

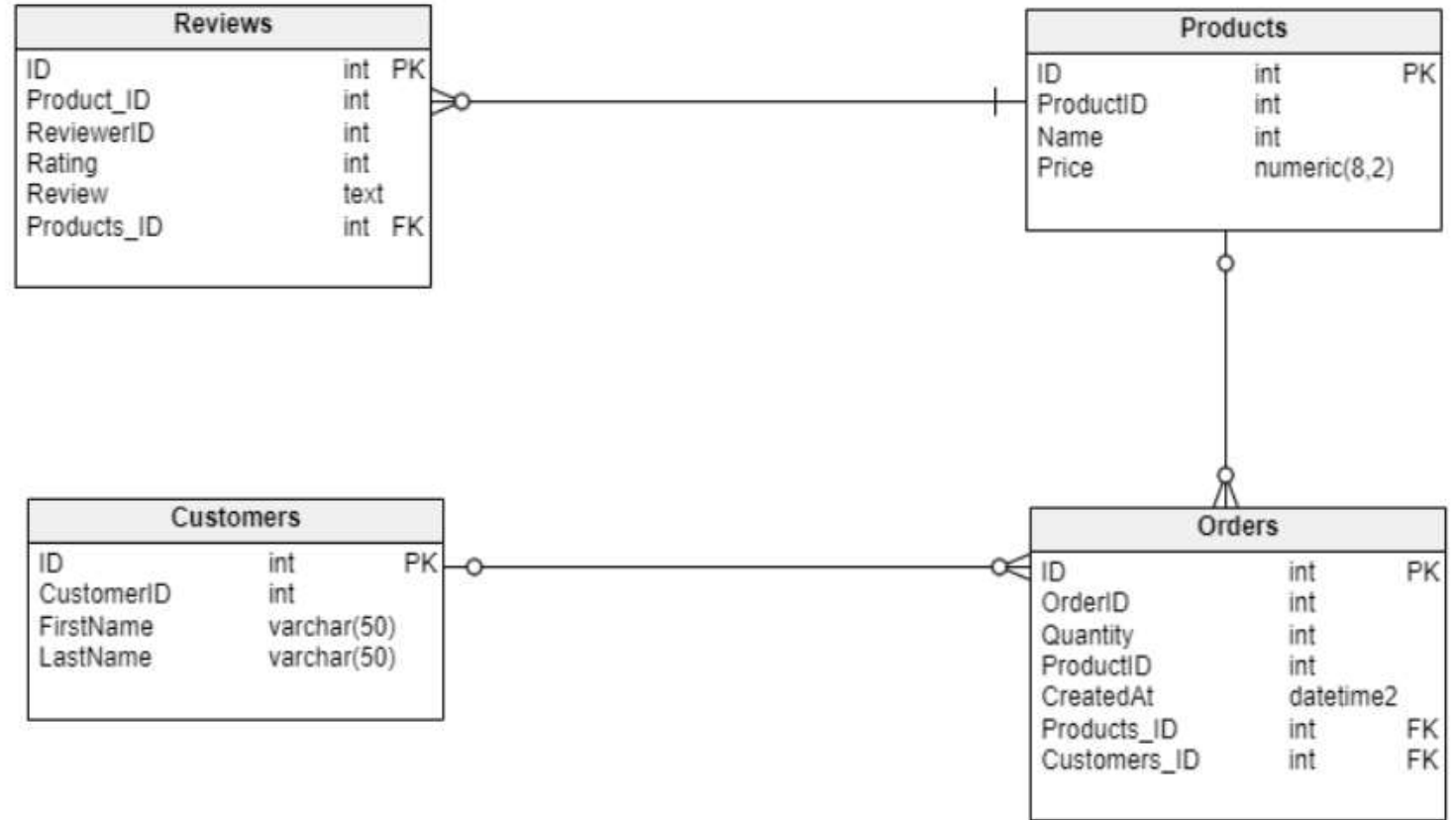
# **ER Diagram. Entity, Attributes, Relationships.**

# ENTITY RELATIONAL (ER) MODEL

- is a high-level conceptual data model diagram.
- ER modeling helps you to analyze data requirements systematically to produce a well-designed database.
- The Entity-Relation model represents real-world entities and the relationship between them.

# ER DIAGRAM S

- **ENTITY-RELATIONSHIP DIAGRAM (ERD)** displays the relationships of entity set stored in a database. In other words, we can say that ER diagrams help you to explain the logical structure of databases.



# Why use ER Diagrams?

- Helps to define terms related to entity relationship modeling
- Provide a preview of how all your tables should connect, what fields are
- Helps to describe entities, attributes, relationships
- ER diagrams are translatable into relational tables which allows you to build databases quickly
- ERD is allowed you to communicate with the logical structure of the database to users



Entity Name

### Entity

Person, place, object, event  
or concept about which  
data is to be maintained

**Example:** Car, Student



Jack

Attribute  
Name

### Attribute

Property or characteristic of  
an entity

**Example:** Color of car Entity  
Name of Student Entity



### Relation

Verb  
Phrase

Association between the instances of one or  
more entity types

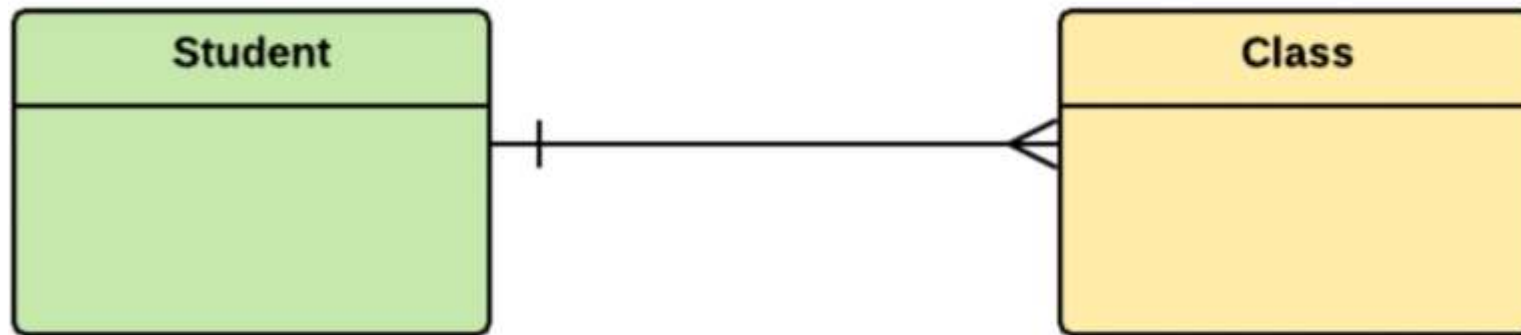
**Example:** Blue Car Belongs to Student Jack

# WHAT IS ENTITY?

- A real-world thing either living or non-living that is easily recognizable and nonrecognizable.
- An entity can be place, person, object, event or a concept, which stores data in the database.
- **Examples of entities:**
- **Person:** Employee, Student, Patient
- **Place:** Store, Building
- **Object:** Machine, product, and Car
- **Event:** Sale, Registration, Renewal
- **Concept:** Account, Course

# ATTRIBUTES

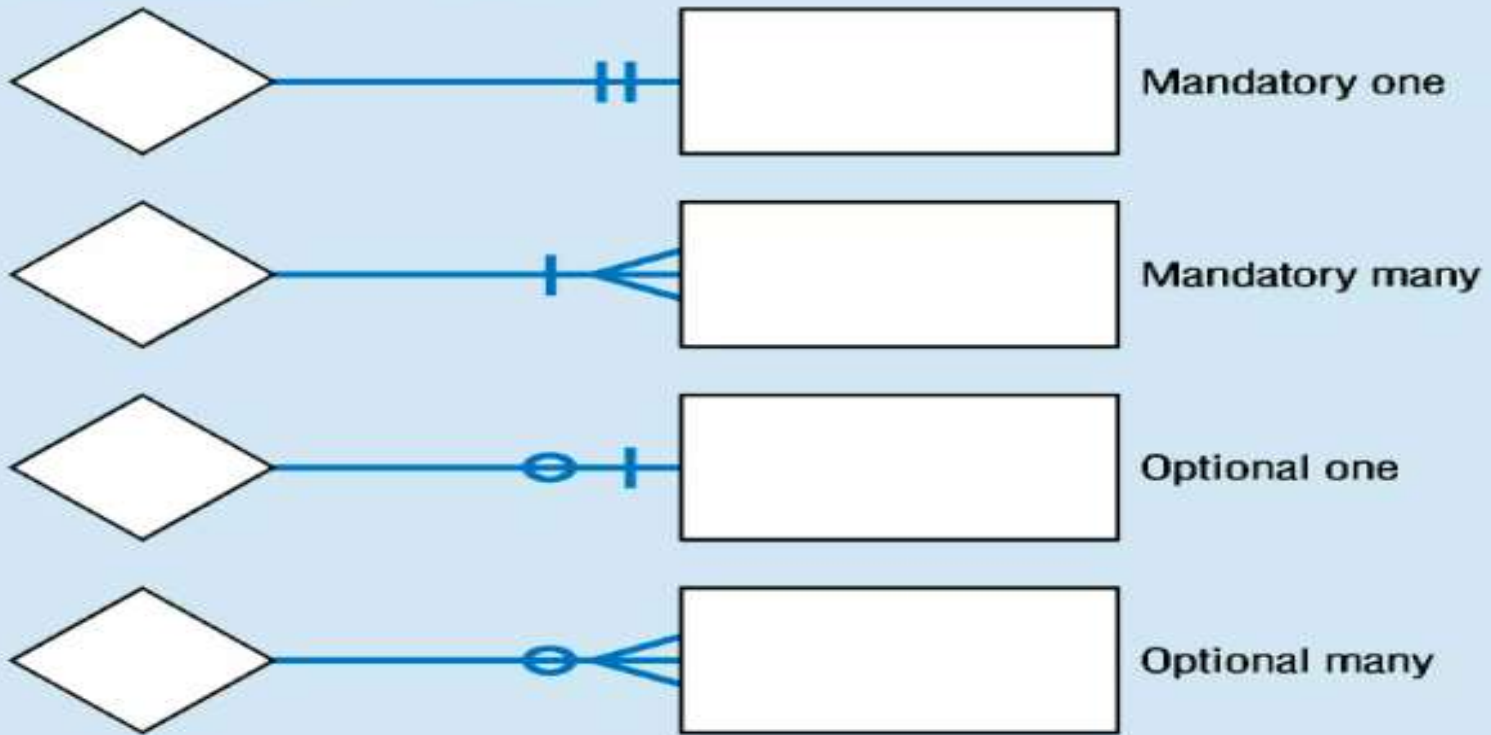
- Entities are represented by their properties, which also called attributes.
- For example, a student entity may have a name, age, class, as attributes.



# Relationships

- There are three types of relationships between entities (tables) in data modeling:
- One-to-many relationships (also denoted as 1:M).
- Many-to-many relationships (M:N).
- One-to-one relationships (1:1).

### Relationship cardinality



# Steps to Create an ERD

