# LAB : 5

## TOPIC :

SQL QUERIES

## Requrements :

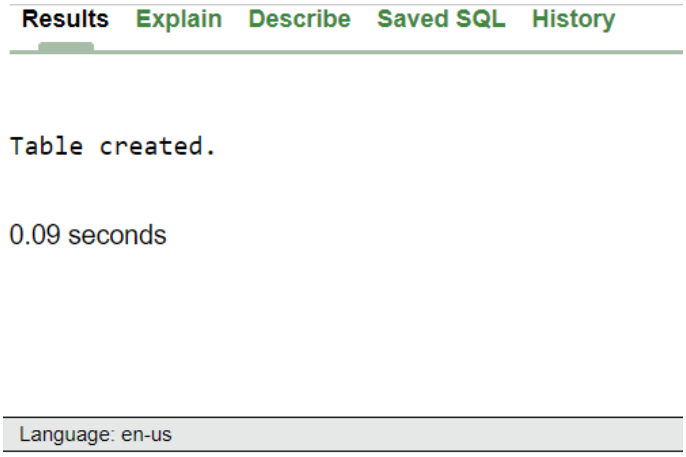
(a) Windows PC (Windows 7/8/10) / Mac

(b) Oracle XE database

## Implementation :

**1. Create a table EMP with column empid, name, birthdate, email, position, and department.**

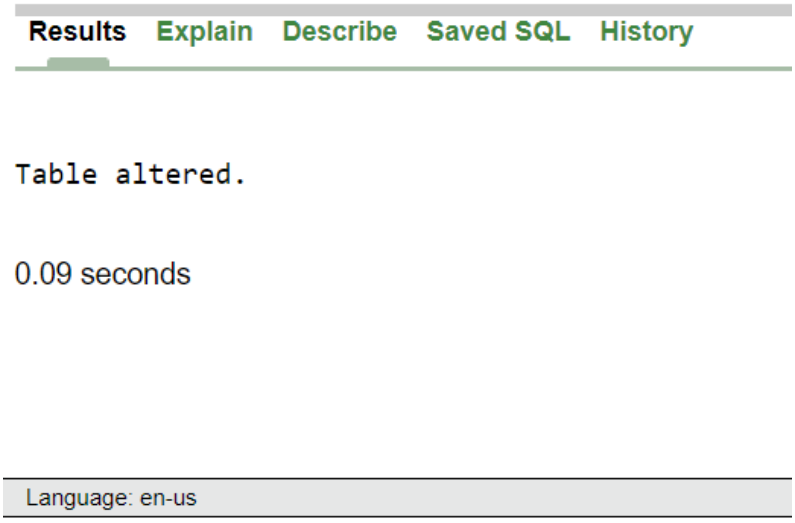
```
CREATE TABLE emp_table(
                emp_id int,
                e_name varchar(20),
                email varchar(20),
                birthday date,
                position varchar(20),
                dept_id int,
                salary int DEFAULT 10000       );
```




**2. Alter the table EMP, redefining the fields such that empid, name must not contain null values.**

```
ALTER TABLE emp_table
        MODIFY (emp_id int NOT NULL,
                e_name varchar(20) NOT NULL,
                dept_id int NOT NULL);
-- ALTER TABLE emp_table
--      ADD salary int DEFAULT 10000

ALTER TABLE emp_table
        ADD PRIMARY KEY(emp_id)
```



**3. Insert data in all the fields. Insert 20 records.**

```
INSERT INTO emp_table (emp_id,e_name,email,birthday,position,dept_id,salary)
                VALUES
                        (1,'A','a@gmail.com',to_date('1976-05-02','YYYY-MM-
DD'),'SDE1',1,75000),
                        (2,'B','b@gmail.com',to_date('1977-04-09','YYYY-MM-
DD'),'SDE2',1,90000),
                        (3,'C','c@gmail.com',to_date('1974-07-08','YYYY-MM-
DD'),'SDE1',2,75000),
                        (4,'D','d@gmail.com',to_date('1973-08-12','YYYY-MM-
DD'),'SDE2',2,90000),
                        (5,'E','e@gmail.com',to_date('1976-05-02','YYYY-MM-
DD'),'SDE1',3,75000),
                        (6,'F','f@gmail.com',to_date('1977-04-09','YYYY-MM-
DD'),'SDE2',3,90000),
                        (7,'G','g@gmail.com',to_date('1974-07-08','YYYY-MM-
DD'),'SDE1',4,75000),
                        (8,'H','h@gmail.com',to_date('1973-08-12','YYYY-MM-
DD'),'SDE2',4,90000),
                        (9,'I','i@gmail.com',to_date('1976-05-02','YYYY-MM-
DD'),'SDE1',5,75000),
                        (10,'J','j@gmail.com',to_date('1977-04-09','YYYY-MM-
DD'),'SDE2',5,90000),
                        (11,'K','k@gmail.com',to_date('1974-07-08','YYYY-MM-
DD'),'SDE1',6,75000),
                        (12,'L','l@gmail.com',to_date('1973-08-12','YYYY-MM-
DD'),'SDE2',6,90000),
                        (13,'M','m@gmail.com',to_date('1976-05-02','YYYY-MM-
DD'),'SDE1',7,75000),
                        (14,'N','n@gmail.com',to_date('1977-04-09','YYYY-MM-
DD'),'SDE2',7,90000),
                        (15,'O','o@gmail.com',to_date('1974-07-08','YYYY-MM-
DD'),'SDE1',8,75000),
                        (16,'P','p@gmail.com',to_date('1973-08-12','YYYY-MM-
DD'),'SDE2',8,90000),
```

```
                    (17,'Q','q@gmail.com',to_date('1976-05-02','YYYY-MM-
DD'),'SDE1',9,75000),
                    (18,'R','r@gmail.com',to_date('1977-04-09','YYYY-MM-
DD'),'SDE2',9,90000),
                    (19,'S','s@gmail.com',to_date('1974-07-08','YYYY-MM-
DD'),'SDE1',10,75000),
                    (20,'T','t@gmail.com',to_date('1973-08-12','YYYY-MM-
DD'),'SDE2',10,90000);



SELECT *from emp_table ;
```

Results Explain Describe Saved SQL History

| EMP_ID | E_NAME | EMAIL | BIRTHDAY | POSITION | DEPT_ID | SALARY |
|---|---|---|---|---|---|---|
| 1 | A | a@gmail.com | 02-MAY-76 | SDE1 | 1 | 75000 |
| 2 | B | b@gmail.com | 09-APR-77 | SDE2 | 1 | 90000 |
| 3 | C | c@gmail.com | 08-JUL-74 | SDE1 | 2 | 75000 |
| 4 | D | d@gmail.com | 12-AUG-73 | SDE2 | 2 | 90000 |
| 5 | E | e@gmail.com | 02-MAY-76 | SDE1 | 3 | 75000 |
| 6 | F | f@gmail.com | 09-APR-77 | SDE2 | 3 | 90000 |
| 7 | G | g@gmail.com | 08-JUL-74 | SDE1 | 4 | 75000 |
| 8 | H | h@gmail.com | 12-AUG-73 | SDE2 | 4 | 90000 |
| 9 | I | i@gmail.com | 02-MAY-76 | SDE1 | 5 | 75000 |
| 10 | J | j@gmail.com | 09-APR-77 | SDE2 | 5 | 90000 |
| 11 | K | k@gmail.com | 08-JUL-74 | SDE1 | 6 | 75000 |
| 12 | L | l@gmail.com | 12-AUG-73 | SDE2 | 6 | 90000 |
| 13 | M | m@gmail.com | 02-MAY-76 | SDE1 | 7 | 75000 |
| 14 | N | n@gmail.com | 09-APR-77 | SDE2 | 7 | 90000 |
| 15 | O | o@gmail.com | 08-JUL-74 | SDE1 | 8 | 75000 |
| 16 | P | p@gmail.com | 12-AUG-73 | SDE2 | 8 | 90000 |
| 17 | Q | q@gmail.com | 02-MAY-76 | SDE1 | 9 | 75000 |
| 18 | R | r@gmail.com | 09-APR-77 | SDE2 | 9 | 90000 |
| 19 | S | s@gmail.com | 08-JUL-74 | SDE1 | 10 | 75000 |
| 20 | T | t@gmail.com | 12-AUG-73 | SDE2 | 10 | 90000 |

**4. Create another table DEPARTMENT, such that deptid, name, location, empid are its fields.**

```
CREATE TABLE dept_table (dept_id INT, d_name Varchar(30), loc Varchar(20))
```

**5. Insert 10 records to the table.**

```
INSERT INTO dept_table (dept_id, d_name,loc) VALUES
(1,'Dep1','DELHI'),
(2,'Dep2','MUMBAI'),
(3,'Dep3','DELHI'),
(4,'Dep4','MUMBAI'),
(5,'Dep5','MUMBAI'),
(6,'Dep6','DELHI'),
(7,'Dep7','BANGALORE'),
(8,'Dep8','DELHI'),
(9,'Dep9','BANGALORE'),
(10,'Dep10','DELHI');
```

Results Explain Describe Saved SQL History

| DEPT_ID | D_NAME | LOC |
|---|---|---|
| 1 | Dep1 | DELHI |
| 2 | Dep2 | MUMBAI |
| 3 | Dep3 | DELHI |
| 4 | Dep4 | MUMBAI |
| 5 | Dep5 | MUMBAI |
| 6 | Dep6 | DELHI |
| 7 | Dep7 | BANGALORE |
| 8 | Dep8 | DELHI |
| 9 | Dep9 | BANGALORE |
| 10 | Dep10 | DELHI |

10 rows returned in 0.02 seconds CSV Export

Language: en-us

**6. Retrieve the data from EMP table.**

```
SELECT *from emp_table;
```

Results Explain Describe Saved SQL History

| EMP_ID | E_NAME | EMAIL | BIRTHDAY | POSITION | DEPT_ID | SALARY |
|---|---|---|---|---|---|---|
| 1 | A | a@gmail.com | 02-MAY-76 | SDE1 | 1 | 75000 |
| 2 | B | b@gmail.com | 09-APR-77 | SDE2 | 1 | 90000 |
| 3 | C | c@gmail.com | 08-JUL-74 | SDE1 | 2 | 75000 |
| 4 | D | d@gmail.com | 12-AUG-73 | SDE2 | 2 | 90000 |
| 5 | E | e@gmail.com | 02-MAY-76 | SDE1 | 3 | 75000 |
| 6 | F | f@gmail.com | 09-APR-77 | SDE2 | 3 | 90000 |
| 7 | G | g@gmail.com | 08-JUL-74 | SDE1 | 4 | 75000 |
| 8 | H | h@gmail.com | 12-AUG-73 | SDE2 | 4 | 90000 |
| 9 | I | i@gmail.com | 02-MAY-76 | SDE1 | 5 | 75000 |
| 10 | J | j@gmail.com | 09-APR-77 | SDE2 | 5 | 90000 |
| 11 | K | k@gmail.com | 08-JUL-74 | SDE1 | 6 | 75000 |
| 12 | L | l@gmail.com | 12-AUG-73 | SDE2 | 6 | 90000 |
| 13 | M | m@gmail.com | 02-MAY-76 | SDE1 | 7 | 75000 |
| 14 | N | n@gmail.com | 09-APR-77 | SDE2 | 7 | 90000 |
| 15 | O | o@gmail.com | 08-JUL-74 | SDE1 | 8 | 75000 |
| 16 | P | p@gmail.com | 12-AUG-73 | SDE2 | 8 | 90000 |
| 17 | Q | q@gmail.com | 02-MAY-76 | SDE1 | 9 | 75000 |
| 18 | R | r@gmail.com | 09-APR-77 | SDE2 | 9 | 90000 |
| 19 | S | s@gmail.com | 08-JUL-74 | SDE1 | 10 | 75000 |
| 20 | T | t@gmail.com | 12-AUG-73 | SDE2 | 10 | 90000 |

20 rows returned in 0.00 seconds CSV Export

Language: en-us

## 7. Join both the tables EMP and DEPARTMENT.

```
SELECT *FROM emp_table JOIN dept_table
        ON emp_table.dept_id = dept_table.dept_id
        ORDER BY emp_id;
```

Results Explain Describe Saved SQL History

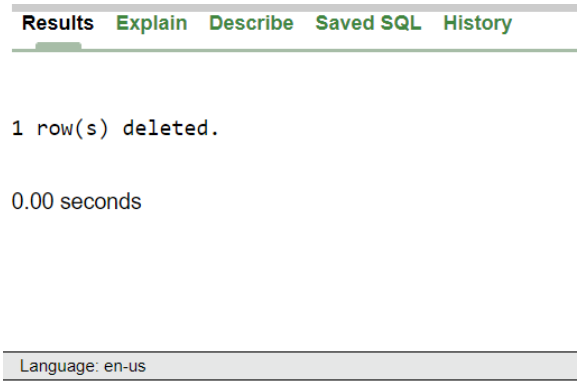
| EMP_ID | E_NAME | EMAIL | BIRTHDAY | POSITION | DEPT_ID | SALARY | DEPT_ID | D_NAME | LOC |
|---|---|---|---|---|---|---|---|---|---|
| 1 | A | a@gmail.com | 02-MAY-76 | SDE1 | 1 | 75000 | 1 | Dep1 | DELHI |
| 2 | B | b@gmail.com | 09-APR-77 | SDE2 | 1 | 90000 | 1 | Dep1 | DELHI |
| 3 | C | c@gmail.com | 08-JUL-74 | SDE1 | 2 | 75000 | 2 | Dep2 | MUMBAI |
| 4 | D | d@gmail.com | 12-AUG-73 | SDE2 | 2 | 90000 | 2 | Dep2 | MUMBAI |
| 5 | E | e@gmail.com | 02-MAY-76 | SDE1 | 3 | 75000 | 3 | Dep3 | DELHI |
| 6 | F | f@gmail.com | 09-APR-77 | SDE2 | 3 | 90000 | 3 | Dep3 | DELHI |
| 7 | G | g@gmail.com | 08-JUL-74 | SDE1 | 4 | 75000 | 4 | Dep4 | MUMBAI |
| 8 | H | h@gmail.com | 12-AUG-73 | SDE2 | 4 | 90000 | 4 | Dep4 | MUMBAI |
| 9 | I | i@gmail.com | 02-MAY-76 | SDE1 | 5 | 75000 | 5 | Dep5 | MUMBAI |
| 10 | J | j@gmail.com | 09-APR-77 | SDE2 | 5 | 90000 | 5 | Dep5 | MUMBAI |
| 11 | K | k@gmail.com | 08-JUL-74 | SDE1 | 6 | 75000 | 6 | Dep6 | DELHI |
| 12 | L | l@gmail.com | 12-AUG-73 | SDE2 | 6 | 90000 | 6 | Dep6 | DELHI |
| 13 | M | m@gmail.com | 02-MAY-76 | SDE1 | 7 | 75000 | 7 | Dep7 | BANGALORE |
| 14 | N | n@gmail.com | 09-APR-77 | SDE2 | 7 | 90000 | 7 | Dep7 | BANGALORE |
| 15 | O | o@gmail.com | 08-JUL-74 | SDE1 | 8 | 75000 | 8 | Dep8 | DELHI |
| 16 | P | p@gmail.com | 12-AUG-73 | SDE2 | 8 | 90000 | 8 | Dep8 | DELHI |
| 17 | Q | q@gmail.com | 02-MAY-76 | SDE1 | 9 | 75000 | 9 | Dep9 | BANGALORE |
| 18 | R | r@gmail.com | 09-APR-77 | SDE2 | 9 | 90000 | 9 | Dep9 | BANGALORE |
| 19 | S | s@gmail.com | 08-JUL-74 | SDE1 | 10 | 75000 | 10 | Dep10 | DELHI |
| 20 | T | t@gmail.com | 12-AUG-73 | SDE2 | 10 | 90000 | 10 | Dep10 | DELHI |

20 rows returned in 0.01 seconds CSV Export

Language: en-us

**8. Delete some data from Table.**

```
DELETE FROM emp_table where emp_id=16
```




**9. Calculate data (For example: - student marks and percentage or employee salary and taxes)**

Add a column Hike in dept_table, which denotes multiplication factor to obtain 'NET SALARY' after Hike. Here we are assumning that hike of every department is different.

```
alter table "DEPT_TABLE" add
("HIKE" NUMBER NULL)

UPDATE dept_table
        SET HIKE = 1.5
        where dept_id > 5

UPDATE dept_table
        SET HIKE = 1.2
        where dept_id <= 5
```

Calculation Query

```
SELECT emp_table.emp_id,
       emp_table.e_name,
       emp_table.salary * dept_table.hike AS "NET SALARY"
FROM emp_table JOIN dept_table          ON emp_table.dept_id = dept_table.dept_id
ORDER BY emp_id
```

Results Explain Describe Saved SQL History

| EMP_ID | E_NAME | NET SALARY |
|---|---|---|
| 1 | A | 90000 |
| 2 | B | 108000 |
| 3 | C | 90000 |
| 4 | D | 108000 |
| 5 | E | 90000 |
| 6 | F | 108000 |
| 7 | G | 90000 |
| 8 | H | 108000 |
| 9 | I | 90000 |
| 10 | J | 108000 |
| 11 | K | 112500 |
| 12 | L | 135000 |
| 13 | M | 112500 |
| 14 | N | 135000 |
| 15 | O | 112500 |
| 17 | Q | 112500 |
| 18 | R | 135000 |
| 19 | S | 112500 |
| 20 | T | 135000 |

19 rows returned in 0.00 seconds CSV Export

## 10. Ordering of Data (ascending and descending order)

```
SELECT *from dept_table
   ORDER BY loc
```

Results Explain Describe Saved SQL History

| DEPT_ID | D_NAME | LOC | HIKE |
|---|---|---|---|
| 9 | Dep9 | BANGALORE | 1.5 |
| 7 | Dep7 | BANGALORE | 1.5 |
| 8 | Dep8 | DELHI | 1.5 |
| 3 | Dep3 | DELHI | 1.2 |
| 1 | Dep1 | DELHI | 1.2 |
| 10 | Dep10 | DELHI | 1.5 |
| 6 | Dep6 | DELHI | 1.5 |
| 4 | Dep4 | MUMBAI | 1.2 |
| 2 | Dep2 | MUMBAI | 1.2 |
| 5 | Dep5 | MUMBAI | 1.2 |

10 rows returned in 0.00 seconds CSV Export

Language: en-us

```
SELECT *from dept_table
   ORDER BY loc DESC
```

Results Explain Describe Saved SQL History

| DEPT_ID | D_NAME | LOC | HIKE |
|---|---|---|---|
| 5 | Dep5 | MUMBAI | 1.2 |
| 4 | Dep4 | MUMBAI | 1.2 |
| 2 | Dep2 | MUMBAI | 1.2 |
| 10 | Dep10 | DELHI | 1.5 |
| 6 | Dep6 | DELHI | 1.5 |
| 3 | Dep3 | DELHI | 1.2 |
| 8 | Dep8 | DELHI | 1.5 |
| 1 | Dep1 | DELHI | 1.2 |
| 9 | Dep9 | BANGALORE | 1.5 |
| 7 | Dep7 | BANGALORE | 1.5 |

10 rows returned in 0.03 seconds CSV Export

Language: en-us