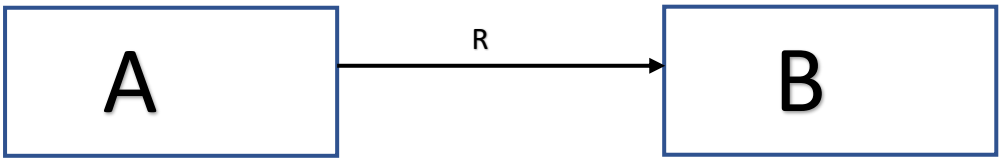
ASSOCIATION RELATION (HAS-A RELATION)

Association relation is always called has-a relation. Has-a relation simply means that a class will contain a member field of another class type.

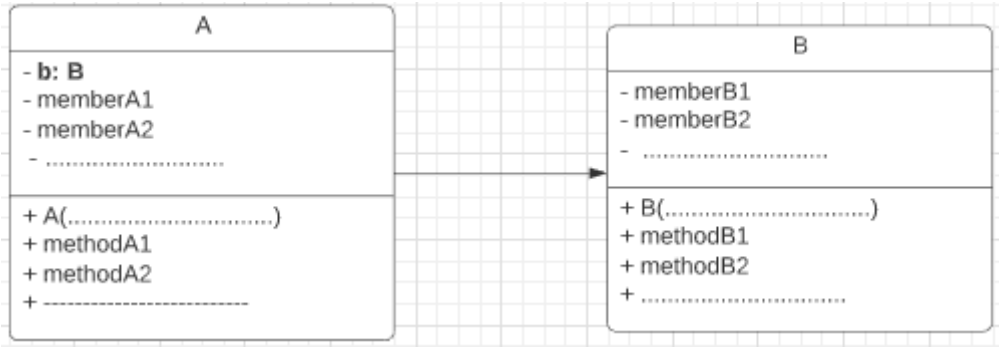


One-way relationship

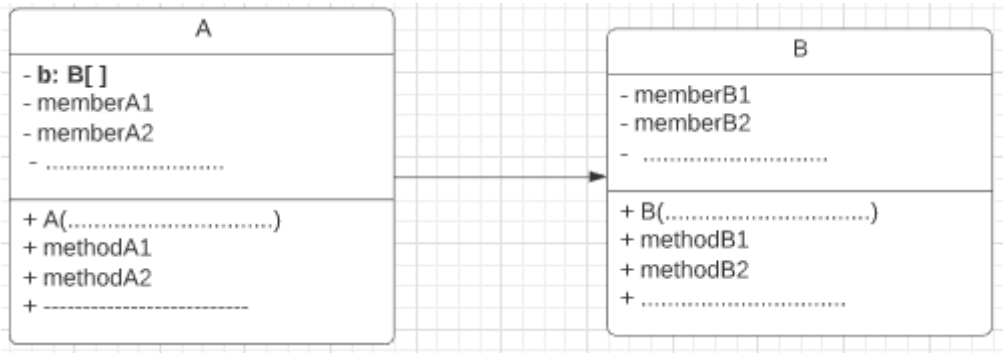
- In this figure, we can say that **Class A** has a **member(s) from class B. R** is the name of the relation (this is optional)**.**

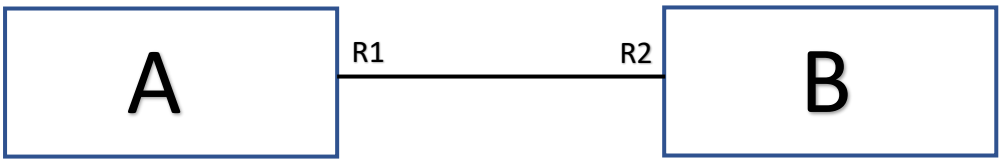
Possible UML Represantation:

i.



ii.

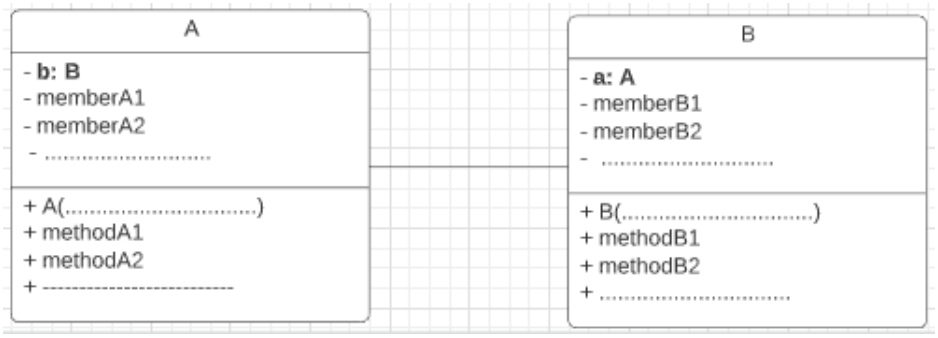


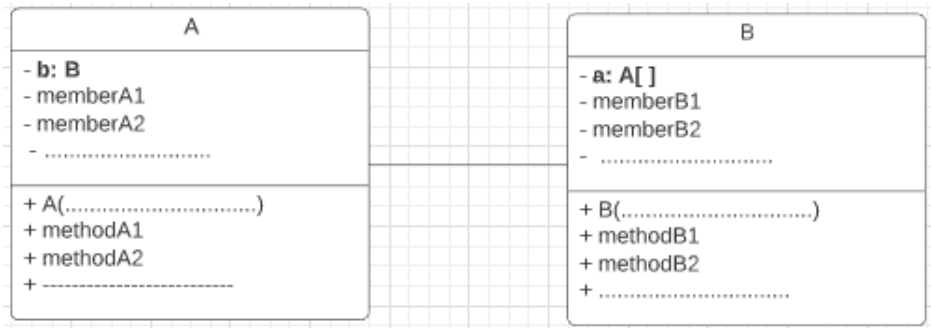


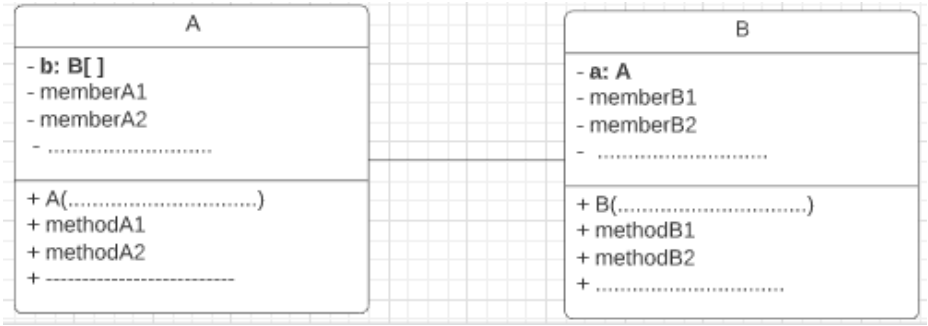
Two-Way Relationship

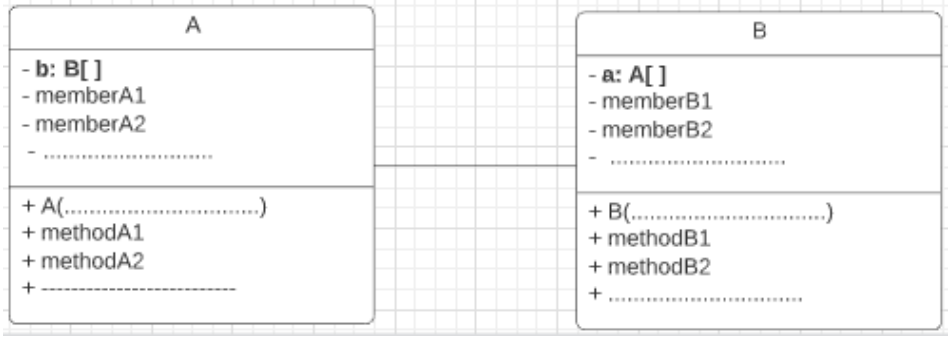
- In this figure, we can say that **Class A** has a **member(s) from class B** and **Class B** has a **member(s) from class A. R1 and R2** are the name of the relations (these are optional).

Possible UML Represantation:





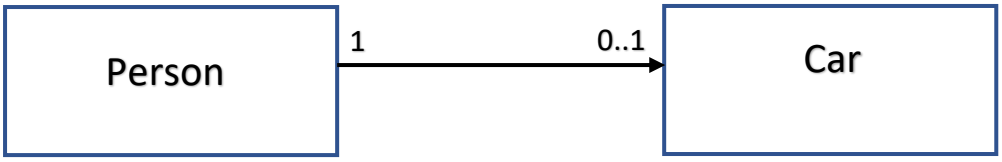




Degree of the relationship:

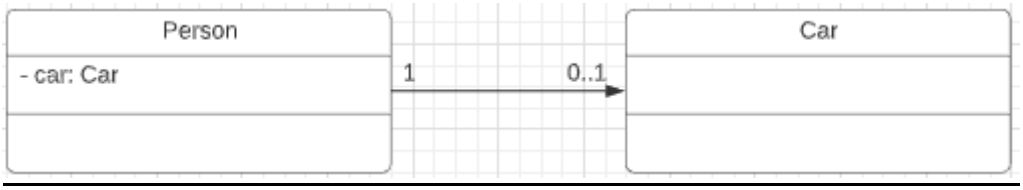
Degree	Explanation
0..1	Zero or one
0..*	Zero or more
1..*	One or more
*	Zero or more
k (k is any number)	Exactly k

Example-1:

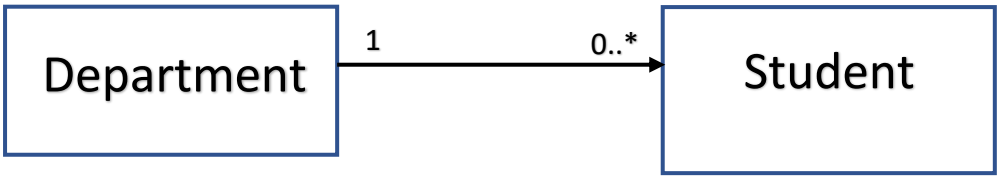


- A person has at most one car.
- A car has only one person.

UML Represantation:

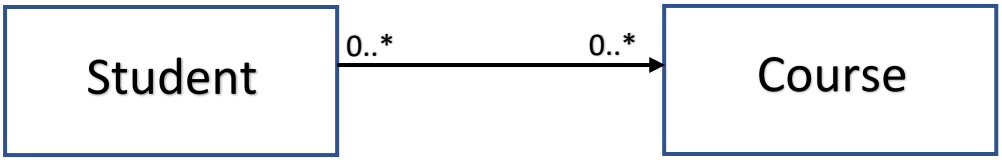


Example-2:



- A department has zero or more students.
- A student has only one department.

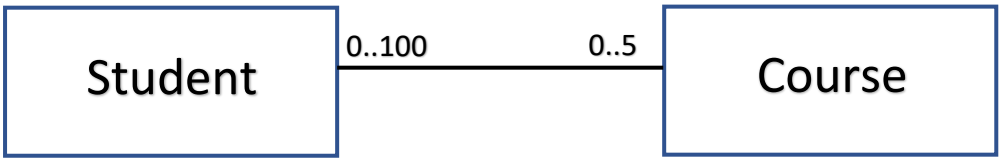
Example-3:



- A student can be registered zero or more courses.

- A course can be taken by zero or more students.

Example-4:



- A student can be registered at most 5 courses.
- A course can be taken by at most 100 students.

UML Represantation: