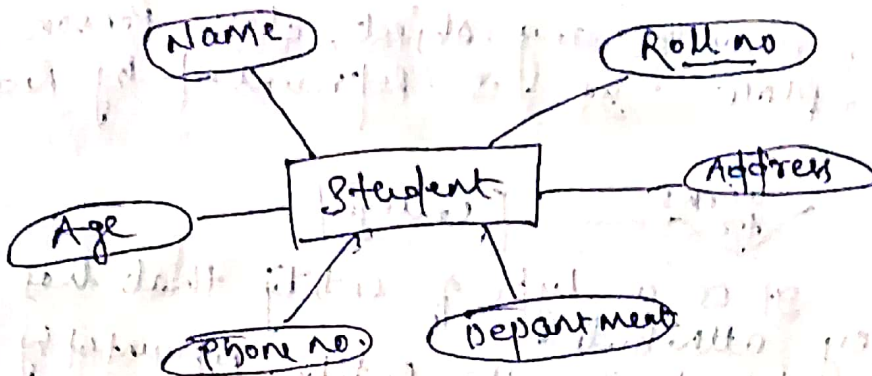


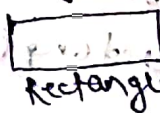
Entity Relationship Diagram (E-R Diagram)

- * The entity relationship diagram is identifying entities to be represented in the database and representation of how those entities are related.
- * E-R diagram are used to represent the E-R Model in database, which makes them easy to be converted into relations.
- * E-R diagram provides the purpose of real world modeling of objects which makes them instantly useful.
- * It requires no technical knowledge & no hardware support.
- * It gives a standard solution for visualizing the data logically.



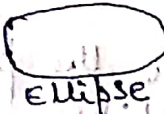
Symbols

Represents



Rectangle

Entities in E-R diagram/Model



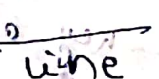
Ellipse

Attributes in E-R Model



Diamond

Relationship among entities



line

Attributes to Entities & Entity set with other Relationship types



Double Ellipse

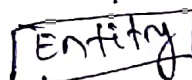
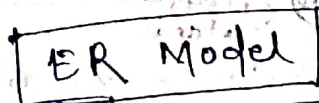
Multivalued Attributes



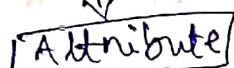
Double Rectangle

Weak entity

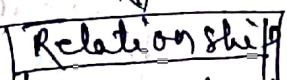
components of E-R diagram



- Strong
- Weak



- Key attribute
- Composite "
- Multivalued "
- Derived "



- one to one
- one to many
- many to one
- many to many

1) Entity :- Entity may be any object, class, Person or place. It is represented by Rectangle.

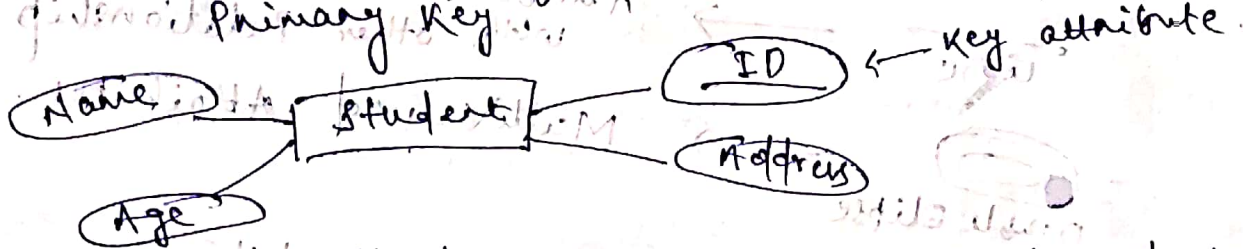


- a) Strong Entity :- It is a type of entity that has a key attribute.
 * It does not depend on other Entity. Represented by Rectangle.
- b) Weak Entity :- Entity that depends on another Entity.
 * It does not contain any key attributes.
 * It is represented by double rectangle.

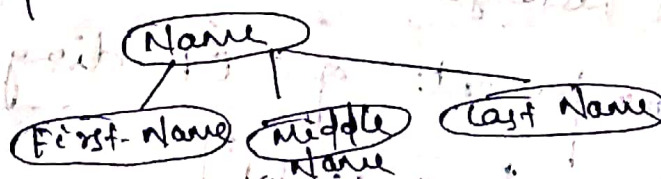


2) Attribute :- It is used to describe the property of an entity. Represented by Ellipse.

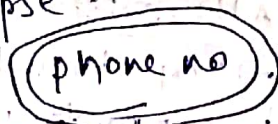
a) Key attribute :- is used to represent the main characteristics of the entity. It represents the primary key.



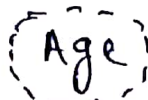
b) Composite Attribute :- Attribute that composes of many attributes. Represented by an ellipse.



c) Multivalued Attribute :- An attribute can have more than one value. Represented by double ellipse.



d) Derived Attribute :- Attribute that can be derived from other attributes. Represented by dashed ellipse.



3) Relationship

Used to describe the Relationship between entities.
Represented by diamond.

a) one to one



one instance of an entity is associated with the relationship of one instance of another.

b) one to Many: one instance of the entity on the left, & more than one instance of an entity on the right



c) Many to one:



d) Many to Many:

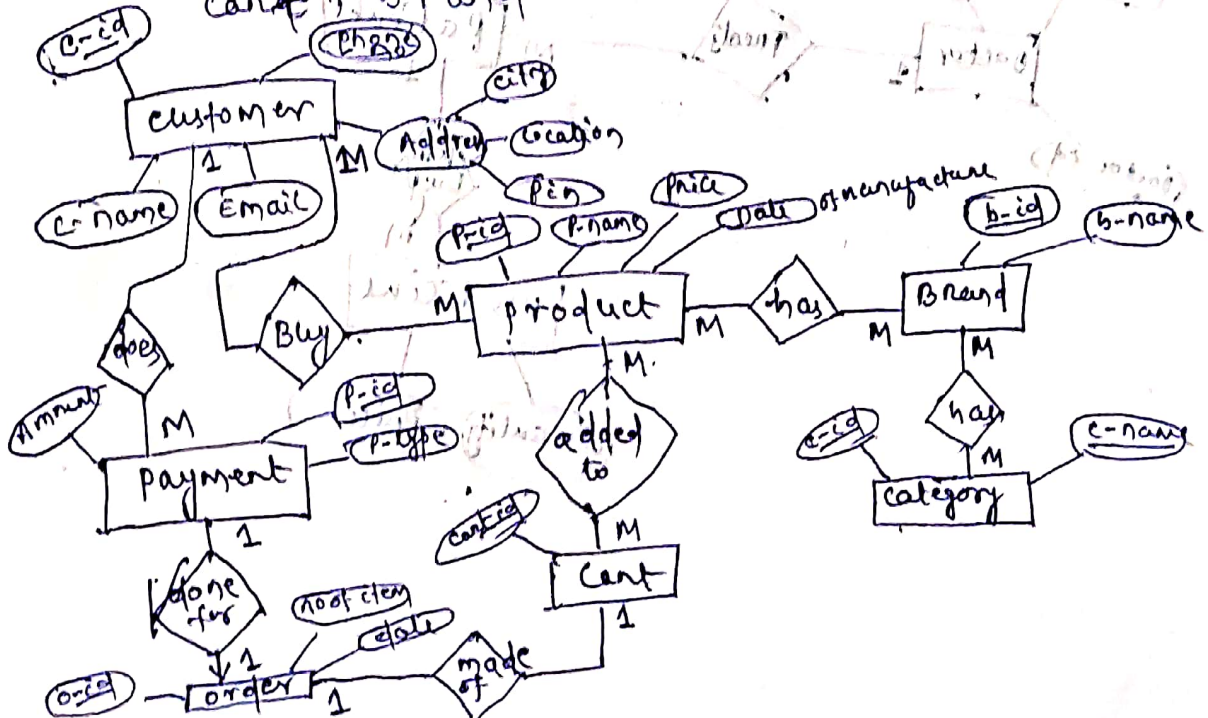


Example

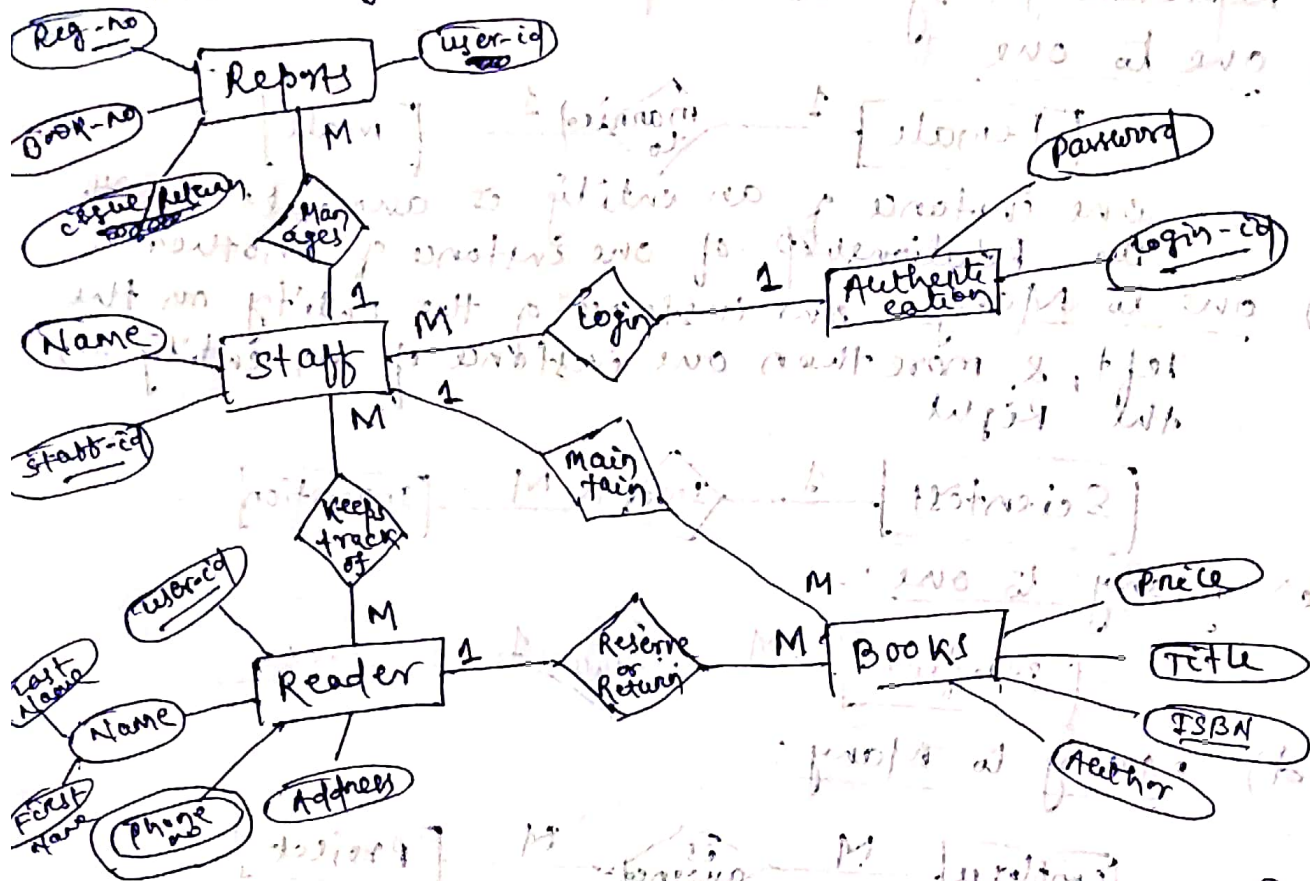
E-R diagram of online shopping.

First identify the entities.

* customer, product, category, Payment, order, cart, brand



ER Diagram for Library Management System.



ER Diagram for Hospital Management System.

