- **Describe different types of database models with diagram.**

The data model that determines the logical structural of a database are called database models. There are various types of database models, here are a few of them.

1) Hierarchical database model
2) Network model
3) Entity model
4) Relational model

A. Hierarchical Database model

A hierarchical model represents the data in a tree-like structure in which there is a single parent for each record. To maintain order there is a sort field which keeps sibling nodes into a recorded manner. These types of models are designed basically for the early mainframe database management systems.

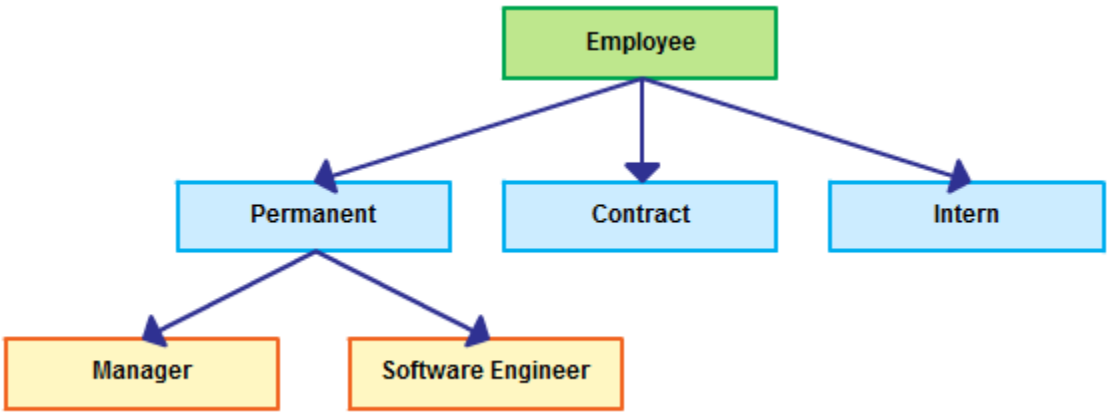
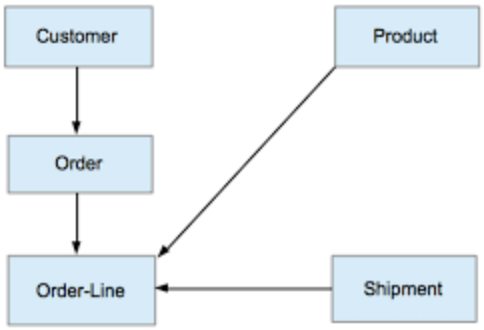


Fig: Hierarchical Database mode Of a company

B. Network Model

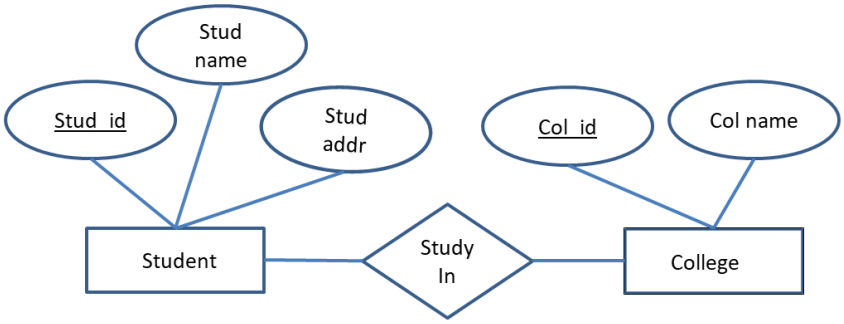
A network database model is a database model that allows multiple records to be linked to the same owner file. The model can be seen as an upside down tree where the branches are the member information linked to the owner, which is the bottom of the tree. The multiple linkages which this information allows the network database model to be very flexible. In addition, the relationship that the information has in the network database model is defined as many-to-many relationship because one owner file can be linked to many member files and vice versa.



C. Entity relational model

Entity Relationship Model (ER Modeling) is a graphical approach to database design. It is a high-level data model that defines data elements and their relationship for a specified software system. An ER model is used to represent real-world objects.

An Entity is a thing or object in real world that is distinguishable from surrounding environment. For example, each employee of an organization is a separate entity. Following are some of major characteristics of entities.



D. Relational model

Relational Model (RM**)** represents the database as a collection of relations. A relation is nothing but a table of values. Every row in the table represents a collection of related data values. These rows in the table denote a real-world entity or relationship.

The table name and column names are helpful to interpret the meaning of values in each row. The data are represented as a set of relations. In the

relational model, data are stored as tables. However, the physical storage of the data is independent of the way the data are logically organized.

Student

S_id	Name	Class	Age	C_type
1	Andrew	5	25	A
2	Angel	10	30	A
3	Anamika	8	35	C

Course

C_type	C_name
A	Foundation C
B	C++

Student ⋈ Course

S_id	Name	Class	Age	C_type	C_name
1	Andrew	5	25	A	Foundation C
2	Angel	10	30	A	Foundation C
3	Anamika	8	35	C	-
-	-	-	-	B	C++