MODULE: 5 (Database)

1. What is you understand by database?

Ans :

- database is called as DBMS.
- DBMS stands for database management system.
- Database is inter-related data and management system, is set of program for store and retrieve data.
- DBMS is store and access data easy and effectively.
- For ex: school , universities data.

2. What is normalization?

Ans:

- Normalization is the processes of minimizing redundancy from a relation or set of relations.
- Redundancy in relation may cause insertion , deletion and updation anomalies. So , it helps to minimize the redundancy in relation.

NORMALIZATION FORMS:

FIRST NORMAL FORM:

SECOND NORMAL FORM:

THIRD NORMAL FORM:

BOYCE & CODE NORMAL FORM (BCNF):

FIRST NORMAL FORM:

A relation is in 1NF if every attribute in that rel*999ation singled valued attribute.

A single cell must not hold more than one value.

It does not contain any composite or multi-valued attribute.

SECOND NORMAL FORM:

In this normal form , a relation must be in first form and relation must not contain any partial dependency.

Partial dependency – If the proper subset of candidate key determines non-prime attribute, it is called partial dependency.

THIRD NORMAL FORM:

There is no transitive dependency form non-prime attribute as well as it is in second normal form.

A relation is in 3NF if at least one of the following condition holds in every non-trivial function dependency x -> y

X is a super key.

Y is a prime attribute.

TRANSITIVE DEPENDENCY – if a->b and b->c are two FDs then a->C is called transitive dependency.

3. What is Difference between DBMS and RDBMS?

DBMS	RDBMS
Stores data in the form of a file.	Stores data in the form of tables.
Allow one user at a time.	Allow more than one user at a time.
Manages the data in a computer.	Maintains the relationship of table in a database.
Cannot be normalized.	Supports normalization.
Cannot handle large amount of data.	Able to handle high amounts of data.
Do not use the ACID form of data storage.	Use the ACID model.

4. What is MF Codd Rule of RDBMS Systems?

Ans:

The MF Codd rule is a set of thirteen rules(numbered 0 to 12)that define a database to be a correct relational database management system(RDBMS).

RDMS - RELATIONAL DATABASE MANA-GGEMENT SYSTEM : an information management system that is oriented on data model.

5. What do you understand By Data Redundancy?

Ans:

Redundancy in DBMS is having several copies of the same data in the database.

6. What is DDL Interpreter?

Ans:

DDL is stands for data definition language.

This statement such as scheme definition statement like create, delete, etc.

7. What is DML Compiler in SQL?

Ans :

DML stands for data manipulation language.

a computer programming language that allows you to add (insert), delete (delete), and alter (update) data in a database.

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

Ans:

SQL constraints are used to specify rules for the data in a table.

Constraints are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the table. If there is any violation between the constraint and the data action, the action is aborted.

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

Ans:

Save point is a command in SQL that is used with the rollback command.

It is a command in Transaction Control Language that is used to mark the transaction in a table.

Syntax for Save point command: SAVEPOINT SAVEPOINT_NAME

This command is used only in the creation of SAVEPOINT among all the transactions.

10. What is trigger and how to create a Trigger in SQL?

Ans:

A trigger in SQL is a procedural code that is automatically executed in response to certain events on a specified table.

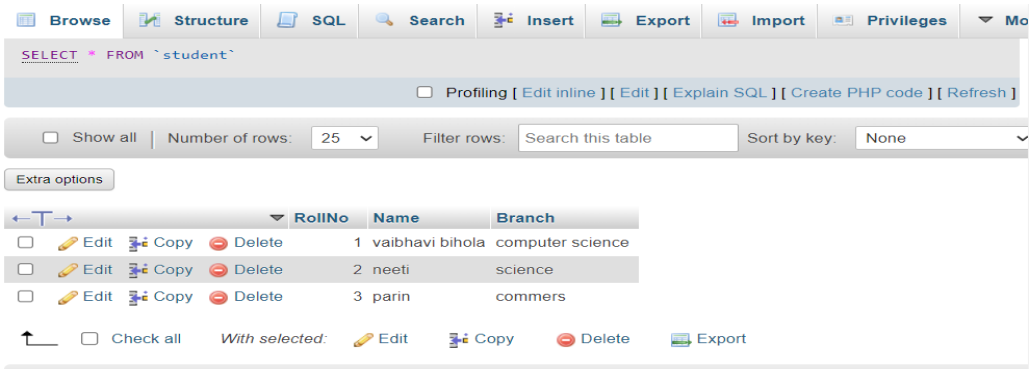
Syntax:

```
Create Trigger Trigger_Name
(Before | After) [ Insert | Update | Delete]
on [Table_Name]
[ for each row | for each column]
[ trigger_body]
```

```
Ex:
CREATE TRIGGER sample_trigger
before INSERT
ON student
FOR EACH ROW
SET new.total = new.marks/6;
```

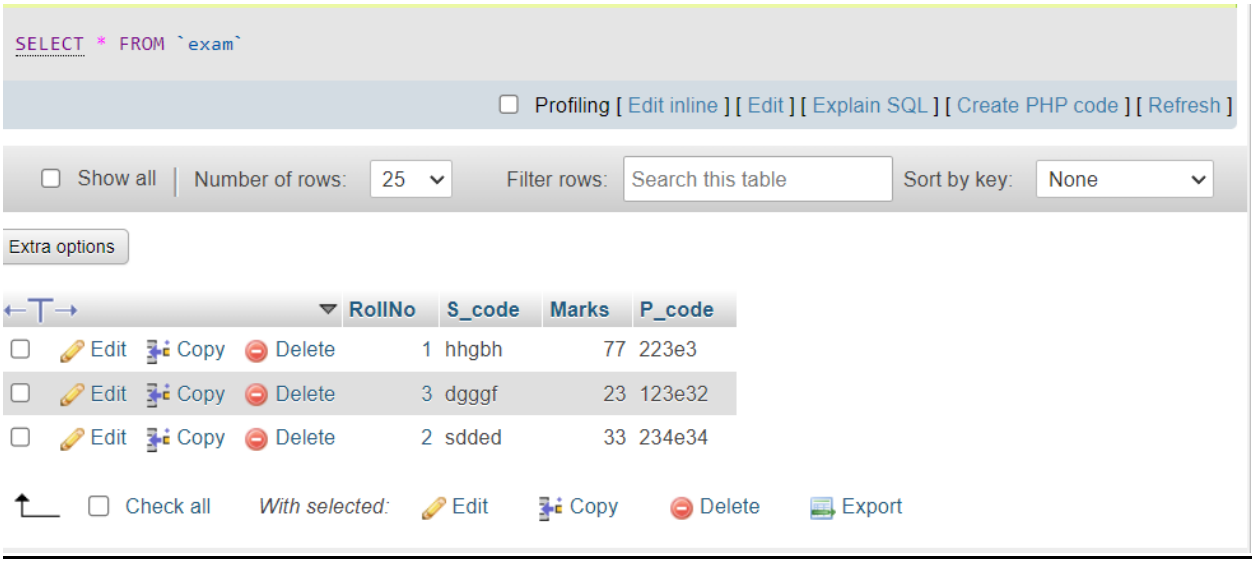
TASK: 1

Create student table:



In this table name is student, and roll number has primary key .

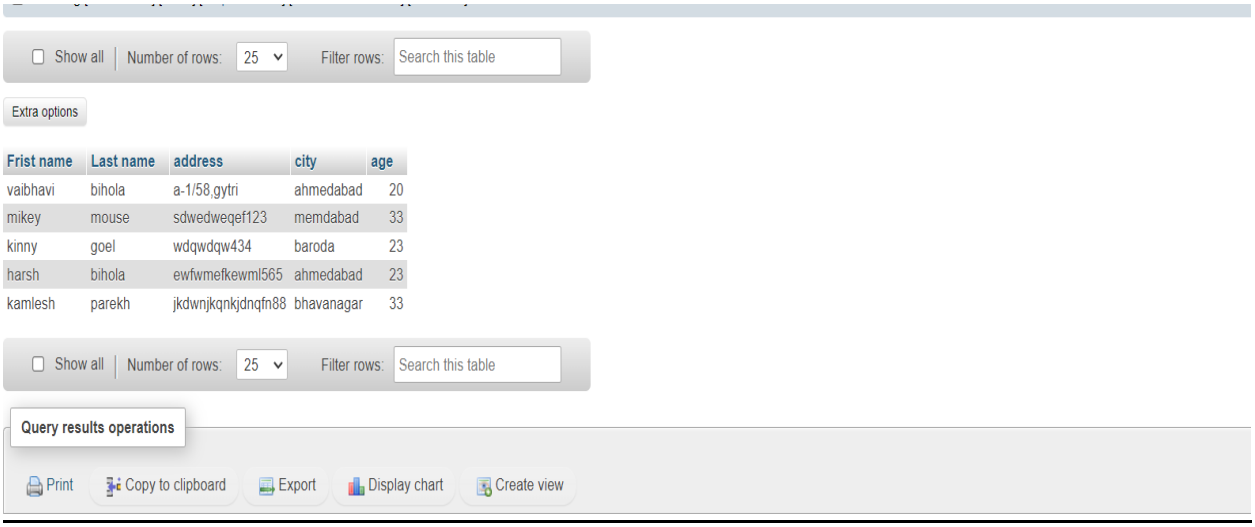
Create table exam:



This table is exam Table and in this roll number has foreign key .

TASK: 2

Details table of person with age , first name , last name , address ,city :

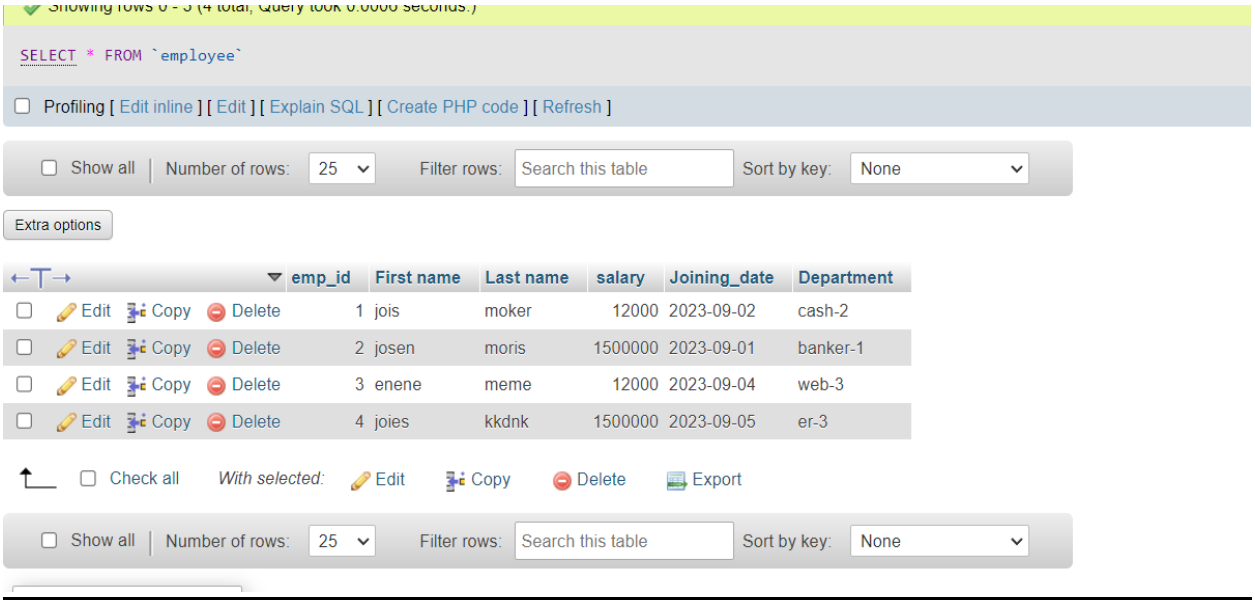


INSERT INTO `details`(`Frist name`, `Last name`, `address`, `city`, `age`) VALUES ('manthan','rathod','asdcdkjcnenowefo890','ahmedabad','33')

This is the details table and above given query is insert query of this table.

TASK: 3

Create table given below: Employee and Incentive:



```
SELECT * FROM `employee`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

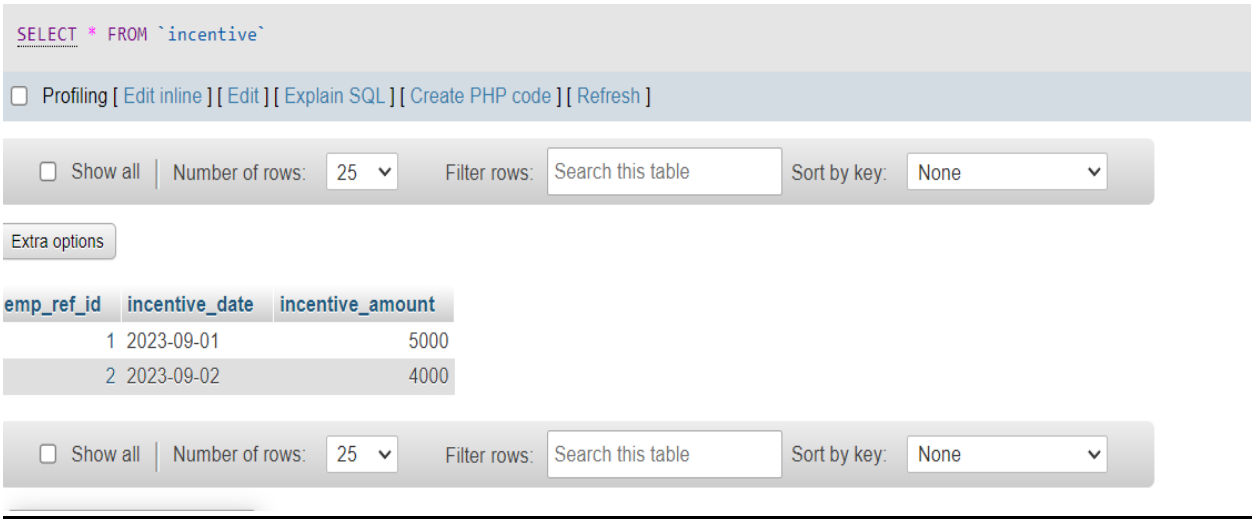
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	emp_id	First name	Last name	salary	Joining_date	Department
Edit Copy Delete	1	jois	moker	12000	2023-09-02	cash-2
Edit Copy Delete	2	josen	moris	1500000	2023-09-01	banker-1
Edit Copy Delete	3	enene	meme	12000	2023-09-04	web-3
Edit Copy Delete	4	joies	kkdnk	1500000	2023-09-05	er-3

Check all With selected: Edit Copy Delete Export

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None



```
SELECT * FROM `incentive`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

emp_ref_id	incentive_date	incentive_amount
1	2023-09-01	5000
2	2023-09-02	4000

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

A) Get First Name from employee table using Tom name “Employee Name”.

Ans:

```
Select * from EMPLOYEE where FIRST_NAME = ‘Josen’
```

B) Get FIRST_NAME, Joining Date, and Salary from employee table.

Ans:

```
SELECT `First name` , `joining_date` , `salary` FROM `employee`
```

c) Get all employee details from the employee table order by First_Name

Ascending and Salary descending?

Ans:

First name ascending:

```
SELECT * FROM employee
ORDER BY First_name;
```

Salary descending:

```
SELECT *
    FROM employee
    ORDER BY salary DESC;
```

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

Ans :

```
Select * from EMPLOYEE where FIRST_NAME like 'j%'
```

E) Get department wise maximum salary from employee table order by salary

ascending?

Ans:

```
SELECT * FROM employee ORDER BY salary;
```

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

Ans:

```
SELECT * FROM `incentive` WHERE incentive_amount > 3000
```

G)) Create After Insert trigger on Employee table which insert records in view table

Ans:

```
CREATE TRIGGER trigger_name
AFTER INSERT
ON table_name FOR EACH ROW
trigger_body ;
```

TASK: 4

Create table given below: Salesperson and Customer:

```
SELECT * FROM `salesman`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	s_no	s_name	city	comm
Edit Copy Delete	111	suresh	ahmedabad	12
Edit Copy Delete	112	parekh	bhvanagar	11
Edit Copy Delete	113	kunti	gandhinagar	13
Edit Copy Delete	114	parerana	ahmedabad	14
Edit Copy Delete	115	jdjjww	gandhi	15
Edit Copy Delete	117	jjkjjkkj	baroda	17
Edit Copy Delete	118	hjjdsjh	ahmedabad	22
Edit Copy Delete	123	ddlkje	velicia	23

Check all *With selected:* Edit Copy Delete Export

```
SELECT * FROM `customer`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	c_num	c_name	city	rating	s-no
Edit Copy Delete	22	mwdd	akkkssksk	200	123
Edit Copy Delete	111	hdie	agora	1000	111

Check all *With selected:* Edit Copy Delete Export

A) All orders for more than $1000

Ans: Select * from orders where amt > 1000;

B) Names and cities of all salespeople in Ahmedabad with commission above 0.12

Ans: SELECT `s_no`,`city`,`comm` FROM `salesman` WHERE comm > 0.12 and city = 'ahmedabad';

C) All salespeople either in Barcelona or in London

Ans: SELECT `s_no`, `s_name`, `city`, `comm` FROM `salesman` WHERE city in ('bhavanagar','ahmedabad');

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

Ans: SELECT `s_no`, `s_name`, `city`, `comm` FROM `salesman` WHERE comm > 0.10 and comm < 0.12;

E) All customers excluding those with rating <= 100 unless they are located in agora

Ans: `SELECT * FROM `customer` WHERE rating>100 AND city='agora';`