Mapping constraints in a database define rules that entities and their relationships must adhere to.

Two main types of mapping constraints are mapping cardinalities and participation constraints.

1. Mapping Cardinalities:

Mapping cardinalities specify how many entities of one type can be associated with entities of another type through a relationship set. For binary relationship sets (involving two entity sets), the mapping cardinality can be categorized as:

a. One to One (1:1): An entity in set A is associated with at most one entity in set B, and vice versa.

b. One to Many (1:N): An entity in set A can be associated with any number of entities in set B, but an entity in set B can be associated with at most one entity in set A.

c. Many to One (N:1): An entity in set A can be associated with at most one entity in set B, while an entity in set B can be associated with any number of entities in set A.

d. Many to Many (N:N): An entity in set A can be associated with any number of entities in set B, and vice versa.

2.Participation Constraints: Participation constraints describe the involvement of entity sets in a relationship. There are two types of participation:

1.Partial Participation: Not all entities in an entity set are required to participate in the relationship.

ii. Total Participation: Every entity in an entity set must participate in the relationship.

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24. Consider the following relations:

25. What are the additional operations in relational algebra ?
26. Explain integrity constraints.
27. Explain the following constraints : i. Entity integrity constraint. ii. Referential integrity constraint. iii. Domain constraint.
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