Database Relationships:

One-to-One (1:1) Relationship

A one-to-one relationship exists when each record in one table corresponds to only one record in another table. This occurs when each record in one table has a unique counterpart in another table.

Example: A customer has one passport, and a passport is associated with one customer.

Suppose: In the Passports table, the CustomerID field is a foreign key that references the CustomerID field in the Customers table.

So, A customer has one passport, and a passport is associated with one customer.

One-to-Many (1:N) Relationship

A one-to-many relationship exists when one record in one table can have multiple corresponding records in another table.

Example:

Suppose: In the Orders table, the CustomerID field is a foreign key that references the CustomerID field in the Customers table.

So, A customer can have multiple orders, but each order belongs to only one customer.

Many-to-Many Relationship

A many-to-many relationship exists between two tables when:

1. One record in Table A can be related to multiple records in Table B.

2. One record in Table B can be related to multiple records in Table A.

Example:
Suppose: In the Enrollments table, the StudentID and CourseID fields are foreign keys that reference the StudentID field in the Students table and the CourseID field in the Courses table, respectively.

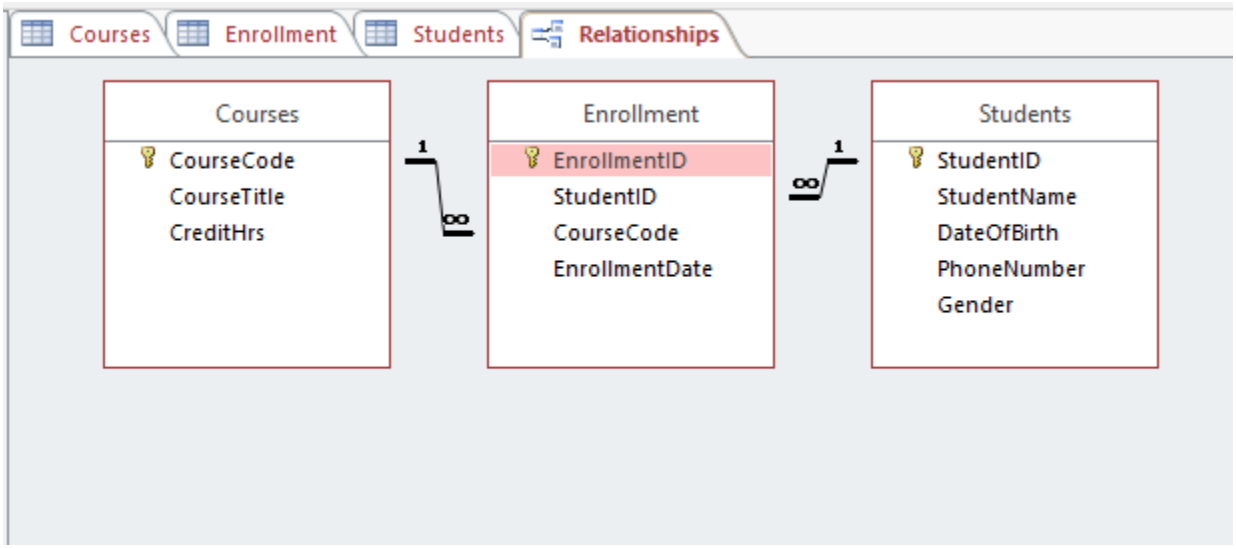
So, A student can enrol in multiple courses, and each course can have multiple students enrolled.

DEMONSTRATE:

As I have included one to many relationship in my question:

In the Enrollments table, the StudentID and CourseID fields are foreign keys that reference the StudentID field (Primary key) in the Students table and the CourseID field (Primary Key) in the Courses table

Relationship :



Importance of Referential Integrity

Referential integrity is essential for database accuracy. It validates table relationships, eliminating inconsistencies and errors. This ensures that data is logically connected, changes to one table update related tables, and deletions don't leave orphaned records. By enforcing referential integrity, databases maintain data precision, reliability, and overall health.

You can prevent errors such as:

1. Deleting a record in one table that is still referenced by another table
2. Inserting a record in one table with a foreign key that does not exist in the referenced table
3. Updating a record in one table that would cause inconsistencies in related tables

In MS Access, you can enforce referential integrity by creating relationships between tables and setting the Enforce Referential Integrity option to Yes.