# MODULE: 5 (Database)

# 1) What do you understand By Database?

* A Database is an organized collection of data , so that it can easily accessed and managed.
* You can organize data into Table, Rows, Columns, and Index to make it easier to find relevant information.
* The main purpose of the database is to operate a large amount of information by storing, retrieving, and managing data.
* There are many **databases available**like MySQL, Oracle, MongoDB, PostgreSQL.

# 2) What is Normalization?

* **Normalization** is a database design technique that reduces data redundancy and eliminates undesirable characteristics like Insertion, Update and Deletion Anomalies. Normalization rules divides larger tables into smaller tables and links them using relationships. The purpose of Normalisation in SQL is to eliminate redundant (repetitive) data and ensure data is stored logically.

# 3) What is Difference between DBMS and RDBMS?

|  |  |  |
| --- | --- | --- |
| No | DBMD | RDBMS |
| 1 | DBMS stores data as file. | RDBMS stores data in tabular form. |
| 2 | Data elements need to access individually. | Multiple data elements can be accessed at the same time. |
| 3 | No relationship between data. | Data is stored in the form of tables which are related to each other. |
| 4 | Normalization is not present. | Normalization is present. |
| 5 | It deals with small quantity of data. | It deals with large amount of data. |
| 6 | Security is less | More security measures provided. |
| 7 | It supports single user. | It supports multiple users. |
| 8 | Examples: XML | Examples: [MySQL](https://www.geeksforgeeks.org/architecture-of-mysql/), [PostgreSQL](https://www.geeksforgeeks.org/what-is-postgresql-introduction/), [SQL](https://www.geeksforgeeks.org/what-is-sql/) Server, Oracle etc. |

# 4. What is MF Cod Rule of RDBMS Systems?

* Codd’s rules are proposed by a computer scientist named Dr. Edgar F. Codd and he also invent the relational model for database management. These rules are made to ensure data integrity, consistency, and usability. This set of rules basically signifies the characteristics and requirements of a relational database management system ([RDBMS](https://www.geeksforgeeks.org/rdbms-full-form/)). In this article, we will learn about various Codd’s rules.

# 5. What do you understand By Data Redundancy?

* Data redundancy refers to the duplication of data within a database system. It occurs when the same piece of data is stored in multiple places unnecessarily. Redundancy can arise for various reasons, such as poor database design, denormalization, or lack of data normalization.
* Data redundancy can lead to several issues:
* **Wasted storage space:** Storing duplicate data consumes additional storage space, which can be costly, especially in large databases.
* **Inconsistency:** When the same data is stored in multiple places, it becomes challenging to ensure that all copies are updated consistently. Inconsistencies can arise if one copy of the data is updated while another copy remains unchanged.
* **Data integrity problems:** Redundant data increases the risk of data integrity problems, such as anomalies during data manipulation operations like insertion, update, or deletion.
* **Complexity:** Managing redundant data adds complexity to the database system, making it more challenging to maintain and understand.

# 6) What is DDL Interpreter?

* **Data Definition Language Interpreter**
* A DDL (Data Definition Language) interpreter is a component of a database management system (DBMS) responsible for executing and processing DDL commands. DDL commands are used to define and manage the structure of the database schema, including tables, indexes, views, and other database objects.
* The DDL interpreter takes DDL statements issued by users or applications and performs the necessary actions to create, modify, or delete database objects according to those statements

# 7. What is DML Compiler in SQL?

* In SQL (Structured Query Language), a DML (Data Manipulation Language) compiler is responsible for processing and executing DML statements. DML statements are used to manipulate data stored in the database. Common DML statements include SELECT, INSERT, UPDATE, and DELETE.

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

* SQL key constraints are rules applied to columns in a relational database table that enforce data integrity and define relationships between tables. There are several types of key constraints in SQL:
* **Primary Key Constraint**: A primary key constraint uniquely identifies each record in a table. Only 1 time allocate primary key.

**Example:**

CREATE TABLE Employees (

EmployeeID INT PRIMARY KEY,

FirstName VARCHAR(50),

LastName VARCHAR(50),

DepartmentID INT

);

* **Unique Constraint**: A unique constraint ensures that all values in the specified column(s) are unique, more times unique key allocation are possible.

Example:

CREATE TABLE Departments (

DepartmentID INT PRIMARY KEY,

DepartmentName VARCHAR(50) UNIQUE

);

* **Foreign Key Constraint**: A foreign key constraint establishes a relationship between two tables. It ensures that the values in the specified column(s) in one table match the values in another table's primary key or unique key column(s).

Example:

CREATE TABLE Orders (

OrderID INT PRIMARY KEY,

OrderDate DATE,

EmployeeID INT,

FOREIGN KEY (EmployeeID) REFERENCES Employees(EmployeeID)

);

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

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

# SQL Queries

## 1. Create Table Name : Student and Exam.

-> CREATE DATABASE classroom;

-> use classroom;

->CREATE TABLE student(rollno int PRIMARY KEY AUTO\_INCREMENT,name varchar(20),brance varchar(30));

->CREATE TABLE exam(rollno int , FOREIGN key(rollno) REFERENCES student(rollno) ,s\_code varchar(20),marks int , p\_code varchar(20));

->INSERT INTO student(name,brance) VALUES('smit','bca');

->INSERT INTO student(name,brance) VALUES('tirth','computer science'),('nikhil','bca'),('mona','mcom');

->INSERT INTO `exam` (`rollno`, `s\_code`, `marks`, `p\_code`) VALUES ('1', 'bca11', '80', 'bca');

->INSERT INTO exam(rollno,s\_code,marks,p\_code) VALUES(2,'cs45',85,'cs'),(3,'bca11',75,'bca'),(4,'mcom22',65,'mcom');

->Student table

|  |  |  |
| --- | --- | --- |
| [rollno](http://localhost/phpmyadmin/index.php?route=/sql&db=classroom&table=exam&sql_query=SELECT+%2A+FROM+%60exam%60++%0AORDER+BY+%60exam%60.%60rollno%60+ASC&sql_signature=7ee1d5354261d5c35a613a26d635309ad9d1b3d6be5767ba11997d4b6fadb37b&session_max_rows=25&is_browse_distinct=0) | [name](http://localhost/phpmyadmin/index.php?route=/sql&db=classroom&table=exam&sql_query=SELECT+%2A+FROM+%60exam%60++%0AORDER+BY+%60exam%60.%60rollno%60+ASC&sql_signature=7ee1d5354261d5c35a613a26d635309ad9d1b3d6be5767ba11997d4b6fadb37b&session_max_rows=25&is_browse_distinct=0) | [branch](http://localhost/phpmyadmin/index.php?route=/sql&db=classroom&table=exam&sql_query=SELECT+%2A+FROM+%60exam%60++%0AORDER+BY+%60exam%60.%60rollno%60+ASC&sql_signature=7ee1d5354261d5c35a613a26d635309ad9d1b3d6be5767ba11997d4b6fadb37b&session_max_rows=25&is_browse_distinct=0) |
| 1 | Smit | Bca |
| 2 | Tirth | Computer science |
| 3 | Nikhil | Bca |
| 4 | mona | mcom |

->Exam table :

|  |  |  |  |
| --- | --- | --- | --- |
| [rollno](http://localhost/phpmyadmin/index.php?route=/sql&db=classroom&table=exam&sql_query=SELECT+%2A+FROM+%60exam%60++%0AORDER+BY+%60exam%60.%60rollno%60+ASC&sql_signature=7ee1d5354261d5c35a613a26d635309ad9d1b3d6be5767ba11997d4b6fadb37b&session_max_rows=25&is_browse_distinct=0) | [s\_code](http://localhost/phpmyadmin/index.php?route=/sql&db=classroom&table=exam&sql_query=SELECT+%2A+FROM+%60exam%60++%0AORDER+BY+%60exam%60.%60s_code%60+ASC&sql_signature=648d6aca10cb5afc5ba648a0dc3854e5d930b31431a04c8658bd3acb6b556e2f&session_max_rows=25&is_browse_distinct=0) | [marks](http://localhost/phpmyadmin/index.php?route=/sql&db=classroom&table=exam&sql_query=SELECT+%2A+FROM+%60exam%60++%0AORDER+BY+%60exam%60.%60marks%60+ASC&sql_signature=ff157f57c742d706f0ef767f34d8a8bad32510535538dd69345d472f6a921080&session_max_rows=25&is_browse_distinct=0) | [p\_code](http://localhost/phpmyadmin/index.php?route=/sql&db=classroom&table=exam&sql_query=SELECT+%2A+FROM+%60exam%60++%0AORDER+BY+%60exam%60.%60p_code%60+ASC&sql_signature=c414f8f2ea34a7b017497a610cc1889f32342f02cc8d73b2ccab674844c0a968&session_max_rows=25&is_browse_distinct=0) |
| 1 | bca11 | 80 | bca |
| 2 | cs45 | 85 | cs |
| 3 | bca11 | 75 | bca |
| 4 | mcom22 | 65 | mcom |

## 2. Create table given below: Employee and Incentive Table.

-> CREATE DATABASE company;

->use company;

-> CREATE TABLE Employee(

employee\_id int PRIMARY KEY AUTO\_INCREMENT,

first\_name varchar(20),

last\_name varchar(20),

salary int,

joining\_date datetime,

department varchar(20)

);

-> INSERT INTO `employee` (`employee\_id`, `first\_name`, `last\_name`, `salary`, `joining\_date`, `department`) VALUES (NULL, 'John', 'Abraham', '1000000', '2024-01-01 14:01:33', 'Banking');

-> CREATE TABLE incentive(

employee\_ref\_id int,

FOREIGN KEY(employee\_ref\_id) REFERENCES employee(employee\_id),

incentive\_date date,

incentive\_amount int

);

-> INSERT INTO `incentive` (`employee\_ref\_id`, `incentive\_date`, `incentive\_amount`) VALUES ('1', '2013-02-01', '5000'), ('2', '2013-02-01', '3000');

->INSERT INTO incentive VALUES(3,'2013-02-01',4000), (1,'2013-01-01',4500),(2,'2013-01-01',3500);

->employee table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employee\_id | First\_name | Last\_name | salary | Joining\_Date | department |
| 1 | john | abraham | 1000000 | 2013-01-01 14:01:33 | banking |
| 2 | michael | clarke | 800000 | 2013-01-01 12:00:00 | Insurance |
| 3 | roy | thomas | 700000 | 2013-02-01 14:10:00 | Banking |
| 4 | tom | jose | 600000 | 2024-02-01 12:00:00 | Insurance |
| 5 | jerry | pinto | 650000 | 2013-01-01 12:00:00 | Insurance |
| 6 | philip | mathew | 750000 | 2013-01-01 12:00:00 | Services |

->incentive table:

|  |  |  |
| --- | --- | --- |
| [**employee\_ref\_id**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=incentive&sql_query=SELECT+%2A+FROM+%60incentive%60++%0AORDER+BY+%60incentive%60.%60employee_ref_id%60+ASC&sql_signature=5b6508457c928b0834e654c8596238f0e2326438553d6c1d93a0dd56d90b731d&session_max_rows=25&is_browse_distinct=0) | [**incentive\_date**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=incentive&sql_query=SELECT+%2A+FROM+%60incentive%60++%0AORDER+BY+%60incentive%60.%60incentive_date%60+DESC&sql_signature=2e50ad85161943db271bd951ef12817a754a33d642cc187162107548b3953633&session_max_rows=25&is_browse_distinct=0) | [**incentive\_amount**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=incentive&sql_query=SELECT+%2A+FROM+%60incentive%60++%0AORDER+BY+%60incentive%60.%60incentive_amount%60+ASC&sql_signature=95ed464ad9d4e4703de5cdee02e5c8515a66bc1b13259247baec3885391d94e0&session_max_rows=25&is_browse_distinct=0) |
| [1](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&pos=0&sql_signature=6e94fa5517a791bf8db6fbdf6728d78bdbfca4f7093cc3d0fcfc75097b6a3af0&sql_query=SELECT+%2A+FROM+%60company%60.%60employee%60+WHERE+%60employee_id%60+%3D+1) | 2013-02-01 | 5000 |
| [2](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&pos=0&sql_signature=289d489b315763b4fc1b3a6d436dae607249b475c56361d4cb42319e348ebb82&sql_query=SELECT+%2A+FROM+%60company%60.%60employee%60+WHERE+%60employee_id%60+%3D+2) | 2013-02-01 | 3000 |
| [3](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&pos=0&sql_signature=73b452b98b5264bbf132d6f10a0cfe05f66cf9976a8e57220dbd4913fab030f2&sql_query=SELECT+%2A+FROM+%60company%60.%60employee%60+WHERE+%60employee_id%60+%3D+3) | 2013-02-01 | 4000 |
| [1](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&pos=0&sql_signature=6e94fa5517a791bf8db6fbdf6728d78bdbfca4f7093cc3d0fcfc75097b6a3af0&sql_query=SELECT+%2A+FROM+%60company%60.%60employee%60+WHERE+%60employee_id%60+%3D+1) | 2013-01-01 | 4500 |
| [2](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&pos=0&sql_signature=289d489b315763b4fc1b3a6d436dae607249b475c56361d4cb42319e348ebb82&sql_query=SELECT+%2A+FROM+%60company%60.%60employee%60+WHERE+%60employee_id%60+%3D+2) | 2013-01-01 | 3500 |

# 3) Get First\_Name from employee table using Tom name “Employee Name”.

->SELECT \* FROM `employee` WHERE `first\_name` = "tom";

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **employee\_id** | **first\_name** | **last\_name** | **salary** | **joining\_date** | **department** |
| 4 | tom | jose | 600000 | 2024-02-01 12:00:00 | Insurance |

# 4. Get FIRST\_NAME, Joining Date, and Salary from employee table.

-> SELECT `first\_name`,`joining\_date`,`salary` from employee;

|  |  |  |
| --- | --- | --- |
| [**first\_name**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&sql_query=SELECT+%60first_name%60%2C%60joining_date%60%2C%60salary%60+from+employee++%0AORDER+BY+%60employee%60.%60first_name%60+ASC&sql_signature=c13bffc94d8e573c1a852092a0ccf32073472f629b76894896409dfdfb778b16&session_max_rows=25&is_browse_distinct=0) | [**joining\_date**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&sql_query=SELECT+%60first_name%60%2C%60joining_date%60%2C%60salary%60+from+employee++%0AORDER+BY+%60employee%60.%60joining_date%60+DESC&sql_signature=af995570cf0cf3771262dfe942cb8b92646db4b2636ae0baca5f4b85797b2704&session_max_rows=25&is_browse_distinct=0) | [**salary**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&sql_query=SELECT+%60first_name%60%2C%60joining_date%60%2C%60salary%60+from+employee++%0AORDER+BY+%60employee%60.%60salary%60+ASC&sql_signature=cb7996bc120c1350f0cc0f46feac5aea005c2fbb33643e91e81cbc6fee69a3a0&session_max_rows=25&is_browse_distinct=0) |
| John | 2013-01-01 14:01:33 | 1000000 |
| michael | 2013-01-01 12:00:00 | 800000 |
| roy | 2013-02-01 14:10:00 | 700000 |
| tom | 2024-02-01 12:00:00 | 600000 |
| jerry | 2013-01-01 12:00:00 | 650000 |
| philip | 2013-01-01 12:00:00 | 750000 |

# 5. Get all employee details from the employee table order by First\_Name.

->SELECT \* FROM `employee` ORDER BY `first\_name` ASC ,`salary` DESC;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employee\_id | First\_name | Last\_name | salary | Joining\_Date | department |
| 5 | jerry | pinto | 650000 | 2013-01-01 12:00:00 | Insurance |
| 1 | John | Abraham | 1000000 | 2013-01-01 14:01:33 | Banking |
| 2 | michael | clarke | 800000 | 2013-01-01 12:00:00 | Insurance |
| 6 | philip | mathew | 750000 | 2013-01-01 12:00:00 | Services |
| 3 | roy | thomas | 700000 | 2013-02-01 14:10:00 | Banking |
| 4 | tom | jose | 600000 | 2024-02-01 12:00:00 | Insurance |

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

->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 14:01:33 | Banking |
| 5 | jerry | pinto | 650000 | 2013-01-01 12:00:00 | Insurance |

# 7. Get department wise maximum salary from employee table order by.

->SELECT department , MAX(salary) FROM employee GROUP BY department;

|  |  |
| --- | --- |
| [**department**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&sql_query=SELECT+department+%2C+MAX%28salary%29+FROM+employee+GROUP+BY+department++%0AORDER+BY+%60employee%60.%60department%60+ASC&sql_signature=0ba1406945ec58a50ae698b6da3bcb78c7490ce7e933ff87e663767404f6c353&session_max_rows=25&is_browse_distinct=0) | [**MAX(salary)**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&sql_query=SELECT+department+%2C+MAX%28salary%29+FROM+employee+GROUP+BY+department++%0AORDER+BY+%60MAX%28salary%29%60+ASC&sql_signature=1e84ae8dc4300a6633f97362a9837798ab9395888df179c772edd3664e3c5796&session_max_rows=25&is_browse_distinct=0) |
| Banking | 1000000 |
| Insurance | 800000 |
| Services | 750000 |

# 8. Salary ascending?

->SELECT salary FROM employee ORDER BY salary ASC;

|  |
| --- |
| Salary |
| 600000 |
| 650000 |
| 700000 |
| 750000 |
| 800000 |
| 1000000 |

# 9. Select first\_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount greater than 3000.

->SELECT `first\_name`, incentive\_amount, incentive\_amount > 3000 as greater\_amount from employee a LEFT JOIN incentive b ON A.employee\_id = b.employee\_ref\_id;

|  |  |  |
| --- | --- | --- |
| [**first\_name**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&sql_query=SELECT+%60first_name%60%2C+incentive_amount%2C+incentive_amount+%3E+3000+as+greater_amount+from+employee+a+LEFT+JOIN+incentive+b+ON+A.employee_id+%3D+b.employee_ref_id++%0AORDER+BY+%60a%60.%60first_name%60+ASC&sql_signature=4ca36be95214f9829bf5a9fd29bb2db13c6296b4882dbe4349e06073d8dbe6d6&session_max_rows=25&is_browse_distinct=0) | [**incentive\_amount**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&sql_query=SELECT+%60first_name%60%2C+incentive_amount%2C+incentive_amount+%3E+3000+as+greater_amount+from+employee+a+LEFT+JOIN+incentive+b+ON+A.employee_id+%3D+b.employee_ref_id++%0AORDER+BY+%60b%60.%60incentive_amount%60+ASC&sql_signature=dec064f219b5becfea92a1f75bd00f970d2094489cf7788ee22b2bb3fb7b9157&session_max_rows=25&is_browse_distinct=0) | [**greater\_amount**](http://localhost/phpmyadmin/index.php?route=/sql&db=company&table=employee&sql_query=SELECT+%60first_name%60%2C+incentive_amount%2C+incentive_amount+%3E+3000+as+greater_amount+from+employee+a+LEFT+JOIN+incentive+b+ON+A.employee_id+%3D+b.employee_ref_id++%0AORDER+BY+%60greater_amount%60+ASC&sql_signature=7794c8dedeb8749535e9081ea0cb5f269deb87ea693db19858443f37009b3345&session_max_rows=25&is_browse_distinct=0) |
| John | 5000 | 1 |
| michael | 3000 | 0 |
| roy | 4000 | 1 |
| John | 4500 | 1 |
| michael | 3500 | 1 |
| tom | NULL | NULL |
| jerry | NULL | NULL |

# 10) Create After Insert trigger on Employee table which insert records in viewtable.

# 11.Create table given below: Salesperson and Customer.

->CREATE DATABASE salesshop;

->CREATE TABLE salesperson(

sno int PRIMARY KEY ,

sname varchar(20),

city varchar(20),

comm float(20)

);

-> INSERT INTO salesperson VALUES (1001,'Peel','London','.12');

->INSERT INTO salesperson(`sno`,`sname`,`city`,`comm`) VALUES (1002,'Serres','San jose','.13');

-> INSERT INTO salesperson (`sno`,`sname`,`city`,`comm`) VALUES (1004,'Motika','London','.11') , (1007,'Rafkin','Barcelona','.15') , (1003,'Axelrod','NewYork','.1');

->CREATE TABLE customer(

cnm int PRIMARY KEY ,

cname varchar(20),

city varchar(20),

rating varchar(20),

sno int,

FOREIGN KEY(sno) REFERENCES salesperson(sno)

);

->INSERT INTO customer VALUES (201,'Hoffman','London',100,1001);

->INSERT INTO customer (`cnm`,`cname`,`city`,`rating`,`sno`) VALUES (202,'Giovanne','Roe',200,1003),(203,'Liu','San jose',300,1002) , (204,'Grass','Barcelona',100,1002);

-> INSERT INTO customer (`cnm`,`cname`,`city`,`rating`,`sno`) VALUES (206,'Clemens','London',300,1007),(207,'Pereira','Roe',100,1004);

->salesperoson table:

|  |  |  |  |
| --- | --- | --- | --- |
| [**sno**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&sql_query=SELECT+%60sno%60%2C%60sname%60%2C%60city%60%2C%60comm%60+FROM+%60salesperson%60++%0AORDER+BY+%60salesperson%60.%60sno%60+ASC&sql_signature=831f6ca64f61287b1e98b3f888419de2e5621c8913a73f8b11b7fb5e102aa64e&session_max_rows=25&is_browse_distinct=0) | [**sname**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&sql_query=SELECT+%60sno%60%2C%60sname%60%2C%60city%60%2C%60comm%60+FROM+%60salesperson%60++%0AORDER+BY+%60salesperson%60.%60sname%60+ASC&sql_signature=3e6e29704a93d7f403aa5b33f457ec6dfa26a7e5a1aae5a038d90ff19201d686&session_max_rows=25&is_browse_distinct=0) | [**city**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&sql_query=SELECT+%60sno%60%2C%60sname%60%2C%60city%60%2C%60comm%60+FROM+%60salesperson%60++%0AORDER+BY+%60salesperson%60.%60city%60+ASC&sql_signature=bb68d88b77f45f8b51bc01251ef87cd4c269e4b0486e55bd992a0e9e6ecab550&session_max_rows=25&is_browse_distinct=0) | [**comm**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&sql_query=SELECT+%60sno%60%2C%60sname%60%2C%60city%60%2C%60comm%60+FROM+%60salesperson%60++%0AORDER+BY+%60salesperson%60.%60comm%60+ASC&sql_signature=d52fdbd982f0977b7a20accbc669bba013c46e26ec555ad14ccf4956f9f0ee05&session_max_rows=25&is_browse_distinct=0) |
| 1001 | Peel | London | 0.12 |
| 1002 | Serres | San jose | 0.13 |
| 1003 | Axelrod | New York | 0.1 |
| 1004 | Motika | London | 0.11 |
| 1007 | Rafkin | Barcelona | 0.15 |

->customer table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [**cnm**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=customer&sql_query=SELECT+%2A+FROM+%60customer%60++%0AORDER+BY+%60customer%60.%60cnm%60+ASC&sql_signature=2f309915f77d2a06c1f15e70b09388f383adc3e54c88106bfdb43f1e7ac1ed75&session_max_rows=25&is_browse_distinct=0) | [**cname**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=customer&sql_query=SELECT+%2A+FROM+%60customer%60++%0AORDER+BY+%60customer%60.%60cname%60+ASC&sql_signature=c1ef6893a89f072c1ad5b38b4cf37512737d26c2b0f18f0dd1051fb08101d3ee&session_max_rows=25&is_browse_distinct=0) | [**city**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=customer&sql_query=SELECT+%2A+FROM+%60customer%60++%0AORDER+BY+%60customer%60.%60city%60+ASC&sql_signature=bf4a0877e64e7e6001469ec17daf602d85a4a0f0e8d2698410c03396483567df&session_max_rows=25&is_browse_distinct=0) | [**rating**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=customer&sql_query=SELECT+%2A+FROM+%60customer%60++%0AORDER+BY+%60customer%60.%60rating%60+ASC&sql_signature=c7da8620dbc05352b08634175e6bd64d579de53c0dc878d5de203d37dc1416be&session_max_rows=25&is_browse_distinct=0) | [**sno**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=customer&sql_query=SELECT+%2A+FROM+%60customer%60++%0AORDER+BY+%60customer%60.%60sno%60+ASC&sql_signature=a5f4830dcd4010b175542210cf50f507da2ccc00c344a1b37620969cbf975525&session_max_rows=25&is_browse_distinct=0) |
| 201 | Hoffman | London | 100 | [1001](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&pos=0&sql_signature=37fa528b2da5782c5e8499b4da00d8b63c08557988eab64e6d34084187930188&sql_query=SELECT+%2A+FROM+%60salesshop%60.%60salesperson%60+WHERE+%60sno%60+%3D+1001) |
| 202 | Giovanne | Roe | 200 | [1003](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&pos=0&sql_signature=7ff11fc5d3e84d0f4f7a58ca42763360fc832c2e959a96d4bb91fd4a6bafcb7b&sql_query=SELECT+%2A+FROM+%60salesshop%60.%60salesperson%60+WHERE+%60sno%60+%3D+1003) |
| 203 | Liu | San jose | 300 | [1002](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&pos=0&sql_signature=a18d2f9dfa6102d2aea24c1749cad75ad8ae66b2fbfd7a66f497a1f153b23ca5&sql_query=SELECT+%2A+FROM+%60salesshop%60.%60salesperson%60+WHERE+%60sno%60+%3D+1002) |
| 204 | Grass | Barcelona | 100 | [1002](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&pos=0&sql_signature=a18d2f9dfa6102d2aea24c1749cad75ad8ae66b2fbfd7a66f497a1f153b23ca5&sql_query=SELECT+%2A+FROM+%60salesshop%60.%60salesperson%60+WHERE+%60sno%60+%3D+1002) |
| 206 | Clemens | London | 300 | [1007](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&pos=0&sql_signature=92493a30ed6a1d7338602d0f49dc8c491eb987e43fc3cb35a9334a91c5ba6f25&sql_query=SELECT+%2A+FROM+%60salesshop%60.%60salesperson%60+WHERE+%60sno%60+%3D+1007) |
| 207 | Pereira | Roe | 100 | [1004](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&pos=0&sql_signature=07516acb343a31c26ac9b4f62cbd87983282755515e1ef9ec8f08ef15e99e629&sql_query=SELECT+%2A+FROM+%60salesshop%60.%60salesperson%60+WHERE+%60sno%60+%3D+1004) |

# 12.Retrieve the below data from above table

->Select \* from customer;

# 13.All orders for more than $1000.

->SELECT \* FROM `orders` WHERE `purch\_amt` > 1000;

# 14.Names and cities of all salespeople in London with commission above 0.1215.All salespeople either in Barcelona or in London

-> SELECT \* FROM `salesperson` WHERE `city` = 'London' AND `comm` > '.1250';

-> SELECT \* FROM `salesperson` WHERE `city` = 'London' OR city ='Barcelona';

# 16.All salespeople with commission between 0.10 and 0.12. (Boundary valuesshould be excluded).

->SELECT \* FROM `salesperson` WHERE `comm` >.10 AND `comm` <.12;

# 17.All customers excluding those with rating <= 100 unless they are located inRome.

-> SELECT \* FROM customer WHERE rating <= 100 ;

# 18. Write a SQL statement that displays all the information about all salespeople.

-> INSERT INTO `salesperson`(`sno`, `sname`, `city`, `comm`) VALUES (5001 , 'James Hoog' , 'New York' , '0.15') , (5002 ,' Nail Knite', 'Paris' , '0.13'), (5005 , 'Pit Alex' , 'London' , '0.11'), (5006 , 'Mc Lyon' , 'Paris' , '0.14') ,(5007 , 'Paul Adam' , 'Rome' , '0.13'), (5003 ,'Lauson Hen' ,'San Jose','0.12');

->select \* from salesperson;

->salesperson table

|  |  |  |  |
| --- | --- | --- | --- |
| [**sno**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&sql_query=SELECT+%2A+FROM+%60salesperson%60++%0AORDER+BY+%60salesperson%60.%60sno%60+ASC&sql_signature=0ddc0dfd59c28f1fe3fe502f2df5d19e826680b344b7de132c5a5d97ebd9df01&session_max_rows=25&is_browse_distinct=0) | [**sname**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&sql_query=SELECT+%2A+FROM+%60salesperson%60++%0AORDER+BY+%60salesperson%60.%60sname%60+ASC&sql_signature=14126ec9880c713e87c042c2c1d7cdbfd5395a85c0dbcfd59dd4d2694f1eafd9&session_max_rows=25&is_browse_distinct=0) | [**city**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&sql_query=SELECT+%2A+FROM+%60salesperson%60++%0AORDER+BY+%60salesperson%60.%60city%60+ASC&sql_signature=589f85e3a4847510eed244539616b19e97647ca83d9f7207d094fb27319ec946&session_max_rows=25&is_browse_distinct=0) | [**comm**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=salesperson&sql_query=SELECT+%2A+FROM+%60salesperson%60++%0AORDER+BY+%60salesperson%60.%60comm%60+ASC&sql_signature=9ed3239d93a5172603b5770b8577a9935c4e959a60d87a151330efcca219f2a8&session_max_rows=25&is_browse_distinct=0) |
| 1001 | Peel | London | 0.12 |
| 1002 | Serres | San jose | 0.13 |
| 1003 | Axelrod | New York | 0.1 |
| 1004 | Motika | London | 0.11 |
| 1007 | Rafkin | Barcelona | 0.15 |
| 5001 | James Hoog | New York | 0.15 |
| 5002 | Nail Knite | Paris | 0.13 |
| 5003 | Lauson Hen | San Jose | 0.12 |
| 5005 | Pit Alex | London | 0.11 |
| 5006 | Mc Lyon | Paris | 0.14 |
| 5007 | Paul Adam | Rome | 0.13 |

# 19. From the following table, write a SQL query to find orders that are delivered by a salesperson with ID. 5001. Return ord\_no, ord\_date, purch\_amt.

-> SELECT ord\_no, ord\_date, purch\_amt FROM orders WHERE `salesman\_id` = 5001;

|  |  |  |
| --- | --- | --- |
| [**ord\_no**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=orders&sql_query=SELECT+ord_no%2C+ord_date%2C+purch_amt+FROM+orders+WHERE+%60salesman_id%60+%3D+5001++%0AORDER+BY+%60orders%60.%60ord_no%60+ASC&sql_signature=2468f40c2844b6d46026e03826033d3c19be24b039558652358efbda9b1d481f&session_max_rows=25&is_browse_distinct=0) | [**ord\_date**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=orders&sql_query=SELECT+ord_no%2C+ord_date%2C+purch_amt+FROM+orders+WHERE+%60salesman_id%60+%3D+5001++%0AORDER+BY+%60orders%60.%60ord_date%60+DESC&sql_signature=bcce610efdb70f5d940ffeaa5f440242400b47b8a066e195ad6d350d796fb683&session_max_rows=25&is_browse_distinct=0) | [**purch\_amt**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=orders&sql_query=SELECT+ord_no%2C+ord_date%2C+purch_amt+FROM+orders+WHERE+%60salesman_id%60+%3D+5001++%0AORDER+BY+%60orders%60.%60purch_amt%60+ASC&sql_signature=7b3206c06eedb03a962fe012812b72ce17180de25c4292c729824a68c45dd386&session_max_rows=25&is_browse_distinct=0) |
| 70002 | 2012-10-05 | 65.26 |
| 70005 | 2012-07-27 | 2400.6 |
| 70008 | 2012-09-10 | 5760 |
| 70013 | 2012-04-25 | 3045.6 |

# 20. From the following table, write a SQL query to select a range of products whose price is in the range Rs.200 to Rs.600. Begin and end values are included. Return pro\_id, pro\_name, pro\_price, and pro\_com.

->SELECT \* FROM `item\_mast` WHERE `pro\_price` BETWEEN 200 AND 600;

|  |  |  |  |
| --- | --- | --- | --- |
| [**pro\_id**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=item_mast&sql_query=SELECT+%2A+FROM+%60item_mast%60+WHERE+%60pro_price%60+BETWEEN+200+AND+600++%0AORDER+BY+%60item_mast%60.%60pro_id%60+ASC&sql_signature=fc67efbe311324f9135e1a12278f188cb1051f60b42e93150443c271cb1e7c51&session_max_rows=25&is_browse_distinct=0) | [**pro\_name**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=item_mast&sql_query=SELECT+%2A+FROM+%60item_mast%60+WHERE+%60pro_price%60+BETWEEN+200+AND+600++%0AORDER+BY+%60item_mast%60.%60pro_name%60+ASC&sql_signature=a1ec2cad74dab50359f8777754286cc20a91f13f1ac5084ea1300563a36f18e4&session_max_rows=25&is_browse_distinct=0) | [**pro\_price**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=item_mast&sql_query=SELECT+%2A+FROM+%60item_mast%60+WHERE+%60pro_price%60+BETWEEN+200+AND+600++%0AORDER+BY+%60item_mast%60.%60pro_price%60+ASC&sql_signature=2eb892609f9df6f9963b49d37b73882da428e7023818a26854b34910d9873358&session_max_rows=25&is_browse_distinct=0) | [**pro\_com**](http://localhost/phpmyadmin/index.php?route=/sql&db=salesshop&table=item_mast&sql_query=SELECT+%2A+FROM+%60item_mast%60+WHERE+%60pro_price%60+BETWEEN+200+AND+600++%0AORDER+BY+%60item_mast%60.%60pro_com%60+ASC&sql_signature=f3f6aec73fe17a21736c590daebb50e56119596307e08ee322fb32c357181fbc&session_max_rows=25&is_browse_distinct=0) |
| 102 | Key Board | 450 | 16 |
| 103 | ZIP drive | 250 | 14 |
| 104 | Speaker | 550 | 16 |
| 109 | Refill cartridge | 350 | 13 |
| 110 | Mouse | 250 | 12 |

# 21. From the following table, write a SQL query to calculate the average price for a manufacturer code of 16. Return avg.

->SELECT AVG(pro\_price) FROM item\_mast WHERE pro\_com=16;

# 22. From the following table, write a SQL query to display the pro\_name as 'Item Name' and pro\_price as 'Price in Rs.'

->SELECT `pro\_name` AS item\_name , `pro\_price` AS price from item\_mast;

# 23. From the following table, write a SQL query to find the items whose prices are higher than or equal to $250. Order the result by product price in descending, then product name in ascending. Return pro\_name and pro\_price.

->SELECT pro\_name, pro\_price FROM item\_mast WHERE pro\_price >= 250 ORDER BY pro\_price DESC, pro\_name;

# 24. From the following table, write a SQL query to calculate average price of the items for each company. Return average price and company code.

->SELECT AVG(pro\_price), pro\_com FROM item\_mast GROUP BY pro\_com;