

Class – XII
Multimedia and Web Technology
Mysql/ms- access

Types of Table Relationships

A relationship works by matching data in key columns — usually columns with the same name in both tables. In most cases, the relationship matches the primary key from one table, which provides a unique identifier for each row, with an entry in the foreign key in the other table. For example, book sales can be associated with the specific titles sold by creating a relationship between the title_id column in the titles table (the primary key) and the title_id column in the sales table (the foreign key).

There are three types of relationships between tables. The type of relationship that is created depends on how the related columns are defined.

- One-to-Many Relationship
- Many-to-Many Relationships
- One-to-One Relationships

One-to-Many Relationships

A one-to-many relationship is the most common type of relationship. In this type of relationship, a row in table A can have many matching rows in table B, but a row in table B can have only one matching row in table A. For example, the publishers and titles tables have a one-to-many relationship: each publisher produces many titles, but each title comes from only one publisher.

Make a one-to-many relationship if only one of the related columns is a primary key or has a unique constraint.

The primary key side of a one-to-many relationship is denoted by a key symbol. The foreign key side of a relationship is denoted by an infinity symbol.

Many-to-Many Relationships

In a many-to-many relationship, a row in table A can have many matching rows in table B, and vice versa. You create such a relationship by defining a third table, called a junction table, whose primary key consists of the foreign keys from both table A and table B. For example, the authors table and the titles table have a many-to-many relationship that is defined by a one-to-many relationship from each of these tables to the titleauthors table. The primary key of the

titleauthors table is the combination of the au_id column (the authors table's primary key) and the title_id column (the titles table's primary key).

One-to-One Relationships

In a one-to-one relationship, a row in table A can have no more than one matching row in table B, and vice versa. A one-to-one relationship is created if both of the related columns are primary keys or have unique constraints.

This type of relationship is not common because most information related in this way would be all in one table. You might use a one-to-one relationship to:

- Divide a table with many columns.
- Isolate part of a table for security reasons.
- Store data that is short-lived and could be easily deleted by simply deleting the table.
- Store information that applies only to a subset of the main table.

The primary key side of a one-to-one relationship is denoted by a key symbol. The foreign key side is also denoted by a key symbol.

Referential Integrity

Referential integrity (RI) is a relational database concept, which states that table relationships must always be consistent. In other words, any foreign key field must agree with the primary key that is referenced by the foreign key. Thus, any primary key field changes must be applied to all foreign keys, or not at all. The same restriction also applies to foreign keys in that any updates (but not necessarily deletions) must be propagated to the primary parent key.

