SQL Queries
Part A: Basic to Intermediate Queries :

1 .
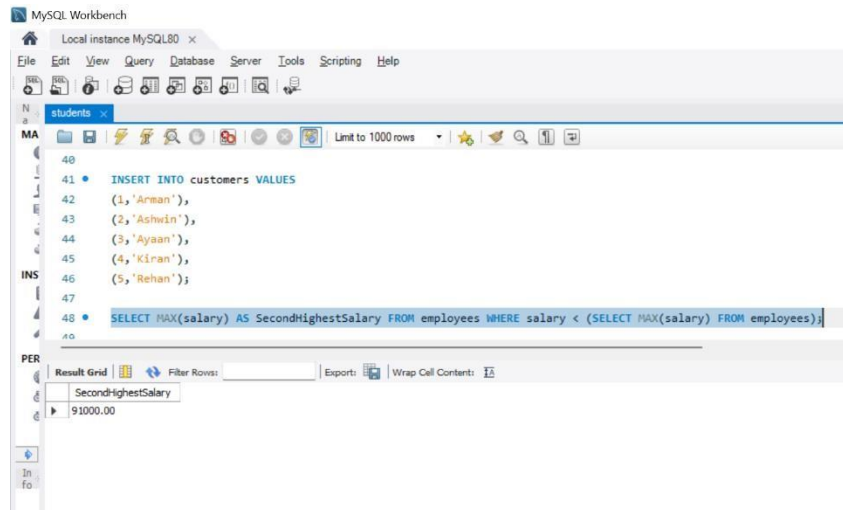
2.
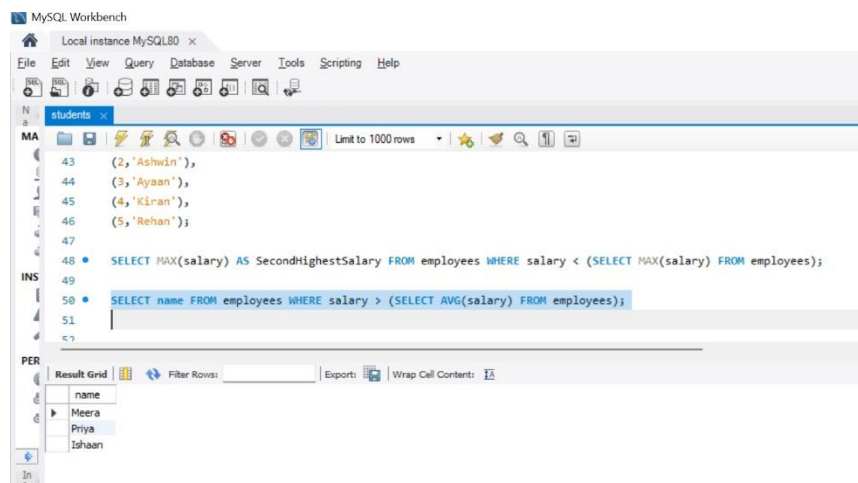
3.

4.


```
46    (5,'Rehan');
47
48 •  SELECT MAX(salary) AS SecondHighestSalary FROM employees WHERE salary < (SELECT MAX(salary) FROM em
49
50 •  SELECT name FROM employees WHERE salary > (SELECT AVG(salary) FROM employees);
51
52 •  SELECT SUBSTRING(name, 1, 3) AS ShortName FROM employees;
53
54 •  SELECT * FROM employees WHERE YEAR(hire_date) = 2023;
55
```
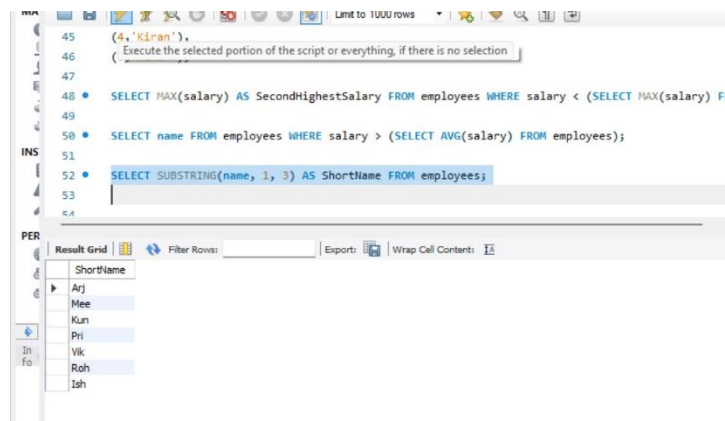
id	name	salary	hire_date	department
1	Arjun	72000.00	2023-01-18	IT
4	Priya	88000.00	2023-03-21	IT
6	Rohan	67000.00	2023-08-12	Sales
7	Ishaan	91000.00	2023-02-07	IT
NULL	NULL	NULL	NULL	NULL

5.


```
49
50 •  SELECT name FROM employees WHERE salary > (SELECT AVG(salary) FROM employees);
51
52 •  SELECT SUBSTRING(name, 1, 3) AS ShortName FROM employees;
53
54 •  SELECT * FROM employees WHERE YEAR(hire_date) = 2023;
55
56 •  SELECT name, COUNT(*) FROM students GROUP BY name HAVING COUNT(*) > 1;
57
58
```

name	COUNT(*)
Rahul	2

6.


```
50 •  SELECT name FROM employees WHERE salary > (SELECT AVG(salary) FROM employees);
51
52 •  SELECT SUBSTRING(name, 1, 3) AS ShortName FROM employees;
53
54 •  SELECT * FROM employees WHERE YEAR(hire_date) = 2023;
55
56 •  SELECT name, COUNT(*) FROM students GROUP BY name HAVING COUNT(*) > 1;
57
58 •  SELECT * FROM employees ORDER BY salary DESC LIMIT 5;
59
```

id	name	salary	hire_date	department
2	Meera	95000.00	2022-05-10	Finance
7	Ishaan	91000.00	2023-02-07	IT
4	Priya	88000.00	2023-03-21	IT
1	Arjun	72000.00	2023-01-18	IT
6	Rohan	67000.00	2023-08-12	Sales
NULL	NULL	NULL	NULL	NULL

7.

MySQL Workbench

Local instance MySQL80 ×

File Edit View Query Database Server Tools Scripting Help

students ×

Limit to 1000 rows

```
53
54 •    SELECT * FROM employees WHERE YEAR(hire_date) = 2023;
55
56 •    SELECT name, COUNT(*) FROM students GROUP BY name HAVING COUNT(*) > 1;
57
58 •    SELECT * FROM employees ORDER BY salary DESC LIMIT 5;
59
60 •    SELECT department, COUNT(*) AS EmployeeCount FROM employees GROUP BY department;
61
62
```

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

department	EmployeeCount
IT	3
Finance	1
HR	1
NULL	1
Sales	1

8.

MySQL Workbench

Local instance MySQL80 ×

File Edit View Query Database Server Tools Scripting Help

students ×

Limit to 1000 rows

```
55
56 •    SELECT name, COUNT(*) FROM students GROUP BY name HAVING COUNT(*) > 1;
57
58 •    SELECT * FROM employees ORDER BY salary DESC LIMIT 5;
59
60 •    SELECT department, COUNT(*) AS EmployeeCount FROM employees GROUP BY department;
61
62 •    SELECT * FROM employees WHERE department IS NULL;
63
64
```

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

id	name	salary	hire_date	department
5	Vikas	53000.00	2020-09-15	NULL
NULL	NULL	NULL	NULL	NULL

9.

MySQL Workbench

Local instance MySQL80 ×

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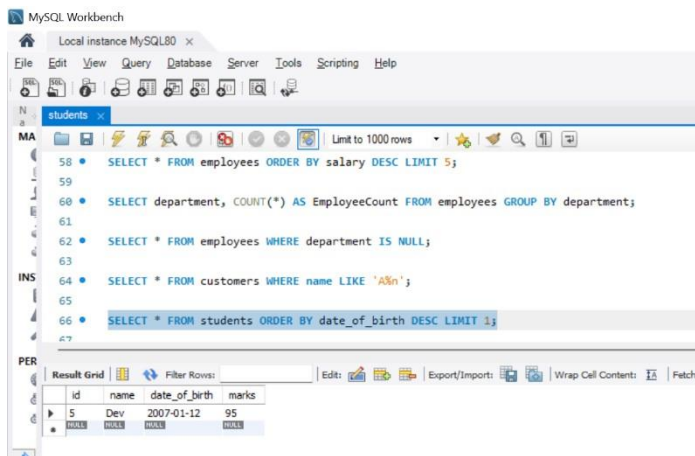students ×

Limit to 1000 rows

```
57
58 •    SELECT * FROM employees ORDER BY salary DESC LIMIT 5;
59
60 •    SELECT department, COUNT(*) AS EmployeeCount FROM employees GROUP BY department;
61
62 •    SELECT * FROM employees WHERE department IS NULL;
63
64 •    SELECT * FROM customers WHERE name LIKE 'A%n';
65
66
```
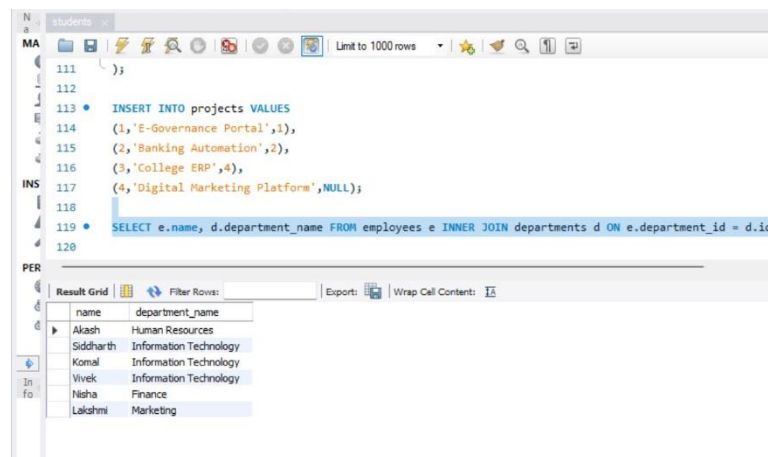
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: IA

id	name
1	Arman
2	Ashwin
3	Ayaan
NULL	NULL

10.

Part B: Joins & Subqueries :

1 .

2
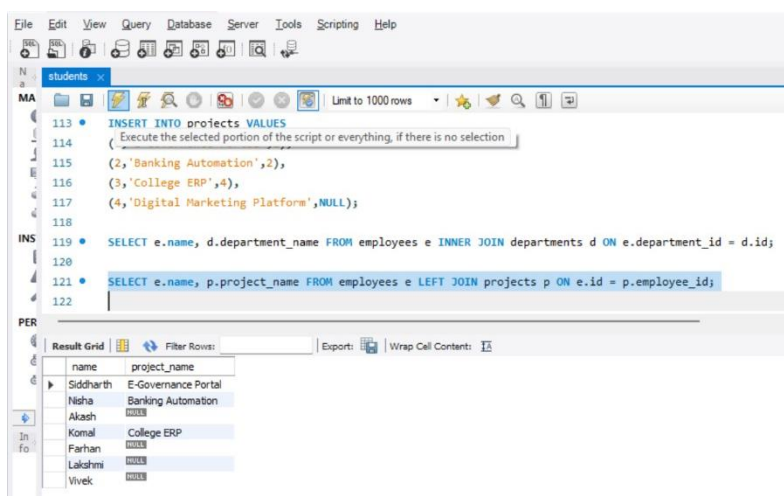
3.


```
116    (3,'College ERP',4),
117    (4,'Digital Marketing Platform',NULL);
118
119 •  SELECT e.name, d.department_name FROM employees e INNER JOIN departments d ON e.department_id = d.id;
120
121 •  SELECT e.name, p.project_name FROM employees e LEFT JOIN projects p ON e.id = p.employee_id;
122
123 •  SELECT e.name, p.project_name FROM employees e RIGHT JOIN projects p ON e.id = p.employee_id;
124
125
```

name	project_name
Siddharth	E-Governance Portal
Nisha	Banking Automation
Komal	College ERP
NULL	Digital Marketing Platform

4.


```
116    (3,'College ERP',4),
117    ( Execute the selected portion of the script or everything, if there is no selection
118
119 •  SELECT e.name, d.department_name FROM employees e INNER JOIN departments d ON e.department_id = d.id;
120
121 •  SELECT e.name, p.project_name FROM employees e LEFT JOIN projects p ON e.id = p.employee_id;
122
123 •  SELECT e.name, p.project_name FROM employees e RIGHT JOIN projects p ON e.id = p.employee_id;
124
125 •  SELECT * FROM employees WHERE id NOT IN (SELECT employee_id FROM projects);
```

id	name	salary	department_id
NULL	NULL	NULL	NULL

5.


```
119 •  SELECT e.name, d.department_name FROM employees e INNER JOIN departments d ON e.department_id = d.id;
120
121 •  SELECT e.name, p.project_name FROM employees e LEFT JOIN projects p ON e.id = p.employee_id;
122
123 •  SELECT e.name, p.project_name FROM employees e RIGHT JOIN projects p ON e.id = p.employee_id;
124
125 •  SELECT * FROM employees WHERE id NOT IN (SELECT employee_id FROM projects);
126
127 •  SELECT d.department_name, MAX(e.salary) AS HighestSalary FROM employees e JOIN departments d ON e.department_id = d.id GROUP BY d.department_name;
128
```

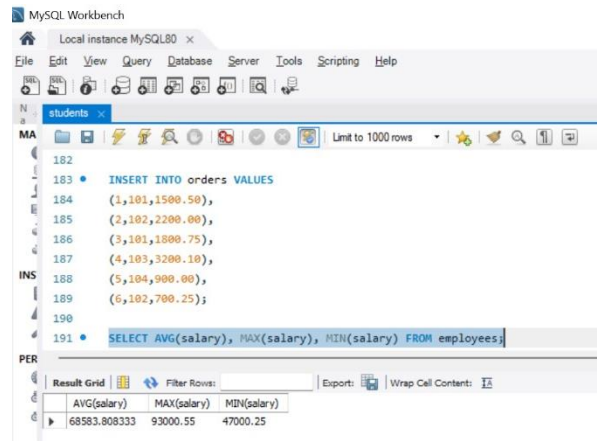| department_name	HighestSalary
Human Resources	46000.00
Information Technology	91000.00
Finance	95000.00
Marketing	69000.00

Part C: Functions & Grouping :

1.

2.

3.

4.


```sql
188        (5,104,900.00),
189        (6,102,700.25);
190
191 •  SELECT AVG(salary), MAX(salary), MIN(salary) FROM employees;
192
193 •  SELECT COUNT(*) FROM students WHERE marks > 80;
194
195 •  SELECT customer_id, SUM(amount) AS TotalSales FROM orders GROUP BY customer_id;
196
197 •  SELECT name, ROUND(salary, 2) FROM employees;
```
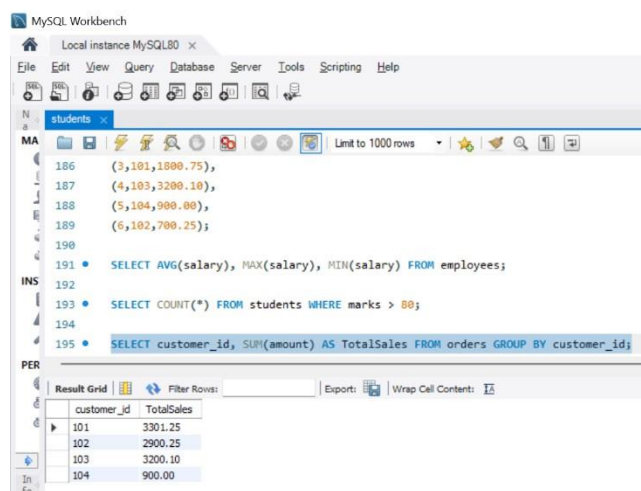
name	ROUND(salary, 2)
Ananya	65000.75
Ravi	72000.40
Meena	84500.90
Neel	50000.00
Malayalam	93000.55
Arun	47000.25

5.


```sql
190
191 •  SELECT AVG(salary), MAX(salary), MIN(salary) FROM employees;
192
193 •  SELECT COUNT(*) FROM students WHERE marks > 80;
194
195 •  SELECT customer_id, SUM(amount) AS TotalSales FROM orders GROUP BY customer_id;
196
197 •  SELECT name, ROUND(salary, 2) FROM employees;
198
199 •  SELECT * FROM employees WHERE name = REVERSE(name);
```
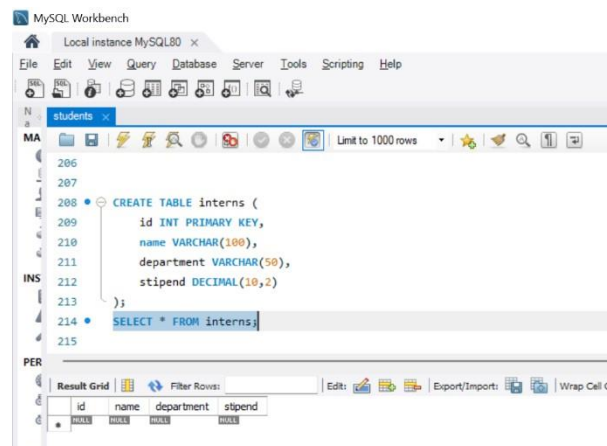
id	name	salary	hire_date
5	Malayalam	93000.55	2020-11-10
NULL	NULL	NULL	NULL

Part D: DDL, DML & Constraints :

1.


```
206
207
208  ⊖  CREATE TABLE interns (
209         id INT PRIMARY KEY,
210         name VARCHAR(100),
211         department VARCHAR(50),
212         stipend DECIMAL(10,2)
213     );
214  ●  SELECT * FROM interns;
215
```

id	name	department	stipend
NULL	NULL	NULL	NULL

2.


```
215
216  ●  INSERT INTO interns VALUES
217     (1,'Amit','Computer',4000),
218     (2,'Sara','Electronics',6000),
219     (3,'John','Computer',5500),
220     (4,'Neha','IT',7000),
221     (5,'Raj','Computer',4500);
222
223  ●  SELECT * FROM interns;
224
```

id	name	department	stipend
1	Amit	Computer	4000.00
2	Sara	Electronics	6000.00
3	John	Computer	5500.00
4	Neha	IT	7000.00
5	Raj	Computer	4500.00
NULL	NULL	NULL	NULL

3.


```
220     (4,'Neha','IT',7000),
221     (5,'Raj','Computer',4500);
222
223  ●  SELECT * FROM interns;
224
225  ●  UPDATE interns
226     SET stipend = stipend + 1000
227     WHERE department = 'Computer';
228
229  ●  SELECT * FROM interns;
```

id	name	department	stipend
1	Amit	Computer	5000.00
2	Sara	Electronics	6000.00
3	John	Computer	6500.00
4	Neha	IT	7000.00
5	Raj	Computer	5500.00
NULL	NULL	NULL	NULL

4.

MySQL Workbench

Local instance MySQL80 ×

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students ×

```
225 •  UPDATE interns
226     SET stipend = stipend + 1000
227     WHERE department = 'Computer';
228
229 •  SELECT * FROM interns;
230
231 •  DELETE FROM interns
232     WHERE stipend < 5000;
233
234 •  SELECT * FROM interns;
```

Limit to 1000 rows

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

id	name	department	stipend
1	Amit	Computer	5000.00
2	Sara	Electronics	6000.00
3	John	Computer	6500.00
4	Neha	IT	7000.00
5	Raj	Computer	5500.00
NULL	NULL	NULL	NULL

5.
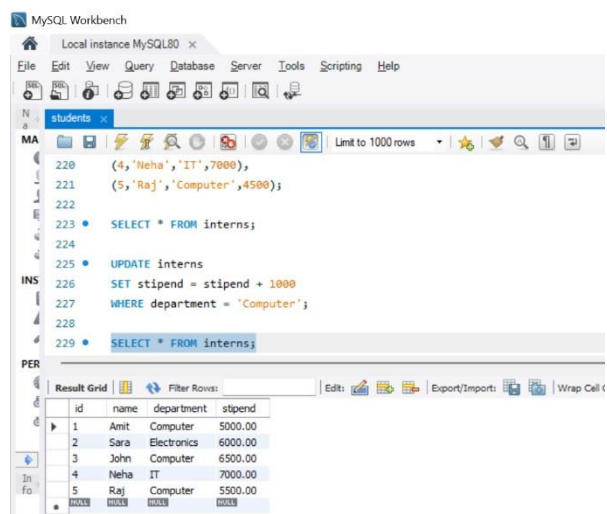
MySQL Workbench

Local instance MySQL80 ×

File Edit View Query Database Server Tools Scripting Help

students ×

```
231 •  DELETE FROM interns
232     WHERE stipend < 5000;
233
234 •  SELECT * FROM interns;
235
236 •  CREATE VIEW HighSalaryEmployees AS
237     SELECT * FROM employees
238     WHERE salary > 50000;
239
240 •  SELECT * FROM HighSalaryEmployees;
```

Limit to 1000 rows

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

id	name	salary	hire_date
1	Ananya	65000.75	2022-03-15
2	Ravi	72000.40	2021-07-20
3	Meena	84500.90	2023-01-05
5	Malayalam	93000.55	2020-11-10