PRACTICAL-3 **DATE:**_____

AIM: Design a Database and create required tables. For e.g. Bank, College Database.Perform the following: a.Viewing all databases, Creating a Database, Viewing all Tables in a Database, Creating Tables (With and Without Constraints), Inserting/Updating/Deleting Records in a Table, Apply the constraints like Primary Key , Foreign key, NOT NULL to the tables.

INPUT:-

i). Database :-

- A database is an organized collection of data, generally stored and accessed electronically from a computer system. Databases are structured to facilitate the storage, retrieval, modification, and deletion of data. They can be managed using a Database Management System (DBMS).

ii). Table :-

- A table is a collection of related data held in a structured format within a database. It consists of rows and columns, where each row represents a unique record and each column represents a field in the record.

iii). Data Manipulation Language (DML) :-

- Data Manipulation Language (DML) is a subset of SQL used for adding, deleting, and modifying data in a database. DML commands are used to manipulate data stored in database objects like tables.

iv). Data Definition Language (DDL) :-

- DDL is a subset of SQL used to define and manages all database objects, such as tables, indexes and views. DDL commands are used to create, modify and delete database structure but do not typically manipulate the data within those structures.

vi). Keys :-

- Keys are attributes or sets of attributes that help to identify a row in a table. They are crucial for establishing relationships between tables and ensuring data integrity.

i). Primary Key : A column or a combination of columns that uniquely identifies each row in a table. Each table can have only one primary key, and it cannot contain null values.

ii). Foreign Key : A column or a combination of columns that establish a link between data in two tables. It refers to the primary key in another table, ensuring referential integrity.

iii). Composite Key : A primary key composed of two or more columns used to identify a record uniquely.

iv). Alternate Key : A candidate key that is not chosen as the primary key.

vii). DDL Commands :-

- DDL commands are used to define and manage database objects. Common DDL commands include :

i). CREATE : Creates a new table.
ii). ALTER : Modifies an existing database object.
iii). DROP : Deletes an existing database object.
iv). TRUNCATE : Removes all records from a table but does not delete the table structure.

vii. DML Commands :-

- DML command are used to manipulate the data within database objects. Common DML commands include :

i). INSERT : Adds new records to a table.
ii). UPDATE : Modifies existing records in a table.
iii). DELETE : Removes records from a table.
iv). SELECT : Retrieves data from one or more tables.

SQL Queries :-

i). CREATE Database Bank ;

ii).
```
CREATE table Customers (
    Customer_id Primary Key Identity (1,1),
    name varchar(20) Not Null,
    Contactno varchar(10) Not Null
);
```

iii).
```
INSERT INTO Customers (name, Contactno) VALUES
    ('John Cina', '1234567890'),
    ('Joe Biden', '246801214'),
    ('Michael Jackson', '3456780912');
```

iv). Select * from Customers ;

Customer_id	Name	Contactno
1	John Cina	1234567890
2	Joe Biden	246801214
3	Michael Jackson	3456780912

vi).
```
CREATE table Accounts (
    acc_id int Primary key Identity(1,1),
    Customer_id int,
    acc_type VARCHAR(10) NOT NULL,
    Balance Decimal(10,2) NOT NULL,
    Foreign key ((ustomer_id) References
                    (ustomer((ustomer_id)
);
```

vii).
```
INSERT INTO Accounts (Customer_id, acc_type, Balance)
VALUES
    (1, 'Savings', 1000.00)
    (2, 'Current', 2500.50)
    (3, 'Salary', 1500.75);
```

vii).
```
SELECT * FROM Accounts;
```

acc_id	Customer_id	acc_type	Balance
1	1	Savings	1000.00
2	2	Current	2500.50
3	3	Salary	1500.75

viii).
```
CREATE Table Transactions (
    t_id int Primary key Identity(1,1),
    acc_id int,
    transaction_type VARCHAR(20) Not Null,
    amount Decimal(10,2) Not Null,
    Foreign key (acc_id) References Accounts(acc_id)
);
```

ix.
```
INSERT INTO Transactions (acc_id, transaction_type,
                          amount) VALUES
    (1, 'Deposit', 200.00),
    (2, 'Withdrawal', -50.75),
    (3, 'Deposit', 300.00);
```

x.
```
SELECT * FROM Transactions ;
```

t_id	acc_id	transaction_type	Amount
1	1	Deposit	200.00
2	2	Withdrawal	-50.75
3	3	Deposit	300.00

xi.
```
UPDATE Customers set name = "Justin Bieber"
  Where Customer_id = 1 ;
```

xii.
```
SELECT * FROM Customers ;
```

Customer_id	Name	Contactno
1	Justin Bieber	12345678 90
2	Joe Biden	246801214
3	Michael Jackson	3456780912

xiii.
```
DELETE FROM Transactions where t_id=3 ;
```

xiv.
```
SELECT * FROM Transactions ;
```

t_id	ac_id	transaction_type	Amount
1	1	Deposit	200.00
2	2	Withdrawal	-50.75