

```
MySQL 8.0 Command Line Client
mysql> SELECT EMPNO,ENAME,JOB,EMP.DEPTNO,DEPT.DEPTNO,DNAME,LOC FROM EMP INNER JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB   | DEPTNO | DEPTNO | DNAME  | LOC   |
+-----+-----+-----+-----+-----+-----+-----+
| 7782  | CLARK | MANAGER | 10    | 10    | ACCOUNTING | NEW YORK |
| 7839  | KING   | PRESIDENT | 10    | 10    | ACCOUNTING | NEW YORK |
| 7934  | MILLER | CLERK   | 10    | 10    | ACCOUNTING | NEW YORK |
| 7369  | SMITH  | CLERK   | 20    | 20    | RESEARCH   | DALLAS  |
| 7566  | JONES  | MANAGER | 20    | 20    | RESEARCH   | DALLAS  |
| 7788  | SCOTT  | ANALYST | 20    | 20    | RESEARCH   | DALLAS  |
| 7876  | ADAMS  | CLERK   | 20    | 20    | RESEARCH   | DALLAS  |
| 7982  | FORD   | ANALYST | 20    | 20    | RESEARCH   | DALLAS  |
| 7499  | ALLEN  | SALESMAN | 30    | 30    | SALES     | CHICAGO |
| 7521  | WARD   | SALESMAN | 30    | 30    | SALES     | CHICAGO |
| 7654  | MARTIN | SALESMAN | 30    | 30    | SALES     | CHICAGO |
| 7698  | BLAKE  | MANAGER | 30    | 30    | SALES     | CHICAGO |
| 7844  | TURNER | SALESMAN | 30    | 30    | SALES     | CHICAGO |
| 7900  | JAMES  | CLERK   | 30    | 30    | SALES     | CHICAGO |
+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

2. Write a query to demonstrate inner join on emp table and dept table.

Display emp name, emp no., and dept no., dept name.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME,EMPNO,EMP.DEPTNO,DEPT.DEPTNO,DNAME FROM EMP INNER JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO;
+-----+-----+-----+-----+-----+
| ENAME | EMPNO | DEPTNO | DEPTNO | DNAME  |
+-----+-----+-----+-----+-----+
| CLARK | 7782 | 10    | 10    | ACCOUNTING |
| KING  | 7839 | 10    | 10    | ACCOUNTING |
| MILLER | 7934 | 10    | 10    | ACCOUNTING |
| SMITH | 7369 | 20    | 20    | RESEARCH   |
| JONES | 7566 | 20    | 20    | RESEARCH   |
| SCOTT | 7788 | 20    | 20    | RESEARCH   |
| ADAMS | 7876 | 20    | 20    | RESEARCH   |
| FORD  | 7982 | 20    | 20    | RESEARCH   |
| ALLEN | 7499 | 30    | 30    | SALES     |
| WARD  | 7521 | 30    | 30    | SALES     |
| MARTIN | 7654 | 30    | 30    | SALES     |
| BLAKE | 7698 | 30    | 30    | SALES     |
| TURNER | 7844 | 30    | 30    | SALES     |
| JAMES | 7900 | 30    | 30    | SALES     |
+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

3. Write a query to demonstrate left join on emp table and dept table. Display emp no., emp name, dept no., dept name, commission.

Command:

MySQL 8.0 Command Line Client

```
mysql> SELECT EMPNO,ENAME , EMP.DEPTNO,DEPT.DEPTNO,DNAME,COMM FROM EMP LEFT JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO;
```

EMPNO	ENAME	DEPTNO	DEPTNO	DNAME	COMM
7369	SMITH	20	20	RESEARCH	NULL
7499	ALLEN	30	30	SALES	300.00
7521	WARD	30	30	SALES	500.00
7566	JONES	20	20	RESEARCH	NULL
7654	MARTIN	30	30	SALES	1400.00
7698	BLAKE	30	30	SALES	NULL
7782	CLARK	10	10	ACCOUNTING	NULL
7788	SCOTT	20	20	RESEARCH	NULL
7839	KING	10	10	ACCOUNTING	NULL
7844	TURNER	30	30	SALES	0.00
7876	ADAMS	20	20	RESEARCH	NULL
7900	JAMES	30	30	SALES	NULL
7982	FORD	20	20	RESEARCH	NULL
7934	MILLER	10	10	ACCOUNTING	NULL

14 rows in set (0.00 sec)

mysql>

4. Write a query to demonstrate right join on emp table and dept table. Display emp no., emp name, dept no., dept name, commission.

Command:

MySQL 8.0 Command Line Client

```
mysql> SELECT EMPNO,ENAME , EMP.DEPTNO,DEPT.DEPTNO,DNAME,COMM FROM EMP RIGHT JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO;
```

EMPNO	ENAME	DEPTNO	DEPTNO	DNAME	COMM
7782	CLARK	10	10	ACCOUNTING	NULL
7839	KING	10	10	ACCOUNTING	NULL
7934	MILLER	10	10	ACCOUNTING	NULL
7369	SMITH	20	20	RESEARCH	NULL
7566	JONES	20	20	RESEARCH	NULL
7788	SCOTT	20	20	RESEARCH	NULL
7876	ADAMS	20	20	RESEARCH	NULL
7982	FORD	20	20	RESEARCH	NULL
7499	ALLEN	30	30	SALES	300.00
7521	WARD	30	30	SALES	500.00
7654	MARTIN	30	30	SALES	1400.00
7698	BLAKE	30	30	SALES	NULL
7844	TURNER	30	30	SALES	0.00
7900	JAMES	30	30	SALES	NULL
NULL	NULL	NULL	40	OPERATIONS	NULL

15 rows in set (0.00 sec)

mysql>

5. Write a query to demonstrate full join on employee table and dept table (union all).

Command:

```

MySQL 8.0 Command Line Client

mysql> SELECT EMPNO,ENAME, EMP.DEPTNO,DEPT.DEPTNO,DNAME,COMM FROM EMP LEFT JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO UNION ALL SELECT EMPNO,ENAME, EMP.DEPTNO,DEPT.DEPTNO,DNAME,COMM FROM EMP RIGHT JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO;
+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | DEPTNO | DEPTNO | DNAME  | COMM   |
+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | 20    | 20    | RESEARCH | NULL   |
| 7499 | ALLEN | 30    | 30    | SALES    | 300.00 |
| 7521 | WARD  | 30    | 30    | SALES    | 500.00 |
| 7566 | JONES | 20    | 20    | RESEARCH | NULL   |
| 7654 | MARTIN| 30    | 30    | SALES    | 1400.00|
| 7698 | BLAKE | 30    | 30    | SALES    | NULL   |
| 7782 | CLARK | 10    | 10    | ACCOUNTING| NULL   |
| 7788 | SCOTT | 20    | 20    | RESEARCH | NULL   |
| 7839 | KING  | 10    | 10    | ACCOUNTING| NULL   |
| 7844 | TURNER| 30    | 30    | SALES    | 0.00   |
| 7876 | ADAMS | 20    | 20    | RESEARCH | NULL   |
| 7908 | JAMES  | 30    | 30    | SALES    | NULL   |
| 7982 | FORD  | 20    | 20    | RESEARCH | NULL   |
| 7934 | MILLER| 10    | 10    | ACCOUNTING| NULL   |
| 7782 | CLARK | 10    | 10    | ACCOUNTING| NULL   |
| 7839 | KING  | 10    | 10    | ACCOUNTING| NULL   |
| 7934 | MILLER| 10    | 10    | ACCOUNTING| NULL   |
| 7369 | SMITH | 20    | 20    | RESEARCH | NULL   |
| 7566 | JONES | 20    | 20    | RESEARCH | NULL   |
| 7788 | SCOTT | 20    | 20    | RESEARCH | NULL   |
| 7876 | ADAMS | 20    | 20    | RESEARCH | NULL   |
| 7982 | FORD  | 20    | 20    | RESEARCH | NULL   |
| 7499 | ALLEN | 30    | 30    | SALES    | 300.00 |
| 7521 | WARD  | 30    | 30    | SALES    | 500.00 |
| 7654 | MARTIN| 30    | 30    | SALES    | 1400.00|
| 7698 | BLAKE | 30    | 30    | SALES    | NULL   |
| 7844 | TURNER| 30    | 30    | SALES    | 0.00   |
| 7908 | JAMES  | 30    | 30    | SALES    | NULL   |
| NULL  | NULL   | NULL  | 40    | OPERATIONS| NULL   |
+-----+-----+-----+-----+-----+-----+
29 rows in set (0.00 sec)

mysql>

```

Exercise 5: Working with SQL constraints.

1. Write a query to add a NOT NULL constraint to species name in Organism

table. Try inserting a null value to this column and demonstrate violation of constraint. (insert new row -> species name is null -> delete this row -> add NOT NULL constraint to column -> again try inserting null value -> put ss of violation of constraint)

Command:

```

MySQL 8.0 Command Line Client
mysql> CREATE TABLE speciestable(ORGANISM_ID INT,GENUS VARCHAR (20) ,SPECIES VARCHAR (20),GENOME INT,CHROMOSOME INT,PRIMARY KEY (ORGANISM_ID));
Query OK, 0 rows affected (0.08 sec)

mysql> INSERT INTO speciestable VALUES (1,'homo','sapiens',8,10);INSERT INTO speciestable VALUES (2,'homo','sapiens',8,10);INSERT INTO speciestable VALUES (3,'homo','sapiens',8,10);INSERT INTO speciestable VALUES (4,'homo','sapiens',8,10);INSERT INTO speciestable VALUES (5,'homo','sapiens',8,10);
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.00 sec)
Query OK, 1 row affected (0.00 sec)
Query OK, 1 row affected (0.00 sec)
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO SpeciesTable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (9,'Sus',NULL,8,10);
Query OK, 1 row affected (0.01 sec)

mysql> DELETE FROM SpeciesTable WHERE GENUS='Sus';
Query OK, 1 row affected (0.01 sec)

mysql> ALTER TABLE SpeciesTable MODIFY SPECIES VARCHAR(20) NOT NULL;
Query OK, 0 rows affected (0.09 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> INSERT INTO SpeciesTable (ORGANISM_ID, GENUS, SPECIES, GENOME, CHROMOSOME) VALUES (9,'Sus',NULL,8,10);
ERROR 1048 (23000): Column 'SPECIES' cannot be null
mysql>

```

2. Write a query to add a default constraint to no. of chromosomes in Organism table. Insert a new entry into the table without giving any value for no. of chromosomes. Display the table and show the default value that has appeared.

Command:

```

MySQL 8.0 Command Line Client
mysql> ALTER TABLE SpeciesTable MODIFY CHROMOSOME INT DEFAULT 200;
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> INSERT INTO speciestable (ORGANISM_ID, GENUS, SPECIES, GENOME) VALUES (7,'homo','sapiens',8);
Query OK, 1 row affected (0.01 sec)

mysql> desc speciestable;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| ORGANISM_ID | int | NO | PRI | NULL | 
| GENUS | varchar(20) | YES | NULL | NULL | 
| SPECIES | varchar(20) | NO | NULL | NULL | 
| GENOME | int | YES | NULL | NULL | 
| CHROMOSOME | int | YES | NULL | 200 | 
+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> select*from speciestable;
+-----+-----+-----+-----+-----+
| ORGANISM_ID | GENUS | SPECIES | GENOME | CHROMOSOME |
+-----+-----+-----+-----+-----+
| 1 | homo | sapiens | 8 | 10 |
| 2 | homo | sapiens | 8 | 10 |
| 3 | homo | sapiens | 8 | 10 |
| 4 | homo | sapiens | 8 | 10 |
| 5 | homo | sapiens | 8 | 10 |
| 7 | homo | sapiens | 8 | 200 |
+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql>

```

3. Write a query to add a unique constraint to Genus name in organism table.

(insert new row -> genus name is same (put ss) -> delete this row -> add unique constraint to genus name -> again try inserting same genus name -

> put ss of violation of constraint)

Command:

```

MySQL 8.0 Command Line Client

mysql> drop table speciestable;
Query OK, 0 rows affected (0.03 sec)

mysql> CREATE TABLE speciesTable(ORGANISM_ID INT,GENUS VARCHAR (20) ,SPECIES VARCHAR (20),GENOME INT,CHROMOSOME INT,PRIMARY KEY (ORGANISM_ID));
Query OK, 0 rows affected (0.05 sec)

mysql> INSERT INTO speciestable VALUES (1,'homo','sapiens',8,10);INSERT INTO speciestable VALUES (2,'hom','sapiens',8,10);INSERT INTO speciestable VALUES (3,'homie','sapi
ns',8,10);INSERT INTO speciestable VALUES (4,'hobro','sapiens',8,10);INSERT INTO speciestable VALUES (5,'holo','sapiens',8,10);
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

mysql> ALTER TABLE SpeciesTable ADD UNIQUE (GENUS);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc speciestable;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| ORGANISM_ID | int    | NO   | PRI | NULL    |       |
| GENUS        | varchar(20) | YES  | UNI | NULL    |       |
| SPECIES      | varchar(20) | YES  |      | NULL    |       |
| GENOME       | int    | YES  |      | NULL    |       |
| CHROMOSOME   | int    | YES  |      | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> select*from speciestable;
+-----+-----+-----+-----+
| ORGANISM_ID | GENUS | SPECIES | GENOME | CHROMOSOME |
+-----+-----+-----+-----+
| 1           | homo  | sapiens | 8      | 10         |
| 2           | hom   | sapiens | 8      | 10         |
| 3           | homie | sapiens | 8      | 10         |
| 4           | hobro | sapiens | 8      | 10         |
| 5           | holo  | sapiens | 8      | 10         |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>

```

```

MySQL 8.0 Command Line Client

mysql> select*from speciestable;
+-----+-----+-----+-----+
| ORGANISM_ID | GENUS | SPECIES | GENOME | CHROMOSOME |
+-----+-----+-----+-----+
| 1           | homo  | sapiens | 8      | 10         |
| 2           | hom   | sapiens | 8      | 10         |
| 3           | homie | sapiens | 8      | 10         |
| 4           | hobro | sapiens | 8      | 10         |
| 5           | holo  | sapiens | 8      | 10         |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>

```

4. Write a query to create a table student having roll no. and name. Have 3 entries into this table. Now add primary key to the table. Demonstrate insertion of rows before and after adding the primary key. (use same values for roll. No.)

Command:

```
MySQL 8.0 Command Line Client
mysql> CREATE TABLE StudentTable(ROLLNO INT, NAME VARCHAR(20),PRIMARY KEY (ROLLNO));
Query OK, 0 rows affected (0.04 sec)

mysql> Insert into StudentTable values(1, 'Raj' );Insert into StudentTable values(2, 'Rahul');Insert into StudentTable values(3, 'Simmba');
Query OK, 1 row affected (0.02 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.00 sec)

mysql> DROP TABLE studenttable;
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE StudentTable(ROLLNO INT, NAME VARCHAR(20));
Query OK, 0 rows affected (0.04 sec)

mysql> Insert into StudentTable values(1, 'Riya' );Insert into StudentTable values(2, 'Anjali');Insert into StudentTable values(3, 'Sanjana');
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

mysql> ALTER TABLE StudentTable ADD PRIMARY KEY (ROLLNO);
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc studenttable;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| ROLLNO | int   | NO   | PRI  | NULL    |       |
| NAME   | varchar(20) | YES  |      | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> select*from studenttable;
+-----+-----+
| ROLLNO | NAME  |
+-----+-----+
| 1      | Riya  |
| 2      | Anjali |
+-----+-----+
```

```
MySQL 8.0 Command Line Client
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.00 sec)

mysql> DROP TABLE studenttable;
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE StudentTable(ROLLNO INT, NAME VARCHAR(20));
Query OK, 0 rows affected (0.04 sec)

mysql> Insert into StudentTable values(1, 'Riya' );Insert into StudentTable values(2, 'Anjali');Insert into StudentTable values(3, 'Sanjana');
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

mysql> ALTER TABLE StudentTable ADD PRIMARY KEY (ROLLNO);
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc studenttable;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| ROLLNO | int   | NO   | PRI  | NULL    |       |
| NAME   | varchar(20) | YES  |      | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> select*from studenttable;
+-----+-----+
| ROLLNO | NAME  |
+-----+-----+
| 1      | Riya  |
| 2      | Anjali |
| 3      | Sanjana |
+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

5. Write a query to demonstrate deletion of primary key from student table.
Command:

```
MySQL 8.0 Command Line Client
mysql> ALTER TABLE StudentTable DROP PRIMARY KEY;
Query OK, 3 rows affected (0.12 sec)
Records: 3  Duplicates: 0  Warnings: 0
mysql>
```

6. Write a query to demonstrate deletion of NOT NULL constraint on species name in organism table.

Command:

```
MySQL 8.0 Command Line Client
mysql> ALTER TABLE StudentTable DROP PRIMARY KEY;
Query OK, 3 rows affected (0.12 sec)
Records: 3  Duplicates: 0  Warnings: 0
mysql> ALTER TABLE SpeciesTable MODIFY SPECIES Varchar(20);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
mysql>
```

7. Write a query to demonstrate deletion of default constraint on no. of chromosomes in organism table.

Command:

```
MySQL 8.0 Command Line Client
mysql> ALTER TABLE StudentTable DROP PRIMARY KEY;
Query OK, 3 rows affected (0.12 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE SpeciesTable MODIFY SPECIES Varchar(20);
Query OK, 0 rows affected (0.04 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE SpeciesTable ALTER CHROMOSOME DROP DEFAULT;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql>
```

8. Write a query to demonstrate deletion of Unique constraint on genus name in organism table.
Command:

```
MySQL 8.0 Command Line Client
mysql> ALTER TABLE SpeciesTable DROP INDEX GENUS;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql>
```

9. Write a query to create a student table having roll no. and name. Roll no. is the primary key. Create another table named Marks having columns serial no. (Primary key), roll no., and marks of 2 subjects. Now demonstrate the deletion of any row from the marks table. (ss of violation of integrity/ foreign key constraint expected)

Command:

```
MySQL 8.0 Command Line Client

mysql> ALTER TABLE SpeciesTable DROP INDEX GENUS;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> CREATE TABLE StuTable(ROLLNO INT, NAME VARCHAR(20),PRIMARY KEY (ROLLNO));
Query OK, 0 rows affected (0.06 sec)

mysql> Insert into StuTable values(1, 'Abhi' );Insert into StuTable values(2, 'Nrupesh');Insert into StuTable values(3, 'Ojas');
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

mysql> CREATE TABLE Marks(SERIALNO INT,ROLLNO INT, BIOMKS INT,CHEMMKS INT,PRIMARY KEY (SERIALNO));
Query OK, 0 rows affected (0.07 sec)

mysql> Insert into Marks values(90,1,5,32 );Insert into Marks values(91,2,75,80);Insert into Marks values(92,3,85,90);
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.00 sec)

mysql> DELETE FROM MARKS WHERE CHEMMKS=20;
Query OK, 0 rows affected (0.01 sec)

mysql> select*from marks;
+-----+-----+-----+-----+
| SERIALNO | ROLLNO | BIOMKS | CHEMMKS |
+-----+-----+-----+-----+
|      90 |      1 |      5 |     32 |
|      91 |      2 |     75 |     80 |
|      92 |      3 |     85 |     90 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

Exercise 6: Working with views in sql.

- 1)Create a view based on employee table by extracting emp. No. from emp.
Command:

```

MySQL 8.0 Command Line Client
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE trialDB;
Database changed
mysql> CREATE VIEW EMPVIEW ASSELECT EMPNOFROM EMP; SELECT*FROM EMP VIEW;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'ASSELECT EMPNOFROM
M EMP' at line 1
+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr  | hiredate | SAL   | comm  | Deptno |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800   | NULL   | 20    |
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-28 | 1600  | 300.00 | 30    |
| 7521 | WARD  | SALESMAN | 7699 | 1981-02-22 | 1250  | 500.00 | 30    |
| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975  | NULL   | 20    |
| 7654 | MARTIN | SALESMAN | 7690 | 1981-09-28 | 1250  | 1400.00 | 30    |
| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850  | NULL   | 30    |
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450  | NULL   | 10    |
| 7788 | SCOTT | ANALYST | 7566 | 1987-07-13 | 3000  | NULL   | 20    |
| 7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000  | NULL   | 10    |
| 7844 | TURNER | SALESMAN | 7691 | 1981-09-08 | 1500  | 0.00   | 30    |
| 7876 | ADAMS | CLERK  | 7781 | 1987-05-23 | 1100  | NULL   | 20    |
| 7908 | JAMES | CLERK  | 7698 | 1981-12-03 | 950   | NULL   | 30    |
| 7902 | FORD  | ANALYST | 7566 | 1981-12-03 | 3000  | NULL   | 20    |
| 7992 | MILLER | CLERK  | 7782 | 1982-01-23 | 1300  | NULL   | 10    |
+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.02 sec)

mysql>

```

2)Create a view based on employee table by extracting emp name, emp no, dept no. from emp.
Command:

```

MySQL 8.0 Command Line Client
+-----+-----+-----+-----+-----+-----+-----+
| 7876 | ADAMS | CLERK | 7788 | 1987-05-23 | 1100 | NULL | 20 |
| 7900 | JAMES | CLERK | 7698 | 1981-12-03 | 950 | NULL | 30 |
| 7902 | FORD  | ANALYST | 7566 | 1981-12-03 | 3000 | NULL | 20 |
| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300 | NULL | 10 |
+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.02 sec)

mysql> CREATE VIEW EMPVIEW ASSELECT ENAME, EMPNO, DEPTNO FROM EMP;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'AS
EMPNO, DEPTNO FROM EMP' at line 1
mysql> drop view empview;
ERROR 1051 (42S02): Unknown table 'trialdb.empview'
mysql> CREATE VIEW EMPVIEW AS SELECT ENAME, EMPNO, DEPTNO FROM EMP;
Query OK, 0 rows affected (0.09 sec)

mysql> select*from empview;
+-----+-----+-----+
| ENAME | EMPNO | DEPTNO |
+-----+-----+-----+
| SMITH | 7369 | 20 |
| ALLEN | 7499 | 30 |
| WARD  | 7521 | 30 |
| JONES | 7566 | 20 |
| MARTIN | 7654 | 30 |
| BLAKE | 7698 | 30 |
| CLARK | 7782 | 10 |
| SCOTT | 7788 | 20 |
| KING  | 7839 | 10 |
| TURNER | 7844 | 30 |
| ADAMS | 7876 | 20 |
| JAMES | 7908 | 30 |
| FORD  | 7902 | 20 |
| MILLER | 7934 | 10 |
+-----+-----+-----+
14 rows in set (0.01 sec)

mysql>

```

3)Create a view based on employee table by extracting emp name, emp no. dept no. from emp where dept no. is 30.

Command:

```

MySQL 8.0 Command Line Client

mysql> CREATE VIEW EMPVIEW AS SELECT ENAME, EMPNO, DEPTNO FROM EMP WHERE DEPTNO = 30;SELECT*FROM EMPVIEW;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'ASS
MPNO, DEPTNOFROM EMPWHERE DEPTNO = 30' at line 1
+-----+-----+
| ENAME | EMPNO | DEPTNO |
+-----+-----+
| SMITH | 7369 | 20 |
| ALLEN | 7499 | 30 |
| WARD | 7521 | 30 |
| JONES | 7566 | 20 |
| MARTIN | 7654 | 30 |
| BLAKE | 7698 | 30 |
| CLARK | 7782 | 10 |
| SCOTT | 7788 | 20 |
| KING | 7839 | 10 |
| TURNER | 7844 | 30 |
| ADAMS | 7876 | 20 |
| JAMES | 7908 | 30 |
| FORD | 7982 | 20 |
| MILLER | 7934 | 10 |
+-----+
14 rows in set (0.00 sec)

mysql>

```

4)Create a view based on employee table by extracting all details of the emp table where dept no is 30 and emp no. is 7499.

Command:

```

MySQL 8.0 Command Line Client

mysql> CREATE VIEW EMPVIEW AS SELECT EMPNO ENAME, JOB, HIREDATE, MGR, SAL, COMM, DEPTNO FROM EMP WHERE DEPTNO = 30 AND EMPNO = 7499;
ERROR 1050 (42001): Table 'EMPVIEW' already exists
mysql> drop view empview;
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE VIEW EMPVIEW AS SELECT EMPNO ENAME, JOB, HIREDATE, MGR, SAL, COMM, DEPTNO FROM EMP WHERE DEPTNO = 30 AND EMPNO = 7499;
Query OK, 0 rows affected (0.02 sec)

mysql> select*from empview;
+-----+-----+-----+-----+-----+-----+
| ENAME | JOB | HIREDATE | MGR | SAL | COMM | DEPTNO |
+-----+-----+-----+-----+-----+-----+
| 7499 | SALESMAN | 1981-02-20 | 7698 | 1600 | 300.00 | 30 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)

mysql>

```

5)Create a view based on employee table by extracting all the details of emp table where emp no. is 7369 or 7782.

Command:

```
MySQL 8.0 Command Line Client

mysql> CREATE VIEW EMPVIEW AS SELECT EMPNO ENAME, JOB, HIREDATE, MGR, SAL, COMM, DEPTNO FROM EMP WHERE EMPNO = 7369 OR EMPNO = 7782;
ERROR 1050 (42S01): Table 'EMPVIEW' already exists
mysql> drop view empview;
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE VIEW EMPVIEW AS SELECT EMPNO ENAME, JOB, HIREDATE, MGR, SAL, COMM, DEPTNO FROM EMP WHERE EMPNO = 7369 OR EMPNO = 7782;
Query OK, 0 rows affected (0.01 sec)

mysql> select*from empview;
+-----+-----+-----+-----+-----+-----+-----+
| ENAME | JOB    | HIREDATE | MGR   | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | CLERK  | 1980-12-17 | 7902 | 800    | NULL   | 20      |
| 7782 | MANAGER | 1981-06-09 | 7839 | 2450   | NULL   | 10      |
+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql>
```

6)Create a view based on previous view and display it.

Command:

```
MySQL 8.0 Command Line Client

mysql> drop view empview;
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE VIEW EMP_VIEW AS SELECT ENAME, JOB, HIREDATE, MGR, SAL, COMM, DEPTNO FROM EMPVIEW;
ERROR 1146 (42S02): Table 'trialdb.empview' doesn't exist
mysql> CREATE VIEW EMPVIEW AS SELECT EMPNO ENAME, JOB, HIREDATE, MGR, SAL, COMM, DEPTNO FROM EMP WHERE EMPNO = 7369 OR EMPNO = 7782;
Query OK, 0 rows affected (0.03 sec)

mysql> CREATE VIEW EMP_VIEW AS SELECT ENAME, JOB, HIREDATE, MGR, SAL, COMM, DEPTNO FROM EMPVIEW;
Query OK, 0 rows affected (0.02 sec)

mysql> select*from emp_view;
+-----+-----+-----+-----+-----+-----+-----+
| ENAME | JOB    | HIREDATE | MGR   | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | CLERK  | 1980-12-17 | 7902 | 800    | NULL   | 20      |
| 7782 | MANAGER | 1981-06-09 | 7839 | 2450   | NULL   | 10      |
+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql>
```

7)Create a joint view based on emp table and dept table by extracting emp no, name, hire date, dept name and location

Command:

```

MySQL 8.0 Command Line Client

mysql> drop view empview;
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE VIEW EMPVIEW AS SELECT EMPNO, ENAME, HIREDATE, DNAME, LOC FROM EMP, DEPT;
Query OK, 0 rows affected (0.03 sec)

mysql> select*from empview;
+-----+-----+-----+-----+-----+
| EMPNO | ENAME | HIREDATE | DNAME  | LOC    |
+-----+-----+-----+-----+-----+
| 7369  | SMITH | 1980-12-17 | ACCOUNTING | NEW YORK
| 7369  | SMITH | 1980-12-17 | RESEARCH   | DALLAS
| 7369  | SMITH | 1980-12-17 | SALES     | CHICAGO
| 7369  | SMITH | 1980-12-17 | OPERATIONS | BOSTON
| 7499  | ALLEN | 1981-02-20 | ACCOUNTING | NEW YORK
| 7499  | ALLEN | 1981-02-20 | RESEARCH   | DALLAS
| 7499  | ALLEN | 1981-02-20 | SALES     | CHICAGO
| 7499  | ALLEN | 1981-02-20 | OPERATIONS | BOSTON
| 7521  | WARD  | 1981-02-22 | ACCOUNTING | NEW YORK
| 7521  | WARD  | 1981-02-22 | RESEARCH   | DALLAS
| 7521  | WARD  | 1981-02-22 | SALES     | CHICAGO
| 7521  | WARD  | 1981-02-22 | OPERATIONS | BOSTON
| 7566  | JONES | 1981-04-02 | ACCOUNTING | NEW YORK
| 7566  | JONES | 1981-04-02 | RESEARCH   | DALLAS
| 7566  | JONES | 1981-04-02 | SALES     | CHICAGO
| 7566  | JONES | 1981-04-02 | OPERATIONS | BOSTON
| 7654  | MARTIN | 1981-09-28 | ACCOUNTING | NEW YORK
| 7654  | MARTIN | 1981-09-28 | RESEARCH   | DALLAS
| 7654  | MARTIN | 1981-09-28 | SALES     | CHICAGO
| 7654  | MARTIN | 1981-09-28 | OPERATIONS | BOSTON
| 7698  | BLAKE | 1981-05-01 | ACCOUNTING | NEW YORK
| 7698  | BLAKE | 1981-05-01 | RESEARCH   | DALLAS
| 7698  | BLAKE | 1981-05-01 | SALES     | CHICAGO
| 7698  | BLAKE | 1981-05-01 | OPERATIONS | BOSTON
| 7782  | CLARK | 1981-06-09 | ACCOUNTING | NEW YORK
| 7782  | CLARK | 1981-06-09 | RESEARCH   | DALLAS
| 7782  | CLARK | 1981-06-09 | SALES     | CHICAGO
| 7782  | CLARK | 1981-06-09 | OPERATIONS | BOSTON
| 7788  | SCOTT | 1987-07-13 | ACCOUNTING | NEW YORK
| 7788  | SCOTT | 1987-07-13 | RESEARCH   | DALLAS
| 7788  | SCOTT | 1987-07-13 | SALES     | CHICAGO
| 7788  | SCOTT | 1987-07-13 | OPERATIONS | BOSTON
| 7839  | KING  | 1981-11-17 | ACCOUNTING | NEW YORK
| 7839  | KING  | 1981-11-17 | RESEARCH   | DALLAS
| 7839  | KING  | 1981-11-17 | SALES     | CHICAGO
| 7839  | KING  | 1981-11-17 | OPERATIONS | BOSTON
| 7844  | TURNER | 1981-09-08 | ACCOUNTING | NEW YORK
| 7844  | TURNER | 1981-09-08 | RESEARCH   | DALLAS
| 7844  | TURNER | 1981-09-08 | SALES     | CHICAGO
| 7844  | TURNER | 1981-09-08 | OPERATIONS | BOSTON
| 7876  | ADAMS | 1987-05-23 | ACCOUNTING | NEW YORK
| 7876  | ADAMS | 1987-05-23 | RESEARCH   | DALLAS
| 7876  | ADAMS | 1987-05-23 | SALES     | CHICAGO
| 7876  | ADAMS | 1987-05-23 | OPERATIONS | BOSTON
| 7900  | JAMES | 1981-12-03 | ACCOUNTING | NEW YORK
| 7900  | JAMES | 1981-12-03 | RESEARCH   | DALLAS
| 7900  | JAMES | 1981-12-03 | SALES     | CHICAGO
| 7900  | JAMES | 1981-12-03 | OPERATIONS | BOSTON
| 7902  | FORD  | 1981-12-03 | ACCOUNTING | NEW YORK
| 7902  | FORD  | 1981-12-03 | RESEARCH   | DALLAS
| 7902  | FORD  | 1981-12-03 | SALES     | CHICAGO
| 7902  | FORD  | 1981-12-03 | OPERATIONS | BOSTON
| 7934  | MILLER | 1982-01-23 | ACCOUNTING | NEW YORK
| 7934  | MILLER | 1982-01-23 | RESEARCH   | DALLAS
| 7934  | MILLER | 1982-01-23 | SALES     | CHICAGO
| 7934  | MILLER | 1982-01-23 | OPERATIONS | BOSTON
+-----+-----+-----+-----+-----+
56 rows in set (0.01 sec)

```

```

MySQL 8.0 Command Line Client

+-----+-----+-----+-----+-----+
| 7698  | BLAKE | 1981-05-01 | SALES     | CHICAGO
| 7698  | BLAKE | 1981-05-01 | OPERATIONS | BOSTON
| 7782  | CLARK | 1981-06-09 | ACCOUNTING | NEW YORK
| 7782  | CLARK | 1981-06-09 | RESEARCH   | DALLAS
| 7782  | CLARK | 1981-06-09 | SALES     | CHICAGO
| 7782  | CLARK | 1981-06-09 | OPERATIONS | BOSTON
| 7788  | SCOTT | 1987-07-13 | ACCOUNTING | NEW YORK
| 7788  | SCOTT | 1987-07-13 | RESEARCH   | DALLAS
| 7788  | SCOTT | 1987-07-13 | SALES     | CHICAGO
| 7788  | SCOTT | 1987-07-13 | OPERATIONS | BOSTON
| 7839  | KING  | 1981-11-17 | ACCOUNTING | NEW YORK
| 7839  | KING  | 1981-11-17 | RESEARCH   | DALLAS
| 7839  | KING  | 1981-11-17 | SALES     | CHICAGO
| 7839  | KING  | 1981-11-17 | OPERATIONS | BOSTON
| 7844  | TURNER | 1981-09-08 | ACCOUNTING | NEW YORK
| 7844  | TURNER | 1981-09-08 | RESEARCH   | DALLAS
| 7844  | TURNER | 1981-09-08 | SALES     | CHICAGO
| 7844  | TURNER | 1981-09-08 | OPERATIONS | BOSTON
| 7876  | ADAMS | 1987-05-23 | ACCOUNTING | NEW YORK
| 7876  | ADAMS | 1987-05-23 | RESEARCH   | DALLAS
| 7876  | ADAMS | 1987-05-23 | SALES     | CHICAGO
| 7876  | ADAMS | 1987-05-23 | OPERATIONS | BOSTON
| 7900  | JAMES | 1981-12-03 | ACCOUNTING | NEW YORK
| 7900  | JAMES | 1981-12-03 | RESEARCH   | DALLAS
| 7900  | JAMES | 1981-12-03 | SALES     | CHICAGO
| 7900  | JAMES | 1981-12-03 | OPERATIONS | BOSTON
| 7902  | FORD  | 1981-12-03 | ACCOUNTING | NEW YORK
| 7902  | FORD  | 1981-12-03 | RESEARCH   | DALLAS
| 7902  | FORD  | 1981-12-03 | SALES     | CHICAGO
| 7902  | FORD  | 1981-12-03 | OPERATIONS | BOSTON
| 7934  | MILLER | 1982-01-23 | ACCOUNTING | NEW YORK
| 7934  | MILLER | 1982-01-23 | RESEARCH   | DALLAS
| 7934  | MILLER | 1982-01-23 | SALES     | CHICAGO
| 7934  | MILLER | 1982-01-23 | OPERATIONS | BOSTON
+-----+-----+-----+-----+-----+
56 rows in set (0.01 sec)

```

8)Write a query to delete all entries from a view where emp name is "miller".
Command:

```
MySQL 8.0 Command Line Client
mysql> drop view empview;
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE VIEW EMPVIEW AS SELECT *FROM EMP WHERE ENAME = 'MILLER';
Query OK, 0 rows affected (0.05 sec)

mysql> select*from empview;
+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job  | Mgr   | hiredate | SAL   | comm |
+-----+-----+-----+-----+-----+-----+
| 7934  | MILLER | CLERK | 7782 | 1982-01-23 | 1300 | NULL  |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)

mysql> -
```

```
MySQL 8.0 Command Line Client
mysql> DELETE FROM EMPVIEW;
Query OK, 1 row affected (0.01 sec)

mysql> select*from empview;
Empty set (0.00 sec)

mysql>
```

9) Write a query to demonstrate insertion of a value in a view.
Command:

The screenshot shows a Windows desktop environment with a MySQL 8.0 Command Line Client window open. The window title is "MySQL 8.0 Command Line Client". The command line shows:

```
mysql> INSERT INTO EMPVIEW VALUES(1,'Peter','clerk', 7902,'1980-12-17', 800, NULL, 20);
Query OK, 1 row affected (0.02 sec)

mysql> select*from empview;
+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job  | Mgr   | hiredate | SAL   | comm |
+-----+-----+-----+-----+-----+-----+-----+
| 7934  | MILLER | CLERK | 7782 | 1982-01-23 | 1300  | NULL  |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

The taskbar at the bottom of the screen shows several pinned icons and the system tray with the date and time (04-05-2021, 23:20).

Exercise 7: Working with sql sub-queries and transactions.

1. Write a subquery to create backup of dept.table.
Command:

```

MySQL 8.0 Command Line Client
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE trialDB;
Database changed
mysql> Create Table DEPT_BACKUP(DEPTNO int(2),DNAME varchar(15), LOC varchar(15),PRIMARY KEY(deptno));
Query OK, 0 rows affected, 1 warning (0.12 sec)

mysql> INSERT INTO DEPT_BACKUPSELECT * FROM DEPT;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '/* FROM DEPT' at line 1
mysql> INSERT INTO DEPT_BACKUP SELECT*FROM DEPT;
Query OK, 4 rows affected (0.02 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> SELECT*FROM DEPT_backup;
+-----+-----+-----+
| DEPTNO | DNAME   | LOC    |
+-----+-----+-----+
| 10    | ACCOUNTING | NEW YORK |
| 20    | RESEARCH   | DALLAS  |
| 30    | SALES     | CHICAGO |
| 40    | OPERATIONS | BOSTON  |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```

2. Write a subquery to select student from studentinfo where age of student is more than or equal to 9. Select students whose marks are greater than or equal to 80.

Command:

```

MySQL 8.0 Command Line Client
mysql> SELECT SAL*10 AS UPDATED_SAL FROM EMP WHERE SAL >= 2;
+-----+
| UPDATED_SAL |
+-----+
| 8000      |
| 8000      |
| 16000     |
| 12500     |
| 29750     |
| 12500     |
| 28500     |
| 24500     |
| 30000     |
| 50000     |
| 15000     |
| 11000     |
| 9500      |
| 30000     |
| 13000     |
+-----+
15 rows in set (0.01 sec)

mysql>

```

3. Write a subquery to select student from studentinfo where age of student is more than or equal to 9 OR(do any one) select students whose marks are more than or equal to (some value according to your table).

Command:

```

Select MySQL 8.0 Command Line Client
96, 870114); insert into Student values( 'Damica' , 4,19, 70.00, 800474); insert into Student values( 'Akshay' , 5,19, 97.80, 500124); insert into Student values( 'Farah' , 6,16, 37.54, 9008484); insert into Student values( 'Om' , 7, 20,31.23, 609424); insert into Student values( 'Ram' , 8,17, 68.20, 1000474);insert into Student values( 'Raj' , 9,18,78.04, 2006374);insert into Student values( 'Rahul' , 10, 29,37.31, 9006374); insert into Student values( 'Sonam' , 11,17, 20.00, 370015);
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.00 sec)

mysql> select*from student;
+-----+-----+-----+-----+-----+
| Name | RollNo | Age | Marks | PhoneNo |
+-----+-----+-----+-----+-----+
| Ajay | 1      | 17   | 80.00 | 230115 |
| Prachi | 2      | 20   | 94.00 | 329501 |
| Ragini | 3      | 17   | 65.06 | 870114 |
| Damica | 4      | 19   | 10.00 | 800474 |
| Akshay | 5      | 19   | 97.80 | 500124 |
| Farah | 6      | 16   | 37.54 | 9008484 |
| Om     | 7      | 20   | 31.23 | 609424 |
| Ram    | 8      | 17   | 68.20 | 1000474 |
| Raj    | 9      | 18   | 78.04 | 2006374 |
| Rahul | 10     | 29   | 37.31 | 9006374 |
| Sonam | 11     | 17   | 20.00 | 370015 |
+-----+-----+-----+-----+-----+
11 rows in set (0.00 sec)

Windows Type here to search 14:43
ENG 05-05-2021 9

```

4. Write a query to demonstrate the use of commit.

Command:

```

MySQL 8.0 Command Line Client

mysql> SELECT SAL*10 AS UPDATED_SAL FROM EMP WHERE SAL >= 2;
+-----+
| UPDATED_SAL |
+-----+
| 8000 |
| 8000 |
| 16000 |
| 12500 |
| 29750 |
| 12500 |
| 28500 |
| 24500 |
| 30000 |
| 50000 |
| 15000 |
| 11000 |
| 9500 |
| 30000 |
| 13000 |
+-----+
15 rows in set (0.00 sec)

mysql> 
Windows Type here to search 14:48
ENG 05-05-2021 9

```

5. Write a query to demonstrate the use of rollback.

Command:

```

MySQL 8.0 Command Line Client
Query OK, 1 row affected (0.01 sec)

mysql> Select*from student;
+-----+-----+-----+-----+-----+
| Name | RollNo | Age | Marks | PhoneNo |
+-----+-----+-----+-----+-----+
| Ajay | 1 | 17 | 80.00 | 230115 |
| Prachi | 2 | 20 | 94.88 | 329501 |
| Ragini | 3 | 17 | 65.96 | 870114 |
| Danica | 4 | 19 | 70.00 | 800474 |
| Akshay | 5 | 19 | 97.88 | 500124 |
| Farah | 6 | 16 | 37.54 | 9008484 |
| Om | 7 | 20 | 31.23 | 609424 |
| Ram | 8 | 17 | 68.20 | 1000474 |
| Rahul | 10 | 29 | 37.31 | 9006374 |
| Sonam | 11 | 17 | 20.00 | 370015 |
+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql> ROLLBACK;
Query OK, 0 rows affected (0.01 sec)

mysql> Select*from student;
+-----+-----+-----+-----+-----+
| Name | RollNo | Age | Marks | PhoneNo |
+-----+-----+-----+-----+-----+
| Ajay | 1 | 17 | 80.00 | 230115 |
| Prachi | 2 | 20 | 94.88 | 329501 |
| Ragini | 3 | 17 | 65.96 | 870114 |
| Danica | 4 | 19 | 70.00 | 800474 |
| Akshay | 5 | 19 | 97.88 | 500124 |
| Farah | 6 | 16 | 37.54 | 9008484 |
| Om | 7 | 20 | 31.23 | 609424 |
| Ram | 8 | 17 | 68.20 | 1000474 |
| Raj | 9 | 18 | 78.04 | 2006374 |
| Rahul | 10 | 29 | 37.31 | 9006374 |
| Sonam | 11 | 17 | 20.00 | 370015 |
+-----+-----+-----+-----+-----+
11 rows in set (0.01 sec)

mysql>

```

6. Write set of queries demonstrating a transaction with creation of save points. Demonstrate the rollback query on a particular save-point.

Command:

```

MySQL 8.0 Command Line Client
mysql> Select*from student;
+-----+-----+-----+-----+-----+
| Name | RollNo | Age | Marks | PhoneNo |
+-----+-----+-----+-----+-----+
| Ajay | 1 | 17 | 80.00 | 230115 |
| Prachi | 2 | 20 | 94.88 | 329501 |
| Ragini | 3 | 17 | 65.96 | 870114 |
| Danica | 4 | 19 | 70.00 | 800474 |
| Akshay | 5 | 19 | 97.88 | 500124 |
| Farah | 6 | 16 | 37.54 | 9008484 |
| Om | 7 | 20 | 31.23 | 609424 |
| Ram | 8 | 17 | 68.20 | 1000474 |
| Raj | 9 | 18 | 78.04 | 2006374 |
| Rahul | 10 | 29 | 37.31 | 9006374 |
| Sonam | 11 | 17 | 20.00 | 370015 |
+-----+-----+-----+-----+-----+
11 rows in set (0.00 sec)

mysql> Set autocommit = 0;
Query OK, 0 rows affected (0.00 sec)

mysql> SAVEPOINT SP1;
Query OK, 0 rows affected (0.00 sec)

mysql> Insert into StudentValues( 'John', 12, 19,53.04, 6606374);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near ''John', 12, 19,53
.04, 6606374' at line 1
mysql> Insert into StudentValues( 'Joey', 12, 19,53.04, 7306374);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near ''Joey', 12, 19,53
.04, 7306374' at line 1
mysql> Insert into Student Values( 'Johny', 12, 19,53.04, 7306374);
Query OK, 1 row affected (0.01 sec)

mysql> SAVEPOINT SP2;
Query OK, 0 rows affected (0.00 sec)

mysql> Insert into StudentValues( 'Mansi', 13, 21,99.34, 826374);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near ''Mansi', 13, 21,9
.34, 826374' at line 1
mysql> Insert into Student Values( 'Mansi', 13, 21,99.34, 826374);

```

```
MySQL 8.0 Command Line Client
mysql> Select*from student;
+-----+-----+-----+-----+-----+
| Name | RollNo | Age | Marks | PhoneNo |
+-----+-----+-----+-----+-----+
| Ajay | 1 | 17 | 88.00 | 230115 |
| Prachi | 2 | 20 | 94.80 | 329501 |
| Ragini | 3 | 17 | 65.96 | 870114 |
| Danica | 4 | 19 | 78.00 | 800474 |
| Akshay | 5 | 19 | 97.80 | 500124 |
| Farah | 6 | 16 | 37.54 | 9008484 |
| Om | 7 | 20 | 31.23 | 609424 |
| Raj | 9 | 18 | 78.04 | 2006374 |
| Rahul | 10 | 29 | 37.31 | 9006374 |
| Sonam | 11 | 17 | 20.00 | 370015 |
| Johny | 12 | 19 | 53.04 | 7306374 |
| Mansi | 13 | 21 | 99.34 | 826374 |
+-----+-----+-----+-----+
12 rows in set (0.00 sec)

mysql> ROLLBACK TO SP2;
Query OK, 0 rows affected (0.01 sec)

mysql> Select*from student;
+-----+-----+-----+-----+-----+
| Name | RollNo | Age | Marks | PhoneNo |
+-----+-----+-----+-----+-----+
| Ajay | 1 | 17 | 88.00 | 230115 |
| Prachi | 2 | 20 | 94.80 | 329501 |
| Ragini | 3 | 17 | 65.96 | 870114 |
| Danica | 4 | 19 | 78.00 | 800474 |
| Akshay | 5 | 19 | 97.80 | 500124 |
| Farah | 6 | 16 | 37.54 | 9008484 |
| Om | 7 | 20 | 31.23 | 609424 |
| Ram | 8 | 17 | 68.28 | 1000474 |
| Raj | 9 | 18 | 78.04 | 2006374 |
| Rahul | 10 | 29 | 37.31 | 9006374 |
| Sonam | 11 | 17 | 20.00 | 370015 |
| Johny | 12 | 19 | 53.04 | 7306374 |
+-----+-----+-----+-----+
12 rows in set (0.00 sec)

mysql>
```

Phyloinformatics

Exercise 1:

Phylogenetics Analysis In MEGA software:

1. Perform distance based phylogenetic analysis of hemoglobin sequences of 10 different organisms (protein sequences)

Answer:

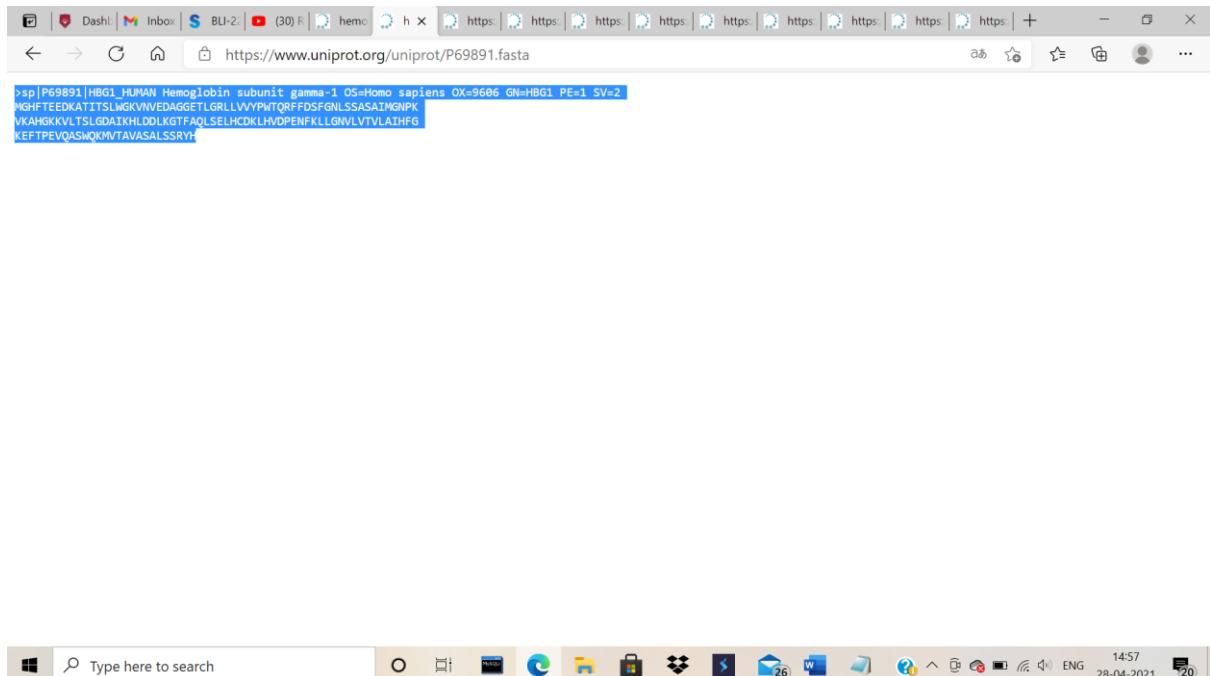
Select your 10 hemoglobin protein sequence for different organisms from uniprot:

```
>sp|P02024|= Gorilla Hemoglobin  
>sp|P68872|= Pan paniscus Hemoglobin  
>sp|P02112|= CHICK Hemoglobin  
>sp|P02067|= PIG Hemoglobin  
>sp|P02075|= SHEEP Hemoglobin  
>sp|P09905|= Physeter macrocephalus Hemoglobin  
>sp|P04244|= Panthera pardus orientalis Hemoglobin  
>sp|P02094|= Mesocricetus auratus Hemoglobin  
>sp|P60524|= Canis lupus Hemoglobin  
>sp|P18983|= Ailuropoda melanoleuca
```

The screenshot shows the UniProtKB 2021_02 results page. The search term "hemoglobin protein" is entered in the search bar. The results table displays 25 of 26,475 entries, filtered by "Reviewed (Swiss-Prot)". The columns include Entry, Entry name, Protein names, Gene names, Organism, and Length. The first two entries are shown:

Entry	Entry name	Protein names	Gene names	Organism	Length
P9WN23	TRHBO_MYCTU	Group 2 truncated hemoglobin GlbO	glbO	Mycobacterium tuberculosis (strain ATCC 25618 / H37Rv)	128
P69891	HBG1_HUMAN	Hemoglobin subunit gamma-1	HBG1	Homo sapiens (Human)	147

Go to sequences and download the fasta format of each organism:



Copy paste each fasta sequence in notepad for all 10 different organisms:
Paste fasta sequence in notepad as hemoglobin.fas extension:

```
C:\phylip-3.695\exe\hemoglobin.fas - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
outtree_hema_char.mt outfile_hema_char.mt outfile_hemo_pan_char outfile_hemo_pari_char seq.fas hemoglobin.fas
1 >sp|P02024|HBB_GORGO Hemoglobin subunit beta OS=Gorilla gorilla gorilla OX=9595 GN=HBB PE=1 SV=2
2 MVHLTPEEKSAVTALWGKVNVDEVGGEALGRLLVVYPWTQRFFESFGDLSTPDAMGNPK
3 VKAHGKKVLTGAFSDGLAHLDNLKGTFATLSLHCDKLHVDPENFKLLGNVLVCVLAHHFG
4 KEFTPBVQAYQKVVAGVANALAHKYH
5
6 >sp|P68872|HBB_PANPA Hemoglobin subunit beta OS=Pan paniscus OX=9597 GN=HBB PE=1 SV=2
7 MVHLTPEEKSAVTALWGKVNVDEVGGEALGRLLVVYPWTQRFFESFGDLSTPDAMGNPK
8 VKAHGKKVLTGAFSDGLAHLDNLKGTFATLSLHCDKLHVDPENFRLLGNVLVCVLAHHFG
9 KEFTPBVQAYQKVVAGVANALAHKYH
10
11 >sp|P02112|HBB_CHICK Hemoglobin subunit beta OS=Gallus gallus OX=9031 GN=HBB PE=1 SV=2
12 MVHLTAAEKQLITGELWGKVNVDEVGGEALGRLLVVYPWTQRFFESFGDLSTPDAMGNPK
13 VRAHGKKVLTSGDAVKNLDNIKNTFSQLSELHCDKLHVDPENFRLLGNVLVCVLAHHFG
14 KDFTPECQAAQKLVRVVAHALARKYH
15
16 >sp|P02067|HBB_PIG Hemoglobin subunit beta OS=Sus scrofa OX=9823 GN=HBB PE=1 SV=3
17 MVHLSAEEKEAVLGLWGKVNVDEVGGEALGRLLVVYPWTQRFFESFGDLSTPDAMGNPK
18 VKAHGKKVLTGAFSDGLAHLDNLKGTFAKLSLHCDKLHVDPENFRLLGNVLVCVLAHHFG
19 HDPNPNVQAAQKVVAGVANALAHKYH
20
21 >sp|P02075|HBB_SHEEP Hemoglobin subunit beta OS=Ovis aries OX=9940 GN=HBB PE=1 SV=2
22 MLTAEEKAATVGFWGKVKVDEVGAEALGRLLVVYPWTQRFFEHFGDLSNADAVMNPKVK
23 AHGKKVLDTSFNGMKHLDDLKGTAQQLSELHCDKLHVDPENFRLLGNVLVVVLAHHGNE
24 FTFVLIQADFQKVVAGVANALAHKYH
25
26 >sp|P09905|HBB_PHYMC Hemoglobin subunit beta-1/2 OS=Physeter macrocephalus OX=9755 GN=HBB PE=1 SV=1
27 VHLTGEEKSLTALWAKVNVEEIGGEALGRLLVVYPWTQRFFEHFGDLSNADAVMNPKVK
28 KKHGQQKVLASFEGGLKHLDDNLKGTFATLSLHCDKLHVDPENFRLLGNVLVVVLAHRHFGK
29 EFTPELQTAYQKVVAGVANALAHKYH
30
31 >sp|P04244|HBB_PANPO Hemoglobin subunit beta OS=Panthera pardus orientalis OX=9692 GN=HBB PE=1 SV=2
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Open MEGA software and go to Edit/Built Alignment: