

DBMS Assignment 4

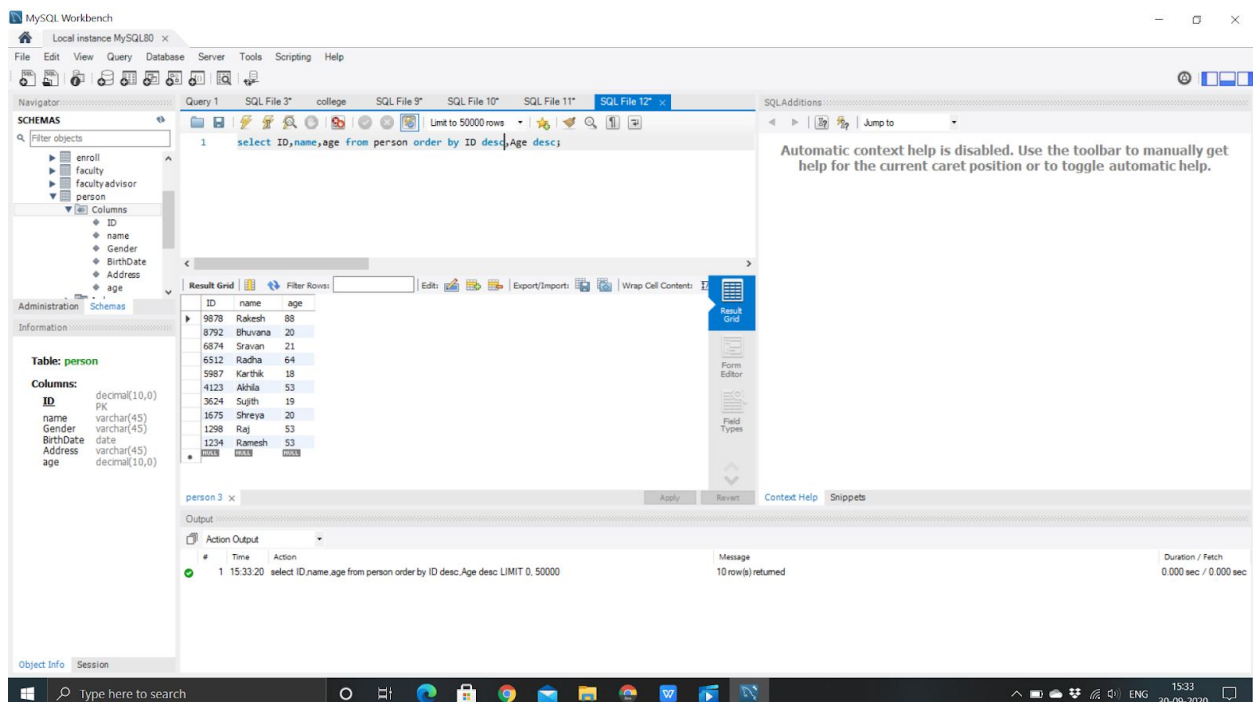
1. Order by Clause

a) Table person is selected based on ID descending order and Age Descending Order.

Query:

```
select ID,name,age from person order by ID desc, Age desc;
```

output:



The screenshot displays the MySQL Workbench interface. The 'Schemas' pane on the left shows the 'person' table selected. The 'Query' editor in the center contains the SQL query: `select ID,name,age from person order by ID desc, Age desc;`. The 'Result Grid' pane shows the output of the query, which is a table with 10 rows and 3 columns: ID, name, and age. The rows are sorted by ID in descending order, and then by age in descending order. The 'Output' pane at the bottom shows the execution details, including the time taken (15.3320) and the number of rows returned (10).

ID	name	age
9878	Rakesh	88
8792	Bhuvana	20
6874	Shravan	21
6512	Rudra	64
5987	Karthik	18
4123	Akhila	53
3624	Sujith	19
1675	Shreya	20
1298	Raj	53
1234	Ramesh	53

b) Table faculty is selected based on increasing order of salary.

Query:

select FacultyID,emailid,salary from faculty order by salary asc

output:

The screenshot shows the MySQL Workbench interface. The SQL editor contains the query: `select FacultyID,emailid,salary from faculty order by salary asc`. The Results tab displays the output of the query in a table format. The table has three columns: FacultyID, emailid, and salary. The data is sorted by salary in ascending order. The output shows 5 rows of data.

FacultyID	emailid	salary
15	akhilaa@gmail.com	59126
26	Radhaa@gmail.com	63458
3	Raj@gmail.com	72158
8	Ramesh@gmail.com	85689
19	Rakesh@gmail.com	90036

The Output tab shows the execution details of the query. The message indicates that 5 row(s) were returned, and the duration was 0.000 sec / 0.000 sec.

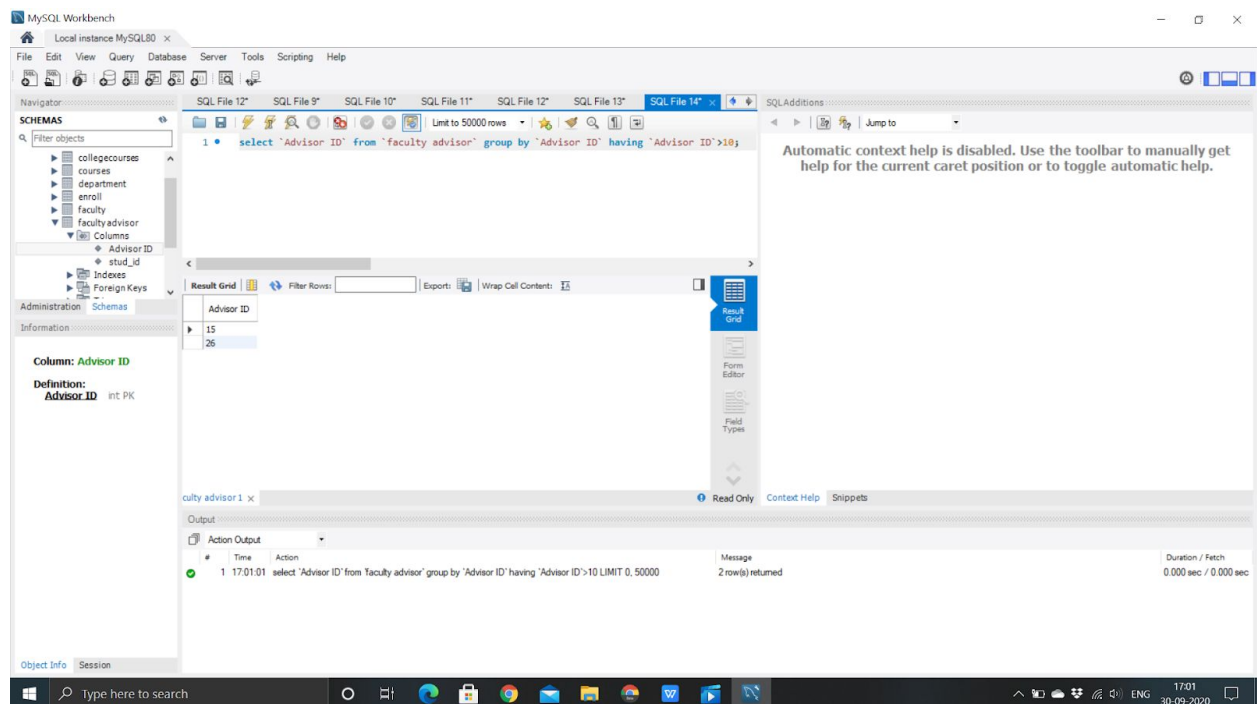
2. Group by and having

a) Using Group by and having clause Advisor ID'S >10 was selected

Query:

```
select `AdvisorID` from `facultyadvisor` group by `AdvisorID` having `AdvisorID`>10;
```

output:



The screenshot displays the MySQL Workbench interface. The SQL Editor at the top contains the query: `select `AdvisorID` from `facultyadvisor` group by `AdvisorID` having `AdvisorID`>10;`. The Results tab below the editor shows a table with one column, 'Advisor ID', and two rows of data: 15 and 26. The left sidebar shows the 'SCHEMAS' panel with a tree view of the database structure, including 'collegecourses', 'courses', 'department', 'enroll', 'faculty', and 'facultyadvisor'. The bottom status bar indicates the query was executed successfully at 17:01:01, returning 2 rows in 0.000 seconds.

Advisor ID
15
26

b) Selecting Advisors from Faculty Advisor Table who is the advisor for more than 2 students.

Query:

```
select `AdvisorID` from `facultyadvisor` group by `AdvisorID` having  
count(`AdvisorID`)>2;
```

output:

The screenshot displays the MySQL Workbench interface. The SQL Editor window shows the following query:

```
1 select `Advisor ID` from `faculty advisor` group by `Advisor ID` having  
2 count(`Advisor ID`)>2;
```

The Results window shows a single row of data:

Advisor ID
26

The Output window shows the execution details:

#	Time	Action	Message	Duration / Fetch
1	17:08:54	select 'Advisor ID' from 'Faculty advisor' group by 'Advisor ID' having count('Advisor ID')>2 LIMIT 0, 50000	1 row(s) returned	0.000 sec / 0.000 sec

3. Aggregate functions

a) Calculating Average Salary using Aggregate Function Average.

Query:

```
select avg(Salary) from faculty;
```

output:

The screenshot shows the MySQL Workbench interface. The query editor contains the query `select avg(Salary) from faculty;`. The result grid shows a single row with the value `74093.4` for the column `avg(Salary)`. The output pane shows the execution details: `1 17:11:05 select avg(Salary) from faculty LIMIT 0, 50000` with a message `1 row(s) returned` and a duration of `0.000 sec / 0.000 sec`.

Column: **Salary**
Collation: utf8_general_ci
Definition: Salary varchar(45)

avg(Salary)
74093.4

Result 1 x

Output

#	Time	Action	Message	Duration / Fetch
1	17:11:05	select avg(Salary) from faculty LIMIT 0, 50000	1 row(s) returned	0.000 sec / 0.000 sec

b)Selected Max Salary using Aggregate Function Max.

Query:

select max(salary) from faculty;

output:

The screenshot displays the MySQL Workbench interface. On the left, the 'SCHEMAS' pane shows the database structure, including tables like 'collegecourses', 'courses', 'department', 'enroll', and 'faculty'. The 'faculty' table is selected, and its columns (FacultyID, MobileNum, emailid, Salary, Unique_id) are visible. The main query editor contains the SQL statement: `select max(salary) from faculty;`. Below the editor, the 'Result Grid' shows the output of the query, which is a single row with the value 90036. The 'Output' pane at the bottom shows the execution details: 'Action Output' for 'select max(salary) from faculty LIMIT 0, 50000', with a message '1 row(s) returned' and a duration of '0.000 sec / 0.000 sec'.

max(salary)
90036

Result 1 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	17:14:56	select max(salary) from faculty LIMIT 0, 50000	1 row(s) returned	0.000 sec / 0.000 sec

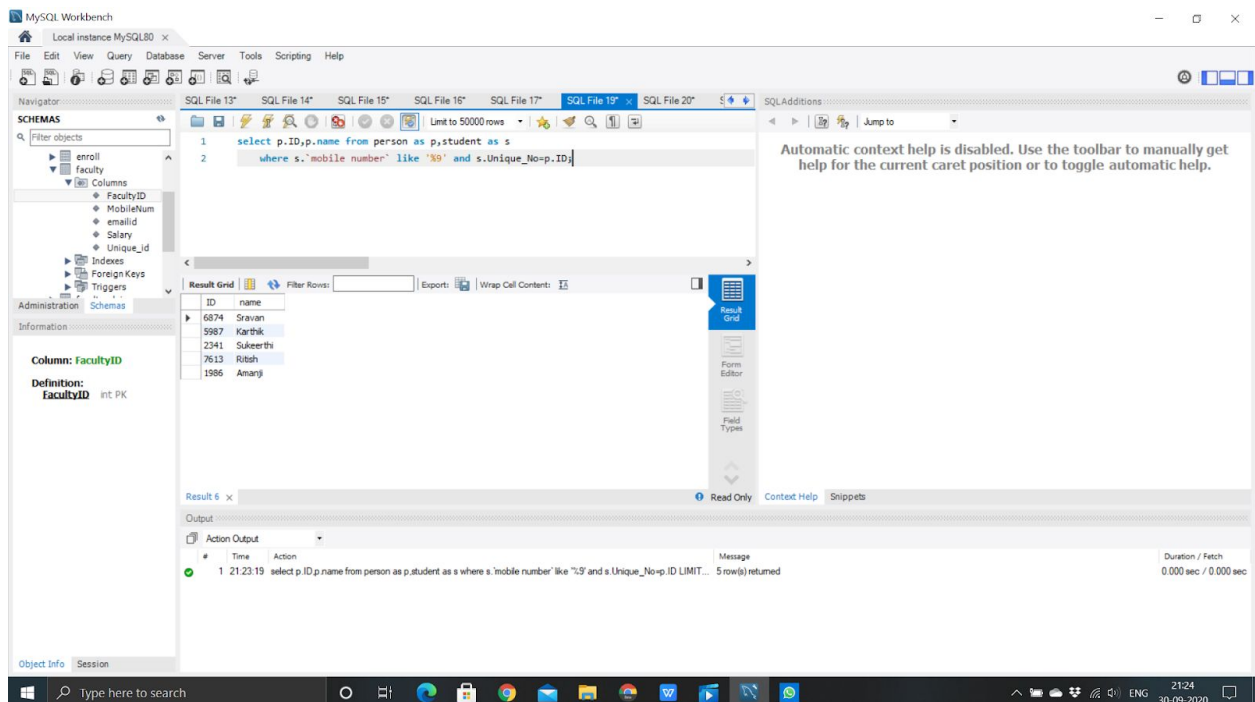
4. Logical operators especially with LIKE

a) Selecting students whose mobile numbers is like %9 (ending with 9)

Query:

```
select p.ID,p.name from person as p,student as s
where s.`mobile number` like '%9' and s.Unique_No=p.ID;
```

output:



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
1 select p.ID,p.name from person as p,student as s
2 where s.`mobile number` like '%9' and s.Unique_No=p.ID;
```

The Results window displays the output of the query, showing a table with 5 rows and 2 columns (ID, name):

ID	name
6874	Sravan
5987	Karthik
2341	Sukeerthi
7613	Ritish
1986	Amanji

The Output window shows the execution details:

```
1 21:23:19 select p.ID,p.name from person as p,student as s where s.`mobile number` like '%9' and s.Unique_No=p.ID LIMIT 5 row(s) returned
```

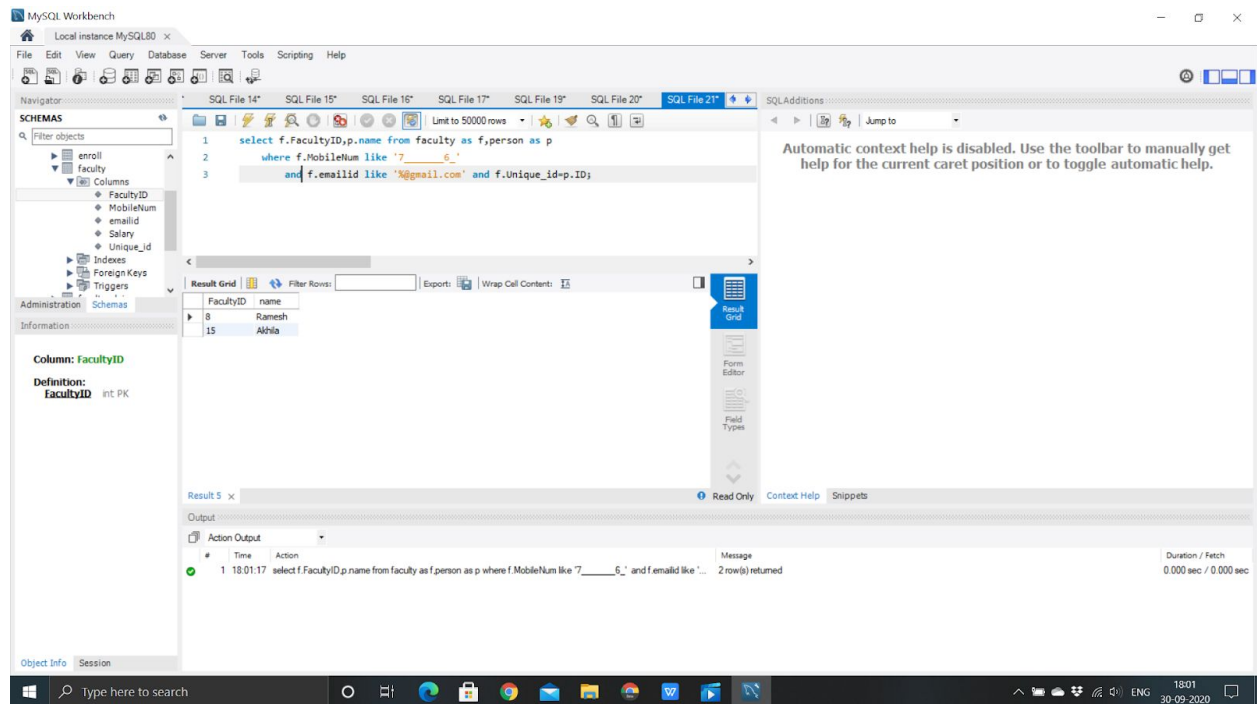
The status bar at the bottom indicates the duration of the query execution as 0.000 sec / 0.000 sec.

b) Selecting faculty from a faculty table whose mobile number like 7_____6_ and mail id like %@gmail.com.

Query:

```
select f.FacultyID,p.name from faculty as f,person as p
where f.MobileNum like '7_____6_'
and f.emailid like '%@gmail.com' and f.Unique_id=p.ID;
```

output:



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1 select f.FacultyID,p.name from faculty as f,person as p
2 where f.MobileNum like '7_____6_'
3 and f.emailid like '%@gmail.com' and f.Unique_id=p.ID;
```

The Results grid displays the following data:

FacultyID	name
8	Ramesh
15	Abhis

The Output pane shows the execution message:

```
1 18:01:17 select f.FacultyID,p.name from faculty as f,person as p where f.MobileNum like '7_____6_' and f.emailid like '%@gmail.com' and f.Unique_id=p.ID; 2 row(s) returned
```

The duration of the query execution is 0.000 sec / 0.000 sec.

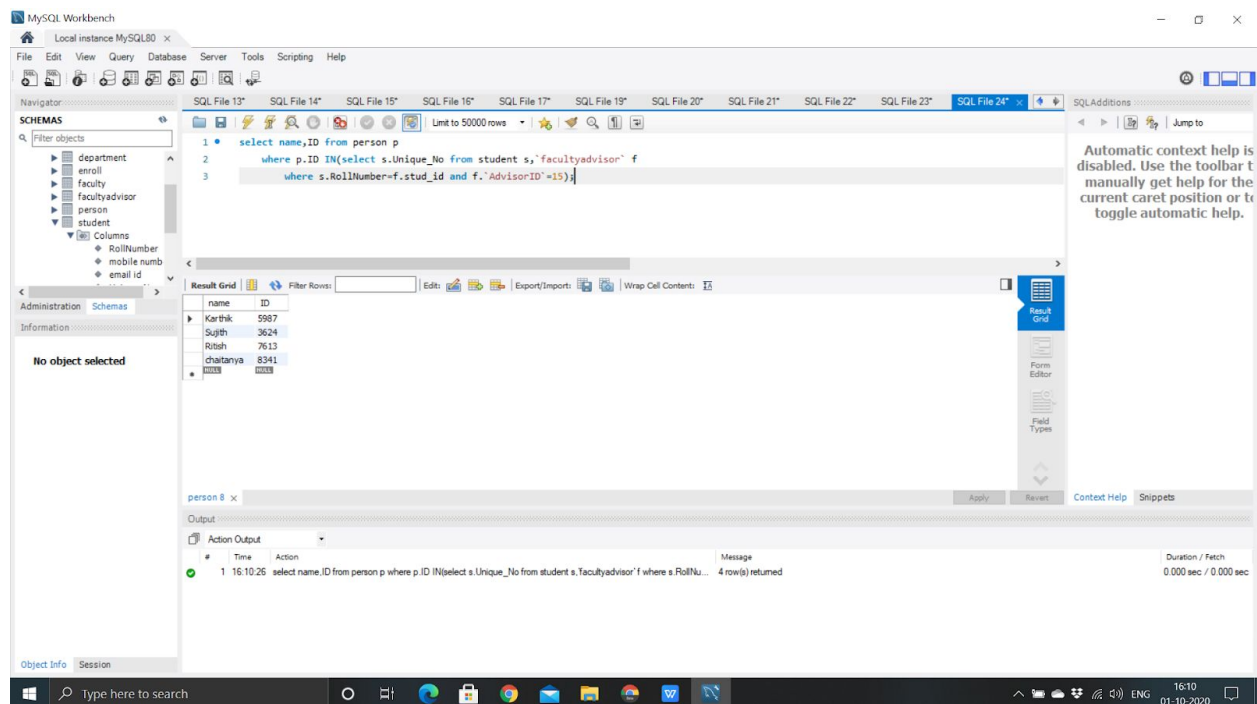
5. At least 4 Nested queries specific to your Database, out of which at least 2 should have multiple subquery.

a) Selecting students whose advisor id=15

Query:

```
select name, ID from person p
where p.ID IN(select s.Unique_No from student s, `facultyadvisor` f
where s.RollNumber=f.stud_id and f.AdvisorID=15);
```

output:



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
1 select name, ID from person p
2 where p.ID IN(select s.Unique_No from student s, `facultyadvisor` f
3 where s.RollNumber=f.stud_id and f.AdvisorID=15);
```

The Results tab displays the output in a table with 2 columns: name and ID. The data is as follows:

name	ID
Karthik	5987
Sujith	3624
Rishabh	7613
chaitanya	8341

The Output tab shows the execution details:

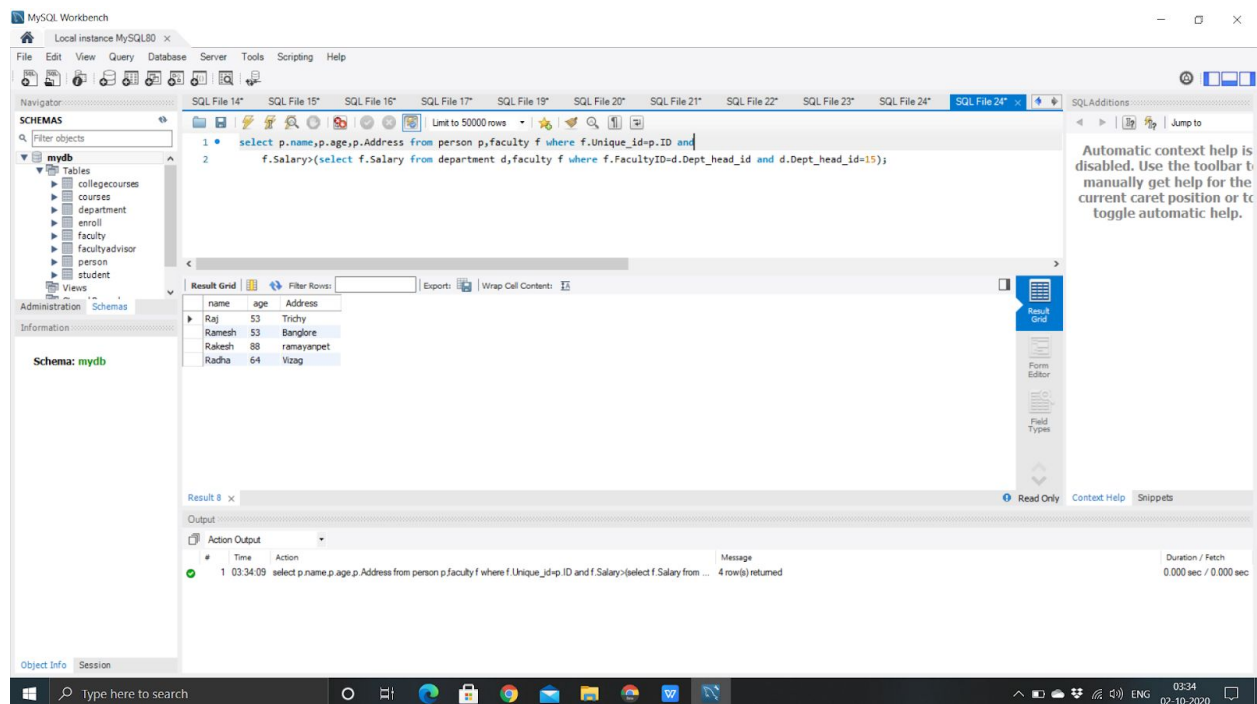
#	Time	Action	Message	Duration / Fetch
1	16:10:26	select name, ID from person p where p.ID IN(select s.Unique_No from student s, `facultyadvisor` f where s.RollNumber=f.stud_id and f.AdvisorID=15);	4 row(s) returned	0.000 sec / 0.000 sec

b) Selecting faculty whose salary is greater than the department head of CSE.

Query:

```
select p.name,p.age,p.Address from person p,faculty f where f.Unique_id=p.ID and  
f.Salary>(select f.Salary from department d,faculty f where  
f.FacultyID=d.Dept_head_id and d.Dept_head_id=15);
```

output:



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1 • select p.name,p.age,p.Address from person p,faculty f where f.Unique_id=p.ID and  
2 f.Salary>(select f.Salary from department d,faculty f where f.FacultyID=d.Dept_head_id and d.Dept_head_id=15);
```

The Results tab displays the output of the query in a table with the following data:

name	age	Address
Raj	53	Trichy
Ramesh	53	Banglore
Rakesh	88	ramayampet
Radha	64	Vizag

The Output tab shows the execution details:

#	Time	Action	Message	Duration / Fetch
1	03:34:09	select p.name,p.age,p.Address from person p,faculty f where f.Unique_id=p.ID and f.Salary>(select f.Salary from ...	4 row(s) returned	0.000 sec / 0.000 sec

c)Selecting students whose Advisor Radha(AdvisorID=26)

Query:

```
SELECT p.name,p.Address,p.Gender,p.ID,p.age
FROM person p
WHERE p.ID= ANY(
SELECT s.Unique_No FROM student s,facultyadvisor f
WHERE f.AdvisorID=26 and f.stud_id=s.RollNumber);
```

output:

The screenshot shows the MySQL Workbench interface. The SQL editor contains the query to select students whose advisor is Radha (AdvisorID=26). The query is executed, and the results are displayed in the Result Grid. The output shows 4 rows of student data.

name	Address	Gender	ID	age
Shreya	Nagpur	F	1675	20
Shravan	Delhi	M	6674	21
Nikhil	Benaras	M	1102	20
Bhuvana	Bombay	F	8792	20

The Output pane shows the execution details: 1 11:34:43 SELECT p.name,p.Address,p.Gender,p.ID,p.age FROM person p WHERE p.ID= ANY(SELECT s.Unique_No F... 4 row(s) returned. Duration / Fetch: 0.000 sec / 0.000 sec.

d) Selecting Students who have enrolled for course
CN(Course_id=306) and Faculty Akhila(faculty_id=15)

Query:

```
select * from student
where RollNumber in(select distinct student_id from enroll where course_id=306
and faculty_id=15)
```

output:

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1 select * from student where RollNumber in(select distinct student_id from enroll where course_id=306 and faculty_id=15)
```

The query results are displayed in the Result Grid, showing 4 rows of student data:

RollNumber	mobile number	email id	Unique_No	qualification
12	8962364567	Sujith@gmail.com	3624	12
15	2132156269	Sravan@gmail.com	6874	12
29	6494054786	Shravya@gmail.com	4535	12
51	7346777557	raghu@gmail.com	5624	12

The Output pane at the bottom shows the execution details:

#	Time	Action	Message	Duration / Fetch
1	13:53:11	select * from student where RollNumber in(select distinct student_id from enroll where course_id=306 and faculty...	4 row(s) returned	0.000 sec / 0.000 sec