

# Task-1: Introduction of 'ER' model

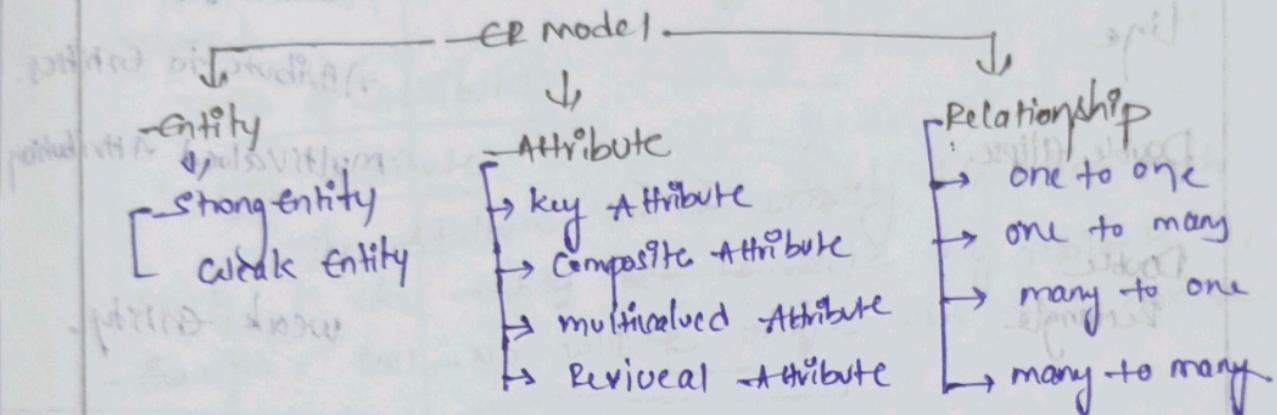
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The Entity-Relationship model (ER model) is a conceptual model for designers a database. This model represents the logical structures of a database, including entities, their attributes and relationship b/w them.

Entity :- An object that is stored as data such as student course (or) company

Attribute :- properties that describes an entity such as student id, course name, (or) employee email

Relationship :- A connecting b/w entities such as a student attends in a course.



- The graphical representation of this model is called as Entity-relationship Diagram (ERD).

## ER model in Database Design process

We typically follow the below steps for design a database for an application.

- Gather the requirements (functional and data) by asking questions to the data base users.
- After this focus on physical Database design (like schema design) and external design (like views).

## Symbols used in ER Model

Rectangles : It represents entities in ER model

Ellipses : It represents attributes in ER model

Diamond : It represents relationship among entities.

Lines : Represents attributes to entities & entities. Job

Double-ellipse:- Represents multi-valued attributes.

Double Rectangle:- Represents weak entities which depend on other entities for identification.

Rectangle

Ellipse

Diamond

Line

Double Ellipse

Double

Rectangle

What is Entity?

An entity represents a real-world objects (or) thing which data is stored in database. & act as building block of a database.

Examples of Entities:-

- Real-world objects :- person, car, employee etc.

- Concepts :- course, event, presentation, etc.

- things :- product, document, device, etc.

Strong Entity:-

A strong entity is a type of entity that has a key attribute that can uniquely identify each instance of the entity. A strong entity does not depend on any other entity in the schema for its identification.

It has a primary key that ensures its unique and

entity in ER model

Attributed in ER model

Relationship among entities.

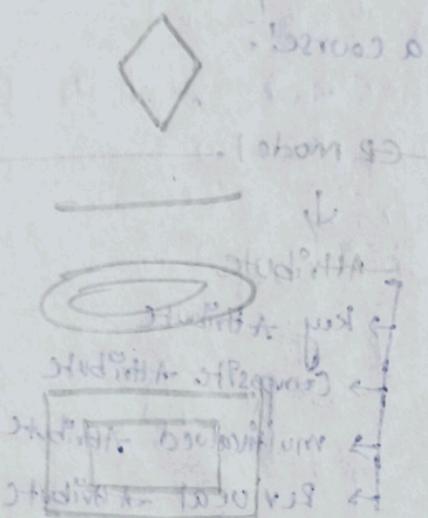
Attribute to entity

multivalued Attribute

(using phone)

(using show)

weak entity.



is represented by a Rectangle in an ER diagram.

### 2. weak entity:-

A weak entity cannot be uniquely identified by its own attributes alone. It depends on a strong entity to be identified. A weak entity are represented by a double rectangle. The participation of weak entity type is always total.

Ex:- A company may store the information of dependents of a employee. But the dependents can't exist without the employee will be identified entity type for dependent which means it's strong entity type.

### types of Attributes:-

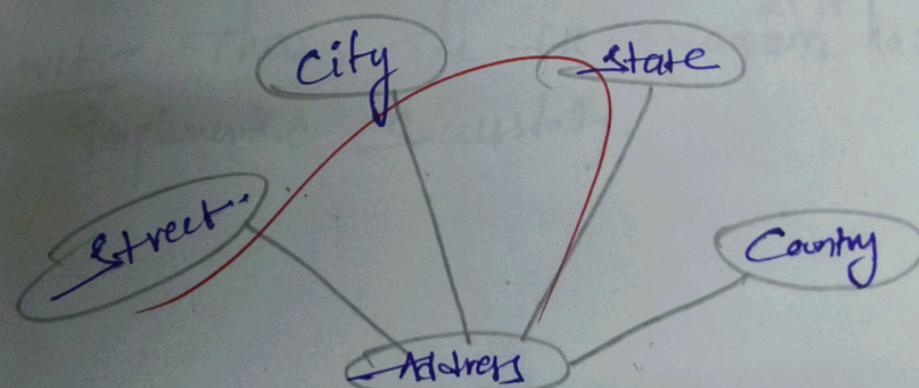
#### 1. Key Attribute.

The Attribute which uniquely identifies each entity in the entity set is called key attribute for example, Roll-No will be unique for each student.

→ Roll-No

### 2. Composite Attribute:-

An attribute Composed of many other attributes is called a composite attribute. For example, the address attribute of the student entity type consists of street, city, state and country.



### 3. Multivalued Attribute

An attribute consisting of more than one value for a given entity. (for example, phone-no (Can be more than one for a given student)).

Phone-NO

### 4. Derived Attribute

An attribute that can be derived from other attribute of the entity type is known as derived attribute e.g:- Age.

on - not

→ Student → 21 years

Students who pass to be young student not  
student who present test. student student is carry 21  
to 21 days with student attribute of student  
student. student bne 31st, 31st, 31st

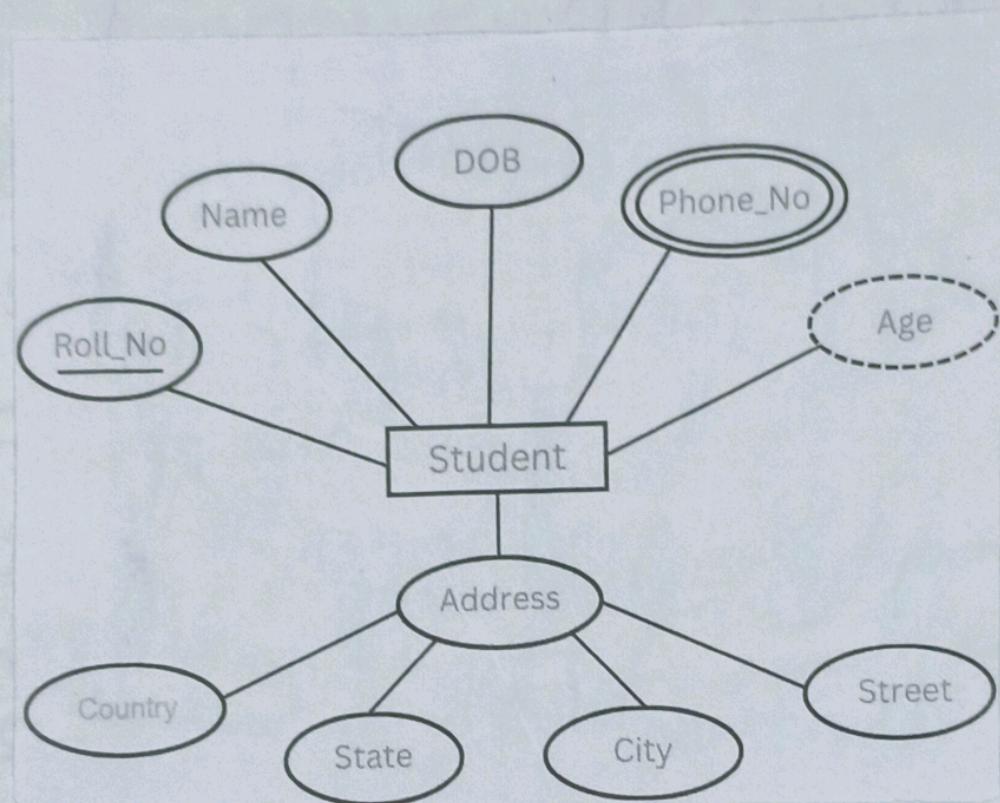
→ 21st

not

present

21st

1B) using erentity tool.



VEL TECH - CSE	
EX NO.	1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
IN. CORD (5)	5
TOTAL (20)	20
SIGN WITH DATE	15/7/17

Result:- Thus, the ER-Diagram has been implemented successfully.

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