Date Functions:

Date\_add(date, interval)

Ex. To add 1 week to current date.

Select date\_add(curdate(), interval 1 week) as date;  
  
mysql> Select date\_add(curdate(), interval 1 week) as date;

+------------+

| date |

+------------+

| 2025-08-04 |

+------------+

1 row in set (0.00 sec)

mysql> Select date\_add(curdate(), interval 1 year) as date;

+------------+

| date |

+------------+

| 2026-07-28 |

+------------+

1 row in set (0.00 sec)

mysql> Select date\_add(curdate(), interval 4 day) as date;

+------------+

| date |

+------------+

| 2025-08-01 |

+------------+

1 row in set (0.00 sec)

Ex. To find employees who joined in February.

Month() -> this is used to extract a month of a date.

Select ename, hiredate

From emp

Where month(hiredate) = 2;

mysql> Select ename, hiredate

-> From emp

-> Where month(hiredate) = 2;

+-------+------------+

| ename | hiredate |

+-------+------------+

| ALLEN | 1981-02-20 |

| WARD | 1981-02-22 |

+-------+------------+

2 rows in set (0.02 sec)

TASK:

Table: Medicine

Columns: MID, Mname, price, exp\_date

Requirement: Find medicines expiring in 3 months.

DML(data manipulation language)

Insert:

Update: Modify existing data in the table

Delete: remove rows from table

* Update

Syntax:

Update table\_name

Set column1 = value1, column2 = value2,……

Where condition

Ex. To increase the salary of employees in department no 30 by 15%.

Update emp

Set sal = sal\*1.15

Where deptno=30;

mysql> Update emp

-> Set sal = sal\*1.15

-> Where deptno=30;

Query OK, 6 rows affected (0.05 sec)

Rows matched: 6 Changed: 6 Warnings: 0

mysql> select \* from emp;

+-------+--------+-----------+------+------------+---------+---------+--------+

| EMPNO | ENAME | JOB | MGR | HIREDATE | sal | COMM | DEPTNO |

+-------+--------+-----------+------+------------+---------+---------+--------+

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1840.00 | 300.00 | 30 |

| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1437.50 | 500.00 | 30 |

| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |

| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1437.50 | 1400.00 | 30 |

| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 3277.50 | NULL | 30 |

| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |

| 7788 | SCOTT | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL | 20 |

| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |

| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 | 0.00 | 30 |

| 7876 | ADAMS | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL | 20 |

| 7900 | JAMES | CLERK | 7698 | 1981-12-03 | 1092.50 | NULL | 30 |

| 7902 | FORD | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL | 20 |

| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |

+-------+--------+-----------+------+------------+---------+---------+--------+  
  
\* To change the job of smith(7369) from clerk to senior clerk.

Update emp

Set job = ‘Senior Clerk’

Where empno = 7369;

mysql> Update emp

-> Set job = 'Senior Clerk'

-> Where empno = 7369;

Query OK, 1 row affected (0.02 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select \* from emp;

+-------+--------+--------------+------+------------+---------+---------+--------+

| EMPNO | ENAME | JOB | MGR | HIREDATE | sal | COMM | DEPTNO |

+-------+--------+--------------+------+------------+---------+---------+--------+

| 7369 | SMITH | Senior Clerk | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1840.00 | 300.00 | 30 |

| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1437.50 | 500.00 | 30 |

| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |

| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1437.50 | 1400.00 | 30 |

| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 3277.50 | NULL | 30 |

| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |

| 7788 | SCOTT | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL | 20 |

| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |

| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 | 0.00 | 30 |

| 7876 | ADAMS | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL | 20 |

| 7900 | JAMES | CLERK | 7698 | 1981-12-03 | 1092.50 | NULL | 30 |

| 7902 | FORD | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL | 20 |

| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |

+-------+--------+--------------+------+------------+---------+---------+--------+

Delete Statement:

Syntax:

Delete from table\_name

Where condition;

Ex. Remove employee whose empno is 7900

Delete from emp

Where empno = 7900;  
  
Ex. Remove all employees whose salary is less than 1000.  
  
Delete from emp

Where sal < 1000;  
  
Assignment Question:

Select concat(TRIM(ename),’.’) as empName from emp;

mysql> Select concat(TRIM(ename),'.') as empName from emp;

+---------+

| empName |

+---------+

| SMITH. |

| ALLEN. |

| WARD. |

| JONES. |

| MARTIN. |

| BLAKE. |

| CLARK. |

| SCOTT. |

| KING. |

| TURNER. |

| ADAMS. |

| FORD. |

| MILLER. |

+---------+

JOINS:

Creating a department table:

Create table dept (

DEPTNO INT(2) primary key,

DNAME VARCHAR(20),

LOC VARCHAR(15)

);

Inserting values in table

INSERT INTO DEPT VALUES(10,'ACCOUNTING','NEW YORK');

INSERT INTO DEPT VALUES(20,'RESEARCH','DALLAS');

INSERT INTO DEPT VALUES(30,'SALES','CHICAGO');

INSERT INTO DEPT VALUES(40,'OPRATIONS','BOSTON');  
  
  
It allows us to retrieve data from multiple tables based on related columns.

Types of joins:

1. Inner Join
2. Left Join (Left Outer Join)
3. Right Join (Right Outer Join)
4. Full Join(Full Outer Join)  
     
     
   \* Left Join (Left Outer Join)

It returns all rows from the left table and matched rows from the right table.

Unmatched rows from the right table will display NULL.

SYNTAX:

Select columns

From table1

Left join table2

ON table1.column = table2.column;

Ex. To retrieve all employees and their department names, even if some employees does not belong to any department.

Select emp.ename, emp.job, dept.dname

From emp

Left join dept

On emp.deptno = dept.deptno;  
  
mysql> Select emp.ename, emp.job, dept.dname

-> From emp

-> Left join dept

-> On emp.deptno = dept.deptno;

+--------+--------------+------------+

| ename | job | dname |

+--------+--------------+------------+

| SMITH | Senior Clerk | RESEARCH |

| ALLEN | SALESMAN | SALES |

| WARD | SALESMAN | SALES |

| JONES | MANAGER | RESEARCH |

| MARTIN | SALESMAN | SALES |

| BLAKE | MANAGER | SALES |

| CLARK | MANAGER | ACCOUNTING |

| SCOTT | ANALYST | RESEARCH |

| KING | PRESIDENT | ACCOUNTING |

| TURNER | SALESMAN | SALES |

| ADAMS | CLERK | RESEARCH |

| FORD | ANALYST | RESEARCH |

| MILLER | CLERK | ACCOUNTING |

+--------+--------------+------------+

TASK:

Add an employee who is working in deptno (60) then execute the query and analyze

* Inner join

Returns only where there is match in both tables.

SYNTAX:  
select columns

From table1

Inner join table2

On table1.column = table2.column;

To retrieve employees and their department names.

Select emp.ename, emp.job, dept.dname

From emp

Inner join dept

On emp.deptno = dept.deptno;  
  
mysql> Select emp.ename, emp.job, dept.dname

-> From emp

-> Inner join dept

-> On emp.deptno = dept.deptno;

+--------+--------------+------------+

| ename | job | dname |

+--------+--------------+------------+

| SMITH | Senior Clerk | RESEARCH |

| ALLEN | SALESMAN | SALES |

| WARD | SALESMAN | SALES |

| JONES | MANAGER | RESEARCH |

| MARTIN | SALESMAN | SALES |

| BLAKE | MANAGER | SALES |

| CLARK | MANAGER | ACCOUNTING |

| SCOTT | ANALYST | RESEARCH |

| KING | PRESIDENT | ACCOUNTING |

| TURNER | SALESMAN | SALES |

| ADAMS | CLERK | RESEARCH |

| FORD | ANALYST | RESEARCH |

| MILLER | CLERK | ACCOUNTING |

+--------+--------------+------------+

Right Join: It return all rows from the right table and matched rows from the left table.

Unmatched rows from the left table will display NULL.

Ex. To retrieve all departments and their employees, including departments with no employees.

mysql> select emp.ename,emp.job, dept.dname

-> from emp

-> right join dept

-> on emp.deptno = dept.deptno;

+--------+--------------+------------+

| ename | job | dname |

+--------+--------------+------------+

| MILLER | CLERK | ACCOUNTING |

| KING | PRESIDENT | ACCOUNTING |

| CLARK | MANAGER | ACCOUNTING |

| FORD | ANALYST | RESEARCH |

| ADAMS | CLERK | RESEARCH |

| SCOTT | ANALYST | RESEARCH |

| JONES | MANAGER | RESEARCH |

| SMITH | Senior Clerk | RESEARCH |

| TURNER | SALESMAN | SALES |

| BLAKE | MANAGER | SALES |

| MARTIN | SALESMAN | SALES |

| WARD | SALESMAN | SALES |

| ALLEN | SALESMAN | SALES |

| NULL | NULL | OPRATIONS |

+--------+--------------+------------+

FULL Outer Join

UNION