MODULE 5

TASK

1. What do you understand By Database?

Ans. Database is a collection of database which is organized in a structured form known as tables. It stores data in a format called rows and column.

2. What is Normalization?

Ans.Normalization helps in organizing database in a proper way in which rows and columns contains same type of data. This helps database more efficient and easier to manage.

3. What is Difference between DBMS and RDBMS?

Ans. DBMS

- It stores small quantity of data
- It is less secure
- Only single user can access it
- Ex.- SQL Lite

RDBMS

- It stores large amount of data
- It is more secure
- Multiple user can access it
- Ex.- MySQL
-

4. What is MF Cod Rule of RDBMS Systems?

Ans.MF Cod Rule of RDBMS means to manage relational relations for complete database systems.

5. What do you understand By Data Redundancy?

Ans.Data Redundancy means duplicate data which means same data can be found in multiple locations in database.

6. What is DDL Interpreter?

Ans.DDL interpreter processes and executes the command that are written in the structure of database. It uses commands like create, alter, drop, truncate.

7. What is DML Compiler in SQL?

Ans.DML compiler processes and executes the actual data which is stored in tables. It uses commands like insert, update, delete, select.

8. What is SQL Key Constraints writing an Example of SQL Key Constraints?

Ans.SQL Key constrains is a set of rules which are applied while creating a column to specify the type of column and it can be used while creating a table or alter a table if already exists.

Example:

```
Create table database(
Rollno INTEGER PRIMARY KEY AUTOINCREMENT,
Name TEXT NOTNULL,
Branch TEXT);
```

9. What is save Point? How to create a save Point write a Query?

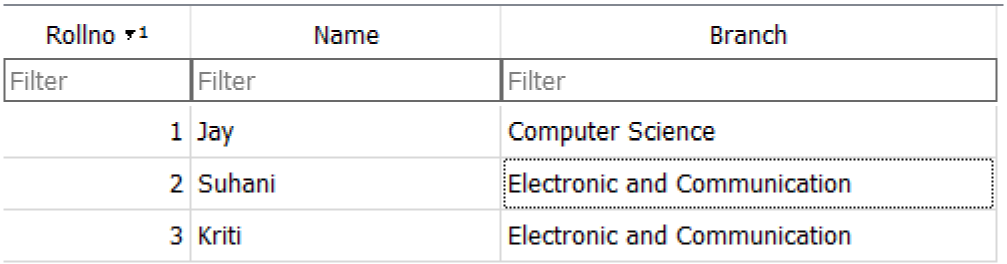
Ans.Savepoint is used to save a transaction temporarily.

1. Create Table Name : Student and Exam

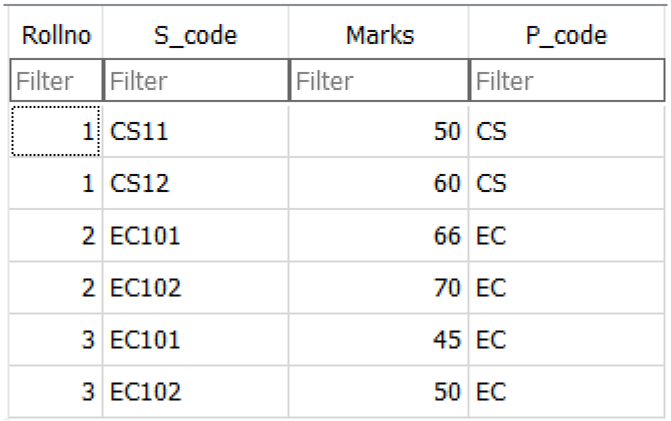
Ans.

```
CREATE TABLE Student(
 Rollno INTEGER PRIMARY KEY AUTOINCREMENT,
 Name TEXT,
 Branch TEXT);

 INSERT INTO Student(name, Branch) VALUES
 ('Jay','Computer Science'),
 ('Suhani','Electronic and Communication'),
 ('Kriti','Electronic and Communication');

 CREATE TABLE EXAM
 (
  Rollno INTEGER,
  S_code TEXT,
  Marks INTEGER,
  P_code TEXT,
  FOREIGN KEY(Rollno) REFERENCES Student(Rollno)
 );

 INSERT INTO EXAM (Rollno,S_code,Marks,P_code)
 VALUES
 (1,'CS11',50,'CS'),
(1,'CS12',60,'CS'),
(2,'EC101',66,'EC'),
(2,'EC102',70,'EC'),
(3,'EC101',45,'EC'),
(3,'EC102',50,'EC');
```

Output:



Rollno ▾1	Name	Branch
Filter	Filter	Filter
1	Jay	Computer Science
2	Suhani	Electronic and Communication
3	Kriti	Electronic and Communication



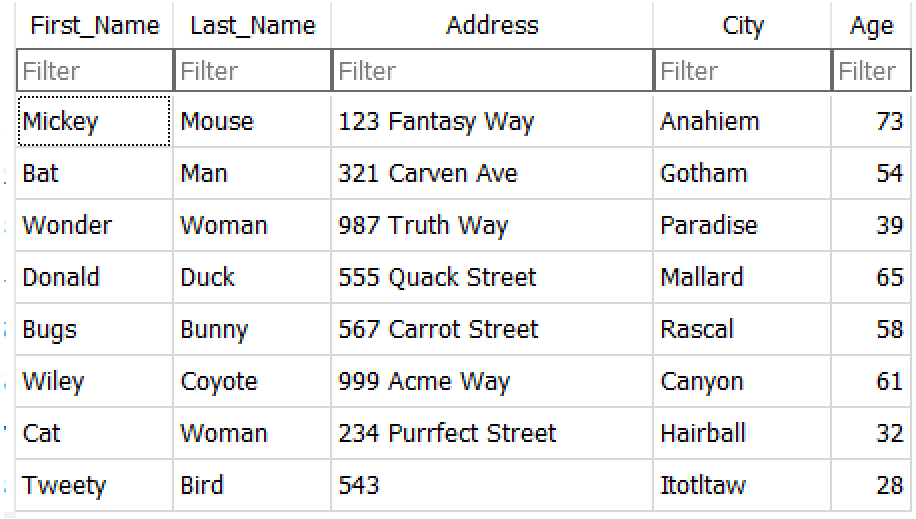
Rollno	S_code	Marks	P_code
Filter	Filter	Filter	Filter
1	CS11	50	CS
1	CS12	60	CS
2	EC101	66	EC
2	EC102	70	EC
3	EC101	45	EC
3	EC102	50	EC

2. Create table given below

Ans.

```
CREATE TABLE task
(
 First_Name TEXT,
 Last_Name TEXT,
 Address TEXT,
 City TEXT,
 Age INTEGER
);

INSERT INTO task (First_Name, Last_Name, Address,City,
Age) VALUES
('Mickey','Mouse','123 Fantasy Way','Anahiem',73),
('Bat','Man','321 Carven Ave','Gotham',54),
('Wonder','Woman','987 Truth Way','Paradise',39),
('Donald','Duck','555 Quack Street','Mallard',65),
('Bugs','Bunny','567 Carrot Street','Rascal',58),
('Wiley','Coyote','999 Acme Way','Canyon',61),
('Cat','Woman','234 Purrfect Street','Hairball',32),
('Tweety','Bird','543','Itotltaw',28);
```

Output:



First_Name	Last_Name	Address	City	Age
Filter	Filter	Filter	Filter	Filter
Mickey	Mouse	123 Fantasy Way	Anahiem	73
Bat	Man	321 Carven Ave	Gotham	54
Wonder	Woman	987 Truth Way	Paradise	39
Donald	Duck	555 Quack Street	Mallard	65
Bugs	Bunny	567 Carrot Street	Rascal	58
Wiley	Coyote	999 Acme Way	Canyon	61
Cat	Woman	234 Purrfect Street	Hairball	32
Tweety	Bird	543	Itotltaw	28

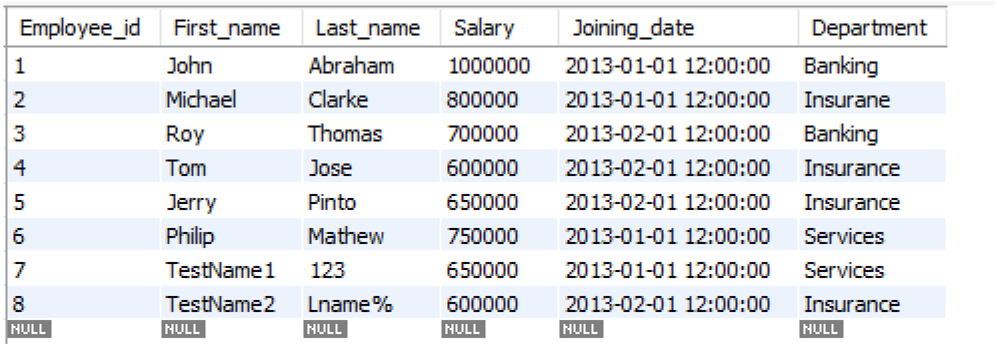
3. Create table given below: Employee and Incentive

Ans.

```
create table Employee(

Employee_id integer primary key auto_increment,

First_name varchar(20),

Last_name varchar(20),

Salary int,

Joining_date date,

Department varchar(20));
```

```
insert into Employee (First_name, Last_name, Salary,
Joining_date, Department) values

('John','Abraham',1000000,'2013-01-01 12:00:00','Banking'),

('Michael','Clarke',800000,'2013-01-01 12:00:00','Insurane'),

('Roy','Thomas',700000,'2013-02-01 12:00:00','Banking'),

('Tom','Jose',600000,'2013-02-01 12:00:00','Insurance'),

('Jerry','Pinto',650000,'2013-02-01 12:00:00','Insurance'),

('Philip','Mathew',750000,'2013-01-01 12:00:00','Services'),

('TestName1','123',650000,'2013-01-01 12:00:00','Services'),

('TestName2','Lname%',600000,'2013-02-01
12:00:00','Insurance');
```

Output: Employee Table

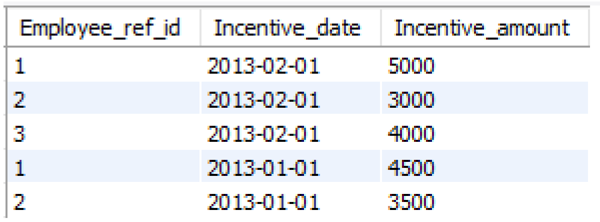


Employee_id	First_name	Last_name	Salary	Joining_date	Department
1	John	Abraham	1000000	2013-01-01 12:00:00	Banking
2	Michael	Clarke	800000	2013-01-01 12:00:00	Insurane
3	Roy	Thomas	700000	2013-02-01 12:00:00	Banking
4	Tom	Jose	600000	2013-02-01 12:00:00	Insurance
5	Jerry	Pinto	650000	2013-02-01 12:00:00	Insurance
6	Philip	Mathew	750000	2013-01-01 12:00:00	Services
7	TestName1	123	650000	2013-01-01 12:00:00	Services
8	TestName2	Lname%	600000	2013-02-01 12:00:00	Insurance
NULL	NULL	NULL	NULL	NULL	NULL

Create Incentive Table:-

```
create table Incentive(

Employee_ref_id integer,

Incentive_date date,

Incentive_amount int,

foreign key(Employee_ref_id) references Employee (Employee_id));


insert into Incentive (Employee_ref_id, Incentive_date, Incentive_amount) values

(1,'2013-02-01',5000),

(2,'2013-02-01',3000),

(3,'2013-02-01',4000),

(1,'2013-01-01',4500),

(2,'2013-01-01',3500);
```

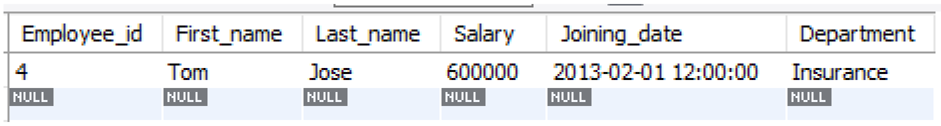
Output: Incentive Table



Employee_ref_id	Incentive_date	Incentive_amount
1	2013-02-01	5000
2	2013-02-01	3000
3	2013-02-01	4000
1	2013-01-01	4500
2	2013-01-01	3500

Task1. Get First_Name from employee table using Tom name “Employee Name”.

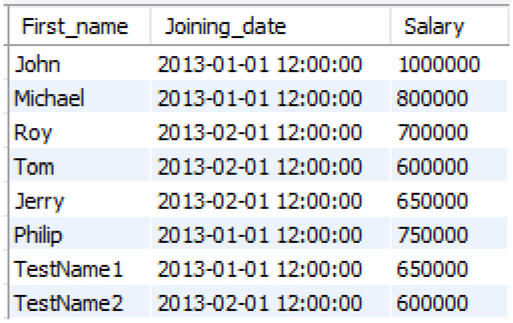
Ans. select * from Employee where first_name = 'Tom';



Employee_id	First_name	Last_name	Salary	Joining_date	Department
4	Tom	Jose	600000	2013-02-01 12:00:00	Insurance
NULL	NULL	NULL	NULL	NULL	NULL

Task2. Get FIRST_NAME, Joining Date, and Salary from employee table.

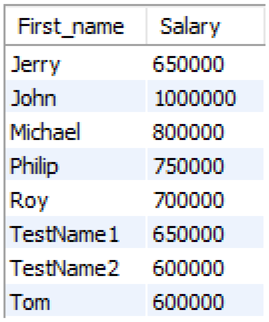
Ans. select First_name,Joining_date,Salary from Employee;



First_name	Joining_date	Salary
John	2013-01-01 12:00:00	1000000
Michael	2013-01-01 12:00:00	800000
Roy	2013-02-01 12:00:00	700000
Tom	2013-02-01 12:00:00	600000
Jerry	2013-02-01 12:00:00	650000
Philip	2013-01-01 12:00:00	750000
TestName1	2013-01-01 12:00:00	650000
TestName2	2013-02-01 12:00:00	600000

Task3. Get all employee details from the employee table order by First_Name Ascending and Salary descending?

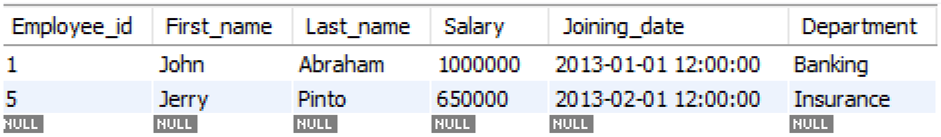
Ans. select First_name,Salary from Employee order by First_name asc, Salary desc;



First_name	Salary
Jerry	650000
John	1000000
Michael	800000
Philip	750000
Roy	700000
TestName1	650000
TestName2	600000
Tom	600000

Task4. Get employee details from employee table whose first name contains ‘J’.

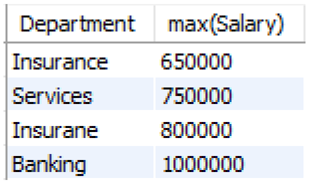
Ans. select * from Employee where First_name like 'j%';



Employee_id	First_name	Last_name	Salary	Joining_date	Department
1	John	Abraham	1000000	2013-01-01 12:00:00	Banking
5	Jerry	Pinto	650000	2013-02-01 12:00:00	Insurance
NULL	NULL	NULL	NULL	NULL	NULL

Task5. Get department wise maximum salary from employee table order by salary ascending?

Ans. select Department,max(Salary) from Employee group by Department order by max(Salary) asc;

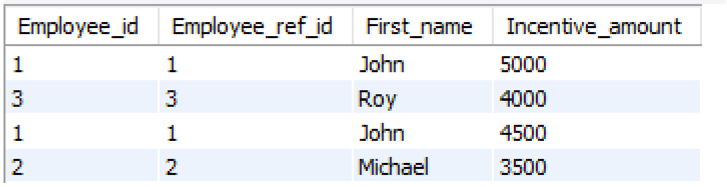


Department	max(Salary)
Insurance	650000
Services	750000
Insurane	800000
Banking	1000000

Task6. Select first_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount greater than 3000.

Ans. select Employee.Employee_id,Incentive.Employee_ref_id,Employee

```
.First_name,Incentive.Incentive_amount from  Employee
cross join  Incentive on
Employee.Employee_id=Incentive.Employee_ref_id where
Incentive_amount > 3000;
```



Employee_id	Employee_ref_id	First_name	Incentive_amount
1	1	John	5000
3	3	Roy	4000
1	1	John	4500
2	2	Michael	3500

Task7. Create After Insert trigger on Employee table which insert records in view table

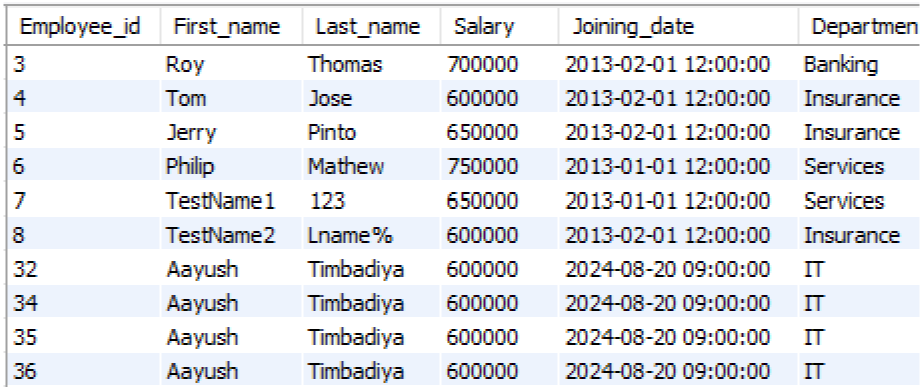
Ans. delimiter //

```
create trigger employee_data

after insert

 on Employee

 for each row

begin

insert into viewtable(First_name, Last_name, Salary,
Joining_date, department,joined_at) values

( new.First_name, new.Last_name,
new.salary,new.Joining_date, new.Department, now());

end;
```

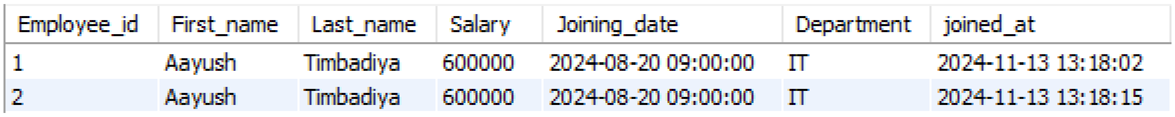
//

insert into Employee(First_name, Last_name, Salary, Joining_date, Department)values

('Aayush','Timbadiya',600000,'2024-08-20 09:00:00','IT');



Employee_id	First_name	Last_name	Salary	Joining_date	Departmen
3	Roy	Thomas	700000	2013-02-01 12:00:00	Banking
4	Tom	Jose	600000	2013-02-01 12:00:00	Insurance
5	Jerry	Pinto	650000	2013-02-01 12:00:00	Insurance
6	Philip	Mathew	750000	2013-01-01 12:00:00	Services
7	TestName1	123	650000	2013-01-01 12:00:00	Services
8	TestName2	Lname%	600000	2013-02-01 12:00:00	Insurance
32	Aayush	Timbadiya	600000	2024-08-20 09:00:00	IT
34	Aayush	Timbadiya	600000	2024-08-20 09:00:00	IT
35	Aayush	Timbadiya	600000	2024-08-20 09:00:00	IT
36	Aayush	Timbadiya	600000	2024-08-20 09:00:00	IT



Employee_id	First_name	Last_name	Salary	Joining_date	Department	joined_at
1	Aayush	Timbadiya	600000	2024-08-20 09:00:00	IT	2024-11-13 13:18:02
2	Aayush	Timbadiya	600000	2024-08-20 09:00:00	IT	2024-11-13 13:18:15

4. Create table given below: Salesperson and Customer

Ans.

create database shop;

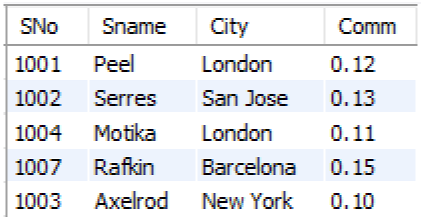
use shop;

create table Salesperson(

SNo integer,

```
Sname varchar(10),
City varchar(20),
Comm decimal(10,2));
insert into Salesperson(Sno, Sname, City, Comm) values
(1001,'Peel','London',.12),
(1002,'Serres','San Jose',.13),
(1004,'Motika','London',.11),
(1007,'Rafkin','Barcelona',.15),
(1003,'Axelrod','New York',.1);
```

Output: Salesperson Table

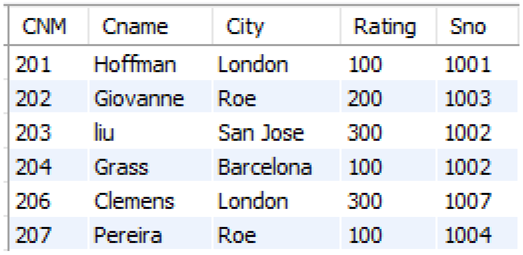


SNo	Sname	City	Comm
1001	Peel	London	0.12
1002	Serres	San Jose	0.13
1004	Motika	London	0.11
1007	Rafkin	Barcelona	0.15
1003	Axelrod	New York	0.10

*Customer Table

```
create table Customer(
CNM integer,
Cname varchar(20),
City varchar(20),
Rating integer,
Sno integer,
foreign key (Sno) references Salesperson (SNo));
insert into Customer (CNM, Cname, City, Rating, Sno)values
(201,'Hoffman','London',100,1001),
(202,'Giovanne','Roe',200,1003),
(203,'liu','San Jose',300,1002),
(204,'Grass','Barcelona',100,1002),
(206,'Clemens','London',300,1007),
(207,'Pereira','Roe',100,1004);
```

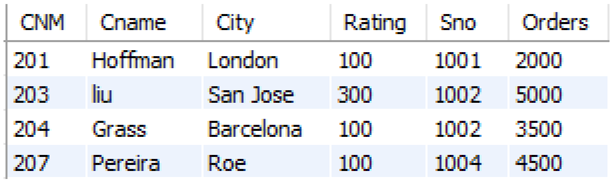
Output: Customer Table



CNM	Cname	City	Rating	Sno
201	Hoffman	London	100	1001
202	Giovanne	Roe	200	1003
203	liu	San Jose	300	1002
204	Grass	Barcelona	100	1002
206	Clemens	London	300	1007
207	Pereira	Roe	100	1004

Task1. All orders for more than $1000.

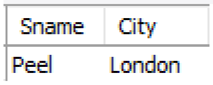
Ans. select * from Customer where orders > 1000;



CNM	Cname	City	Rating	Sno	Orders
201	Hoffman	London	100	1001	2000
203	liu	San Jose	300	1002	5000
204	Grass	Barcelona	100	1002	3500
207	Pereira	Roe	100	1004	4500

Task2. Names and cities of all salespeople in London with commission above 0.12

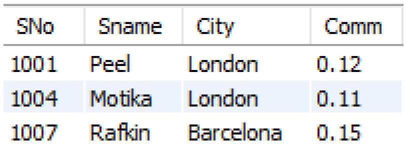
Ans. select Sname, City from Salesperson where Comm >= 0.12 and city = 'London';



Sname	City
Peel	London

Task3. All salespeople either in Barcelona or in London

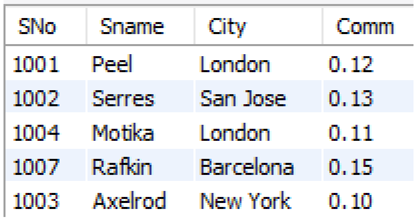
Ans.select * from Salesperson where city = 'barcelona' or city = 'London';



SNo	Sname	City	Comm
1001	Peel	London	0.12
1004	Motika	London	0.11
1007	Rafkin	Barcelona	0.15

Task4. All salespeople with commission between 0.10 and 0.12. (Boundary values should be excluded).

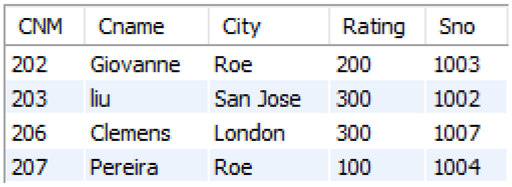
Ans. select * from Salesperson where comm > 0.10 or comm < 0.12;



SNo	Sname	City	Comm
1001	Peel	London	0.12
1002	Serres	San Jose	0.13
1004	Motika	London	0.11
1007	Rafkin	Barcelona	0.15
1003	Axelrod	New York	0.10

Task5. All customers excluding those with rating <= 100 unless they are located in Rome

Ans. select * from Customer where rating > 100 or city = 'roe';



CNM	Cname	City	Rating	Sno
202	Giovanne	Roe	200	1003
203	liu	San Jose	300	1002
206	Clemens	London	300	1007
207	Pereira	Roe	100	1004