Task 3: Creating Tables with Default Values and Constraints

Q6) Create the following tables with a foreign key constraint:

·Departments (Columns: DepartmentID INT PRIMARY KEY, DepartmentName VARCHAR(100))

·Employees (Columns: EmployeeID INT PRIMARY KEY, Name VARCHAR(100), DepartmentID INT referencing Departments)

```
mysql> CREATE TABLE Departments (
    ->     DepartmentID INT PRIMARY KEY,
    ->     DepartmentName VARCHAR(100)
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql> CREATE TABLE Employees (
    ->     EmployeeID INT PRIMARY KEY,
    ->     Name VARCHAR(100),
    ->     DepartmentID INT,
    ->     FOREIGN KEY (DepartmentID) REFERENCES Departments(DepartmentID)
    -> );
Query OK, 0 rows affected (0.05 sec)

mysql> Describe Departments
    -> ;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| DepartmentID   | int          | NO   | PRI | NULL    |       |
| DepartmentName | varchar(100) | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

Q7) Write an SQL statement to create a table named Orders with the following structure:

· OrderID: Integer, Primary Key

· OrderDate: Date, Default to Current Date

· OrderStatus: Varchar(20), Default value is 'Pending'

· TotalAmount: Decimal, should be greater than 0

```
mysql> CREATE TABLE Orders (
    ->     OrderID INT PRIMARY KEY,
    ->     OrderDate DATE DEFAULT '2024-01-01',  -- You can set a static default date
    ->     OrderStatus VARCHAR(20) DEFAULT 'Pending',
    ->     TotalAmount DECIMAL CHECK (TotalAmount > 0)
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql> describe table
    -> ;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to y
 at line 1
mysql> describe Orders;
+-------------+---------------+------+-----+------------+-------+
| Field       | Type          | Null | Key | Default    | Extra |
+-------------+---------------+------+-----+------------+-------+
| OrderID     | int           | NO   | PRI | NULL       |       |
| OrderDate   | date          | YES  |     | 2024-01-01 |       |
| OrderStatus | varchar(20)   | YES  |     | Pending    |       |
| TotalAmount | decimal(10,0) | YES  |     | NULL       |       |
+-------------+---------------+------+-----+------------+-------+
4 rows in set (0.00 sec)
```

Q8) Create a table named Customers with the following structure:

- CustomerID: Integer, Primary Key
- Email: Varchar(100), Unique
- FirstName: Varchar(50), Not Null
- LastName: Varchar(50), Not Null

```
mysql> CREATE TABLE Customers (
    ->     CustomerID INT PRIMARY KEY,
    ->     Email VARCHAR(100) UNIQUE,
    ->     FirstName VARCHAR(50) NOT NULL,
    ->     LastName VARCHAR(50) NOT NULL
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql> describe Customers;
+------------+--------------+------+-----+---------+-------+
| Field      | Type         | Null | Key | Default | Extra |
+------------+--------------+------+-----+---------+-------+
| CustomerID | int          | NO   | PRI | NULL    |       |
| Email      | varchar(100) | YES  | UNI | NULL    |       |
| FirstName  | varchar(50)  | NO   |     | NULL    |       |
| LastName   | varchar(50)  | NO   |     | NULL    |       |
+------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

Q9) Write an SQL statement to create a temporary table named TempStudents with the same structure as the Student table.

```
mysql> CREATE TEMPORARY TABLE TempStudents AS SELECT * FROM Stud WHERE 0;
Query OK, 0 rows affected (0.00 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> Describe TempStudents
    -> ;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| StudentID  | int         | NO   |     | NULL    | NULL  |
| SudentName | varchar(40) | YES  |     | NULL    | NULL  |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0.01 sec)
```

Q10) Create a table named Departments with the following columns:

· DepartmentID: Integer, Primary Key, Auto Increment

· DepartmentName: Varchar(100), Unique

```
mysql> CREATE TABLE department (
    ->     DepartmentID INT AUTO_INCREMENT PRIMARY KEY,
    ->     DepartmentName VARCHAR(100) UNIQUE
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> Describe Department
    -> ;
+----------------+--------------+------+-----+---------+----------------+
| Field          | Type         | Null | Key | Default | Extra          |
+----------------+--------------+------+-----+---------+----------------+
| DepartmentID   | int          | NO   | PRI | NULL    | auto_increment |
| DepartmentName | varchar(100) | YES  | UNI | NULL    |                |
+----------------+--------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)

mysql>
```

Q11) Create a table named Grades with the following structure:

· GradeID: Integer, Primary Key

· StudentID: Integer, Foreign Key referencing Students(StudentID) with ON DELETE CASCADE

· CourseID: Integer, Foreign Key referencing Courses(CourseID) with ON DELETE CASCADE

Grade: Char(2)

```
mysql> CREATE TABLE grades (
    ->     GradeID INT PRIMARY KEY,
    ->     StudentID INT,
    ->     CourseID INT,
    ->     Grade CHAR(2),
    ->     FOREIGN KEY (StudentID) REFERENCES Students(StudentID) ON DELETE CASCADE,
    ->     FOREIGN KEY (CourseID) REFERENCES Courses(CourseID) ON DELETE CASCADE
    -> );
Query OK, 0 rows affected (0.05 sec)

mysql> describe Grades
    -> ;
+-----------+---------+------+-----+---------+-------+
| Field     | Type    | Null | Key | Default | Extra |
+-----------+---------+------+-----+---------+-------+
| GradeID   | int     | NO   | PRI | NULL    |       |
| StudentID | int     | YES  | MUL | NULL    |       |
| CourseID  | int     | YES  | MUL | NULL    |       |
| Grade     | char(2) | YES  |     | NULL    |       |
+-----------+---------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```