# Assignment 5

1. Write a query to create a table Employee with the following structure:

```
mysql> use duk
Database changed
mysql> CREATE TABLE Employee (
    ->     emp_id INT NOT NULL PRIMARY KEY,
    ->     emp_name VARCHAR(100),
    ->     department VARCHAR(50),
    ->     salary DECIMAL(10,2)
    -> );
Query OK, 0 rows affected (0.04 sec)
```

2. Insert Data into Employee Table.

```
mysql> INSERT INTO Employee (emp_id, emp_name, department, salary) VALUES
    -> (1, 'Alice', 'HR', 55000),
    -> (2, 'Bob', 'Research', 70000),
    -> (3, 'Charlie', 'Sales', 45000),
    -> (4, 'Diana', 'Research', 60000),
    -> (5, 'Edward', 'IT', 75000),
    -> (6, 'Fiona', 'HR', 52000),
    -> (7, 'George', 'Research', 68000),
    -> (8, 'Hannah', 'IT', 80000),
    -> (9, 'Irene', 'Research', 62000),
    -> (10, 'Jack', 'Sales', 49000);
Query OK, 10 rows affected (0.02 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

3. Write a query to find the sum of the salaries of all employees.

```
mysql> select sum(salary) from Employee as Sum;
+-------------+
| sum(salary) |
+-------------+
|   616000.00 |
+-------------+
1 row in set (0.01 sec)
```

4. Write a query to find the maximum salary, minimum salary, and the average salary of employees.

```
mysql> select max(salary),min(salary),avg(salary) from Employee;
+-------------+-------------+--------------+
| max(salary) | min(salary) | avg(salary)  |
+-------------+-------------+--------------+
|    80000.00 |    45000.00 | 61600.000000 |
+-------------+-------------+--------------+
1 row in set (0.01 sec)
```

5. Write a query to find the sum of the salaries of all employees in the ‘Research’ department, as well as the maximum, minimum, and average salary in this department.

```
mysql> select sum(salary),min(salary),max(salary),avg(salary) from Employee where department = "Research";
+-------------+-------------+-------------+--------------+
| sum(salary) | min(salary) | max(salary) | avg(salary)  |
+-------------+-------------+-------------+--------------+
|   260000.00 |    60000.00 |    70000.00 | 65000.000000 |
+-------------+-------------+-------------+--------------+
1 row in set (0.04 sec)
```

6. Retrieve the total number of employees in the company.

```
mysql> select count(*) from Employee;
+----------+
| count(*) |
+----------+
|       10 |
+----------+
1 row in set (0.02 sec)
```

7. Retrieve the total number of employees in the ‘Research’ department.

```
mysql> select count(*) from Employee where department = "Research";
+----------+
| count(*) |
+----------+
|        4 |
+----------+
1 row in set (0.00 sec)
```

8. Write a query to count the number of distinct salary values in the database.

```
mysql> select count(Distinct salary) from Employee;
+------------------------+
| count(Distinct salary) |
+------------------------+
|                     10 |
+------------------------+
1 row in set (0.02 sec)
```

9. Retrieve the total number of employees, maximum salary, and minimum salary in one query using multiple aggregate functions.

```
mysql> select count(Distinct emp_name) , max(salary), min(salary) from Employee;
+--------------------------+-------------+-------------+
| count(Distinct emp_name) | max(salary) | min(salary) |
+--------------------------+-------------+-------------+
|                       10 |    80000.00 |    45000.00 |
+--------------------------+-------------+-------------+
1 row in set (0.00 sec)
```

10. Write a query to find the sum, average, and count of salaries but filter out employees with a salary below 50,000.

```
mysql> select sum(salary) , max(salary), min(salary) , count(DISTINCT salary) from Employee where salary < 50000;
+-------------+-------------+-------------+------------------------+
| sum(salary) | max(salary) | min(salary) | count(DISTINCT salary) |
+-------------+-------------+-------------+------------------------+
|    94000.00 |    49000.00 |    45000.00 |                      2 |
+-------------+-------------+-------------+------------------------+
1 row in set (0.00 sec)
```

11. Group employees by their department and retrieve the sum, average, maximum, and minimum salaries for each department.

```
mysql> select department, sum(salary) , avg(salary), min(salary) from Employee group by department;
+------------+-------------+--------------+-------------+
| department | sum(salary) | avg(salary)  | min(salary) |
+------------+-------------+--------------+-------------+
| HR         |   107000.00 | 53500.000000 |    52000.00 |
| Research   |   260000.00 | 65000.000000 |    60000.00 |
| Sales      |    94000.00 | 47000.000000 |    45000.00 |
| IT         |   155000.00 | 77500.000000 |    75000.00 |
+------------+-------------+--------------+-------------+
4 rows in set (0.00 sec)
```

12. Find departments where the sum of salaries is more than 150,000, and return the number of employees in those departments

```
mysql> select department, count(*) from Employee group by department having sum(salary) > 150000;
+------------+----------+
| department | count(*) |
+------------+----------+
| Research   |        4 |
| IT         |        2 |
+------------+----------+
2 rows in set (0.00 sec)
```

13. Find the total number of employees, and show only departments where the number of distinct salary values is greater than 2

```
mysql> select count(DISTINCT emp_name) from Employee group by department having count(DISTINCT salary) > 2;
+--------------------------+
| count(DISTINCT emp_name) |
+--------------------------+
|                        4 |
+--------------------------+
1 row in set (0.01 sec)
```

14. Retrieve departments with a total salary of more than 120,000 but limit to departments where the minimum salary is greater than 50,000

```
mysql> select department from Employee group by department having sum(salary) > 120000 and min(salary) > 50000;
+------------+
| department |
+------------+
| Research   |
| IT         |
+------------+
2 rows in set (0.00 sec)
```

15. Find departments with exactly 2 employees.

```
mysql> select department from Employee group by department having count(*) = 2;
+------------+
| department |
+------------+
| HR         |
| Sales      |
| IT         |
+------------+
3 rows in set (0.00 sec)
```