PRACTICAL-5

AIM: Perform the following:
   a. Altering a Table, Dropping/Truncating/Renaming Tables,
   b. Backing up / Restoring a Database.
   c. Use of grant, revoke.

INPUT:-

Step-1 : Create Customer, Accounts and Transactions table.

```sql
// Customer Table
CREATE TABLE Customer (
      CustomerID INT AUTO_INCREMENT PRIMARY KEY,
      FirstName VARCHAR(50) NOT NULL,
      LastName VARCHAR(50) NOT NULL,
      DateOfBirth DATE NOT NULL,
      Gender CHAR(1),
      Phone VARCHAR(10) NOT NULL
);
// Accounts Table
CREATE TABLE Accounts (
      AccountID INT AUTO_INCREMENT PRIMARY KEY,
      CustomerID INT,
      AccountType VARCHAR(20) NOT NULL,
      Balance DECIMAL(15,2) NOT NULL,
      FOREIGN KEY (CustomerID) REFERENCES
                  Customer (CustomerID)
);
// Transactions Table
CREATE TABLE Transactions (
      TransactionID INT AUTO_INCREMENT PRIMARY KEY,
      AccountID INT,
      TransactionDate DATE NOT NULL,
      Amount DECIMAL(15,2) NOT NULL,
      TransactionType VARCHAR(20) NOT NULL,
      FOREIGN KEY (AccountID) REFERENCES Accounts(AccountID)
);
```

Step-2: Inserting Data into Tables.

```sql
// Customers Table
INSERT INTO Customers
    (FirstName, LastName, DateOfBirth, Gender, PhoneNumber)
VALUES
('John', 'Doe', '1980-01-05', 'Male', '1234567890'),
('Jane', 'Smith', '1985-05-23', 'Female', '0987654321');


// Accounts Table
INSERT INTO Accounts
    (CustomerID, AccountType, Balance) VALUES
(1, 'Savings', 5000.00),
(2, 'Checking', 1500.00),
(1, 'Checking', 2000.00);

// Transactions Table
INSERT INTO Transactions
    (AccountID, TransactionDate, Amount, TransactionType)
VALUES
(1, '2024-01-10', 500.00, 'Deposit'),
(2, '2024-01-15', 200.00, 'Withdrawal'),
(3, '2024-01-20', 300.00, 'Deposit');
```

Step-3: Fetch data

```sql
// Customer Table
SELECT * FROM Customers;
// Accounts Table
SELECT * FROM Accounts;
// Transactions Table
SELECT * FROM Transactions;
```

// Customers Table

CustomerID	FirstName	LastName	DateofBirth	Gender	PhoneNumber
1	John	Doe	1980-01-15	Male	1234567890
2	Jane	Smith	1985-05-23	Female	0987654321

// Accounts Table

AccountID	CustomerID	AccountType	Balance
1	1	Savings	5000.00
2	2	Checking	1500.00
3	1	Checking	2000.00

// Transactions Table

TransactionID	AccountID	TransactionDate	Amount	TransactionType
1	1	2024-01-10	500.00	Deposit
2	2	2024-01-15	200.00	Withdrawal
3	3	2024-01-20	300.00	Deposit

9). Altering, Dropping / Truncating / Renaming Tables :-

i). Altering a Table :-

```
ALTER TABLE Customers
ADD Address VARCHAR(255);
```

CustomerID	Firstname	Lastname	DateOfBirth	Gender	PhoneNumber	Address
1	John	Doe	1980-01-15	Male	1234567890	Null
2	Jane	Smith	1985-05-23	Female	0987654321	Null

ii). Dropping a Table :-

```
DROP TABLE Transactions;
```

iii). Truncating a Table :-

```
TRUNCATE TABLE Accounts;
```

AccountID	CustomerID	AccountType	Balance

iv). Renaming a Table :-

```
ALTER TABLE Customers
RENAME TO BankCustomers;
```

b). Backing UP / Restoring a Database :-

i). Backing Up a Database :-

```
BACKUP DATABASE BankDB
TO DISK = 'c:\ backups \ BankDB.bak';
```

ii). Restore a Database :-

```
RESTORE DATABASE BankDB
FROM DISK = 'C:\ backups \ BankDB. bak' ;
```

c). Use of grant and Revoke :-

i). Grant Priviliges :-

```
GRANT SELECT, INSERT, UPDATE ON BankDB. * To
      'bank_user' @ 'localhost' IDENTIFIED BY 'password';
```

ii). Revoke Priviliges :-

```
REVOKE INSERT, UPDATE ON BankDB. * FROM 'bank_user'
                      @ 'localhost';
```