

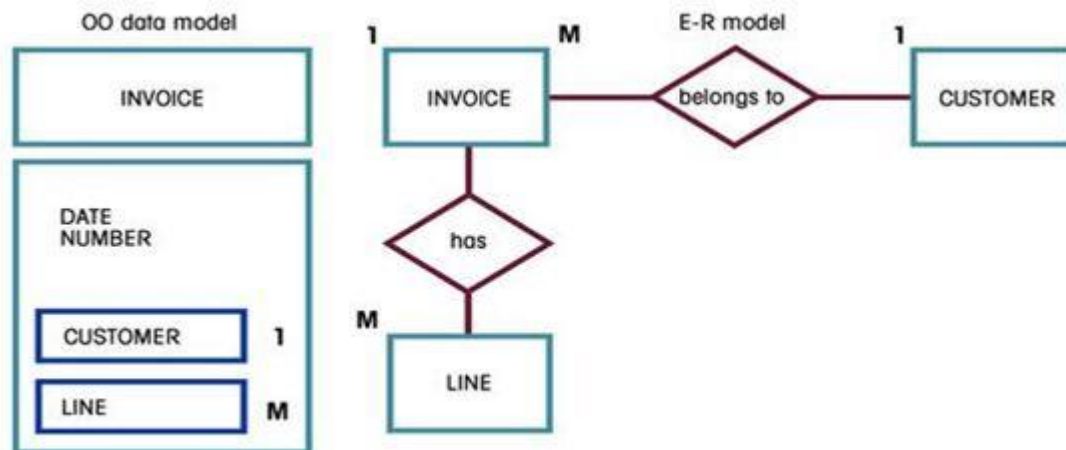
The Object Oriented (OO) Data Model in DBMS

In the object oriented data model (OODM), both data and their relationships are contained in a single structure known as an object.

In turn, the OODM is the basis for the object-oriented database management system (OODBMS).

The Components of the Object Oriented Data Model

- An object is an abstraction of a real-world entity. In general terms, an object may be considered equivalent to an ER model's entity. More precisely, an object represents only one occurrence of an entity. (The object's semantic content is defined through several of the items in this list.)
- Attributes describe the properties of an object. For example, a PERSON object includes the attributes Name, Social Security Number, and Date of Birth.
- Objects that share similar characteristics are grouped in classes. A class is a collection of similar objects with shared structure (attributes) and behavior (methods). In a general sense, a class resembles the ER model's entity set. However, a class is different from an entity set in that it contains a set of procedures known as methods. A class's method represents a real-world action such as finding a selected PERSON's name, changing a PERSON's name, or printing a PERSON's address. In other words, methods are the equivalent of procedures in traditional programming languages. In OO terms, methods define an object's behavior.
- Classes are organized in a class hierarchy. The class hierarchy resembles an upside-down tree in which each class has only one parent. For example, the CUSTOMER class and the EMPLOYEE class share a parent PERSON class. (Note the similarity to the hierarchical data model in this respect.)
- Inheritance is the ability of an object within the class hierarchy to inherit the attributes and methods of the classes above it. For example, two classes, CUSTOMER and EMPLOYEE, can be created as subclasses from the class PERSON. In this case, CUSTOMER and EMPLOYEE will inherit all attributes and methods from PERSON.



A comparison of OO data model and ER model

Advantages of Object Oriented Data Model

1. Add semantic content
2. Visual presentation includes semantic content
3. Database integrity
4. Both structural and data independence

Disadvantages of Object Oriented Data Model

1. Lack of OODM standards
2. Complex navigational data access
3. Steep learning curve
4. High system overhead slows transactions