

DATA MODELS

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MODEL

- A Model is representation of reality, 'real world' objects and events and their associations.
- A database model is an organizing principle that specifies particular mechanism of data storage and retrieval.
- The model explains, in terms of services available to an interfacing application, how to access a data element when other related elements are known.

Components of Data Models

- **Structure Part:**
 - Consisting of *set of rules* according to which databases can be constructed.
- **Manipulative Part:**
 - Define the *types of operation* that are allowed on the data.
- **Set of Integrity Rules:**
 - Which ensures that data is accurate.

Purpose of Data Model

- To represent data.
- To make the data understandable.

Types of Data Models

- Object Based Data Models
- Physical Data Models
- Record Based Logical Data Models

Object Based Data Models

- It use concepts such as entities, attributes and relationships.
- Types of Object Based Data Models:
 - * Entity Relationship
 - * Object Oriented
 - * Semantic
 - * Functional

Physical Data Models

- It describe how data is stored in the computer, representing information such as record structures, record ordering and access paths.
- Less no. of models are there.

Record Based Logical Data Models

- It is used to specify the overall logical structure of the database and to provide a higher-level description of the implementation.
- Structured database in fixed formats.

Types of Record Based Data Models

- Hierarchical Model
- Network Model
- Relational Model