GALGOTIAS UNIVERSITY

School of Computing Science and Engineering

Program: BCA

Course Code:BCAC2102

Course Name: Database Management System

Lecture -10

Topic- Cardinality Constraints

Faculty :-Dr. Satyajee Srivastava

Lecture-9(RECAP)

Lecture 9

- Topic-mappings constraints

Lecture-10

Topic- Cardinality Constraints

Objective :

To be familiar with Cardinality Constraints

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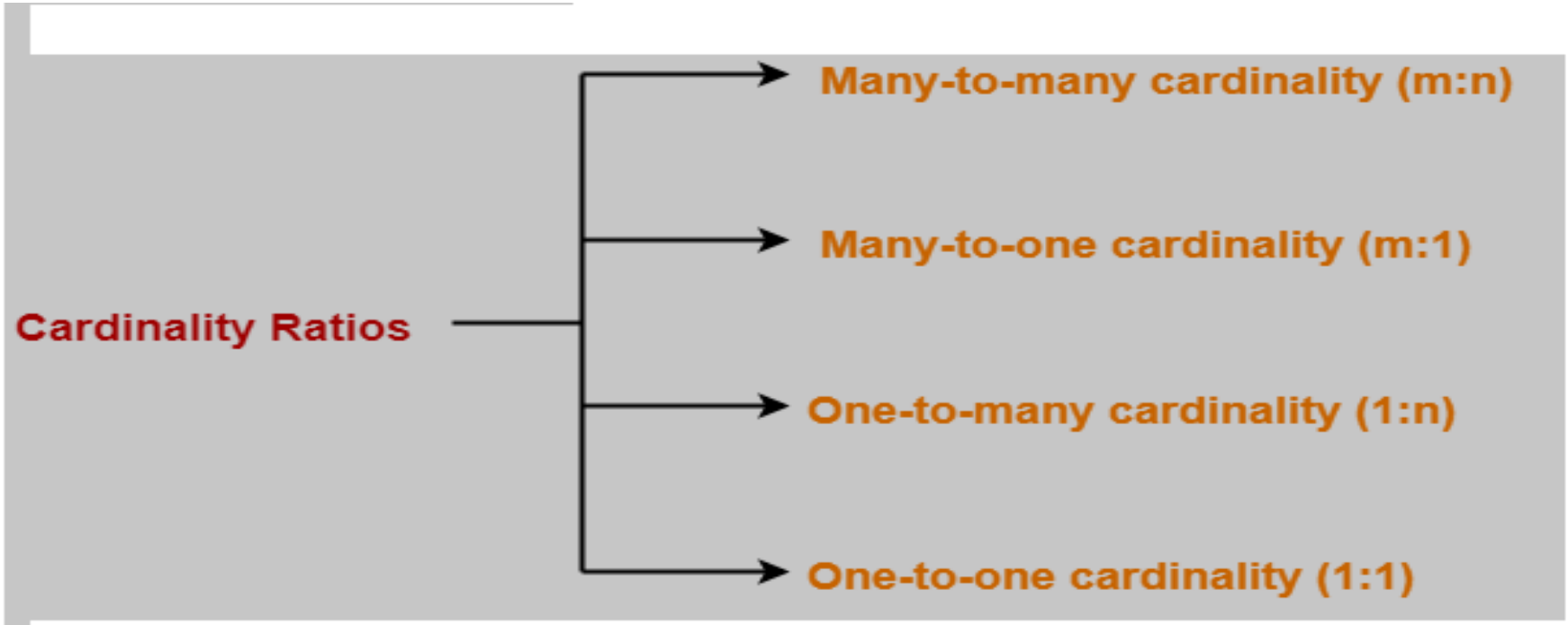

1. Many-to-Many cardinality (m:n)
2. Many-to-One cardinality (m:1)
3. One-to-Many cardinality (1:n)
4. One-to-One cardinality (1:1)

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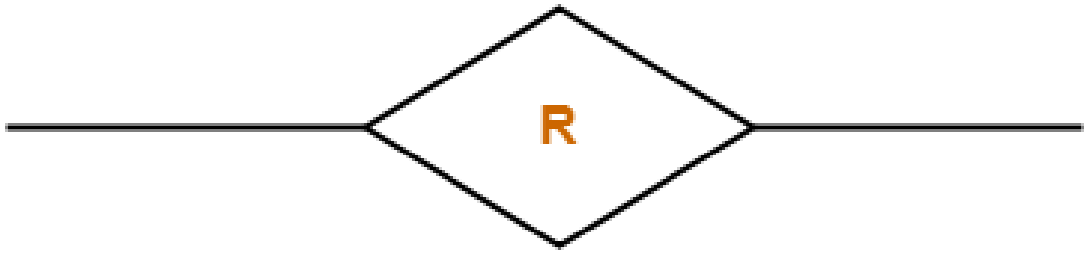
1. Many-to-Many Cardinality-

By this cardinality constraint,

- An entity in set A can be associated with any number (zero or more) of entities in set B.
- An entity in set B can be associated with any number (zero or more) of entities in set A.

Symbol Used-



Cardinality Ratio = m : n

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Example-

Consider the following ER diagram-

Many to Many Relationship

Here,

- One student can enroll in any number (zero or more) of courses.
- One course can be enrolled by any number (zero or more) of students.

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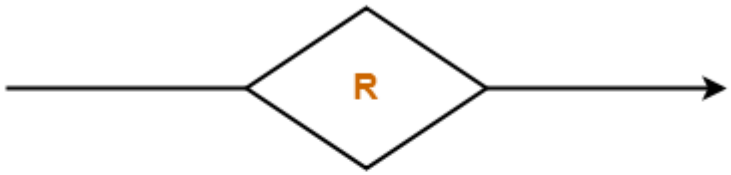
2. Many-to-One Cardinality-

By this cardinality constraint,

- An entity in set A can be associated with at most one entity in set B.
- An entity in set B can be associated with any number (zero or more) of entities in set A.

Symbol Used-



OR

Cardinality Ratio = m : 1

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Example-

Consider the following ER diagram-

Many to One Relationship

Here,

- One student can enroll in at most one course.
- One course can be enrolled by any number (zero or more) of students.

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3. One-to-Many Cardinality-

By this cardinality constraint,

- An entity in set A can be associated with any number (zero or more) of entities in set B.
- An entity in set B can be associated with at most one entity in set A.

Symbol Used-

OR

Cardinality Ratio = 1 : n

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Example-

Consider the following ER diagram-

One to Many Relationship

Here,

- One student can enroll in any number (zero or more) of courses.
- One course can be enrolled by at most one student.

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4. One-to-One Cardinality-

By this cardinality constraint,

- An entity in set A can be associated with at most one entity in set B.
- An entity in set B can be associated with at most one entity in set A.

Symbol Used-

OR

Cardinality Ratio = 1 : 1

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Example-

Consider the following ER diagram-

One to One Relationship

Here,

- One student can enroll in at most one course.
- One course can be enrolled by at most one student.

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Detailed

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(Assignment)

1. Construct an E-R diagram for a car insurance company that has a set of customers, each of whom owns one or more cars. Each car has associated with it zero to any number of recorded accidents**.**

Thank You