SNS COLLEGE OF TECHNOLOGY, COIMBATORE-35

(AN AUTONOMOUS INSTITUTION)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

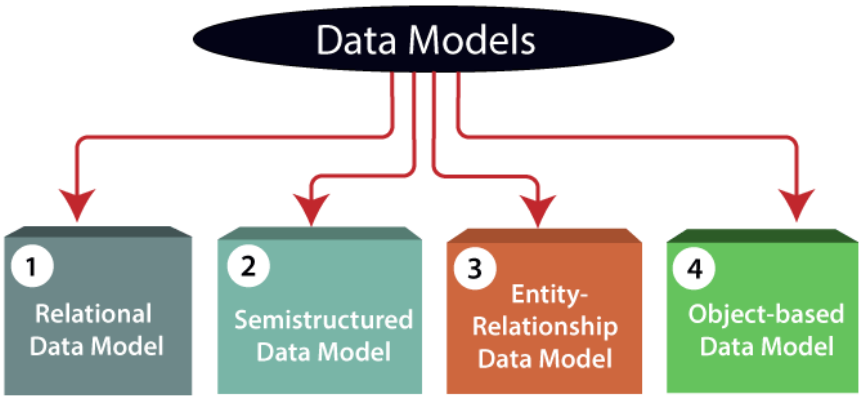
19CST202-DATABASE MANAGEMENT SYSTEM

UNIT-I

Introduction

Data Model:

Data Model is the modeling of the data description, data semantics, and consistency constraints of the data. It provides the conceptual tools for describing the design of a database at each level of data abstraction.



Relational Data Model:

- This type of model designs the data in the form of rows and columns within a table. Thus, a relational model uses tables for representing data and in-between relationships.
- Tables are also called relations.

Entity-Relationship Data Model:

- An ER model is the logical representation of data as objects and relationships among them.
- These objects are known as entities, and relationship is an association among these entities.
- This model was designed by Peter Chen and published in 1976 papers. It was widely used in database designing.
- A set of attributes describe the entities.

For example, student_name, student_id describes the 'student' entity.

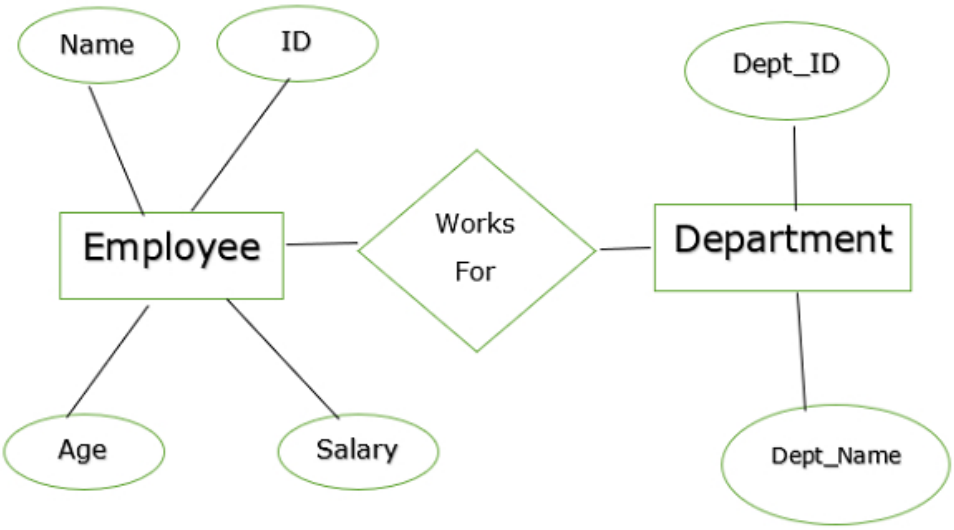
- A set of the same type of entities is known as an 'Entity set', and the set of the same type of relationships is known as 'relationship set'.

Object-based Data Model:

- An extension of the ER model with notions of functions, encapsulation, and object identity, as well.
- This model supports a rich type system that includes structured and collection types.

Semi structured Data Model:

- This type of data model is different from the other three data models.
- The semi structured data model allows the data specifications at places where the individual data items of the same type may have different attributes sets.
- The Extensible Markup Language, also known as XML, is widely used for representing the semi structured data.
- Although XML was initially designed for including the markup information to the text document, it gains importance because of its application in the exchange of data.



Entities − Employee and Department.

Attributes −

- Employee − Name, id, Age, Salary
- Department − Dept_id, Dept_name

The two entities are connected using the relationship. Here, each employee works for a department.