

Course Name: **A Level (1st Sem)**
Topic: **ERD (Part 1)**

Subject : **Introduction to DBMS**
Date: **30-Mar-2020**

Entity Relationship Diagram (ERD)

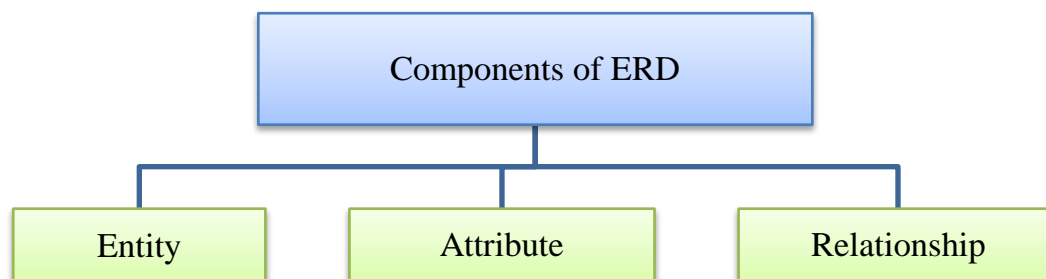
ER Model

Entity Relationship (ER) model is a theoretical/conceptual model which provides a means of identifying entities, their attributes to be represented in the database and how these entities are related to each other. It was introduced by Peter Chen and published in 1976.

ER Diagram

Entity Relationship Diagram (ERD) is a pictorial representation of data that describes how data is communicated and related to each other. Entities, attributes and relationship among entities can be characterised with the help of the ER diagram.

ERD shows the logical structure of the database which can be used to convert into relational database.



Entity

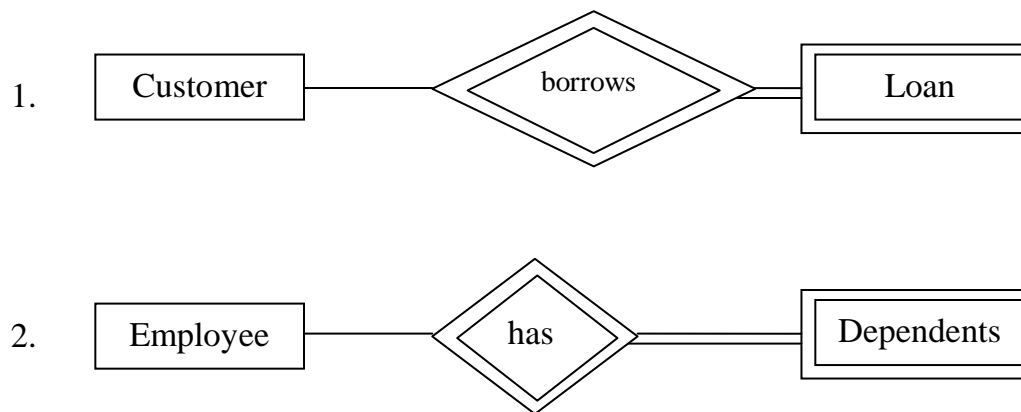
Entities are represented by **rectangles** in ERD. Rectangles are named with the entity set they represent.

For Example



Weak Entity

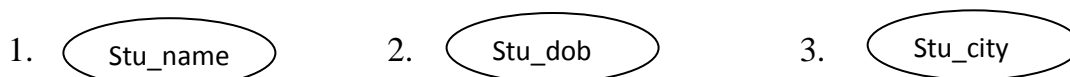
Weak entities are represented by **double-lined rectangles** in ERD.



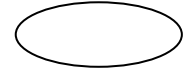
Loan and Dependents are Weak Entities whereas Customer and Employee are Strong Entities.

Attribute

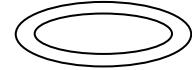
Attributes are represented by ellipses. Ellipses are name with attribute name and connected with rectangle (entity).



Simple and Single valued attributes are represented by **ellipse**.



Multi valued attributes are represented by **double-lined ellipse**.



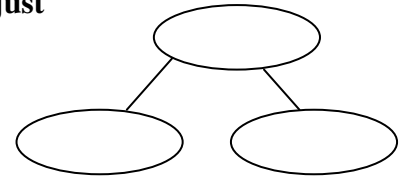
Derived attributes are represented by **dashed ellipse**.



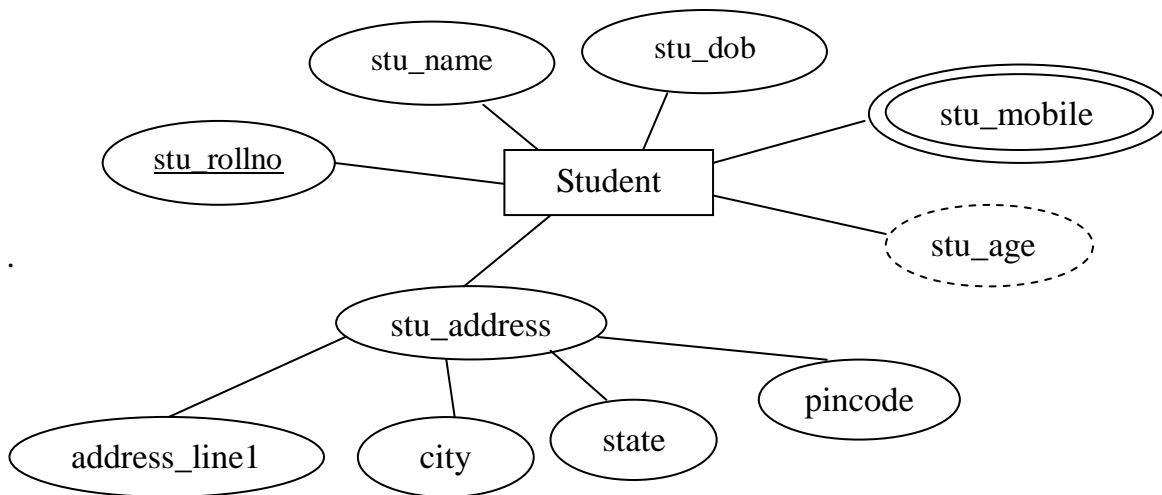
Key attributes are represented by **ellipse with attribute name as underlined**



Composite attributes are represented by further **connected ellipse just like tree structure**.



Example



Exercises:

1. Draw diagram for representing entity Product with their attributes as represented in ERD.
2. Draw diagram for representing entity Course with their attributes as represented in ERD.