IT314 : Software Engineering

Lab-04 : Class Modeling

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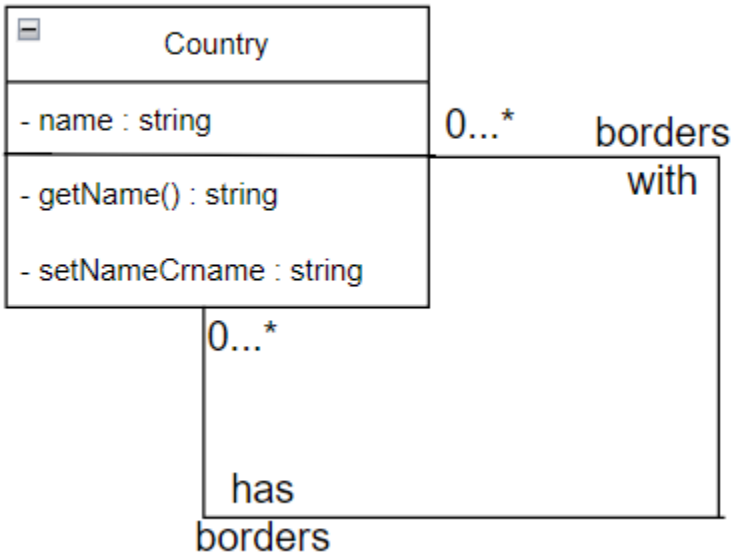
1.



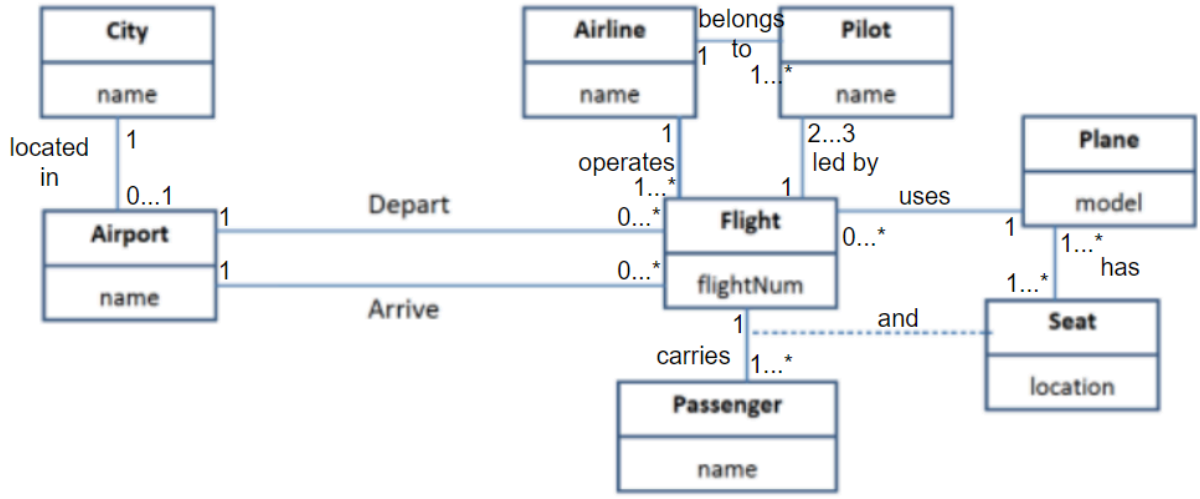
2.

Multiplicity:

- Since a polygon requires at least three points, the multiplicity on the point side of association is 3…*.
- A point can belong to multiple polygons (i.e., it can be shared) so there is 0…* multiplicity on the polygon side of association.

Yes, it makes a difference if points are shared between polygons, as that makes the multiplicity = 0…* otherwise it would be 0…1.

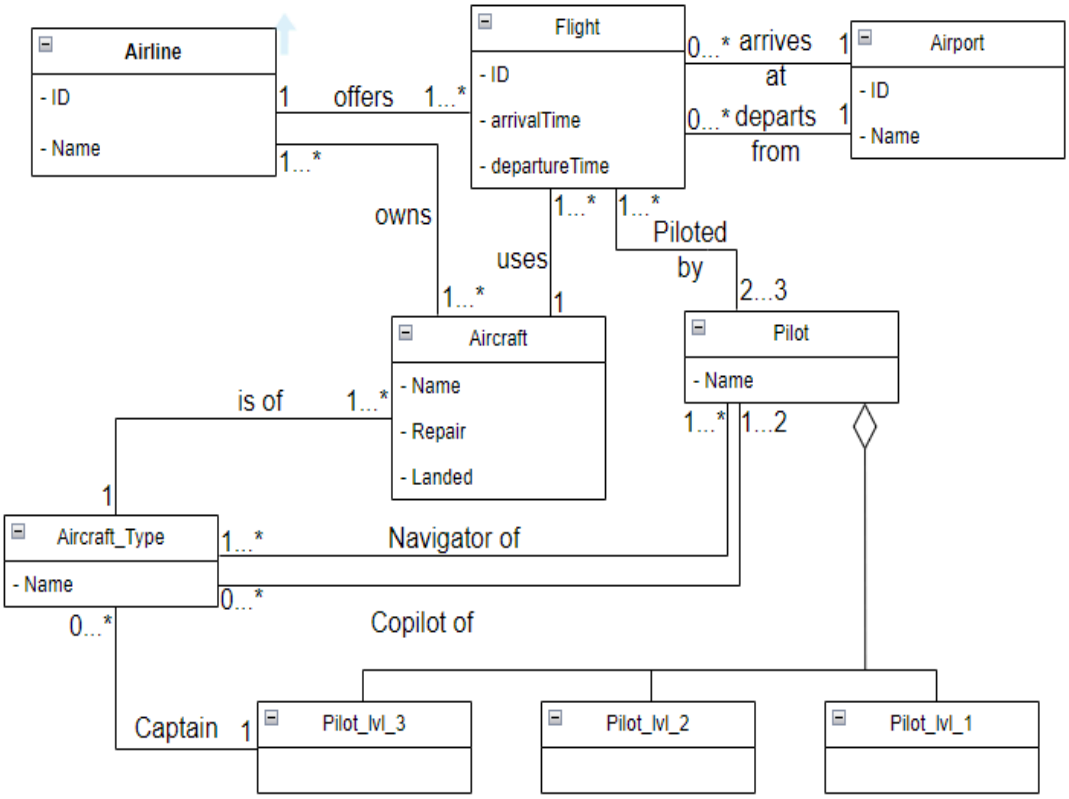
3.



Assumptions:

- Pilot to flight (led by) : two to three pilots per flight.
- Flight to plane (uses) : each flight uses 1 plane.
- Flight to passenger (carries) : each flight carries at least one passenger
- Flight to Airport (departs and arrives) : an airport can have 0 or more flights arriving or departing
- Airport to City (located in) : A city can have 0 or 1 airport
- Airline to Flight (operates) : An airline operates 1 or more flights
- Plane to Seat (has) : A plane can have more than one seat
- Pilot to Airline (belongs to) : 1 or more pilots work for (belongs to) an airline

4.


Airline
- ID
- Name
Flight
- ID
- arrivalTime
- departureTime
Airport
- ID
- Name
0...* arrives at 1
0...* departs from 1
1 offers 1...*
1...*
owns
1...*
uses
1
1...*
Piloted by
2...3
Aircraft
- Name
- Repair
- Landed
Pilot
- Name
is of 1...*
1
1...*
1...2
Aircraft_Type
- Name
1...*
Navigator of
0...*
Copilot of
0...*
Captain 1
Pilot_lvl_3
Pilot_lvl_2
Pilot_lvl_1