AT-1

Page:
Date: / /

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What ~~is data m~~ do you mean by data modelling? Discuss different types of data models.

A data model is the underlying structure of a database, it is a collection of conceptual tools for describing data, data relationship, data semantics and consistency constraints.
The different types of data models are :-

1) Relational ~~data~~ Model :-
The relational model uses a collection of tables to represent both data and the relationships among those data.
Each table has multiple columns, and each column has a unique name. Tables are also known as relations.
Advantages :-
- A relational data model is simpler than hierarchical and network model.
- It makes possible for a high-level query language like SQL to avoid complex database navigation.
- The structure of database can be changed without having to change any application.

Dis advantages :-
- A major constraint of relational database is with large number of tables, machine performance is less.
- Higher memory consumption.

2) Entity Relationship Model :-
The Entity relationship (E-R) data model uses a collection of objects called as entities, and relationship among these objects.
An entity is an object in the real world that is distinguishable from other objects.
Advantages :-
- Better visual representation.
- Easy conversion to any data model
- Effective communication tool.

Disadvantages :-
- Limited constraints and specifications
- Difficult to represent data manipulation.

3) Object-Based Data Model.
The object based data model is based on object-oriented programming, associating methods with objects that can benefit from class hierarchies.
The object-relational data model extends the relational data model by providing a richer type system, including complex data types and object orientation.
The object-oriented data model supports object-oriented type system and allows direct access to the data from an object oriented programming language.
Advantages :-
Because of the inheritance property we can re-use the attributes and functionalities.

Page :
Date : / /

Disadvantages :-
- It is not widely developed and complete for use in database systems.

3 4) Semi-structured data model.
The semi-structured data model permits the specification of data where individual data items of same type may have different set of attributes
JSON and Extensible Markup Language (XML) are widely used semi-structured data representations.
Advantages :-
- The data is not constrained by a fixed schema
- It is flexible and the schema can be changed easily.
- Data is portable

Disadvantages :-
- Lack of fixed, rigid schema
- Queries are less efficient.