**ROLL NO : 19131A05P1**

## Part A

**Projection, ORDER BY clause, Altering and dropping of tables (use constraints while creating tables) examples using SELECT command.**

**Aim:** SQL commands:

i) To sort data in a table
ii) To create a table from an existing table
iii) To insert data into a table from another table
i) To delete data from a table
ii) To update the contents of a table
iii) To modify the structure of a table (Alter table for adding/deleting columns and modifying columns)
iv) To rename a table
v) To truncate a table
vi) To drop a table

**Prerequisite:** Oracle.

**Outcome:** Table is created and records are inserted, viewed, and structure is modified.

**Theory:**

**Sorting data in a table**

Select * from <TableName> order by <ColumnName1>, <ColumnName2> <SortOrder>;

**Creating a table from a table**

Create table <TableName> (<ColumnName1>, <ColumnName2>) as select <ColumnName1>, <ColumnName2> from <TableName>;

**Inserting data into a table from another table**

Insert into <TableName> select <ColumnName1>, <ColumnName2> from <TableName>;

**Delete data from a table**

Delete from <TableName>;

**Updating the contents of a table**

Update <TableName> set <ColumnName1>=<expression1>,<ColumnName2>=<expression2>;

**Modifying the structure of tables (SQL ALTER TABLE Syntax)**

alter table <TableName> add (<ColumnName1><datatype1>, <ColumnName2><datatype2>);

Adding columns

```
ALTER TABLE table_name
ADD column_name datatype;
```

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```
Deleting columns
ALTER TABLE table_name
DROP COLUMN column_name;

Modifying columns (Prior Oracle 10G)
ALTER TABLE table_name
MODIFY COLUMN column_name datatype;

ALTER TABLE table_name (Oracle 10G and later:)
MODIFY column_name datatype;
```

**Renaming tables**

Rename <TableName> to <NewTableName>;

**Truncating Tables**

Truncate table <TableName>;

**Destroying Tables**

drop table <TableName>;

**Procedure:**

1. Formulate the query for given problem.
2. Write the SQL query with proper input.
3. Execute the query.

**Practice Exercise**

| | |
|---|---|
| 1 | List the emps in the asc order of their Salaries? |
| 2 | List the details of the emps in asc order of the Dptnos and desc of Jobs? |
| 3 | Display all the unique job groups in the descending order? |
| 4 | Display all the details of all 'Mgrs' |
| 5 | Display all the details of the emps whose Comm. Is more than their Sal. |
| 6 | List the emps who are either 'CLERK' or 'ANALYST' in the Desc order. |
| 7 | List the emps Who Annual sal ranging from 22000 and 45000. |
| 8 | Create a table Emp_Income(E_ID,Name, Salary, Commission) from emp. |
| 9 | Create a table Emp_data(Name, Gender, Post, Dept_in) from emp. |
| 10 | Create a table Section(S_ID, S_name). (create by normal create table query) |
| 11 | Copy required data into Section table from dapt table. |
| 12 | Create table Relation(Ename, Manager, Dept_no). (create by normal create table query) |
| 13 | Add age at attribute to the employee table |
| 14 | Remove customer name attribute from the depositor table |
| 15 | Increase the size of column ename in table employee to 15. |

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| | |
|---|---|
| 16 | Add New column' Data_of_Birth' in the Emp_data table. Which is of type Date. |
| 17 | Change the name of the Section table to Office, and Relation to Association. |
| 18 | Update the commission of all clerks to 500 in EMP. |
| 19 | Change the salary of every manager to 50000 in Emp_income. |
| 20 | Increase the salary of every salesman by 500 in Emp_income. |
| 21 | Delete the information of all employees of dept_no 20 in Emp_data. |
| 22 | Delete all the data from Association and Office. |
| 23 | Delete the information of 'martin' from Emp_data table. |
| 24 | Increase the commission of all the females by 10%. |
| 25 | Completely delete all the tables created today. |

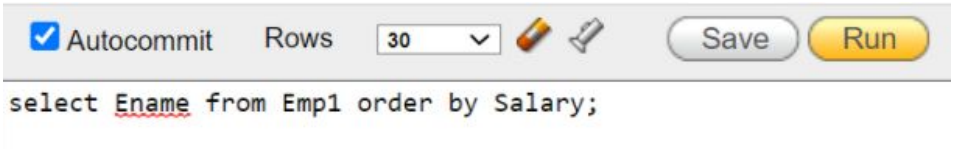
**Instructions:**

1. Write and execute the query in Oracle SQL server.
2. Paste the snapshot of the output in input & output section.

**Part B**

**Code and Output:**

**1)Select Ename from Emp1 order by Salary;**



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Results Explain Describe Saved SQL History

| ENAME |
|---|
| Smith |
| Adams |
| Ward |
| Martin |
| Miller |
| Turner |
| Allen |
| Clark |
| Blake |
| Jones |
| Ford |
| Scott |
| King |
| James |

14 rows returned in 0.01 seconds Download

Workspace: GAYATHRI User: GAYATHRI

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**2)select * from Emp1 order by Dept_no asc,Job desc;**

Results Explain Describe Saved SQL History

| EMP_NO | ENAME | GENDER | JOB | MGR | HIREDATE | SALARY | COMM | DEPT_NO |
|---|---|---|---|---|---|---|---|---|
| 7839 | King | M | PRESIDENT | - | 11/17/1981 | 50000 | - | 10 |
| 7782 | Clark | M | MANAGER | 7839 | 06/09/1981 | 24500 | - | 10 |
| 7934 | Miller | F | CLERK | 7782 | 01/23/1982 | 13000 | - | 10 |
| 7566 | Jones | F | MANAGER | 7839 | 04/02/1981 | 29750 | - | 20 |
| 7876 | Adams | M | CLERK | 7788 | 01/12/1983 | 11000 | - | 20 |
| 7369 | Smith | M | CLERK | 7902 | 12/17/1980 | 8000 | - | 20 |
| 7788 | Scott | M | ANALYST | 7566 | 12/09/1982 | 30000 | - | 20 |
| 7902 | Ford | M | ANALYST | 7566 | 12/03/1981 | 30000 | - | 20 |
| 7654 | Martin | M | SALESMAN | 7698 | 09/28/1981 | 12500 | 14000 | 30 |
| 7844 | Turner | M | SALESMAN | 7698 | 09/08/1981 | 15000 | - | 30 |
| 7521 | Ward | M | SALESMAN | 7698 | 02/22/1981 | 12500 | 5000 | 30 |
| 7499 | Allen | F | SALESMAN | 7698 | 02/20/1981 | 16000 | 3000 | 30 |
| 7698 | Blake | M | MANAGER | 7839 | 05/01/1981 | 28500 | - | 30 |
| 7900 | James | M | CLERK | 7698 | 12/03/1981 | 95000 | - | 30 |

14 rows returned in 0.01 seconds Download

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**3)select distinct Job from Emp1 order by Job desc;**

Results | Explain | Describe | Saved SQL | History

| JOB |
|---|
| SALESMAN |
| PRESIDENT |
| MANAGER |
| CLERK |
| ANALYST |

5 rows returned in 0.01 seconds Download

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**4) select * from Emp1 where Mgr is not null;**

Results | Explain | Describe | Saved SQL | History

| EMP_NO | ENAME | GENDER | JOB | MGR | HIREDATE | SALARY | COMM | DEPT_NO |
|---|---|---|---|---|---|---|---|---|
| 7369 | Smith | M | CLERK | 7902 | 12/17/1980 | 8000 | - | 20 |
| 7499 | Allen | F | SALESMAN | 7698 | 02/20/1981 | 16000 | 3000 | 30 |
| 7521 | Ward | M | SALESMAN | 7698 | 02/22/1981 | 12500 | 5000 | 30 |
| 7566 | Jones | F | MANAGER | 7839 | 04/02/1981 | 29750 | - | 20 |
| 7654 | Martin | M | SALESMAN | 7698 | 09/28/1981 | 12500 | 14000 | 30 |
| 7698 | Blake | M | MANAGER | 7839 | 05/01/1981 | 28500 | - | 30 |
| 7782 | Clark | M | MANAGER | 7839 | 06/09/1981 | 24500 | - | 10 |
| 7788 | Scott | M | ANALYST | 7566 | 12/09/1982 | 30000 | - | 20 |
| 7844 | Turner | M | SALESMAN | 7698 | 09/08/1981 | 15000 | - | 30 |
| 7876 | Adams | M | CLERK | 7788 | 01/12/1983 | 11000 | - | 20 |
| 7900 | James | M | CLERK | 7698 | 12/03/1981 | 95000 | - | 30 |
| 7902 | Ford | M | ANALYST | 7566 | 12/03/1981 | 30000 | - | 20 |
| 7934 | Miller | F | CLERK | 7782 | 01/23/1982 | 13000 | - | 10 |

13 rows returned in 0.01 seconds Download

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**5)select * from Emp1 where comm>salary;**

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Autocommit Rows 30 Save Run

```
select * from Emp1 where comm>salary;
```

Results Explain Describe Saved SQL History

| EMP_NO | ENAME | GENDER | JOB | MGR | HIREDATE | SALARY | COMM | DEPT_NO |
|---|---|---|---|---|---|---|---|---|
| 7654 | Martin | M | SALESMAN | 7698 | 09/28/1981 | 12500 | 14000 | 30 |

1 rows returned in 0.01 seconds Download

---

**6)select ename from emp1 where job='CLERK' or job='ANALYST' order by ename desc;**

Autocommit Rows 30 Save Run

```
select ename from emp1 where job='CLERK' or job='ANALYST' order by ename desc;
```

Results Explain Describe Saved SQL History

| ENAME |
|---|
| Smith |
| Scott |
| Miller |
| James |
| Ford |
| Adams |

6 rows returned in 0.00 seconds Download

Workspace: GAYATHRI User: GAYATHRI

---

**7)select ename from emp1 where salary>22000 and salary<45000;**

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Results Explain Describe Saved SQL History

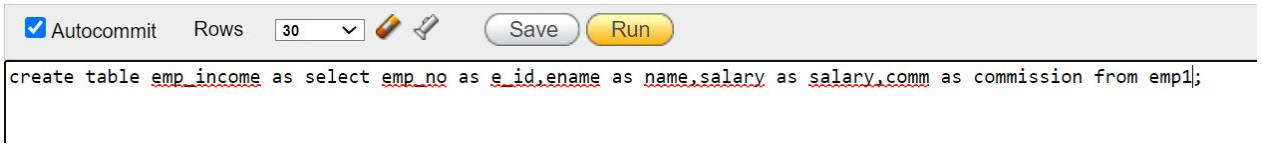
| ENAME |
| --- |
| Jones |
| Blake |
| Clark |
| Scott |
| Ford |

5 rows returned in 0.01 seconds Download

Workspace: GAYATHRI User: GAYATHRI

---

**8)create table emp_income as select emp_no as e_id,ename as name,salary as salary,comm as commission from emp;**



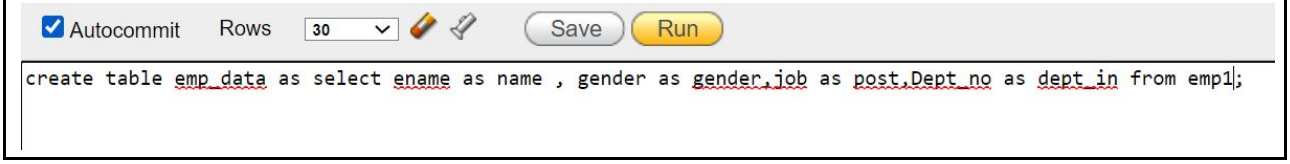

Results Explain Describe Saved SQL History

```
Table created.
```

0.01 seconds

---

**9)**
**create table emp_data as select ename as name , gender as gender,job as post,Dept_no as dept_in from emp1;**



## ROLL NO : 19131A05P1

Results Explain Describe Saved SQL History

```
Table created.
```

0.01 seconds

---

**10)**

**create table section(s_id int,sname varchar(20));**

Autocommit Rows 30 Save Run

```
create table section(s_id int,sname varchar(20));
```

Results Explain Describe Saved SQL History

```
Table created.
```

0.01 seconds

---

**11)insert into section dept_no,dname from department;**

Autocommit Rows 30 Save Run

```
insert into section select dept_no,dname from department;
```

Results Explain Describe Saved SQL History

```
4 row(s) inserted.
```

0.00 seconds

---

**12) create table relation(ename varchar(20),manager varchar(20),dept_no int);**

Autocommit Rows 30 Save Run

```
create table relation(ename varchar(20),manager varchar(20),dept_no int);
```

## ROLL NO : 19131A05P1

Results Explain Describe Saved SQL Histor

```
Table created.
```

0.01 seconds

---

**13)alter table emp1 add(age int);**

Autocommit Rows 30 Save Run

```
alter table emp1 add(age int);
```

Results Explain Describe Saved SQL History

```
Table altered.
```

0.04 seconds

---

**14)alter table depositor drop column custname;**

Autocommit Rows 30 Save Run

```
alter table depositor drop column custname;
```

Results Explain Describe Saved SQL History

```
Table altered.
```

0.33 seconds

---

**15)**
**alter table emp1 modify ename varchar(15);**

Autocommit Rows 30 Save Run

```
alter table emp1 modify ename varchar(15);
```

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Results Explain Describe Saved SQL History

```
Table altered.
```

0.03 seconds

---

**16)alter table emp1 add(date_of_birth date);**

Autocommit Rows 30 Save Run

```
alter table emp1 add(date_of_birth date);
```

Results Explain Describe Saved SQL History

```
Table altered.
```

0.00 seconds

---

**17)**
**alter table section rename to Office;**
**alter table relation rename to association;**

Autocommit Rows 30 Save Run

```
alter table section rename to Office;
alter table relation rename to association;
```

Results Explain Describe Saved SQL History

```
Table altered.
```

0.01 seconds

---

**18)**
**update emp set comm=500 where job='CLERK';**

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Autocommit Rows 30 Save Run

```
update emp set comm=500 where job='CLERK';
```

Results Explain Describe Saved SQL History

```
4 row(s) updated.
```

0.01 seconds

---

**19) update emp_income set salary=50000 where e_id in (select emp_no from emp where job='manager');**

Autocommit Rows 30 Save Run

```
update emp_income set salary=50000 where e_id in (select emp_no from emp1 where job='MANAGER');
```

Results Explain Describe Saved SQL History

```
3 row(s) updated.
```

0.02 seconds

---

**20)update emp_income set salary=salary+500 where e_id in(select emp_no from emp1 where job='SALESMAN');**

Autocommit Rows 30 Save Run

```
update emp_income set salary=salary+500 where e_id in(select emp_no from emp1 where job='SALESMAN');
```

Results Explain Describe Saved SQL History

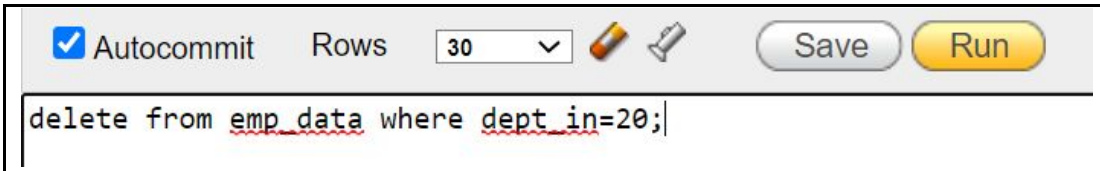
```
4 row(s) updated.
```

0.01 seconds

---

**21)delete from emp_data where dept_in=20;**

**ROLL NO : 19131A05P1**

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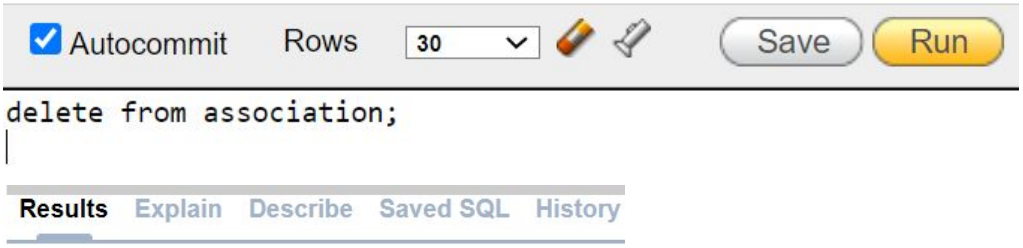
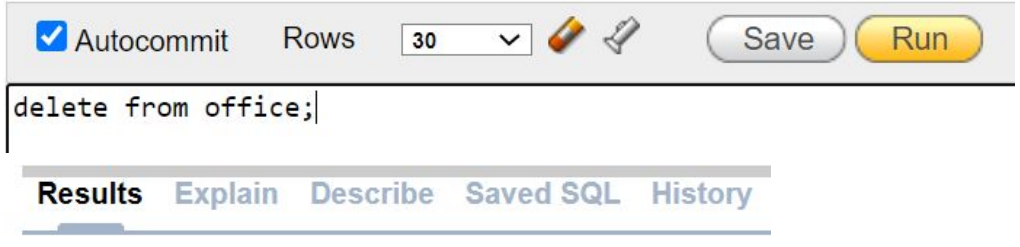
**22)**

**delete from association;**



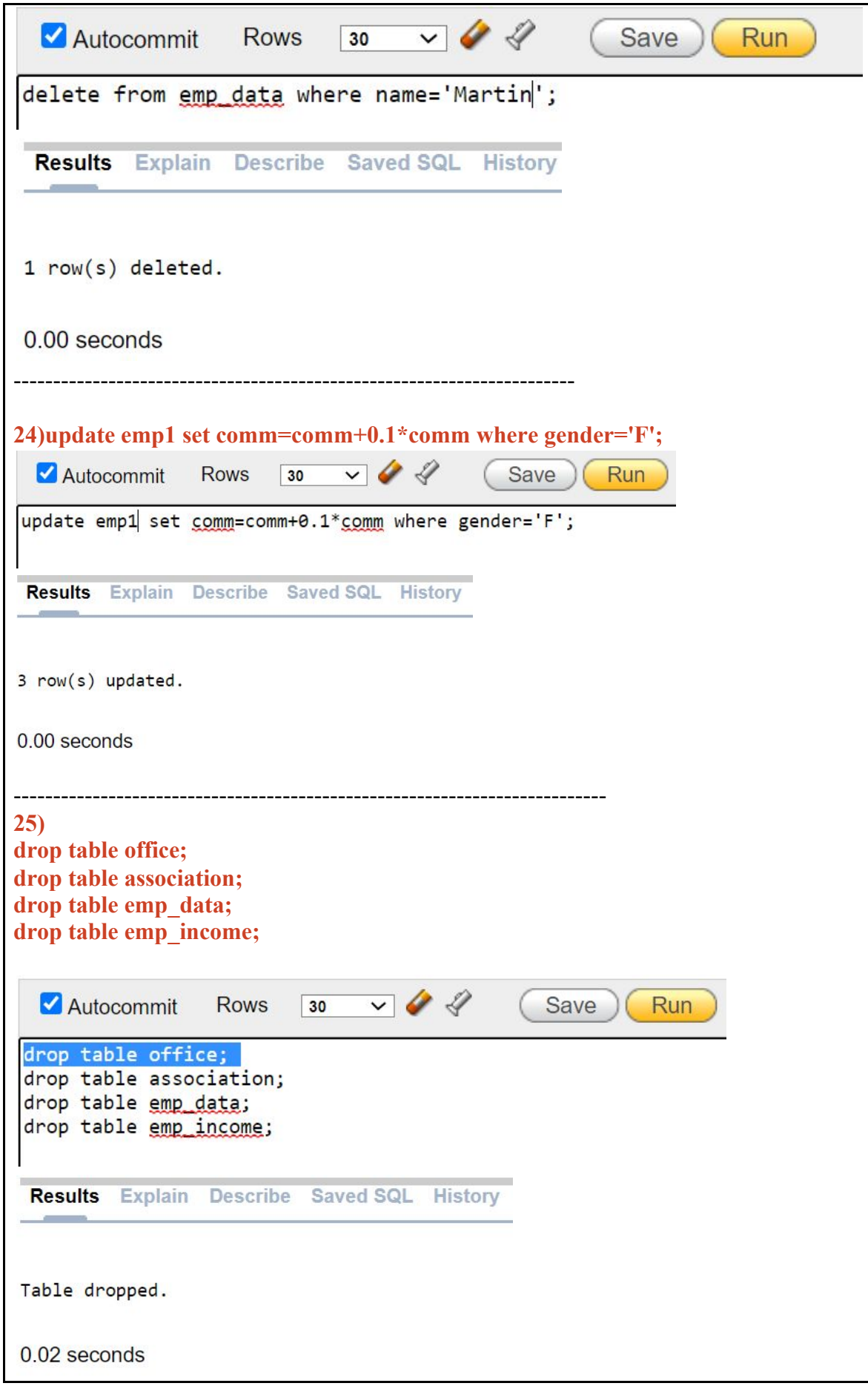

**delete from office;**




---

**23)delete from emp_data where name='Martin';**

**ROLL NO : 19131A05P1**




---

**24)update emp1 set comm=comm+0.1*comm where gender='F';**




---

**25)**

```
drop table office;
drop table association;
drop table emp_data;
drop table emp_income;
```

**ROLL NO : 19131A05P1**

**Observation & Learning:**
Learned and executed following SQL commands on database
SQL commands:
To sort data in a table
To create a table from an existing table
To insert data into a table from another table
To delete data from a table
To update the contents of a table
To modify the structure of a table (Alter table for adding/deleting columns and modifying columns)
To rename a table
To truncate a table
To drop a table

**Conclusion:**
Learned and practiced DML commands and recorded the outputs perfectly.

**Questions:**

1. What happen if where clause is not given in query?
2. What are the various comparison operator used in condition part?
3. Give the difference between delete, truncate, and destroy command.
4. What happen if domain type of data inserted is different from that of column?
5. What are the various comparison operator used in condition part?
6. What is the meaning of NULL in DBMS?

**ANSWERS:**

1. **Unnecessary tuples will also get selected.**
   **And our work will not be efficient.**
2. **= (equal to)**
   **< > (not equal to)**
   **> (greater than)**
   **< (less than)**
   **>= (greater than or equal to)**
   **<= (less than or equal to)**
3. **Difference between Truncate ,delete and destroy is**
   **TRUNCATE SQL query removes all rows from a table, without logging the individual row deletions. TRUNCATE is faster than the DELETE query.**
   **DELETE query deletes all records from a database table. To execute a DELETE query, delete permissions are required on the target table. If you need to use a WHERE clause in a DELETE, select permissions are required as well.**
   **DROP table query removes one or more table definitions and all data, indexes, triggers, constraints, and permission specifications for those tables. DROP command requires to ALTER permission on the schema to which the table belongs,**

**CONTROL permission on the table, or membership in the db_ddladmin fixed database role.**

4. **Data cant be inserted as the datatype of column does not match with given input data and error message will be displayed.**
5. **= (equal to)**
   **< > (not equal to)**
   **> (greater than)**
   **< (less than)**
   **>= (greater than or equal to)**
   **<= (less than or equal to)**
6. **Null means having no value; in other words null is zero.**