

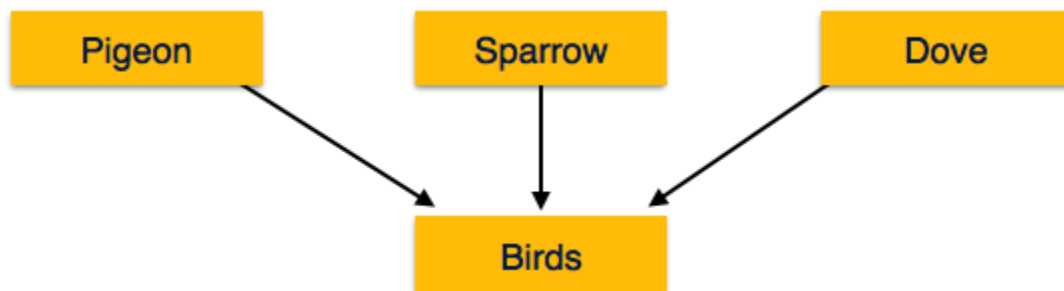
Generalization Aggregation

ER Model has the power of expressing database entities in conceptual hierarchical manner such that, as the hierarchical goes up it generalize the view of entities and as we go deep in the hierarchy it gives us detail of every entity included.

Going up in this structure is called generalization, where entities are clubbed together to represent a more generalized view. For example, a particular student named, Mira can be generalized along with all the students, the entity shall be student, and further a student is person. The reverse is called specialization where a person is student, and that student is Mira.

Generalization

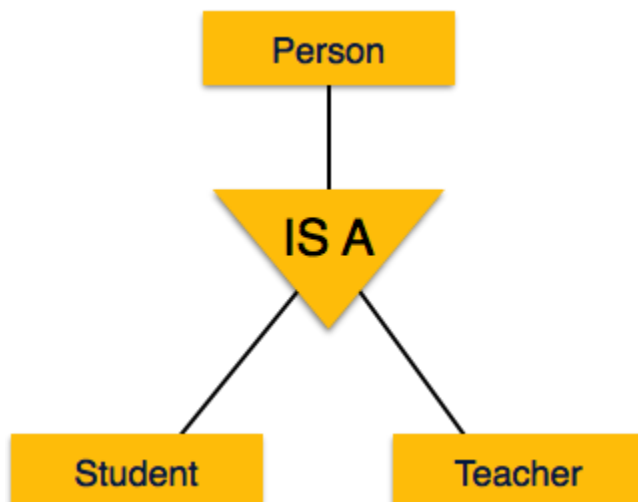
As mentioned above, the process of generalizing entities, where the generalized entities contain the properties of all the generalized entities is called Generalization. In generalization, a number of entities are brought together into one generalized entity based on their similar characteristics. For an example, pigeon, house sparrow, crow and dove all can be generalized as Birds.



[Image: Generalization]

Specialization

Specialization is a process, which is opposite to generalization, as mentioned above. In specialization, a group of entities is divided into sub-groups based on their characteristics. Take a group Person for example. A person has name, date of birth, gender etc. These properties are common in all persons, human beings. But in a company, a person can be identified as employee, employer, customer or vendor based on what role do they play in company.



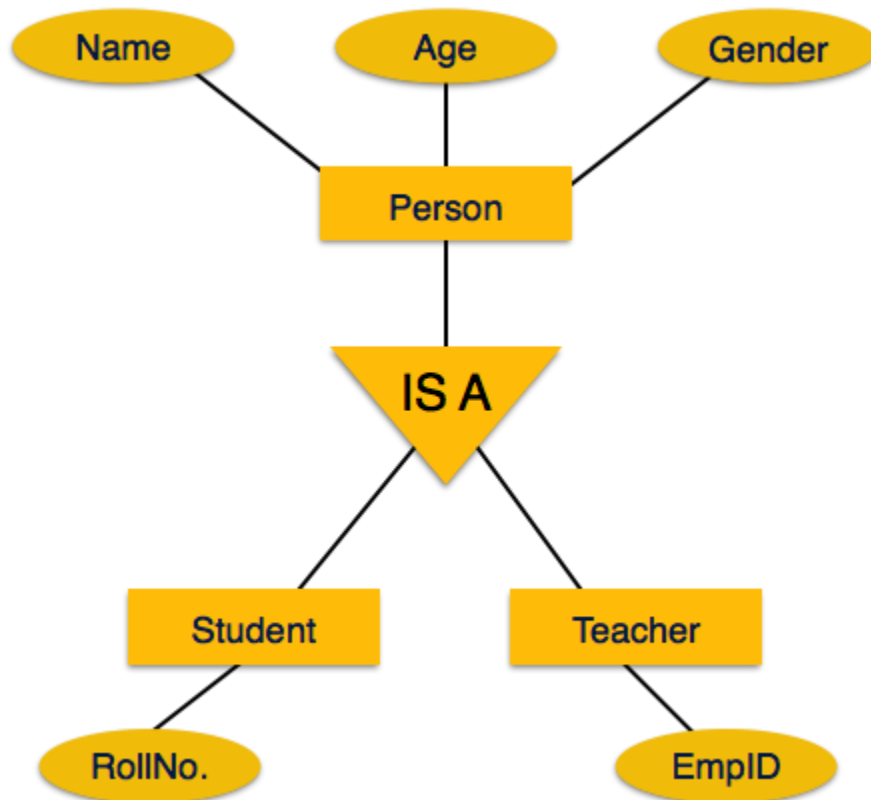
[Image: Specialization]

Similarly, in a school database, a person can be specialized as teacher, student or staff; based on what role do they play in school as entities.

Inheritance

We use all above features of ER-Model, in order to create classes of objects in object oriented programming. This makes it easier for the programmer to concentrate on what she is programming. Details of entities are generally hidden from the user, this process known as abstraction.

One of the important features of Generalization and Specialization, is inheritance, that is, the attributes of higher-level entities are inherited by the lower level entities.



[Image: Inheritance]

For example, attributes of a person like name, age, and gender can be inherited by lower level entities like student and teacher etc.

Source:

http://www.tutorialspoint.com/dbms/dbms_generalization_aggregation.htm