8) Queries using Aggregate functions, GROUP BY, HAVING and Creation and dropping of Views

GROUP BY Syntax

```
SELECT column1, column2, ..., columnN, aggregate_function(column_Z) FROM table_name WHERE condition GROUP BY column1, column2, ..., columnN;
```

mysql> CREATE TABLE Orders (id INTEGER NOT NULL AUTO_INCREMENT PRIMARY KEY, cust_id INTEGER, amount INTEGER NOT NULL);
Query OK

mysql> INSERT INTO Orders(cust_id,amount) VALUES (1,105); INSERT INTO Orders(cust_id,amount) VALUES (1,78); INSERT INTO Orders(cust_id,amount) VALUES (3,55); INSERT INTO Orders(cust_id,amount) VALUES (3,42); INSERT INTO Orders(cust_id,amount) VALUES (2,215);

Query OK, 1 row affected (0.23 sec)

Query OK, 1 row affected

mysql> SELECT * FROM Orders;

++-		+	+		
id cust_id amount					
-		,	,		
1	1	105			
2	1	78			
3	3	55			
4	3	42			
5	2	215			
1 1		1	- 1		

5 rows in set (0.05 sec)

mysql> SELECT cust id, SUM(amount) as total amount FROM Orders GROUP BY cust id;

```
+-----+
| cust_id | total_amount |
+-----+
| 1 | 183 |
| 3 | 97 |
| 2 | 215 |
+-----+
```

3 rows in set

☐ You can also use expressions in the GROUP BY clause to group data based on calculated values. Consider the following query on the same Orders table to understand the usage of GROUP BY with an expression example

mysql> SELECT CASE

WHEN amount < 50 THEN 'Low'

WHEN amount >= 50 AND amount < 150 THEN 'Medium'

WHEN amount >= 150 THEN 'High'

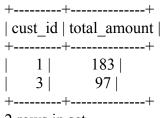
END as amount range,

COUNT(*) as count_orders
FROM Orders
GROUP BY amount_range;

+-----+
| amount_range | count_orders |
+-----+
Medium	3
Low	1
High	1
+-----+

GROUP BY With HAVING Clause

mysql> SELECT cust_id, SUM(amount) as total_amount FROM Orders GROUP BY cust_id HAVING total_amount <= 200;



2 rows in set

3 rows in set

Example

Let's create a view in MySQL Command line client using an existing table inside a database. Suppose, we have a table EMPLOYEE which displays the details of employees working in an organization.

Emp_id	first_name	last_name	Emp_age	Emp_salary
101	Harry	Wills	29	20000
102	Nicholas	Byer	27	30000
103	Marie	Curie	24	55000
104	Karl	Anderson	38	70000

Query:

CREATE VIEW EMP_DETAILS AS SELECT Emp_id,Emp_salary FROM EMPLOYEE WHERE Emp_salary > 20000; SELECT * FROM EMP_DETAILS;

Output:

Emp id	Emp_salary
102	30000
103	55000
104	70000