

M II C3

* Q. Explain components of E-R Model.

- ER diagram is the first step of database design to specify the desired components of the database system and the relationship among these components
- ER model define data elements and relationship among various data elements for a specified element
- It is based on perception of real word data that consists of set of entities and relationship among these entities.
- Components of ER diagram:
 - Entities
 - Attributes
 - Relationship

Entity:

- is anything in the real world which may have physical or logical existence
- has its own property which describes that entity such properties are known as attributes
- 2 types of entities.
 - strong
 - weak

Attributes:

- describes each entity becomes a major part of data stored in db.
- many types of attributes.

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- a) Composite attributes
- b) Multivalued attributes
- c) Derived attributes
- d) Null attributes
- e) Key attributes

Relationship

- association among one or more entities

* Q. Entities.

1 - Strong entity:

- entity type which has its own key attributes by which we can identify specific entity uniquely
- in case of employee entity, any specific employee can be identified by his Employee-ID which primary key of employee entity
- represented by single rectangle.

2 - Weak entity:

- entity type which cannot form distinct key from their attributes and takes help from corresponding strong entity.
- dependent of strong primary key for primary key.
- for them, we assign virtual primary key which are called discriminator.
- represented by strong double rectangle.

Examples:



Types of Key.

Primary Key: A selected Key of strong entity which uniquely identify in entity is a primary key.

Alternate Key: a candidate Key which is not selected as primary key.

Secondary Key: an attribute or set of attributes that is used to access a single tuple in entity.

Super Key: an attribute or set of attributes that uniquely identifies a single in entity.

Composite Key: a Key with more than one attributes that uniquely identifies a single tuple in entity.

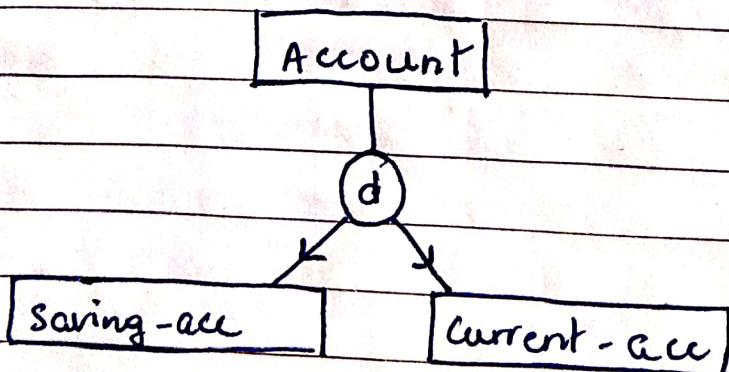
Candidate Key: a super key with minimum number of attributes.

* Q. Compare ER & EER models.

- EER model includes all the modeling concept of ER model.
 - It also includes the concept of aggregation, specialization and generalization.
 - A diagrammatic technique for displaying these concepts when they arise in EER schema are the resulting schema diagrams called as EER diagrams.
- EER Features:
1. Specialization
 2. Generalization
 3. Attribute Inheritance
 4. Aggregation

* Q. Write a short note on Specialization.

- Specialization is a process of defining a set of sub class of entity type, this entity type is called super class of specialization.
- The set of subclass that forms a specialization is defined on the basis of some distinguishing characteristic of entity of super class.
- Example



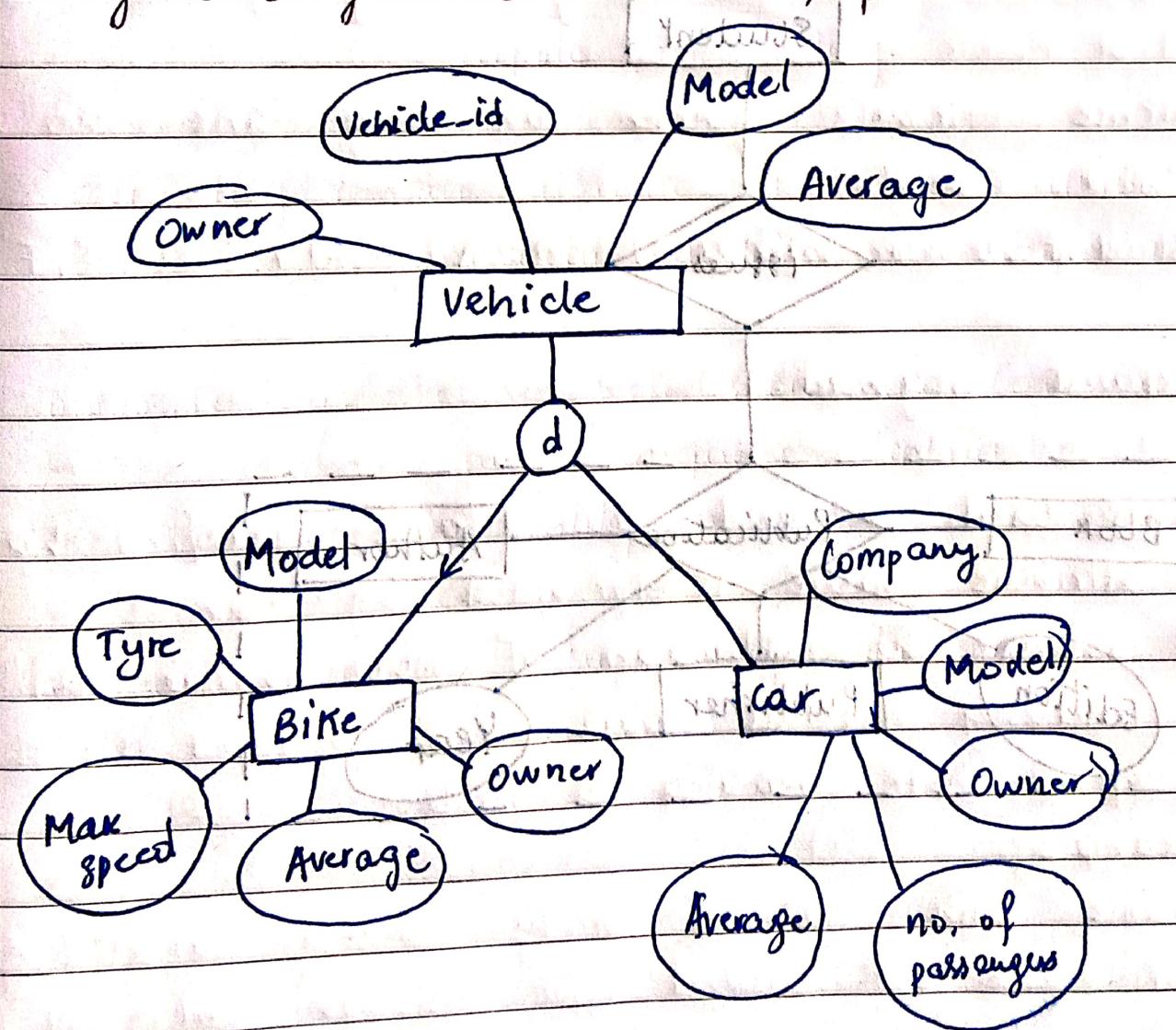
Q. Write short note on generalization.

- Generalization is a process in which we differentiate among several entity types identifying their common features and generalizing them to a single superclass of which original entity are special subclass.

- reverse process of specialization.

- example:

Car & Bike all having several common attributes. They can generalize to the superclass vehicle.



* Q. Write short note on Aggregation

- is meant to represent a relationship between a whole object and its component parts.
 - is used when we have to model a relationship involving entity sets and a relationship set.
 - allows us to treat a relationship set as an entity set for purpose of participation in other relationships.

- example

