

# PERSONAL SUMMARIZE OF E-R MODEL

The conception of E-R model came up by Peter Chen in 1976. It provides user-oriented DBMS expression which free from any constraints of user-oriented DBMS expression. It is widely used as a data modeling tool in database design.

Since we can know much detail information in Peter's paper, I want to only summarize some important conception about E-R model and hope it may help our project design.

## **The structure of E-R model**

E-R model consists of entity sets, attributes, relation sets. Its representation as follows:

- (1) Each entity set is represented by a rectangular box which we can write down the entity name in.
- (2) The attributes of the entity is represented by an oval box. We write down the name of the attribute in it and connect with the entity set by using undirected edges.

(3) And each relationship set is represented by a diamond-shaped box.

Using undirected edges, we can connect the entity set which has relation and mark the relation type, that is 1-1, 1-N or M-N.

ER model shows strong ability in representing complex entities and the complex relationship between entities. In addition to expressly set between two entities, 1-1, 1-N or M-N contacts, it can also

(1) Show the relationship among more than three entity sets.

For example, a salesperson can sale many kinds of goods to a customer, and he can also sale the same goods to multiple customers; one commodity of a customer can be sold by more than one salesperson. The three entities, salesperson, goods and customer, the relation among them is ternary relation of many to many.

(2) The internal relation within the entity set

In the entity set of employee, a general manager supervises multiple department managers, and each department manager following several employees. Therefore, the employee entity set exist relation of 1-M.

(3) The multiple relation between two entity sets.

There are multiple relations between employee and device. Such as one can be a device can be used by multiple employees, another can be an employee can repair multiple devices.

**Steps for drawing an ER diagram:**

(1) Identify the attributes of the entity.

(2) Determine the relation between the entity and the type of the relation.

(3) Add the attributes in the entity and relation.

Source: <http://toyhouse.cc/profiles/blogs/personal-summarize-of-e-r-model>