IT-314 SOFTWARE ENGINEERING

LAB-4

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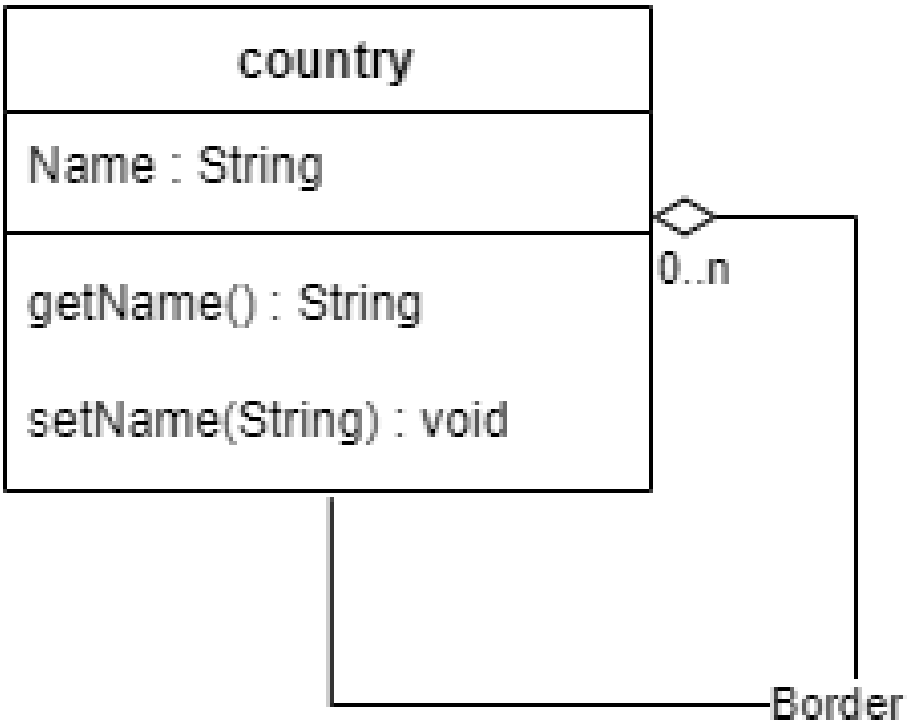
CLASS DIAGRAM

QUESTION - 1

Q.1 Prepare a class diagram for the following object diagram that shows a portion of Europe.

Ans :



QUESTION - 2

Q.2 Prepare a class diagram for object diagram given in Figure -2. Explain your multiplicity decisions. What is the smallest number of points required to construct a polygon? Does it make a difference whether or not point may be shared between polygons? Your answer should address the fact that points are ordered.

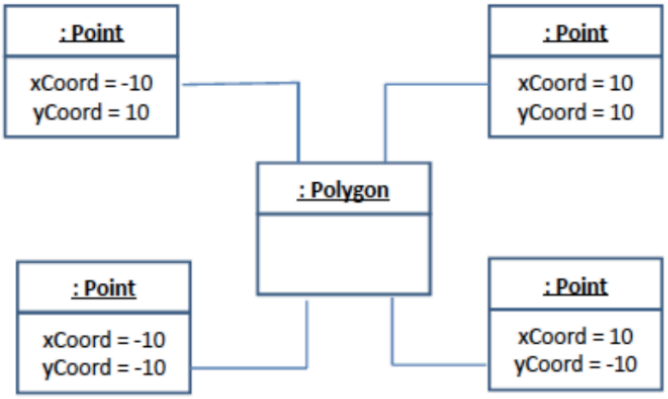
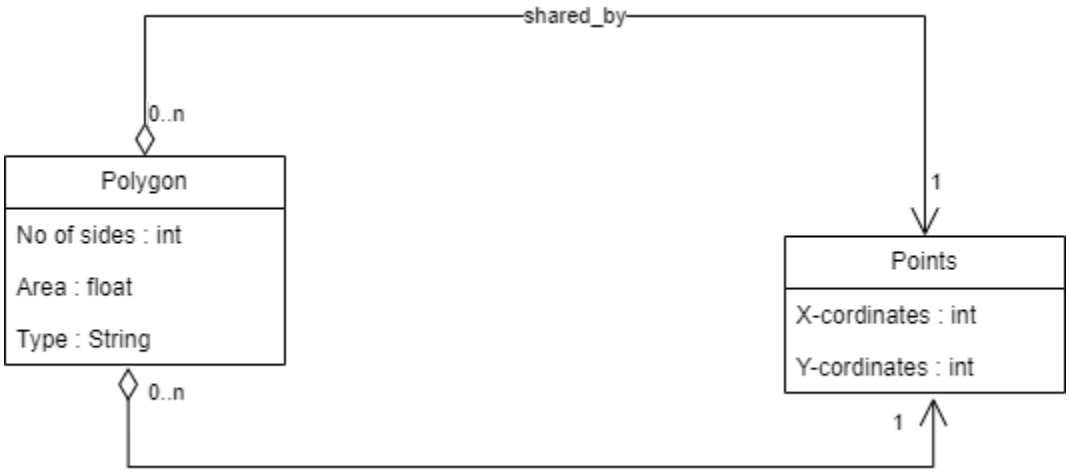


Figure - 2

Ans :



Explain your multiplicity decisions.

Ans- The multiplicity is 0..n as one polygon can have many points and one point can be a part of many polygons.

What is the smallest number of points required to construct a polygon?

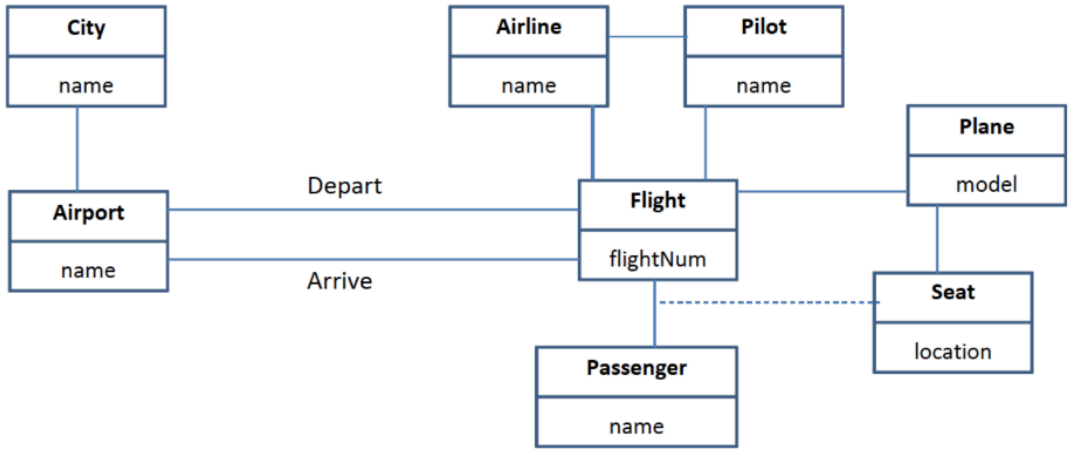
Ans- The smallest number of points required to construct a polygon is 3 non-collinear points.

Does It make a difference whether or not point may be shared between polygons?

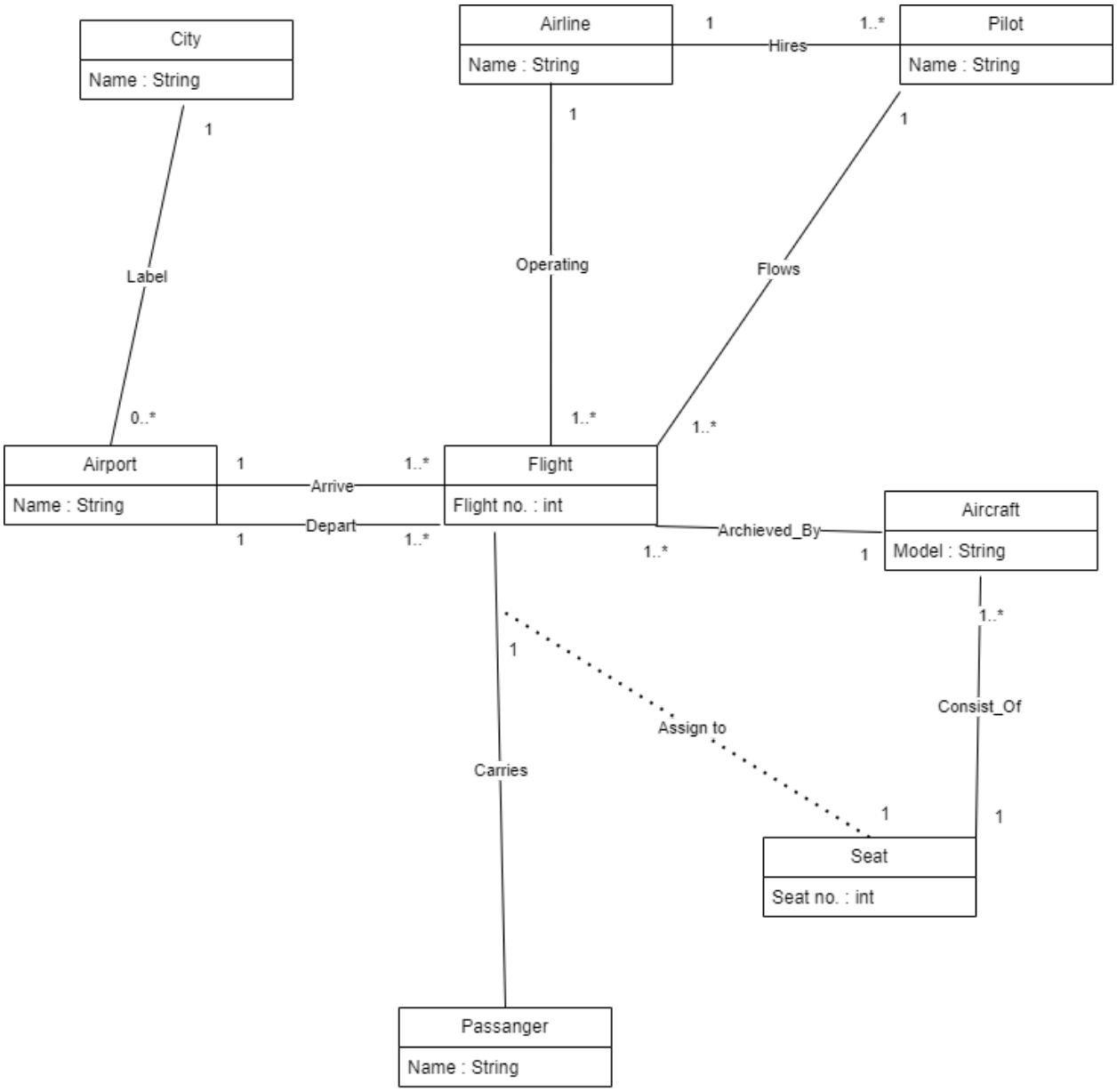
Ans- It makes the difference.If points are shared between polygons or vertices are shared between polygons or if points are not shared that polygon is distinct.

QUESTION - 3

Q.3 Figure 3 is a partially completed class diagram of an air transportation system. Add multiplicities in the diagram. Also add association names to unlevelled associations.



Ans :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Airline
Name : String
Pilot
Name : String
Hires
1
1..*
1
1
Label
Operating
Flows
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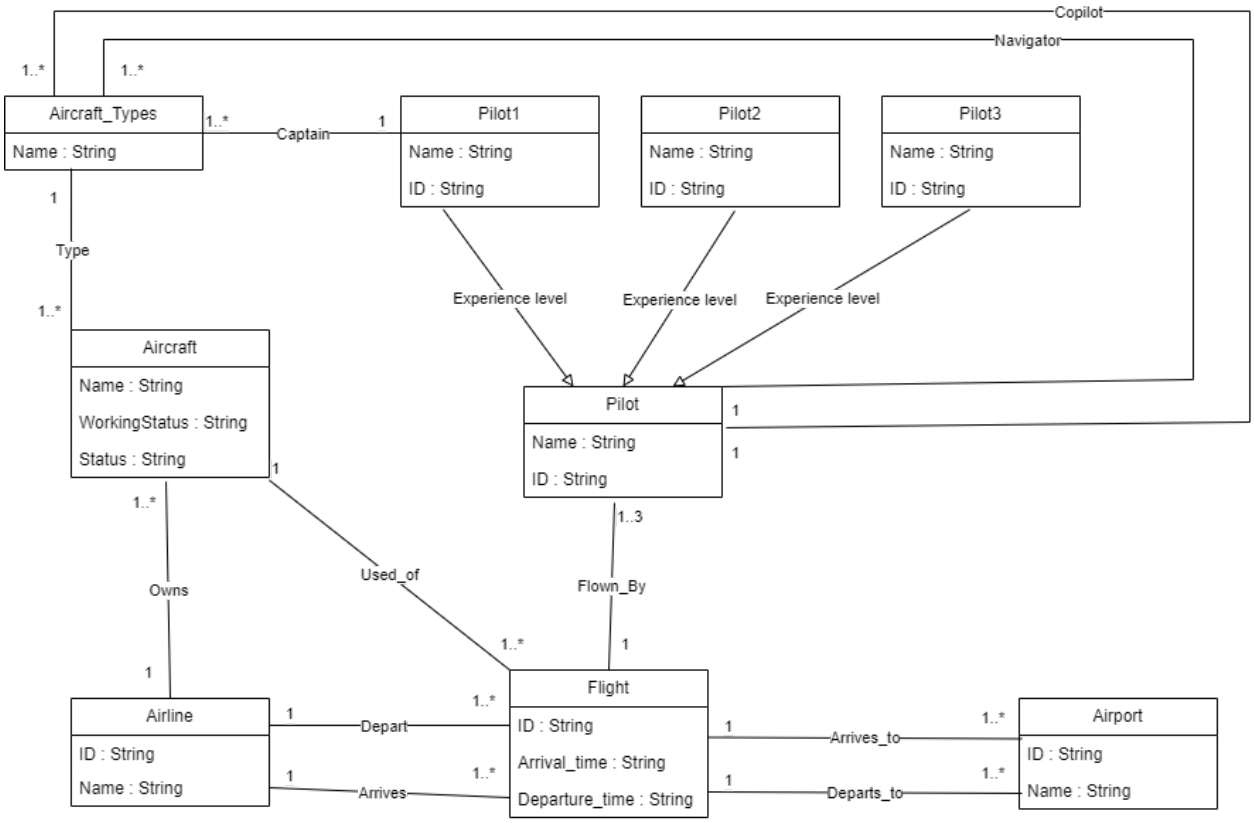
0..*
1..*
1..*
Airport
Name : String
Flight
Flight no. : int
Aircraft
Model : String
Arrive
Depart
1
1..*
1
1..*
Archieved_By
1..*
1
1..*
Consist_Of
Assign to
Carries
1
1
1
Seat
Seat no. : int
Passanger
Name : String

QUESTION - 4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Navigator
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1..*
Aircraft_Types
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Captain
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Pilot1
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ID : String
Pilot2
Name : String
ID : String
Pilot3
Name : String
ID : String
1
Type
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Experience level
Experience level
Experience level
Aircraft
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Status : String
Pilot
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ID : String
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1
1
1..*
1..3
Owns
Used_of
Flown_By
1..*
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1
Airline
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Name : String
1
Depart
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Arrives
1..*
Flight
ID : String
Arrival_time : String
Departure_time : String
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Arrives_to
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Departs_to
1..*
Airport
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Name : String