

University of Central Florida

CGS 2545

Database Concepts

DEPARTMENT OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE
COMPUTER SCIENCE DIVISION

Generalization Aggregation

- The ER Model has the power of expressing database entities in a conceptual hierarchical manner.
- As the hierarchy goes up, it generalizes the view of entities, and as we go deep in the hierarchy, it provides the detail of every entity included.
- Going up in this structure is called **generalization**, where entities are clubbed together to represent a more generalized view.

Generalization Aggregation

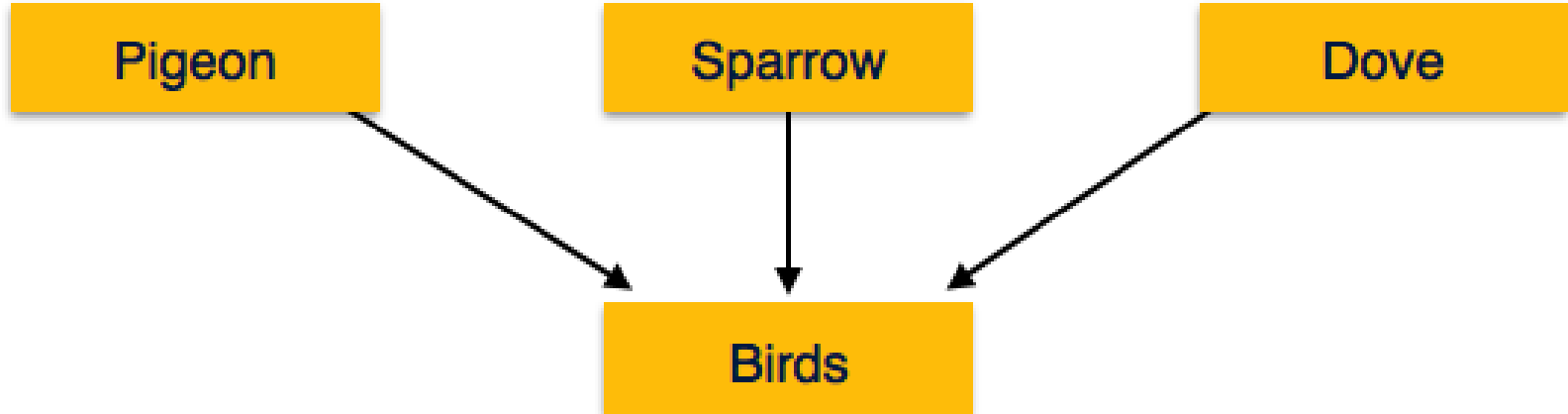
- For example, a particular student named Mira can be generalized along with all the students.
- The entity shall be a student, and further, the student is a person.
- The reverse is called **specialization** where a person is a student, and that student is Mira.

Generalization Aggregation

- Generalization
 - 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.

Generalization Aggregation

- Generalization
 - For example, pigeon, house sparrow, crow and dove can all be generalized as Birds.



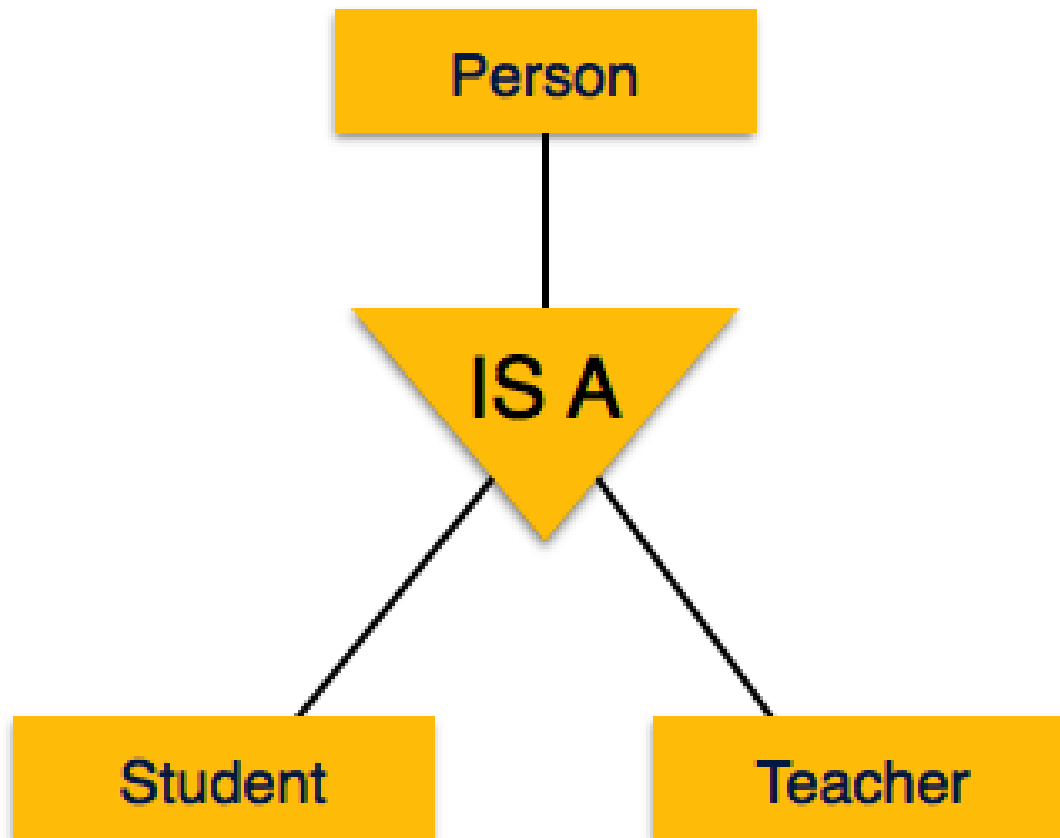
Generalization Aggregation

- Specialization
 - Is the opposite of generalization.
 - In specialization, a group of entities is divided into sub-groups based on their characteristics.

Generalization Aggregation

- Specialization
 - 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, persons can be identified as employee, employer, customer, or vendor, based on what role they play in the company.

Generalization Aggregation



Generalization Aggregation

- Inheritance
 - We use all the above features of ER-Model in order to create classes of objects in object-oriented programming.
 - The details of entities are generally hidden from the user; this process known as **abstraction**.
 - Inheritance is an important feature of Generalization and Specialization.
 - It allows lower-level entities to inherit the attributes of higher-level entities.

Generalization Aggregation

- Inheritance
 - For example, the attributes of a Person class such as name, age, and gender can be inherited by lower-level entities such as Student or Teacher.

