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Part of **Future Connect Media's**  
IT Course

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# Topics to be covered:



**Assigning Primary key & Foreign Key**

In database design, **primary keys** and **foreign keys** are crucial for establishing **relationships** between **tables** and ensuring data integrity.

## Primary Key:

•**Definition:** A primary key is a column or a set of columns in a table that uniquely identifies each row or record in that table. It ensures that each row in a table is unique.

•**Characteristics:**

- Must contain unique values.
- Cannot have NULL values.
- There can be only one primary key in a table.

•**Usage:** Typically used as the main identifier for the records in a table.

## Foreign Key:

•**Definition:** A foreign key is a column or set of columns in a table that refers to the primary key or a unique key in another table. It establishes a link between two tables, enforcing referential integrity.

### •Characteristics:

- Values in the foreign key column must exist in the referenced table's primary key column or a unique key column.
- Can have NULL values unless the column is defined as NOT NULL.

•**Usage:** Used to create relationships between tables, ensuring that data in one table aligns with data in another table.

Let's consider two tables: **orders** and **customers**. The **orders** table has a foreign key that references the **customer\_id** column in the **customers** table.

## **Customers Table:**

```
CREATE TABLE customers ( customer_id INT  
AUTO_INCREMENT PRIMARY KEY, name  
VARCHAR(50), email VARCHAR(50) );
```

## Orders Table:

```
CREATE TABLE orders (  
    order_id INT AUTO_INCREMENT PRIMARY KEY,  
    order_date DATE,  
    amount DECIMAL(10, 2),  
    customer_id INT,  
    FOREIGN KEY (customer_id) REFERENCES  
    customers(customer_id)  
);
```

## **In this example:**

- customers table has `customer_id` as the primary key.
- orders table has `order_id` as the primary key and a `customer_id` column referencing the `customer_id` in the customers table as a foreign key.

This establishes a relationship between the customers and orders tables, ensuring that the `customer_id` in the orders table references an existing `customer_id` in the customers table.

When inserting data into the orders table, ensure that the `customer_id` value exists in the customers table to maintain referential integrity.

This is a basic example of setting up a one-to-many relationship between two tables using primary and foreign keys. Adjust the columns and constraints according to your specific requirements and the structure of your database



**THANK YOU**

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