

Queries for DBMS Lab

Final Labtest

| Course Code | CSE0612216 |
|--------------------|--|
| Submitted to | A. S. M. Shafi Ms. Tania Akter Setu |
| Submitted by | 0432410005101088 |
| Submission Date | 21.05.25 |

(Answers for Table Student, Courses)

Table name Student:

| Student_id | First_name | Last_name | Phone_No | Join_date | Course_Id | Fees | Grade | Mentor_id | Dept |
|------------|------------|-----------|------------|------------|-----------|-------|-------|-----------|------|
| 101 | Akash | Verma | 9876543210 | 2020-07-15 | C101 | 25000 | A | 201 | 1 |
| 102 | Neha | Sharma | 9123456780 | 2019-06-10 | C102 | 23000 | B | 202 | 2 |
| 103 | Rahul | Mehta | 9988776655 | 2021-01-05 | C103 | 27000 | A | 201 | 1 |
| 104 | Sneha | Reddy | 9786543210 | 2022-03-20 | C101 | 19000 | C | 203 | 3 |
| 105 | Aditya | Rao | 9654321876 | 2023-08-11 | C104 | 15000 | B | 202 | 2 |

Table Name: courses

| Course_Id | Course_name | Credits | Min_Fee | Dept_id |
|-----------|------------------|---------|---------|---------|
| C101 | Computer Science | 4 | 20000 | 1 |
| C102 | Mathematics | 3 | 18000 | 2 |
| C103 | Data Science | 5 | 25000 | 1 |
| C104 | Commerce | 3 | 14000 | 2 |

1. List all students mentored by mentor 201.
2. Find the names of students who belong to departments 1, 2, or 3.
3. Display all unique mentor IDs from the student records.
4. Increase the fees by 10% for students in the Commerce department.
5. Find the total number of students in each department.
6. Display departments that have more than one student.
7. Find students who joined between the years 2020 and 2022.
8. List course names and student names where the student's fee is more than the course's minimum fee.
9. Show all course names along with their department IDs.
10. Modify the data type of the Fees column in the students table.
11. Find students whose fee is higher than the average fee of Mathematics courses.
12. List the names of students , grade and department they are enrolled in.

1. Select Student_id, First_name, Last_name from Student where Mentor_id = 201;

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** 127.0.0.1
- Database:** labfinal_01
- Table:** Student
- Query Result:** The query `Select Student_id, First_name, Last_name from Student where Mentor_id = 201;` was run, showing 2 rows.
- Rows:**

| Student_id | First_name | Last_name |
|------------|------------|-----------|
| 101 | Akash | Verma |
| 103 | Rahul | Mehta |
- Operations:** Buttons for Edit, Copy, Delete, and Export are available for each row.
- Query results operations:** Buttons for Print, Copy to clipboard, Export, Display chart, and Create view.
- Bookmark this SQL query:** A field for labeling the bookmark and a checkbox for letting every user access it.

2. select First_name, Last_name from student where Dept_id in (1,2,3);

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** 127.0.0.1
- Database:** labfinal_01
- Table:** student
- Query Result:** The query `select First_name, Last_name from student where Dept_id in (1,2,3);` was run, showing 5 rows.
- Rows:**

| First_name | Last_name |
|------------|-----------|
| Akash | Verma |
| Neha | Sharma |
| Rahul | Mehta |
| Sneha | Reddy |
| Aditya | Rao |
- Operations:** Buttons for Edit, Copy, Delete, and Export are available for each row.
- Query results operations:** Buttons for Print, Copy to clipboard, Export, Display chart, and Create view.
- Bookmark this SQL query:** A field for labeling the bookmark and a checkbox for letting every user access it.

3. SELECT DISTINCT Mentor_id FROM student;

The screenshot shows the phpMyAdmin interface for a database named 'labfinal_01'. The 'student' table is selected. A query has been run: 'SELECT DISTINCT Mentor_id FROM student;'. The results show three distinct values: 201, 202, and 203. Each result row has options to edit, copy, or delete.

| Mentor_id |
|-----------|
| 201 |
| 202 |
| 203 |

4. update table courses set Min_Fee = Min_Fee+Min_Fee*0.10 where Course_name = "Commerce";

The screenshot shows the phpMyAdmin interface for a database named 'labfinal_01'. The 'courses' table is selected. An update query has been run: 'update courses set Min_Fee = Min_Fee+Min_Fee*0.10 where Course_name = 'Commerce';'. The message indicates 1 row affected. The results table shows the updated data for the 'Commerce' course, which now has a Min_Fee of 15400.00.

| Course_Id | Course_name | Credits | Min_Fee | Dept_id |
|-----------|------------------|---------|----------|---------|
| C101 | Computer Science | 4 | 20000.00 | 1 |
| C102 | Mathematics | 3 | 18000.00 | 2 |
| C103 | Data Science | 5 | 25000.00 | 1 |
| C104 | Commerce | 3 | 15400.00 | 2 |

5. select count(student.Student_id) as StudentInDept, Dept_id from student group by Dept_id;

The screenshot shows the phpMyAdmin interface for a database named 'labfinal_01'. The 'student' table is selected. A query has been run:

```
select count(student.Student_id) as StudentInDept, Dept_id from student group by Dept_id;
```

The results are displayed in a grid:

| StudentInDept | Dept_id |
|---------------|---------|
| 2 | 1 |
| 2 | 2 |
| 1 | 3 |

Below the grid, there are buttons for 'Edit', 'Copy', and 'Delete' for each row. There are also buttons for 'Check all', 'With selected', 'Edit', 'Copy', 'Delete', and 'Export'.

6. select count(student.Student_id) as StudentInDept from student group by Dept_id having count(student.Student_id) > 1;

The screenshot shows the phpMyAdmin interface for the same database and table. A different query has been run:

```
select count(student.Student_id) as StudentInDept from student group by Dept_id having count(student.Student_id) > 1;
```

A warning message is displayed: "Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available." Despite this, the results are shown in a grid:

| StudentInDept |
|---------------|
| 2 |
| 2 |

Below the grid, there are buttons for 'Show all', 'Number of rows', 'Filter rows', 'Search this table', and 'Sort by key'.

7. select Student_id, First_name, Last_name from student where Join_date > '2020-01-01' and Join_date < '2022-12-01';

The screenshot shows the phpMyAdmin interface for a MySQL database named 'labfinal_01'. The 'student' table is selected. A query has been run to select rows where the 'Join_date' is between '2020-01-01' and '2022-12-01'. The results show three rows:

| Student_id | First_name | Last_name |
|------------|------------|-----------|
| 101 | Akash | Verma |
| 103 | Rahul | Mehta |
| 104 | Sneha | Reddy |

Below the table, there are buttons for 'Edit', 'Copy', and 'Delete' for each row. There are also global buttons for 'Check all', 'With selected', 'Edit', 'Copy', 'Delete', and 'Export'.

8. select courses.Course_name, student.First_name from student left JOIN courses on student.Course_Id=courses.Course_Id where student.Fees > courses.Min_Fee;

The screenshot shows the phpMyAdmin interface for a MySQL database named 'labfinal_01'. A query has been run to select 'Course_name' and 'First_name' from the 'student' and 'courses' tables using a left join on 'Course_Id'. The results show three rows:

| Course_name | First_name |
|------------------|------------|
| Computer Science | Akash |
| Mathematics | Neha |
| Data Science | Rahul |

Below the table, there are buttons for 'Edit', 'Copy', and 'Delete' for each row. There are also global buttons for 'Check all', 'With selected', 'Edit', 'Copy', and 'Delete'.

9. select distinct student.Course_Id, courses.Course_name from student left JOIN courses on student.Course_Id=courses.Course_Id;

The screenshot shows the phpMyAdmin interface for a database named 'labfinal_01'. The 'student' table is selected. A query has been run:

```
select distinct student.Course_Id, courses.Course_name from student left JOIN courses on student.Course_Id=courses.Course_Id;
```

The results show four rows:

| Course_Id | Course_name |
|-----------|------------------|
| C101 | Computer Science |
| C102 | Mathematics |
| C103 | Data Science |
| C104 | Commerce |

10. alter table student modify column Fees int(10);

The screenshot shows the phpMyAdmin interface for the 'student' table. An 'ALTER TABLE' command has been run:

```
alter table student modify column Fees int(10);
```

The table structure is displayed with a red arrow pointing to the 'Fees' column, which has been modified to type 'int(10)'.

| # | Name | Type | Collation | Attributes | Null | Default | Comments | Extra | Action |
|----|------------|-------------|--------------------|------------|------|---------|----------|-------|--------------------|
| 1 | Student_id | int(11) | | No | None | | | | Change Drop More |
| 2 | First_name | varchar(50) | utf8mb4_general_ci | No | None | | | | Change Drop More |
| 3 | Last_name | varchar(50) | utf8mb4_general_ci | No | None | | | | Change Drop More |
| 4 | Phone_No | varchar(15) | utf8mb4_general_ci | Yes | NULL | | | | Change Drop More |
| 5 | Join_date | date | | Yes | NULL | | | | Change Drop More |
| 6 | Course_Id | varchar(10) | utf8mb4_general_ci | Yes | NULL | | | | Change Drop More |
| 7 | Fees | int(10) | | Yes | NULL | | | | Change Drop More |
| 8 | Grade | char(1) | utf8mb4_general_ci | Yes | NULL | | | | Change Drop More |
| 9 | Mentor_id | int(11) | | Yes | NULL | | | | Change Drop More |
| 10 | Dept_id | int(11) | | Yes | NULL | | | | Change Drop More |

11. select student.Student_id, student.First_name, student.Last_name from student join courses on student.Course_Id=courses.Course_Id where student.Fees > (select avg(courses.Min_Fee) as avgMath from courses where courses.Course_name = 'Mathematics');

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** 127.0.0.1
- Database:** labfinal_01
- Table:** student
- Query:** select student.Student_id, student.First_name, student.Last_name from student join courses on student.Course_Id=courses.Course_Id where student.Fees > (select avg(courses.Min_Fee) as avgMath from courses where courses.Course_name = 'Mathematics');
- Results:** Showing rows 0 - 3 (4 total). The data is:

| Student_id | First_name | Last_name |
|------------|------------|-----------|
| 101 | Akash | Verma |
| 102 | Neha | Sharma |
| 103 | Rahul | Mehta |
| 104 | Sneha | Reddy |

12. select student.First_name, student.Last_name, student.Grade, student.Dept_id from student;

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** 127.0.0.1
- Database:** labfinal_01
- Table:** student
- Query:** select student.First_name, student.Last_name, student.Grade, student.Dept_id from student;
- Results:** Showing rows 0 - 4 (5 total). The data is:

| | First_name | Last_name | Grade | Dept_id |
|---|------------|-----------|-------|---------|
| 1 | Akash | Verma | A | 1 |
| 2 | Neha | Sharma | B | 2 |
| 3 | Rahul | Mehta | A | 1 |
| 4 | Sneha | Reddy | C | 3 |
| 5 | Aditya | Rao | B | 2 |

(Answers for Table Employees, Teacher)

Table Name: employees

| Emp_id | First_name | Last_name | Phone_No | Hire_date | Job_Id | Emp_Salary | Comission_Per | Manager_id | Department_id |
|--------|------------|-----------|------------|------------|--------|------------|---------------|------------|---------------|
| 47401 | Rama | Rao | 8965324170 | 2003-01-28 | 301 | 60000 | 0.10 | 100 | 60 |
| 47402 | Ranga | Reddy | 7020321450 | 2004-06-23 | 302 | 56464 | 0.12 | 101 | 70 |
| 47403 | Raja | Shekhar | 9848002255 | 2004-08-12 | 303 | 58451 | 0.08 | 103 | 80 |
| 47404 | Ravi | Austin | 9701811356 | 2006-09-30 | 304 | 36520 | 0.05 | 100 | 90 |
| 47405 | Ranga | Raju | 9032553262 | 2014-05-17 | 305 | 2568 | 0.00 | 105 | 60 |

Teacher Table

| Id | Name | Deptno | Deptname | JoinDate | Location | Salary |
|----|-------------|--------|------------------|------------|-----------|--------|
| 10 | Kiran | 4 | Computer Science | 2003-06-03 | Hyderabad | 50000 |
| 11 | Ramu | 5 | Mathematics | 2008-07-13 | Hyderabad | 40000 |
| 12 | Raju | 6 | Commerce | 2005-12-23 | Abids | 30000 |
| 13 | Manirathnam | 6 | Commerce | 2006-12-18 | Abids | 30000 |
| 14 | Sita | 6 | Commerce | 2016-08-28 | Kingkoti | 23000 |

1. List out the employees who works under manager 100
2. Find the names of the employees who works in departments 60,70 and 80
3. Display the unique Manager_Id
4. Give Increment of 15% salary for Commerce Department
5. Find the total number of employees in each department.
6. Display departments that have more than 1 employees.
7. Find employees hired between 2004 and 2006.
8. List job titles and the names of employees earning more than the job's minimum salary.
9. Show department names along with the city they are located in.
10. Modify a column's data type (Emp_Salary)
11. Find employees whose salary is higher than any teacher's department average salary (assuming salary in teacher table)
12. Show the total salary paid by each department, but only those paying more than 100,000.

1. select Emp_id, First_name, Last_name from employees where manager_id=100;

The screenshot shows the phpMyAdmin interface for the 'labfinal_02' database. The 'employees' table is selected. A query has been run:

```
select Emp_id, First_name, Last_name from employees where manager_id=100;
```

The results show two rows:

| Emp_id | First_name | Last_name |
|--------|------------|-----------|
| 47401 | Rama | Rao |
| 47404 | Ravi | Austin |

Below the results, there are options to print, copy to clipboard, export, display chart, or create a view.

2. select concat(First_name," ",Last_name) as Employees from employees where Department_id in (60,70,80);

The screenshot shows the phpMyAdmin interface for the 'labfinal_02' database. The 'employees' table is selected. A query has been run:

```
select concat(First_name, " ", Last_name) as Employees from employees where Department_id in (60,70,80);
```

The results show four concatenated names:

| Employees |
|--------------|
| Rama Rao |
| Ranga Reddy |
| Raja Shekhar |
| Ranga Raju |

Below the results, there are options to print, copy to clipboard, export, display chart, or create a view.

3. select distinct manager_id from employees;

The screenshot shows the phpMyAdmin interface for the 'labfinal_02' database. The left sidebar lists various databases and tables. The current table is 'employees'. The main area displays the results of the query: 'select distinct manager_id from employees;'. The results show four distinct manager IDs: 100, 101, 103, and 105.

| manager_id |
|------------|
| 100 |
| 101 |
| 103 |
| 105 |

4. update teacher set salary=salary+salary*0.15 where Deptname="Commerce"; select * from teacher;

The screenshot shows the phpMyAdmin interface for the 'labfinal_02' database. The left sidebar lists various databases and tables. The current table is 'teacher'. The main area displays the results of two queries. The first query is 'update teacher set salary=salary+salary*0.15 where Deptname="Commerce";', which affected 3 rows. The second query is 'select * from teacher;', which showed 5 total rows. The results table lists five teacher entries with their details: Id, name, Deptno, Deptname, joinDate, location, and salary.

| | Id | name | Deptno | Deptname | joinDate | location | salary |
|--------------------------|----|-------------|--------|------------------|------------|-----------|--------|
| <input type="checkbox"/> | 10 | Kiran | 4 | Computer Science | 2003-06-03 | Hyderabad | 50000 |
| <input type="checkbox"/> | 11 | Ramu | 5 | Mathematics | 2008-07-13 | Hyderabad | 40000 |
| <input type="checkbox"/> | 12 | Raju | 6 | Commerce | 2005-12-23 | Abids | 34500 |
| <input type="checkbox"/> | 13 | Manirathnam | 6 | Commerce | 2006-12-18 | Abids | 34500 |
| <input type="checkbox"/> | 14 | Sita | 6 | Commerce | 2016-08-28 | Kingkot | 26450 |

5. select count(employees.Emp_id) as TotalEmp, employees.Department_id from employees group by employees.Department_id;

The screenshot shows the phpMyAdmin interface with the following details:

- Sidebar:** Shows databases like New, assignemnt01, information_schema, joinex, labfinal, labfinal_01, labfinal_02, mysql, performance_schem, phmyadmin, and test.
- Query Box:** Contains the SQL query: `select count(employees.Emp_id) as TotalEmp, employees.Department_id from employees group by employees.Department_id;`
- Results:** A table with two columns: `TotalEmp` and `Department_id`. The data is:

| TotalEmp | Department_id |
|----------|---------------|
| 2 | 60 |
| 1 | 70 |
| 1 | 80 |
| 1 | 90 |
- Operations:** Buttons for Print, Copy to clipboard, Export, Display chart, and Create view.
- Bookmark:** Fields for Label and Let every user access this bookmark.
- Console:** A text input field at the bottom.

6. select Department_id, count(Emp_id) as EmpCount from employees group by Department_id having count(Emp_id) > 1;

The screenshot shows the phpMyAdmin interface with the following details:

- Sidebar:** Shows databases like New, assignemnt01, information_schema, joinex, labfinal, labfinal_01, labfinal_02, mysql, performance_schem, phmyadmin, and test.
- Query Box:** Contains the SQL query: `select Department_id, count(Emp_id) as EmpCount from employees group by Department_id having count(Emp_id) > 1;`
- Results:** A table with two columns: `Department_id` and `EmpCount`. The data is:

| Department_id | EmpCount |
|---------------|----------|
| 60 | 2 |
- Operations:** Buttons for Print, Copy to clipboard, Export, Display chart, and Create view.
- Bookmark:** Fields for Label and Let every user access this bookmark.
- Console:** A text input field at the bottom.

7. select concat(First_name," ",Last_name) as Employees, Hire_date from employees where Hire_date > "2004-01-01" and Hire_date < "2006-12-30";

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** 127.0.0.1
- Database:** labfinal_02
- Table:** employees
- Query:** select concat(First_name," ",Last_name) as Employees, Hire_date from employees where Hire_date > "2004-01-01" and Hire_date < "2006-12-30";
- Results:** 3 rows displayed.
- Data:**

| Employees | Hire_date |
|--------------|------------|
| Ranga Reddy | 2004-06-23 |
| Raja Shekhar | 2004-08-12 |
| Ravi Austin | 2006-09-30 |
- Operations:** Print, Copy to clipboard, Export, Display chart, Create view.
- Bookmark:** Bookmark this SQL query (Label: []), Let every user access this bookmark.

8.

9. select Deptname, location from teacher ;

The screenshot shows the phpMyAdmin interface for the 'labfinal_02' database. The 'teacher' table is selected. The results of the query 'select Deptname, location from teacher;' are displayed, showing five rows of data:

| | Deptname | location |
|--------------------------|------------------|-----------|
| <input type="checkbox"/> | Computer Science | Hyderabad |
| <input type="checkbox"/> | Mathematics | Hyderabad |
| <input type="checkbox"/> | Commerce | Abids |
| <input type="checkbox"/> | Commerce | Abids |
| <input type="checkbox"/> | Commerce | Kingkотi |

Below the table, there are buttons for 'Check all', 'With selected', 'Edit', 'Copy', 'Delete', and 'Export'. The status bar at the bottom right shows '4:19 PM 5/21/2025'.

10. alter table employees modify employees.Emp_Salary decimal(8,2); select * from employees;

The screenshot shows the phpMyAdmin interface for the 'labfinal_02' database. The 'employees' table is selected. The results of the query 'alter table employees modify employees.Emp_Salary decimal(8,2);' are shown, indicating an empty result set.

The results of the query 'select * from employees;' are displayed, showing 5 rows of data:

| Emp_id | First_name | Last_name | Phone_No | Hire_date | Job_Id | Emp_Salary | Comission_Pct | manager_id | Department_id |
|--------|------------|-----------|------------|------------|--------|------------|---------------|------------|---------------|
| 47401 | Rama | Rao | 8965324170 | 2003-01-28 | 301 | 60000.00 | 0.10 | 100 | 60 |
| 47402 | Ranga | Reddy | 7020321450 | 2004-06-23 | 302 | 56464.00 | 0.12 | 101 | 70 |
| 47403 | Raja | Shekhar | 9848002255 | 2004-08-12 | 303 | 58451.00 | 0.08 | 103 | 80 |
| 47404 | Ravi | Austin | 9701811356 | 2006-09-30 | 304 | 36520.00 | 0.05 | 100 | 90 |
| 47405 | Ranga | Raju | 9032553262 | 2014-05-17 | 305 | 2568.00 | 0.00 | 105 | 60 |

Below the table, there are buttons for 'Check all', 'Number of rows: 25', 'Filter rows', and 'Search this table'. The status bar at the bottom right shows '4:30 PM 5/21/2025'.

11.

Use subqueries, it does not require Join operation

12. select Deptname, sum(teacher.salary) SalaryTotal from teacher group by Deptname having sum(teacher.salary) > 100000;

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** 127.0.0.1
- Database:** labfinal_02
- Table:** teacher
- Query Result:**

```
MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)  
select Deptname, sum(teacher.salary) SalaryTotal from teacher group by Deptname having sum(teacher.salary) > 100000;
```
- Operations:** Profiling, Edit inline, Explain SQL, Create PHP code, Refresh
- Results Table:** Deptname, SalaryTotal
- Buttons:** Create view, Bookmark this SQL query, Label input field, Let every user access this bookmark checkbox, Bookmark this SQL query
- Bottom Bar:** Console, various system icons, and a status bar showing 4:45 PM, ENG, S/21/2025.