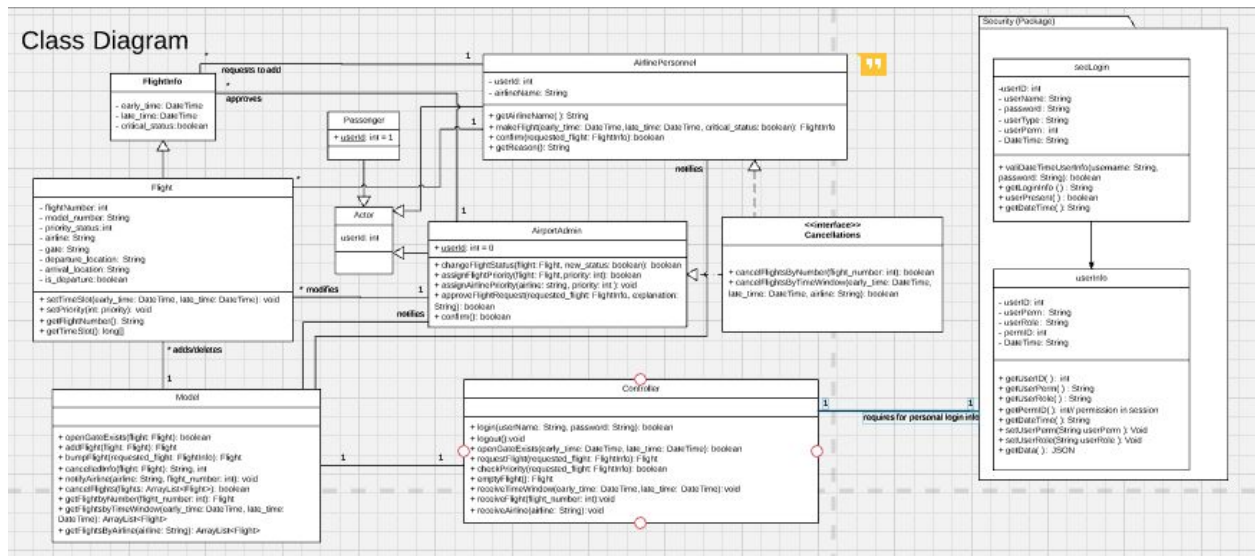
Airport and Airline have almost the same view for Recent Changes

Data Storage

We will be using a MySQL table to house and store all information related to our program. We are also planning on using hibernate to make this setup smoother within our Java program.

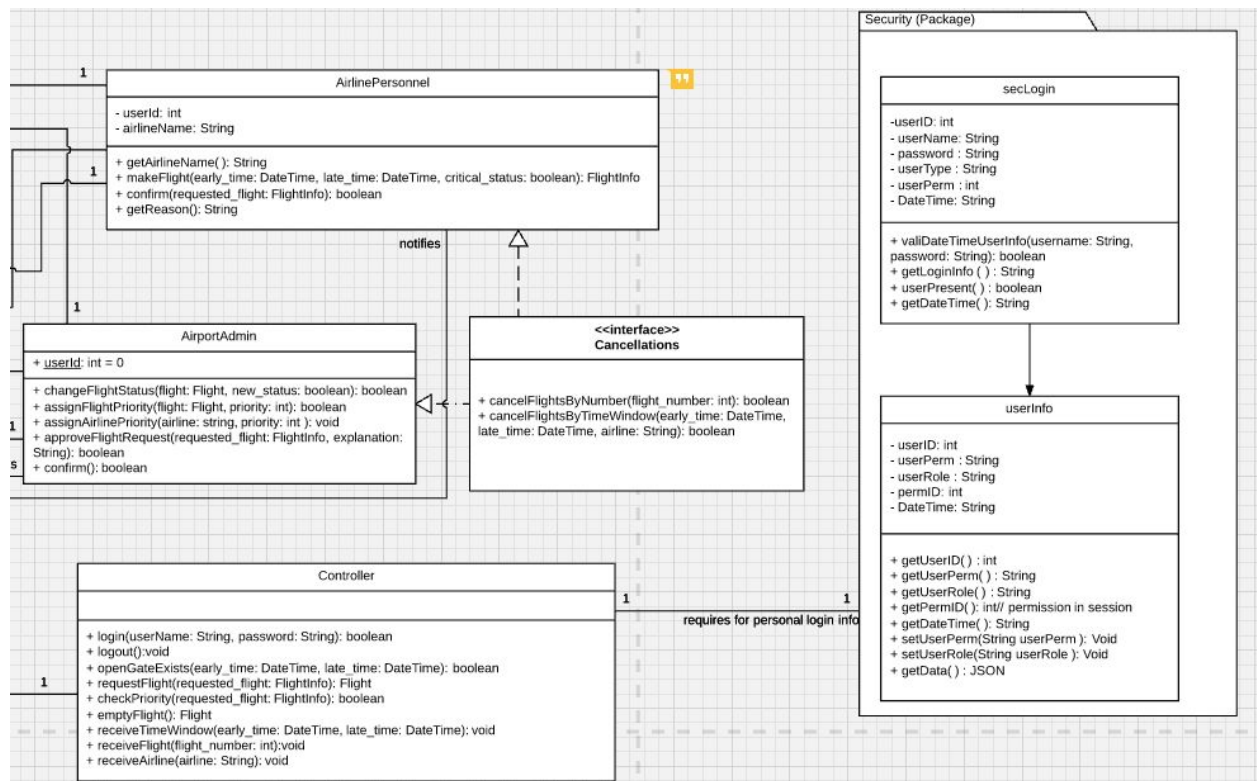
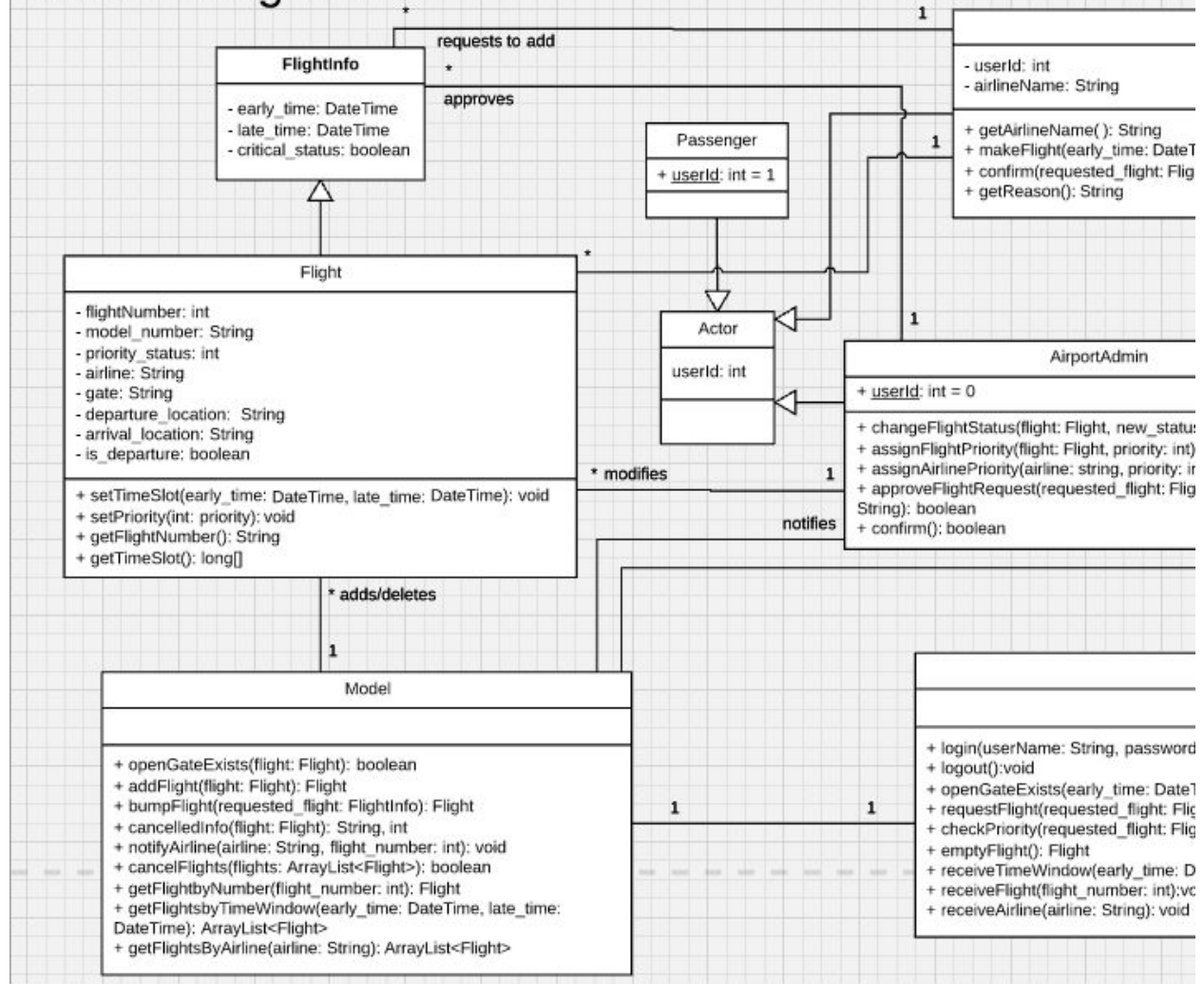
Class Diagram

Full Class Diagram



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Class Diagram

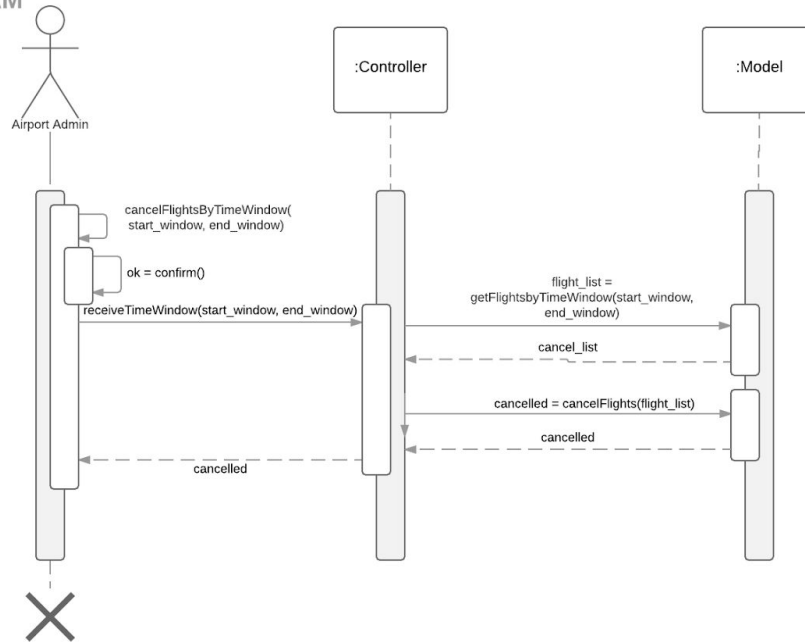


User Interactions - Sequence Diagrams

Use Case: PORT-004

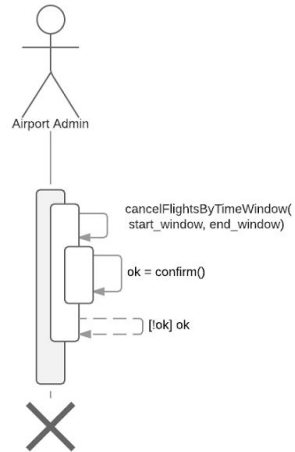
Use Case ID: PORT-004
Requirement ID: PORT-004
Short Description: This is the only variation for this Use Case. An airline personnel needs to cancel flights within a certain range of time. Instead of confirming cancel, the airline personnel fails to confirm the cancellation, resulting in no flight cancellations

CSCI 4448 - FLIGHT SCHEDULER SEQUENCE DIAGRAM



Use Case ID: PORT-004
Requirement ID: PORT-004
Short Description: An airline personnel needs to cancel flights within a certain range of time. The airline personnel enters the relevant time window and confirms the cancellation

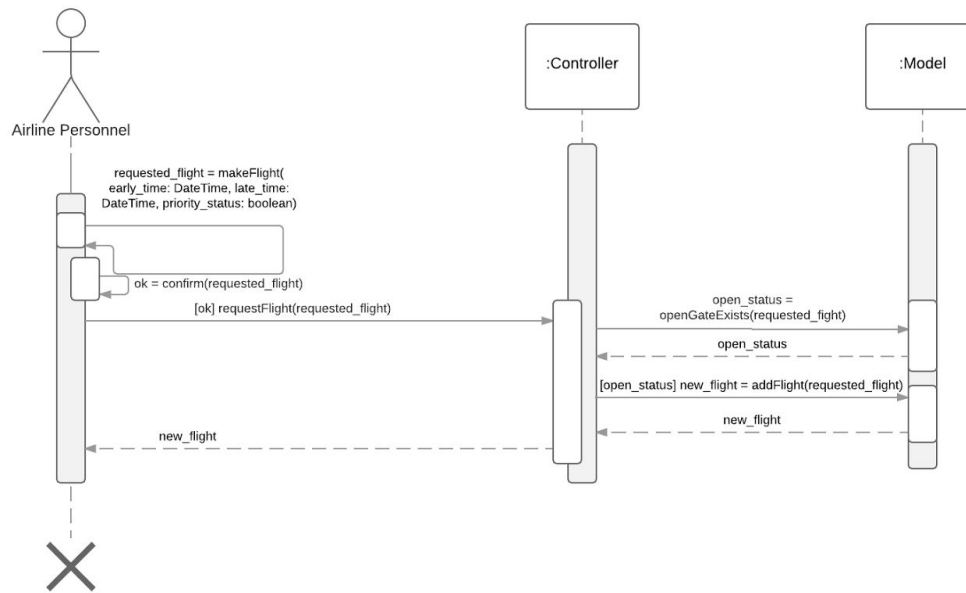
CSCI 4448 - FLIGHT SCHEDULER SEQUENCE DIAGRAM



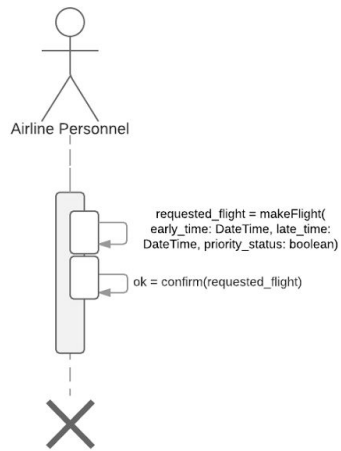
Use Case: AIR-003

CSCI 4448 - FLIGHT SCHEDULER SEQUENCE DIAGRAM

Use Case ID: #AIR-003
Requirement ID: AIR-003
Short Description: An airline
submits a request to add a new
flight and there is space to add
the flight in the allotted time slot



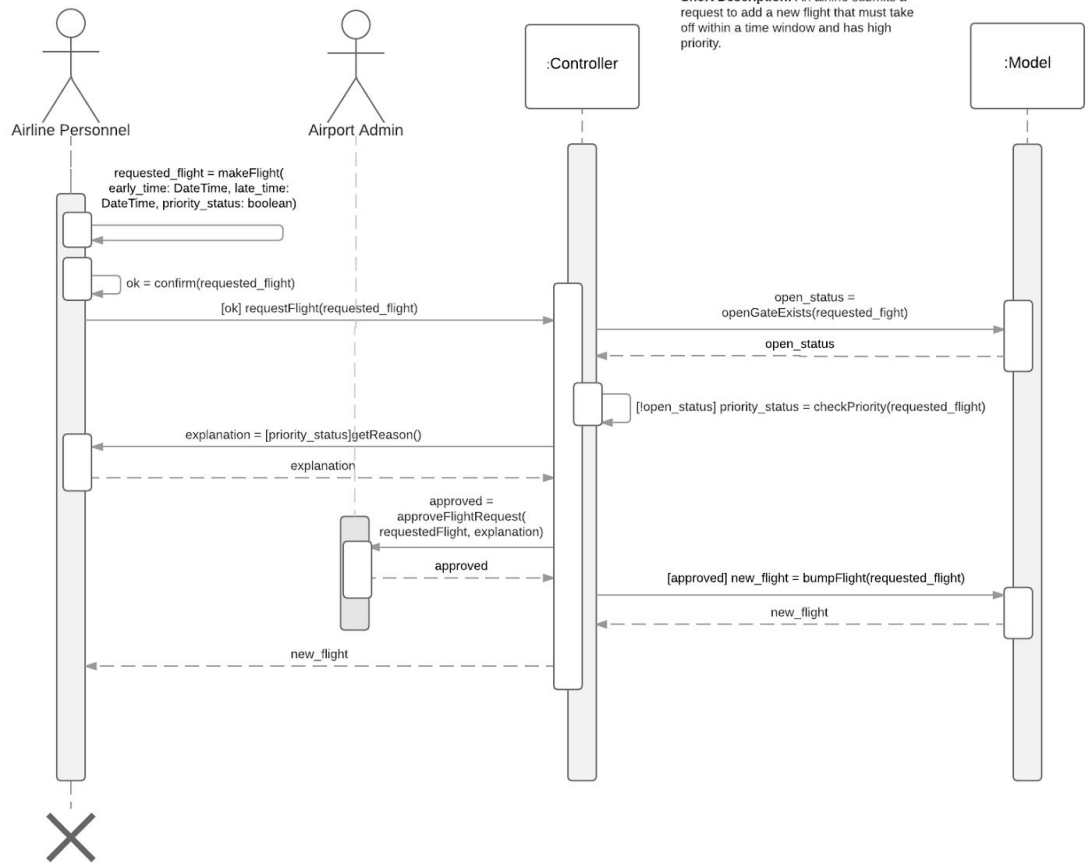
CSCI 4448 - FLIGHT SCHEDULER SEQUENCE DIAGRAM



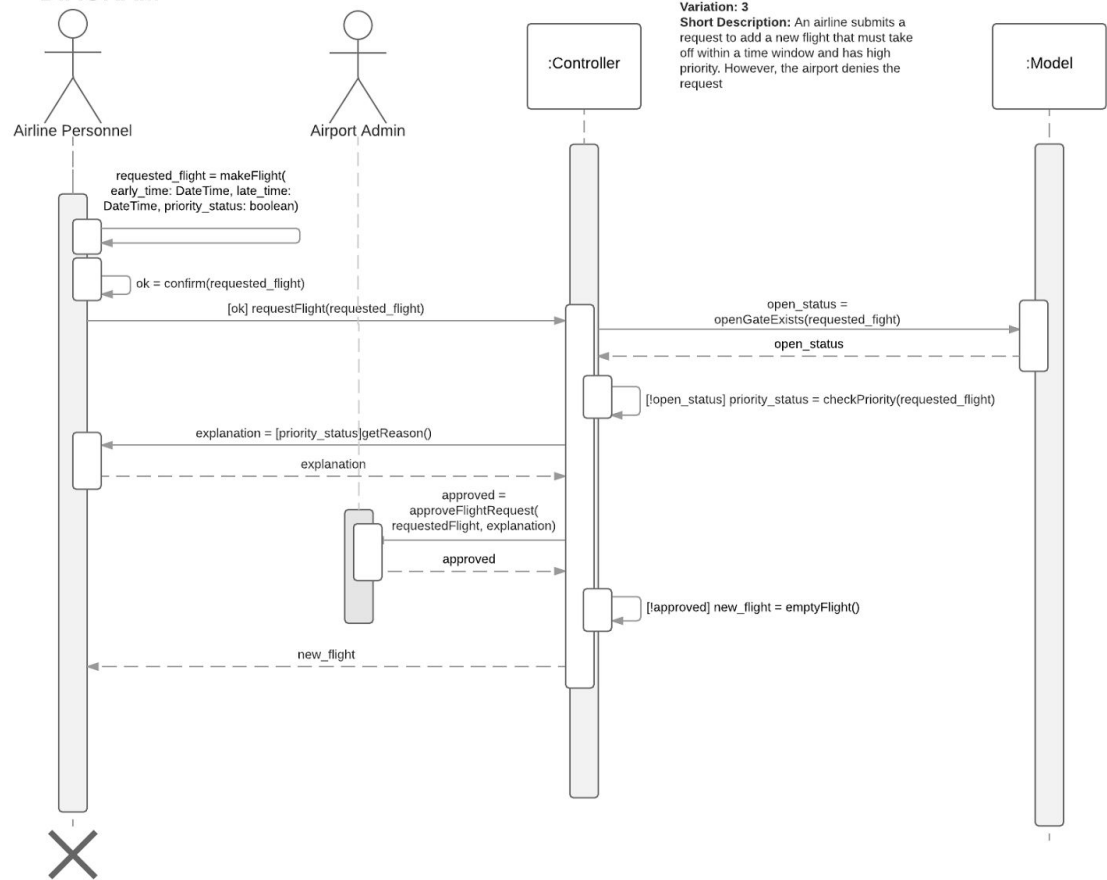
Use Case ID: #AIR-003
Requirement ID: AIR-003
Variation: 1
Short Description: An airline submits a request to add a new flight but does not confirm the request to be sent.

CSCI 4448 - FLIGHT SCHEDULER SEQUENCE
DIAGRAM

Use Case ID: AIR-003
Requirement ID: AIR-003
Variation: 2
Short Description: An airline submits a request to add a new flight that must take off within a time window and has high priority.



CSCI 4448 - FLIGHT SCHEDULER SEQUENCE
DIAGRAM



CSCI 4448 - FLIGHT SCHEDULER SEQUENCE DIAGRAM

Use Case ID: #AIR-003
Requirement ID: AIR-003
Variation: 4
Short Description: An airline submits a request to add a new low priority flight but there is no space for the flight in the time slot to add the new flight.

