

"THE ENTITY-RELATIONSHIP MODEL-TOWARD A UNIFIED VIEW OF DATA"

"The Entity-Relationship Model-Toward a Unified View of Data", that is to say, the author will tell us something about the "E-R model" and give us an "unified view of data".

The background and introduction had generally told us what is E-R model and what the author will say about E-R model. The author layout three major data models: the network model, the relation model and the entity set model. After this, he give an analysis of three models' strengths and weaknesses separately.

Then he set out the E-R model, which has most of the advantages of the above three models.

As the author say, Section 2 introduces the entity-relationship model using a framework of multilevel views of data. What is "multilevel views of data"? The author dived data into four levels:

- (1) Information concerning entities and relationships which exist in our minds.
- (2) Information structure-organization of information in which entities and relationships are represented by data.

(3) Access-path-independent data structure-the data structures which are not involved with search schemes, indexing schemes, etc.

(4) Access-path-dependent data structure.

(and fig.1. give a better description of these four levels)

To describe E-R model vividly, in this section, the author use four little sections and three pitures. Two sections told us what is entity and entity set, what is relationship, role, and

relationship set. Both of them are easy to understand. These factors contributed to section 3 and section 4. In these two section attribute, value and value set , conceptual information

structure are told.

The information structure, the second level, is shown in section 2.3. It is shown in two little sections: primary key and entity or relationship relations. Primary key is explained in detail and with some examples. When it comes to relationship, the conclusion is there are two forms of entity relations: weak entity relation and regular entity relation.

Section 3 is an important part of the article, and it is more than the section title told.Section 3.1 is centered on fig.11 and the author give some characteristics about relationships(mainly about E-R diagram):Such as a relationship set may be

defined on more than two entity sets, or may be defined on only one entity set, there may be more than one relationship set defined on given entity sets and so on.

Design a database using an E-R model may consist of four steps:

- (1) identify the entity sets and the relationship sets of interest;
- (2) identify semantic information in the relationship sets such as whether a certain relationship set is an 1:n mapping;
- (3) define the value sets and attributes;
- (4) organize data into entity/relationship relations and decide primary keys.

The next little section told us the implications on data integrity. Three major kinds of constraints on values are given.

E-R model's superiority is shown in the last section, section 3.4. The semantics of information retrieval requests become clear. So the operations can be easily given:

- (1) Selection of a subset of values from a value set.
- (2) Selection of a subset of entities from an entity set.
- (3) Selection of a subset of relationships from a relationship set.
- (4) Selection of a subset of attributes.

Source: <http://toyhouse.cc/profiles/blogs/a-view-of-the-entity-relationship-model-toward-a-unified-view-of>