

MY SQL QUERIES

create, show and use database:

```
mysql> create database organization;  
Query OK, 1 row affected (0.04 sec)
```

```
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| book_store |  
| college |  
| food_delivery |  
| information_schema |  
| mysql |  
| organization |  
| performance_schema |  
| sys |  
+-----+  
8 rows in set (0.02 sec)
```

```
mysql> use organization;  
Database changed
```

Create and describe table:

```
mysql> create table department(dept_no INT(5) PRIMARY KEY, dept_name Varchar(25) NOT NULL);  
Query OK, 0 rows affected, 1 warning (0.04 sec)
```

```
mysql> DESCRIBE department;  
+-----+-----+-----+-----+-----+-----+  
| Field | Type | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| dept_no | int | NO | PRI | NULL | |  
| dept_name | varchar(25) | NO | | NULL | |  
+-----+-----+-----+-----+-----+-----+  
2 rows in set (0.00 sec)
```

```
mysql> create table grade(grade_no INT(5) PRIMARY KEY, lo_sal INT(7) NOT NULL, hi_sal INT(7) NOT NULL);  
Query OK, 0 rows affected, 3 warnings (0.02 sec)
```

```
mysql> DESCRIBE grade;  
+-----+-----+-----+-----+-----+-----+  
| Field | Type | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| grade_no | int | NO | PRI | NULL | |  
| lo_sal | int | NO | | NULL | |  
| hi_sal | int | NO | | NULL | |  
+-----+-----+-----+-----+-----+-----+  
3 rows in set (0.00 sec)
```

```
mysql> create table employee(emp_no INT(5) PRIMARY KEY, emp_name Varchar(25) NOT NULL, job Varchar(25) NOT NULL, hire_date DATE NOT NULL, commission INT(7) NULL, dept_no INT(5), FOREIGN KEY(dept_no) REFERENCES department(dept_no));  
Query OK, 0 rows affected, 3 warnings (0.06 sec)
```

Alter table:

```
mysql> ALTER table employee ADD grade_no INT(5) NOT NULL;  
Query OK, 0 rows affected, 1 warning (0.10 sec)  
Records: 0 Duplicates: 0 Warnings: 1
```

```
mysql> ALTER table employee ADD CONSTRAINT fk_constraint_name FOREIGN KEY(grade_no) REFERENCES grade(grade_no);  
Query OK, 0 rows affected (0.10 sec)  
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> ALTER table employee add salary INT(7);  
Query OK, 0 rows affected, 1 warning (0.07 sec)  
Records: 0 Duplicates: 0 Warnings: 1
```

Insert data in tables:

```
mysql> insert into department Values(101,'marketing'),(102,'HR'),(103,'finance'),(104,'emp_union');  
Query OK, 4 rows affected (0.01 sec)  
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> insert into grade Values('1','10000','17000'),('2','12000','19000'),('3','14000','2000'),('4','15000','22000');  
Query OK, 4 rows affected (0.01 sec)  
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> insert into employee Values('1234','zainab','assistant','2025-05-03',NULL,'101','4','2100'),('2345','khadija','research analyst','2025-05-02',NULL,'102','1','1500'),('3456','laila','manager',  
'2025-05-07',NULL,'103','3','2200'),('4567','fatima','worker','2025-05-08',NULL,'104','2','13000');  
Query OK, 4 rows affected (0.01 sec)  
Records: 4 Duplicates: 0 Warnings: 0
```

Update data in table:

```
mysql> update employee set commission='1500' where emp_no='1234';  
Query OK, 1 row affected (0.01 sec)  
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> update employee set commission='1500' where emp_no='2345';  
Query OK, 1 row affected (0.01 sec)  
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> update employee set commission='1500' where emp_no='3456';  
Query OK, 1 row affected (0.01 sec)  
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> update employee set commission='1500' where emp_no='4567';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

Select *from tables:

```
mysql> select * from department;
+-----+-----+
| dept_no | dept_name |
+-----+-----+
|      101 | marketing |
|      102 | HR        |
|      103 | finance   |
|      104 | emp_union |
+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from grade;
+-----+-----+-----+
| grade_no | lo_sal | hi_sal |
+-----+-----+-----+
|         1 | 10000 | 17000 |
|         2 | 12000 | 19000 |
|         3 | 14000 | 20000 |
|         4 | 15000 | 22000 |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from employee;
+-----+-----+-----+-----+-----+-----+-----+
| emp_no | emp_name | job          | hire_date | commission | dept_no | grade_no | salary |
+-----+-----+-----+-----+-----+-----+-----+
|    1234 | zainab   | assistant    | 2025-05-03 | NULL       |    101  |         4 |    2100 |
|    2345 | khadija  | research analyst | 2025-05-02 | NULL       |    102  |         1 |    1500 |
|    3456 | laila    | manager      | 2025-05-07 | NULL       |    103  |         3 |    2200 |
|    4567 | fatima   | worker       | 2025-05-08 | NULL       |    104  |         2 |   13000 |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

Select attribute:

```
mysql> select job from employee;
+-----+
| job          |
+-----+
| assistant    |
| research analyst |
| manager      |
| worker       |
+-----+
4 rows in set (0.00 sec)
```

Select as:

```
mysql> select grade_no as scale from employee;
+-----+
| scale |
+-----+
|      1 |
|      2 |
|      3 |
|      4 |
+-----+
4 rows in set (0.00 sec)
```

```
mysql> select grade_no as scale from grade;
+-----+
| scale |
+-----+
|      1 |
|      2 |
|      3 |
|      4 |
+-----+
4 rows in set (0.00 sec)
```

Select by order:

```
mysql> select emp_name from employee Order By salary;
+-----+
| emp_name |
+-----+
| khadija  |
| zainab   |
| laila    |
| fatima   |
+-----+
4 rows in set (0.00 sec)
```

```
mysql> select emp_name, salary from employee Order By salary;
+-----+-----+
| emp_name | salary |
+-----+-----+
| khadija  | 1500   |
| zainab   | 2100   |
| laila    | 2200   |
| fatima   | 13000  |
+-----+-----+
4 rows in set (0.00 sec)
```

Select in descending order:

```
mysql> select emp_name, salary from employee Order By salary DESC;
+-----+-----+
| emp_name | salary |
+-----+-----+
| fatima   | 13000  |
| laila    | 2200   |
| zainab   | 2100   |
| khadija  | 1500   |
+-----+-----+
4 rows in set (0.00 sec)
```

Select distinct:

```
mysql> select distinct dept_no from employee;
+-----+
| dept_no |
+-----+
| 101     |
| 102     |
| 103     |
| 104     |
+-----+
4 rows in set (0.00 sec)
```

Select max:

```
mysql> select MAX(salary) as max_sal from employee;
+-----+
| max_sal |
+-----+
| 13000   |
+-----+
1 row in set (0.00 sec)
```

Select min:

```
mysql> select MIN(salary) as min_sal from employee;
+-----+
| min_sal |
+-----+
| 1500    |
+-----+
1 row in set (0.00 sec)
```

Select sum:

```
mysql> select SUM(salary) as sum_of_salary from employee;
+-----+
| sum_of_salary |
+-----+
| 18800         |
+-----+
1 row in set (0.00 sec)
```

Select avg:

```
mysql> select AVG(salary) as avg_of_salary from employee;
+-----+
| avg_of_salary |
+-----+
|      4700.0000 |
+-----+
1 row in set (0.00 sec)
```

Arithmetic operations:

```
mysql> select salary*12 from employee;
+-----+
| salary*12 |
+-----+
|      25200 |
|      18000 |
|      26400 |
|     156000 |
+-----+
4 rows in set (0.00 sec)
```

```
mysql> select salary+200 as increased_salary from employee;
+-----+
| increased_salary |
+-----+
|           2300 |
|           1700 |
|           2400 |
|          13200 |
+-----+
4 rows in set (0.00 sec)
```

```
mysql> select salary-200 as detucted_salary from employee where emp_no='1234';
+-----+
| detucted_salary |
+-----+
|           1900 |
+-----+
1 row in set (0.00 sec)
```

```
mysql> select (salary+250)*12 as annual_salary from employee;
+-----+
| annual_salary |
+-----+
|      28200 |
|      21000 |
|      29400 |
|     159000 |
+-----+
4 rows in set (0.00 sec)
```

Relational operators:

```
mysql> select salary from employee where salary>1900;
+-----+
| salary |
+-----+
| 2100   |
| 2200   |
| 13000  |
+-----+
3 rows in set (0.00 sec)
```

```
mysql> select emp_name from employee where salary>=1900;
+-----+
| emp_name |
+-----+
| zainab   |
| laila    |
| fatima   |
+-----+
3 rows in set (0.00 sec)
```

```
mysql> select emp_name from employee where salary=1900;
Empty set (0.00 sec)

mysql> select emp_name from employee where salary!=1900;
+-----+
| emp_name |
+-----+
| zainab   |
| khadija  |
| laila    |
| fatima   |
+-----+
4 rows in set (0.00 sec)
```

```
mysql> select emp_name from employee where salary<=1900;
+-----+
| emp_name |
+-----+
| khadija  |
+-----+
1 row in set (0.00 sec)
```

```
mysql> select emp_name,salary,commission from employee where salary>commission;
Empty set (0.00 sec)
```

```
mysql> select emp_name,salary,commission from employee where salary>commission;
+-----+-----+-----+
| emp_name | salary | commission |
+-----+-----+-----+
| zainab   | 2100   | 1500       |
| laila    | 2200   | 1500       |
| fatima   | 13000  | 1500       |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql>
```