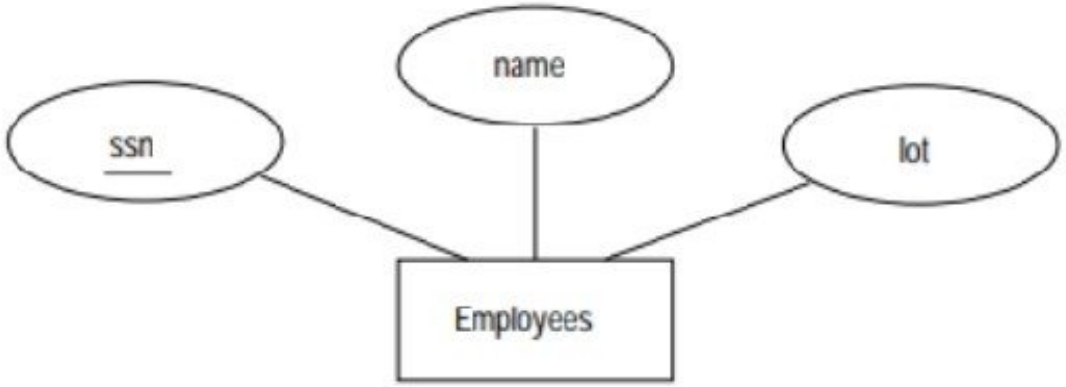
3.3 Entities, Attributes and Entity Sets

Entity: An entity is an object in the real world that is distinguishable from other objects.

Entity set: An entity set is a collection of similar entities. The Employees entity set with attributes ssn, name, and lot is shown in the following figure.



Attribute: An attribute describes a property associated with entities. Attribute will have a name and a value for each entity.

Domain: A domain defines a set of permitted values for an attribute

Entity Relationship Model: An ERM is a theoretical and conceptual way of showing data relationships in software development. It is a database modeling technique that generates an abstract diagram or visual representation of a system's data that can be helpful in designing a relational database.

ER model allows us to describe the data involved in a real-world enterprise in terms of objects and their relationships and is widely used to develop an initial database design.

3.5 Relationship and Relationship set

Relationships are represented by diamond-shaped box. Name of the relationship is written inside the diamond-box. All the entities (rectangles) participating in a relationship, are connected to it by a line.

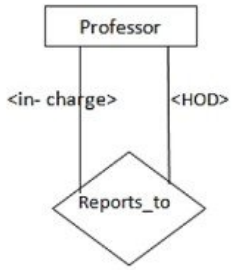
Types of relationships:

Degree of Relationship is the number of participating entities in a relationship defines the degree of the relationship. Based on degree the relationships are categorized as

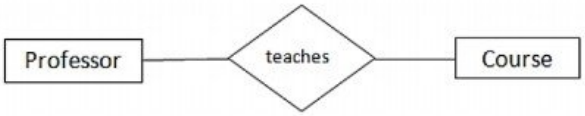
- Unary = degree 1
- Binary = degree 2

- Ternary = degree 3
- n-array = degree

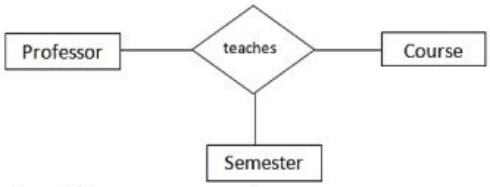
Unary Relationship: A relationship with one entity set. It is like a relationship among 2 entities of same entity set. Example: A professor (in-charge) reports to another professor (Head Of the Dept).



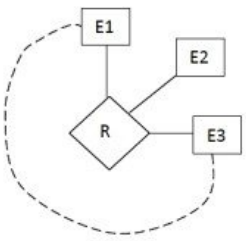
Binary Relationship: A relationship among 2 entity sets. Example: A professor teaches a course and a course is taught by a professor.



Ternary Relationship: A relationship among 3 entity sets. Example: A professor teaches a course in so and so semester.



n-array Relationship: A relationship among n entity sets.



Cardinality