

DBMS

BCA DS & AI

1ST year (2023-24)

Assignment :02

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Assignment \rightarrow 02

Question - 01

What is relational data model terminology?

Answer

The relational data model represents how data is stored in Relational Databases. A relation data base consists of a collection of table, each of which is assigned a unique name. Consider a relation STUDENT with attribute ROLL-NO, Name, ADDRESS, PHONE, and age shown in the Table.

Table - Student

ROLL-NO	NAME	ADDRESS	PHONE	AGE
1	AMAN	RAEBARELI	7744	17
2	VISHUL	LUCKNOW	9006	18
3	RAJAT	KANPUR	7781	19
4	ATUL	KANPUR	9044	18

Question no 2

Discuss the importance of mapping constraints in the E-R Model provide example of mapping constraint & provide example of mapping constraints & explain how they impact Database design.

Answer

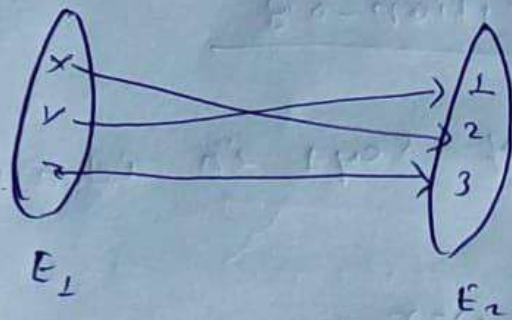
Mapping constraints in Database Management system (DBMS) are crucial for defining and enforcing relationship between entities in ER Model. They contribute to data integrity, query optimization, database consistency, data validation, data modeling and application development. It expressed the no. of entities to which another entity can be related via relationship set.

Fig. ->

- ① one to one
- ② one to Many
- ③ Many to one
- ④ Many to Many

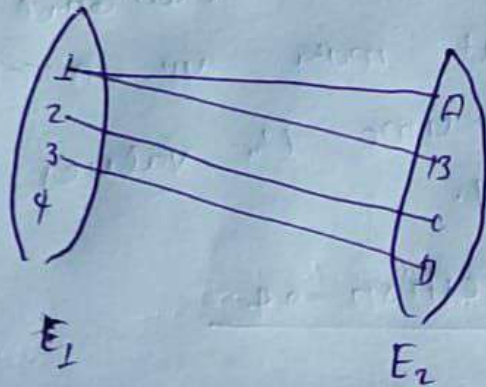
① 1:1 :-

In this one Entity of E_1 is at least related with one entity in E_2 . an entity of E_2 is related with at least one entity in E_1 .



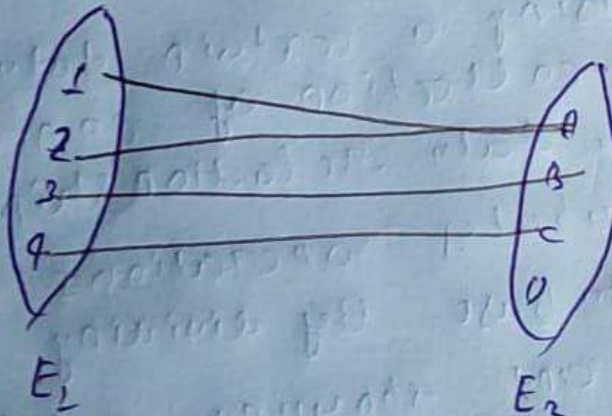
② I: M:-

In this entity of E_1 is associated with only one entity in E_2 and entity in E_2 is associated with one entity in E_1 .



③ M: 1:-

In this entity of E_2 is associated with one entity in E_1 and any no. of E_2 's entity is associated with one entity in E_1 .



Question - 03

Discuss the role of keys in identifying and relating entities?

Answer

Keys are basic requirement of a relational database model. It is uniquely used identifying the tuples (row) uniquely in tables. We also use key to set up relation amongst various columns & tuple of a relational Data-Base.

The properties that make up an entity key are chosen at design time the values must be uniquely identify.

Question - 04

How does the E-R Model facilitate the design & visualization of DB structure?

Answer

In the database designed phase, data are responsible for using a certain data Model. The data Model is collection of concept and notation of describing, data relationship, data semantics and data constraints operations for manipulating data in the Data Base. By dividing the entity their attributes and showing relationship them on ER diagram.

Q5- How are relationship between tables established and why are they essential for data organization?

Ans → Relationships between tables normally rely on the Primary Key in one of the tables. Recall that the Primary Key is a Unique Identifier (often numeric) for each record. To show that the information in two different tables is related, you usually create a relationship using the Primary Key - from one of the tables.

Tables are used to organize data that is too detailed or complicated to be described adequately in the text, allowing the reader to quickly see the result. They can be used to highlight trends or patterns in the data and to make a manuscript more readable by removing numeric data from the text.

Question No → 06

Provide real-world examples of scenarios a relational database is a suitable choice.

Answer N

- ① Airlines → Airlines use RDBMS to store flights & schedules, passenger information, and other operational data. For ex - QTA data & Flight Schedule.
- ② Telecommunications :-
Telecommunications companies use RDBMS to manage customer information. For ex - AT&T and billing information.
- ③ Manufacturing
Manufacturing companies use RDBMS to manage inventory supply chain information, and other operational data. For example, Toyota uses Oracle Database to manage its manufacturing and supply chain data.
- ④ Insurance → Insurance companies use RDBMS to store customer information, claims data, and other financial information. For ex - Astate uses Teradata to manage its claims data and generate insights about its customers and business operations.
- ⑤ Human Resources —
- ⑥ Energy and Utilities —
- ⑦ Social Media —
- ⑧ Logistics and Transportation
- ⑨ Hospitality, etc —