

COEN-6312 -MODEL DRIVEN SOFTWARE ENGINEERING



DELIVARABLE -2 AIRLINE RESERVATION SYSTEM

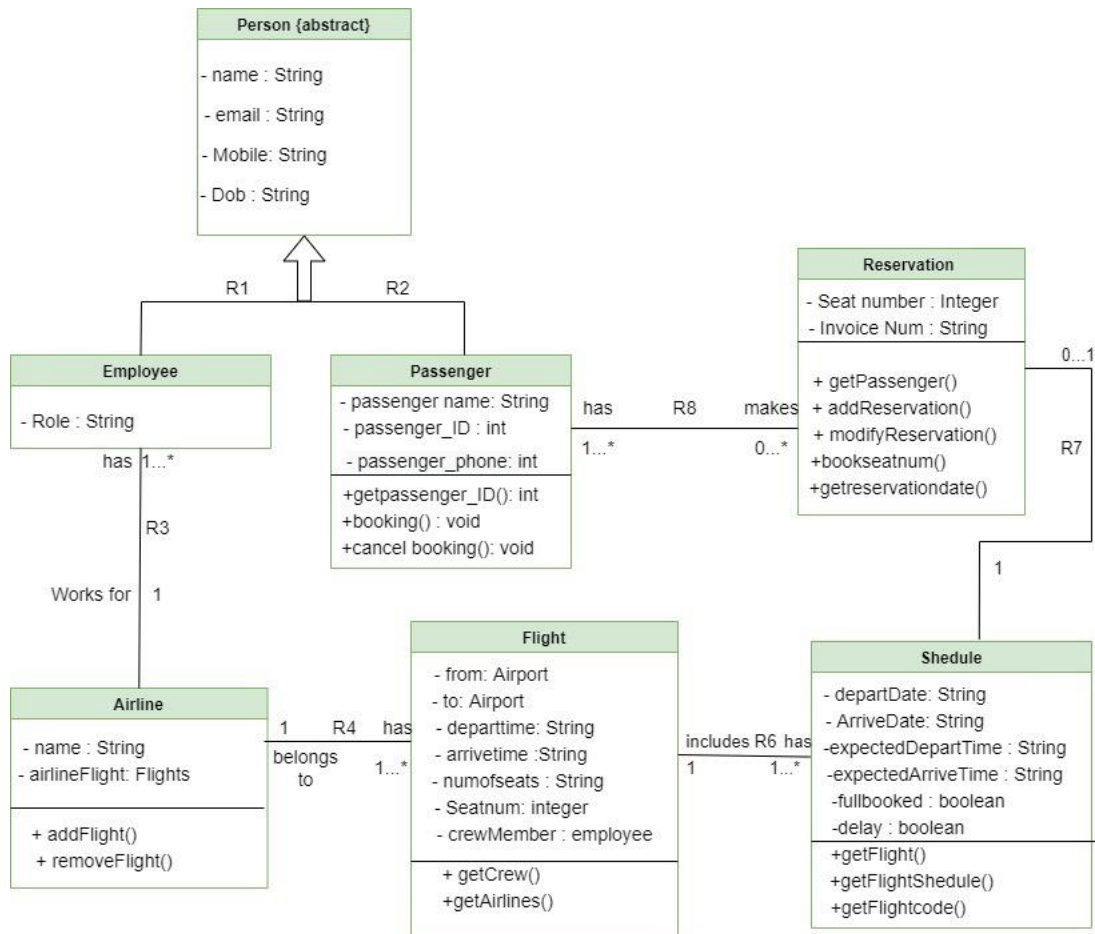
PRESENTED TO

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Class diagram:



OCL Constraints:

1.The age of the passenger should be more than 18 to signup the application.

Context: Passenger

inv: allInstances()->forAll(c: Passenger, (c.Reservation->notEmpty()) implies year(c.Person.dob) <=year(today) – 18))

2.Reservation is done with the requested seat by checking the availability of that seat on the flight.

Context: Flight

Pre: self.seatnumber \longrightarrow includes(seatnumber)

Post: slf.seatnumber \longrightarrow exclude(seatnumber)

3. Cancelling a reservation after checking if there is an existing reservation.

Context : Passenger

Pre:self.PassengerReservation \longrightarrow includes(Passenger n)

Post:self.passengerReservation \longrightarrow excludes(Passenger n)

4. Removing the flight after verifying whether the flight object exists.

Context: Airline

inv: self. Flight \longrightarrow includes(a)

self. Flight \longrightarrow excludes(a)

5. Should check whether the allocated crew members are zero for the flight then only the crew members should be added.

Context: Airline

inv: self. Flight. getCrew.size() =0 \rightarrow self.Flight.setCrew

6. Crew members should not be greater than 5

Context: Flight

Inv: self. Flight. getCrew.size() \leq 5

7. Every flight should have an unique number.

Context: flight

Inv: allInstances- \rightarrow forAll (f1, f2 flight | f1 \neq f2 implies f1.flightID \neq f2.flightID)

8. Regardless of flight numbers, all Schedule ids must be unique.

Context: Schedule

inv: allInstances->forAll (k1, k2 Schedule | k1<>k2 implies
scheduleID<>k2.scheduleID)

9. A passenger cannot have two separate bookings on the same flying schedule.

Context: Passenger

inv:self.Reservation->forAll(p1,p2 Reservation | p1<>p2 implies
p1.Schedule.scheduleID<>p2.Schedule.scheduleID)

10. It is not possible for two distinct people to reserve the same seats on the same aircraft with the same timetable.

Context: Flight

inv: self.Schedule.Reservation-> forAll(p1,p2 Reservation | p1<>p2 implies
p1.seatNumbers<>p2.seatNumbers)

11. The number of reserved tickets cannot exceed the number of seats available for reservation for a certain flight schedule.

Context: Schedule

inv: self.Reservation->collect(seatNumbers) -> count()=<self.Flight.numberOfSeats

12.Passengers can only make changes to bookings that are assigned to them.

Context: Reservation: modification (Passenger n)

pre: self.Passenger->includes(n)

post: self.Passenger->includes(n)

