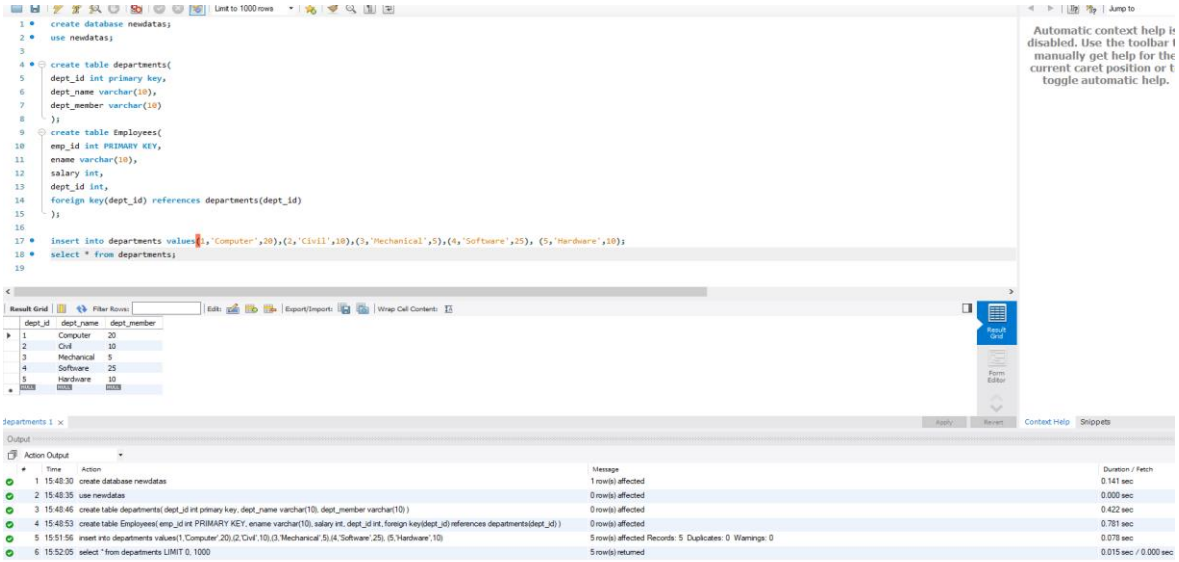
SQL –ASSIGNMENT (25/02/2025) (Pranjali Sharma)

1. Creation of two tables



```
create database newdatas;
use newdatas;

create table departments(
dept_id int primary key,
dept_name varchar(10),
dept_member varchar(10)
);
create table Employees(
emp_id int PRIMARY KEY,
ename varchar(10),
salary int,
dept_id int,
foreign key(dept_id) references departments(dept_id)
);

insert into departments values(1,'Computer',20),(2,'Civil',10),(3,'Mechanical',5),(4,'Software',25), (5,'Hardware',10);
select * from departments;
```

dept_id	dept_name	dept_member
1	Computer	20
2	Civil	10
3	Mechanical	5
4	Software	25
5	Hardware	10

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	15:48:30	create database newdatas	1 row(s) affected	0.141 sec
2	15:48:35	use newdatas	0 row(s) affected	0.000 sec
3	15:48:46	create table departments(dept_id int primary key, dept_name varchar(10), dept_member varchar(10))	0 row(s) affected	0.422 sec
4	15:48:53	create table Employees(emp_id int PRIMARY KEY, ename varchar(10), salary int, dept_id int, foreign key(dept_id) references departments(dept_id))	0 row(s) affected	0.781 sec
5	15:51:56	insert into departments values(1,'Computer',20),(2,'Civil',10),(3,'Mechanical',5),(4,'Software',25), (5,'Hardware',10)	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.078 sec
6	15:52:05	select * from departments LIMIT 0, 1000	5 row(s) returned	0.015 sec / 0.000 sec

```
insert into departments values(1,'Computer',20),(2,'Civil',10),(3,'Mechanical',5),(4,'Software',25), (5,'Hardware',10);
select * from departments;
INSERT into Employees values(101, 'Ram', 10000, 2), (102, 'Shyam', 2000 , 1), (103, 'Diya', 5000, 3), (104, 'Shiya', 9000, 4), (105, 'Rama', 4000, 5);
select * from Employees;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

emp_id	ename	salary	dept_id
101	Ram	10000	2
102	Shyam	2000	1
103	Diya	5000	3
104	Shiya	9000	4
105	Rama	4000	5
NULL	NULL	NULL	NULL

Employees 2

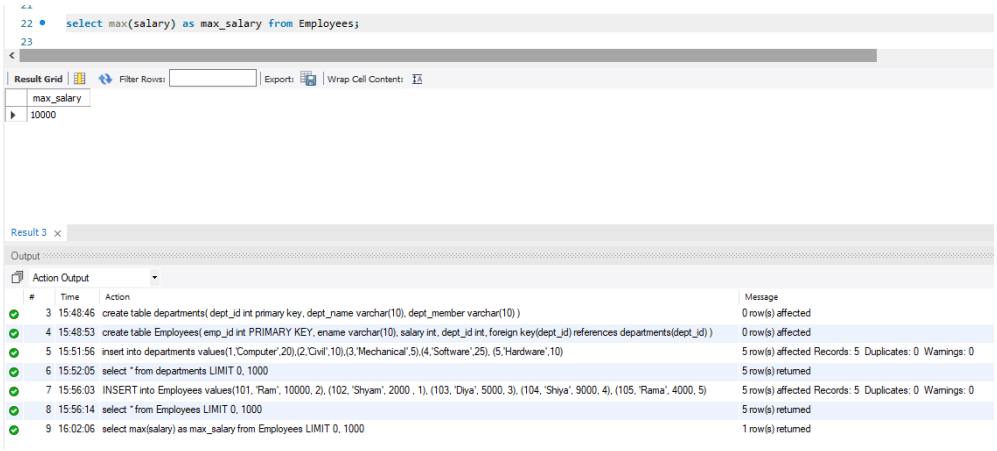
Output

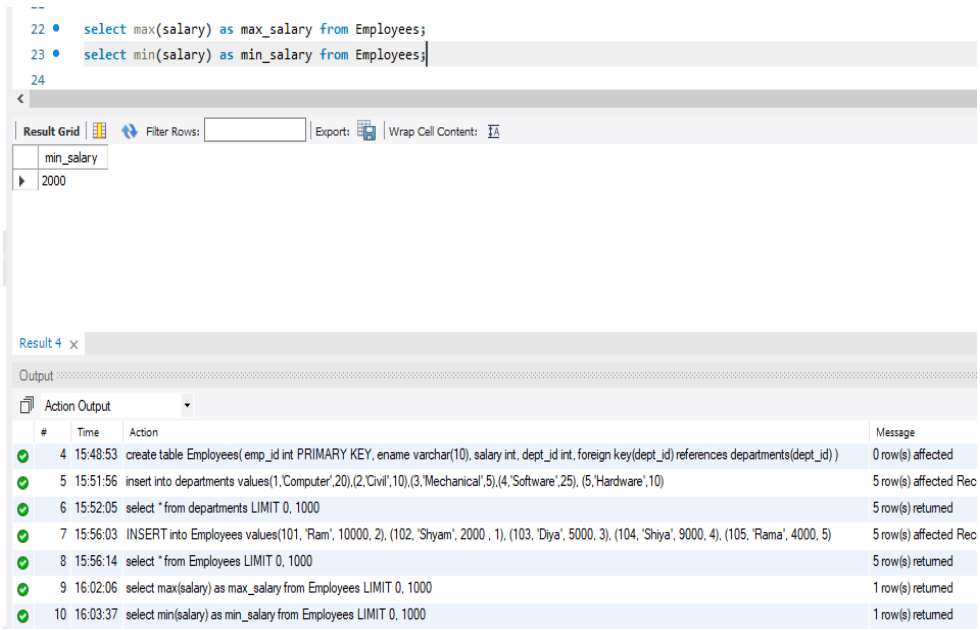
Action Output

#	Time	Action	Message
2	15:48:35	use newdatas	0 row(s) affected
3	15:48:46	create table departments(dept_id int primary key, dept_name varchar(10), dept_member varchar(10))	0 row(s) affected
4	15:48:53	create table Employees(emp_id int PRIMARY KEY, ename varchar(10), salary int, dept_id int, foreign key(dept_id) references departments(dept_id))	0 row(s) affected
5	15:51:56	insert into departments values(1,'Computer',20),(2,'Civil',10),(3,'Mechanical',5),(4,'Software',25), (5,'Hardware',10)	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
6	15:52:05	select * from departments LIMIT 0, 1000	5 row(s) returned
7	15:56:03	INSERT into Employees values(101, 'Ram', 10000, 2), (102, 'Shyam', 2000 , 1), (103, 'Diya', 5000, 3), (104, 'Shiya', 9000, 4), (105, 'Rama', 4000, 5)	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
8	15:56:14	select * from Employees LIMIT 0, 1000	5 row(s) returned

RESULT : showing two tables' Departments and Employees with 5 values in both of them.

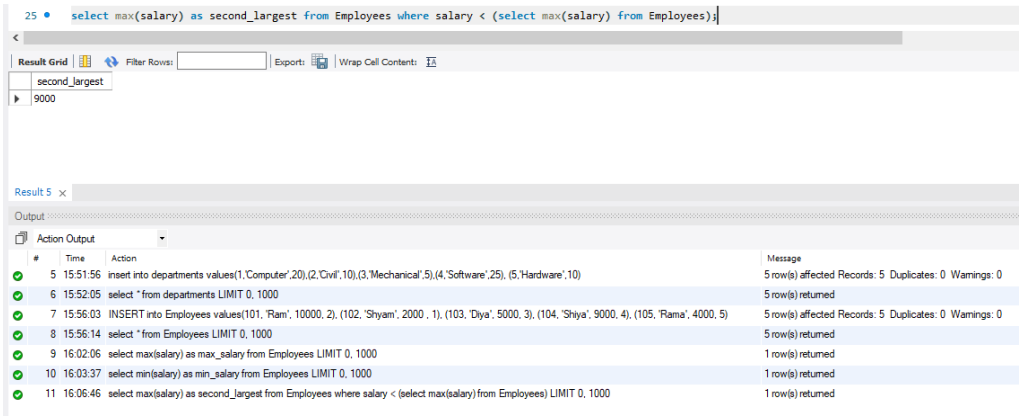
2(a) finding maximum and minimum salary

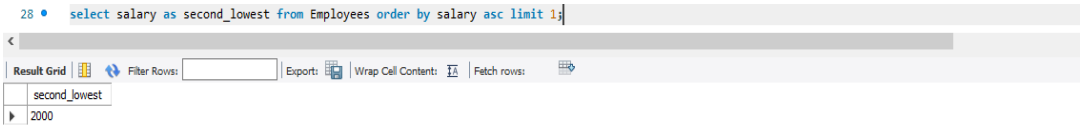


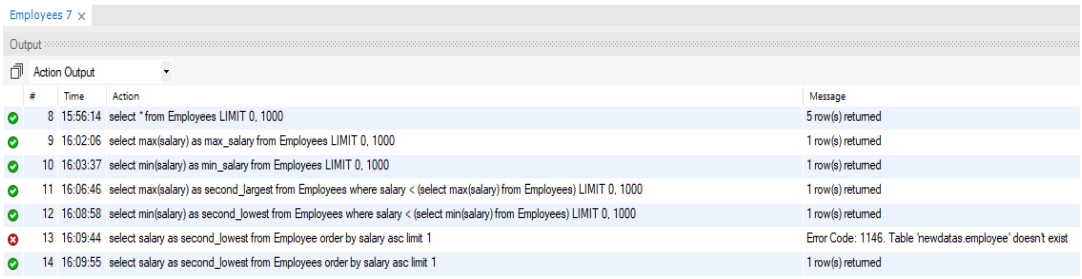


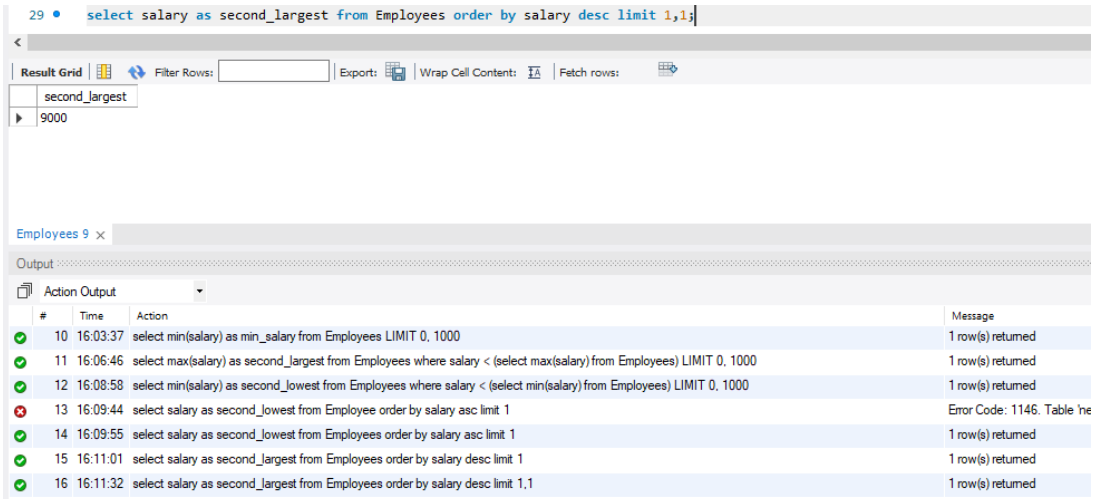
Result: Min and Max Salary

2(b) Second Highest/Lowest by Subquery method





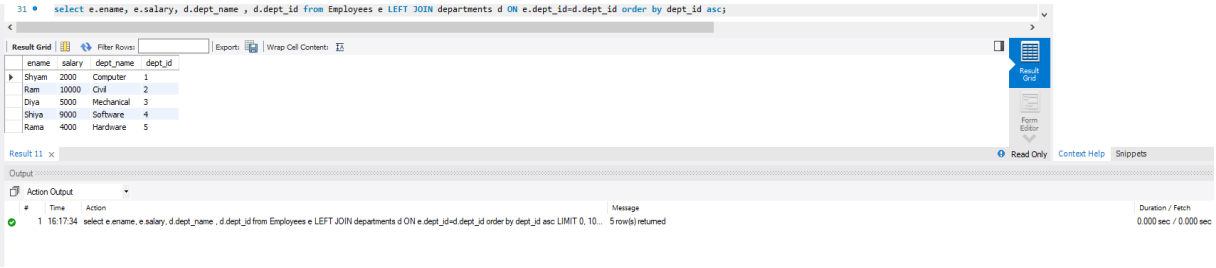




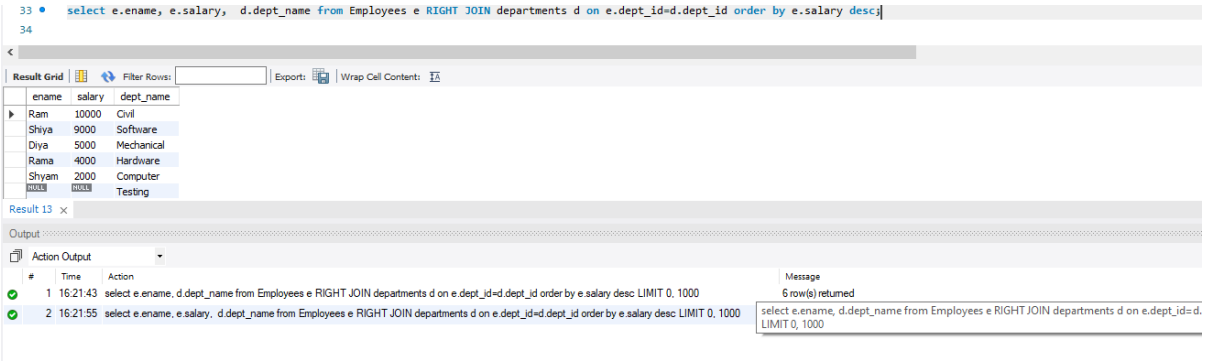
Result: Showing second largest(subquery+limit) and second lowest(limit)

3 Joins with Order by and Group by Clause

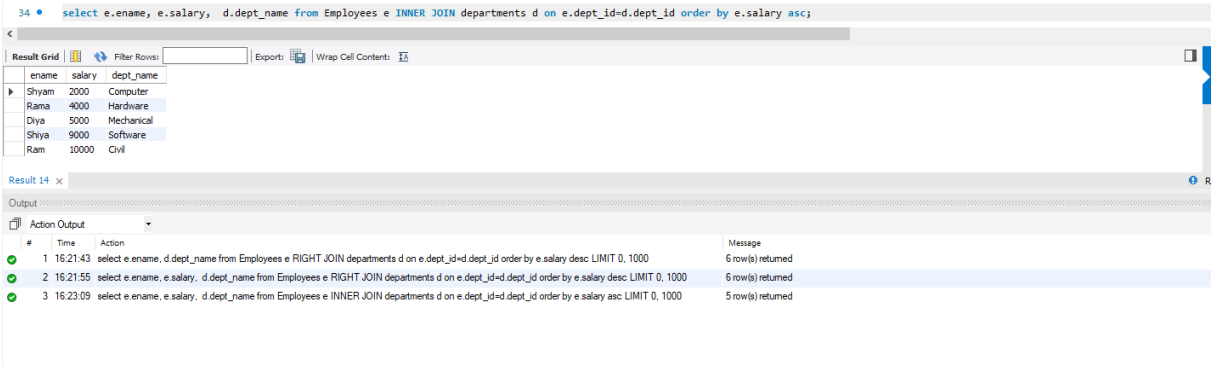
Left Join:



Right Join: (additional row is added with dept_name testing)



Inner Join:



Union:

```
34 •  select e.ename, e.salary,  d.dept_name from Employees e INNER JOIN departments d on e.dept_id=d.dept_id order by e.salary asc;
35 •  select ename from Employees
36    UNION
37    select dept_name from departments;
38
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ename
Ram
Shyam
Diya
Shiya
Rama
Computer
Civil
Mechanical
Software
Hardware
Testing

Result 15

Output

Action Output

#	Time	Action	Message
1	16:21:43	select e.ename, d.dept_name from Employees e RIGHT JOIN departments d on e.dept_id=d.dept_id order by e.salary desc LIMIT 0, 1000	6 row(s) returned
2	16:21:55	select e.ename, e.salary, d.dept_name from Employees e RIGHT JOIN departments d on e.dept_id=d.dept_id order by e.salary desc LIMIT 0, 1000	6 row(s) returned
3	16:23:09	select e.ename, e.salary, d.dept_name from Employees e INNER JOIN departments d on e.dept_id=d.dept_id order by e.salary asc LIMIT 0, 1000	5 row(s) returned
4	16:25:53	select ename from Employees UNION select dept_name from departments	11 row(s) returned

Self-Join:

```
39 •  select distinct e.ename from Employees e , departments d where e.salary>5000 ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ename
Shiya
Ram

Result: Left, Right, Inner, Self, Union Joins.

4 Query with Aggregate Functions:

```
39 •  select distinct e.ename from Employees e , departments d where e.salary>5000 ;
40 •  select sum(salary) as total_salary_sum from Employees;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_salary_sum
30000

```
41 •  select avg(salary) as avg_salary from Employees;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

avg_salary
6000.0000

Result 20

Output

Action Output

#	Time	Action	Message
4	16:25:53	select ename from Employees UNION select dept_name from departments	11 row(s) returned
5	16:29:48	select e.ename from Employees , departments d where e.salary>5000 LIMIT 0, 1000	Error Code: 1054. Unknown column 'e.ename' in 'field list'
6	16:30:09	select e.ename from Employees e , departments d where e.salary>5000 LIMIT 0, 1000	12 row(s) returned
7	16:30:24	select distinct e.ename from Employees e , departments d where e.salary>5000 LIMIT 0, 1000	2 row(s) returned
8	16:33:59	select sum(salary) as total_salary_sum from Employees LIMIT 0, 1000	1 row(s) returned
9	16:34:36	select avg(salary) as avg_salary from Employees LIMIT 0, 1000	1 row(s) returned
10	16:34:49	select avg(salary) as avg_salary from Employees LIMIT 0, 1000	1 row(s) returned

```
39 •  select distinct e.ename from Employees e , departments d where e.salary>5000 ;
40 •  select sum(salary) as total_salary_sum from Employees;
41 •  select avg(salary) as avg_salary from Employees;
42 •  select count(dept_member) as number_memb from departments;
43
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

number_memb
6

```
41 •  select avg(salary) as avg_salary from Employees;
42 •  select count(dept_member) as number_memb from departments;
43 •  select max(salary) as max_salary , min(salary) as min_salary from Employees;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

max_salary	min_salary
10000	2000

Result: Sum, Avg, Count, Max , Min applied to get outputs.

5. Queries with String functions:

Concat, lower, upper:

```
44 •  select concat(emp_id ,' ',ename) as combination , lower(ename) as l_ename , upper(ename) as u_ename from Employees;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

combination	l_ename	u_ename
101 Ram	ram	RAM
102 Shyam	shyam	SHYAM
103 Diya	diya	DIYA
104 Shiya	shiya	SHIYA
105 Rama	rama	RAMA

Result 23

Output

Action Output

#	Time	Action	Message
7	16:30:24	select distinct e.ename from Employees e , departments d where e.salary>5000 LIMIT 0, 1000	2 row(s) returned
8	16:33:59	select sum(salary) as total_salary_sum from Employees LIMIT 0, 1000	1 row(s) returned
9	16:34:36	select avg(salary) as avg_salary from Employees LIMIT 0, 1000	1 row(s) returned
10	16:34:49	select avg(salary) as avg_salary from Employees LIMIT 0, 1000	1 row(s) returned
11	16:35:44	select count(dept_member) as number_memb from departments LIMIT 0, 1000	1 row(s) returned
12	16:42:19	select max(salary) as max_salary , min(salary) as min_salary from Employees LIMIT 0, 1000	1 row(s) returned
13	16:45:50	select concat(emp_id ,' ',ename) as combination , lower(ename) as l_ename , upper(ename) as u_ename from Employees LIMIT 0, 1000	5 row(s) returned

Replace:

```
45 •  select replace (ename , 'Shiya', 'Mansi') from Employees;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

replace (ename , 'Shiya', 'Mansi')
Ram
Shyam
Diya
Mansi
Rama

Trim, Substring, instr;

```
47 •  select trim(ename) as trimmed_name , substring(ename, 1,3) as half_name , instr(ename, 'm') as position_word  from Employees;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

trimmed_name	half_name	position_word
Ram	Ram	3
Shyam	Shy	5
Diya	Diy	0
Shiya	Shi	0
Rama	Ram	3