**1. What do you understand By Database?**

→ A database is information that is set up for easy access, management and updating.

→Computer databases typically store aggregations of data records or files that contain information, such as sales transactions, customer data, financials and product information.

**2. What is Normalization?**

→Normalization is the process to eliminate data redundancy and enhance data integrity in the table.

→Normalization also helps to organize the data in the database.

→ It is a multi-step process that sets the data into tabular form and removes the duplicated data from the relational tables.

**3. What is Difference between DBMS and RDBMS?**

| **DBMS** | **RDBMS** |
| --- | --- |
| [DBMS](https://www.geeksforgeeks.org/introduction-of-dbms-database-management-system-set-1/) stores data as file. | [RDBMS](https://www.geeksforgeeks.org/rdbms-architecture/) stores data in tabular form. |
| Data elements need to access individually. | Multiple data elements can be accessed at the same time. |
| No relationship between data. | Data is stored in the form of tables which are related to each other. |
| Normalization is not present. | Normalization is present. |
| DBMS does not support distributed database. | RDBMS supports distributed database. |
| It stores data in either a navigational or hierarchical form. | It uses a tabular structure where the headers are the column names, and the rows contain corresponding values. |
| It deals with small quantity of data. | It deals with large amount of data. |
| Data redundancy is common in this model. | Keys and indexes do not allow Data redundancy. |
| It is used for small organization and deal with small data. | It is used to handle large amount of data. |
| Not all Codd rules are satisfied. | All 12 Codd rules are satisfied. |
| Security is less | More security measures provided. |
| It supports single user. | It supports multiple users. |
| Data fetching is slower for the large amount of data. | Data fetching is fast because of relational approach. |
| The data in a DBMS is subject to low security levels with regards to data manipulation. | There exists multiple levels of data security in a RDBMS. |
| Low software and hardware necessities. | Higher software and hardware necessities. |
| Examples:[XML](https://www.geeksforgeeks.org/xml-basics/), Window Registry, Forxpro, dbaseIIIplus etc. | Examples: [MySQL](https://www.geeksforgeeks.org/architecture-of-mysql/), [PostgreSQL](https://www.geeksforgeeks.org/what-is-postgresql-introduction/), SQL Server, Oracle, Microsoft Access etc. |

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

**Rule 0 − Foundation rule**

Any relational database management system that is propounded to be RDBMS or advocated to be a RDBMS should be able to manage the stored data in its entirety through its relational capabilities.

**Rule 1 − Rule of Information**

Relational Databases should store the data in the form of relations. Tables are relations in Relational Database Management Systems. Be it any user defined data or meta-data, it is important to store the value as an entity in the table cells.

**Rule 2 − Rule of Guaranteed Access**

The use of pointers to access data logically is strictly forbidden. Every data entity which is atomic in nature should be accessed logically by using a right combination of the name of table, primary key represented by a specific row value and column name represented by attribute value.

**Rule 3 − Rule of Systematic Null Value Support**

Null values are completely supported in relational databases. They should be uniformly considered as ‘missing information’. Null values are independent of any data type. They should not be mistaken for blanks or zeroes or empty strings. Null values can also be interpreted as ‘inapplicable data’ or ‘unknown information.’

**Rule 4 − Rule of Active and online relational Catalog**

In the Database Management Systems lexicon, ‘metadata’ is the data about the database or the data about the data. The active online catalog that stores the metadata is called ‘Data dictionary’. The so called data dictionary is accessible only by authored users who have the required privileges and the query languages used for accessing the database should be used for accessing the data of data dictionary.

**Rule 5 − Rule of Comprehensive Data Sub-language**

A single robust language should be able to define integrity constraints, views, data manipulations, transactions and authorizations. If the database allows access to the aforementioned ones, it is violating this rule.

**Rule 6 − Rule of Updating Views**

Views should reflect the updates of their respective base tables and vice versa. A view is a logical table which shows restricted data. Views generally make the data readable but not modifiable. Views help in data abstraction.

**Rule 7 − Rule of Set level insertion, update and deletion**

A single operation should be sufficient to retrieve, insert, update and delete the data.

**Rule 8 − Rule of Physical Data Independence**

Batch and end user operations are logically separated from physical storage and respective access methods.

**Rule 9 − Rule of Logical Data Independence**

Batch and end users can change the database schema without having to recreate it or recreate the applications built upon it.

**Rule 10 − Rule of Integrity Independence**

Integrity constraints should be available and stored as metadata in data dictionary and not in the application programs.

**Rule 11 − Rule of Distribution Independence**

The Data Manipulation Language of the relational system should not be concerned about the physical data storage and no alterations should be required if the physical data is centralized or distributed.

**Rule 12 − Rule of Non Subversion**

Any row should obey the security and integrity constraints imposed. No special privileges are applicable.

**5. What do you understand By Data Redundancy?**

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

→Redundancy in DBMS occurs when the database is not normalized.

→Redundancy causes insertion, deletion, and updating anomalies.

→Redundancy can be avoided by normalizing the database, maintaining master data, etc.

**6. What is DDL Interpreter?**

→DDL Interpreter DDL expands to Data Definition Language.

→DDL Interpreter as the name suggests interprets the DDL statements such as schema definition statements like create, delete, etc.

→The result of this interpretation is a set of a table that contains the meta-data which is stored in the data dictionary.

**7. What is DML Compiler in SQL?**

→DML Compiler DML expands to Data Manipulation Language in DBMS.

→ DML Compiler again as the name suggests compiles(or translates) the DML statements such as select, update and delete statements into low-level instructions which is nothing but the machine-readable object code to make it executable.

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

Ans:- Constraints can be specified when the table is created with the CREATE TABLE statement, or after the table is created with the ALTER TABLE statement.

**For Example:--**

* CREATE database om;
* use om;
* CREATE TABLE OmPower(id int primary key auto\_increment,name varchar(20),email varchar(50));

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

Ans:- A SAVEPOINT is a logical rollback point in a transaction. Usually, when you execute the ROLLBACK command,

* it undoes the changes until the last COMMIT. But, if you create save points you can partially roll the transaction back to these points.
* You can create multiple save points between two commits.

F**or Example:--**

delete from emp where id = 1;

savepoint k;

delete from emp where id = 2;

commit;

rollback to k;

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

* Ans: - A trigger is a stored procedure in a database that automatically invokes whenever a special event in the database occurs.
* For example, a trigger can be invoked when a row is inserted into a specified table or when specific table columns are updated
* In simple words a trigger is a collection of SQL statements with particular names that are stored in system memory.
* It belongs to a specific class of stored procedures that are automatically invoked in response to database server events.
* Every trigger has a table attached to it.
* Because a trigger cannot be called directly, unlike a stored procedure, it is referred to as a special procedure.
* A trigger is automatically called whenever a data modification event against a table takes place,
* Which is the main distinction between a trigger and a procedure. On the other hand, a stored procedure must be called directly.
* The following are the key differences between triggers and stored procedures:
  + - Triggers cannot be manually invoked or executed.
    - There is no chance that triggers will receive parameters.
    - A transaction cannot be committed or rolled back inside a trigger.

\*\*\*\*SQL Queries\*\*\*\*

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

**Student Table**

[CREATE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-database.html) [DATABASE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-database.html) Aradhya;

use Aradhya;

[Create](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [table](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) student (Rollno int primary key auto\_increment,Name varchar(20),Branch Varchar(50));

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO `student` (`Rollno`, `Name`, `Branch`) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (1, 'jay', 'computer sciences'), (2, 'suhani', 'electronic and com'), (3, 'kriti', 'electronic and com');

**Exam table**

[Create](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [table](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) Exam (s\_code varchar(20),Marks int,P\_code varchar(20),Rollno int,Foreign key(Rollno) References student(Rollno));

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO `exam` (`s\_code`, `Marks`, `P\_code`, `Rollno`) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) ('CS11', '50', 'CS', '1'), ('CS12', '60', 'CS', '1'), ('EC101', '66', 'EC', '2'), ('EC102', '70', 'EC', '2'), ('EC101', '45', 'EC', '3'), ('EC102', '50', 'EC', '3');

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

Create a table of Employee:-

[CREATE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [TABLE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) employee (E\_id INTEGER PRIMARY KEY, first\_name VARCHAR(30), last\_name VARCHAR(30), salary INTEGER, joining\_date date, department VARCHAR(20) );

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO employee [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (1, 'John', 'Abraham',1000000,'01-01-13 12:00 AM','Banking');

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO employee [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (2, 'Michael', 'Clark',800000,'01-01-13 12:00 AM','Insurance');

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO employee [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (3, 'Roy', 'Thomas',700000,'01-02-13 12:00 AM','Banking');

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO employee [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (4, 'Tom', 'Jose',600000,'01-02-13 12:00 AM','Insurance');

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO employee [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (5, 'Jerry', 'Pinto',650000,'01-02-13 12:00 AM','Insurance');

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO employee [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (6, 'Philip', 'Mathew',750000,'01-01-13 12:00 AM','Services');

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO employee [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (7, 'Krunal', 'Patan',650000,'01-01-13 12:00 AM','Services');

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO employee [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (8, 'Rahul', 'Rajkot',650000,'01-02-13 12:00 AM','Insurance');

Table Name: Incentive

[CREATE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [TABLE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) Incentive (Employee\_Ref\_id INTEGER PRIMARY KEY,incentive\_date date,incentive\_amount INTEGER);

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO incentive(Employee\_Ref\_id, incentive\_date, incentive\_amount) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (1,'01-02-2013',5000);

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO incentive(Employee\_Ref\_id, incentive\_date, incentive\_amount) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (2,'01-02-2013',4000);

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO incentive(Employee\_Ref\_id, incentive\_date, incentive\_amount) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (3,'01-02-2013',3000);

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO incentive(Employee\_Ref\_id, incentive\_date, incentive\_amount) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (11,'01-01-2013',4500);

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO incentive(Employee\_Ref\_id, incentive\_date, incentive\_amount) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) (12,'01-01-2013',3500);

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

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) FIRST\_name "Tom\_name" from employee;

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

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) first\_name,joining\_date,salary FROM employee;

**5. Get all employee details from the employee table order by First\_Name Ascending and Salary descending?**

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM employee ORDER BY first\_name; / (Ascending)/

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM employee ORDER BY salary DESC; /(Salary descending)/

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

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM EMPLOYEE WHERE FIRST\_NAME [LIKE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/string-comparison-functions.html%23operator_like) 'J%';

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

**8. salary ascending?**

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html" \t "mysql_doc) DEPARTMENT,[MAX](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_max" \t "mysql_doc)(SALARY) MAXSALARY FROM EMPLOYEE GROUP BY DEPARTMENT ORDER BY MAXSALARY ASC;

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

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) e.first\_name, i.incentive\_amount FROM employee e JOIN incentive i ON e.E\_id=i.Employee\_Ref\_id WHERE i.incentive\_amount>3000;

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

CREATE TRIGGER trigger\_name

AFTER INSERT

ON table\_name FOR EACH ROW

trigger\_body

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

[**CREATE**](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html)[**table**](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) **(Table -1)**

[CREATE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [table](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) Salesperson(SNO int PRIMARY KEY,SNAME varchar (30),CITY varchar (20),COMM Float);

[**INSERT**](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html)[**VALUES**](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values)

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO `salesperson` (`SNO`, `SNAME`, `CITY`, `COMM`) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) ('1001', 'Peel', 'London', '.12'), ('1002', 'Serres', 'San Jose', '.13'), ('1004', 'Motika', 'London', '.11'), ('1007', 'Rafkin', 'Barcelona', '.15'), ('1003', 'Axelrod', 'New York', '.1');

[**CREATE**](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html)[**table**](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) **(Table-2)**

[CREATE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [TABLE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) Customer (CNM int PRIMARY KEY,CNAME Varchar(30),CITY varchar(20),RATING int,SNO int,FOREIGN KEY(SNO) REFERENCES salesperson(SNO));

[**INSERT**](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html)[**VALUES**](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values)

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO customer (CNM, CNAME, CITY, RATING, SNO) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_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');

**12. Retrieve the below data from above table**

**13. All orders for more than $1000.**

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

Select sname, CITY from salesperson where COMM < 0.12 and CITY = "LONDON";

Select sname, CITY from salesperson where COMM > 0.12 and CITY = "LONDON";

**15. All salespeople either in Barcelona or in London**

Select sname, city from salesperson where city in ("Barcelona","London");

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

Select sname, comm from salesperson where comm > 0.10 and comm < 0.12;

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

Select cname from customer where rating <= 100 or city = "Rome";

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

[create](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [table](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) salespepole(salesman\_id int, Name varchar(30),City varchar(20),Commission Float);

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO salespepole(salesman\_id, Name, City, Commission) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_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', 'Louson Hen', 'San Jose', '0.12');

[ALTER](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/alter-table.html) [TABLE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/alter-table.html) `salespepole` ADD PRIMARY KEY(`salesman\_id`);

**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.**

[CREATE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [TABLE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) Orders(ord\_no int,purch\_amt float,ord\_date date,customer\_id int,salesman\_id int);

[ALTER](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/alter-table.html) [TABLE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/alter-table.html) `orders` ADD FOREIGN key(salesman\_id) REFERENCES salespepole (salesman\_id);

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO `orders` (`ord\_no`, `purch\_amt`, `ord\_date`, `customer\_id`, `salesman\_id`) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) ('70001', '150.5', '2012-10-05', '3005', '5002'), ('70009', '270.65', '2012-09-10', '3001', '5005'), ('70002', '65.26', '2012-10-05', '3002', '5001'), ('70004', '110.5', '2012-08-17', '3009', '5003'), ('70007', '948.5', '2012-09-10', '3005', '5002'), ('70005', '2400.6', '2012-07-27', '3007', '5001'), ('70008', '5760', '2012-09-10', '3002', '5001'), ('70010', '1983.43', '2012-10-10', '3004', '5006'), ('70003', '2480.4', '2012-10-10', '3009', '5003'), ('70012', '250.45', '2012-06-27', '3008', '5002'), ('70011', '75.29', '2012-08-17', '3003', '5007'), ('70013', '3045.6', '2012-04-25', '3002', '5001');

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) ord\_no, ord\_date, purch\_amt FROM orders WHERE salesman\_id=5001;

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) ord\_no, ord\_date, purch\_amt FROM orders WHERE salesman\_id=5002;

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) ord\_no, ord\_date, purch\_amt FROM orders WHERE salesman\_id=5003;

**20. From the following table, write a SQL query to select a range ofproducts 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.**

[CREATE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) [TABLE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/create-table.html) item\_mast(PRO\_ID INT PRIMARY KEY,PRO\_NAME VARCHAR(30),PRO\_PRICE FLOAT,PRO\_COM INT);

[INSERT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/insert.html) INTO `item\_mast` (`PRO\_ID`, `PRO\_NAME`, `PRO\_PRICE`, `PRO\_COM`) [VALUES](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/miscellaneous-functions.html%23function_values) ('101', 'Mother Borad ', '3200.00', '15'), ('102', 'Key Borad', '450.00', '16'), ('103', 'Zip drive', '250.00', '14'), ('104', 'Speaker', '550.00', '16'), ('105', 'Monitor', '5000.00', '11'), ('106', 'DVD drive', '900.00', '12'), ('107', 'CD drive', '800.00', '12'), ('108', 'Printer', '2600.00', '13'), ('109', 'Refil cartridge', '350.00', '13'), ('110', 'Mouse', '250.00', '12');

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM item\_mast WHERE pro\_price BETWEEN 200 [AND](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) 600;

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

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg) (PRO\_PRICE) FROM item\_mast WHERE PRO\_COM = 16;

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg) (PRO\_PRICE) FROM item\_mast WHERE PRO\_COM = 12;

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg) (PRO\_PRICE) FROM item\_mast WHERE PRO\_COM = 13;

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

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) pro\_name as "Item Name", pro\_price AS "Price in Rs." 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](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) pro\_name, pro\_price FROM item\_mast WHERE pro\_price >= 250 ORDER BY pro\_price DESC, pro\_name; (Descending)

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) pro\_name, pro\_price FROM item\_mast WHERE pro\_price >= 250 ORDER BY pro\_price , pro\_name; (Ascending)

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

[SELECT](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [AVG](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg)(pro\_price), pro\_com FROM item\_mast GROUP BY pro\_com;