



## **Experiment 2**

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**Subject Name:** Technical Training

**Subject Code:** 25CAP-652

### **1. Aim:**

To analyze student performance using SQL by identifying high-performing students (percentage > 95) and evaluating their distribution across different cities using CASE statements and aggregate functions.

### **2. Objective:**

1. To create and analyze a Students database table containing student ID, name, city, and percentage.
2. To determine the count of students whose percentage is greater than 95:
  - a. Using a CASE statement
  - b. Without using a CASE statement
3. To calculate the average percentage of students (percentage > 95) in each city:
  - c. Using a CASE statement
  - d. Without using a CASE statement
4. To sort the cities in descending order of average percentage to identify cities with the highest-performing students.
5. To understand the use of CASE statements, aggregate functions (COUNT, AVG), GROUP BY, and ORDER BY clauses in SQL for data analysis.

### **3. Implementation/Code:**

```
CREATE TABLE Students (student_id INT, name VARCHAR(50), city VARCHAR(50), percentage DECIMAL(5,2));
```

```
INSERT INTO Students VALUES(1, 'Amit', 'Delhi', 96.5);
```

```
INSERT INTO Students VALUES(2, 'Riya', 'Mumbai', 94.2);
```

```
INSERT INTO Students VALUES(3, 'Rahul', 'Delhi', 97.8);
```

```
INSERT INTO Students VALUES(4, 'Sneha', 'Mumbai', 98.1);
```

```
INSERT INTO Students VALUES(5, 'Ankit', 'Chandigarh', 95.6);
```

```
INSERT INTO Students VALUES(6, 'Pooja', 'Delhi', 93.4);
```

```
INSERT INTO Students VALUES(7, 'Karan', 'Chandigarh', 96.2);
```

```
--count
```

```
--without case statement
```

SELECT city, COUNT(\*) AS students\_count FROM Students WHERE percentage>95 GROUP BY city;

--with case statement

SELECT city, SUM(CASE WHEN percentage>95 THEN 1 ELSE 0 END) AS students\_count FROM Students GROUP BY city;

--average

--without case statement

SELECT city, AVG(percentage) AS students\_avg FROM Students WHERE percentage>95 GROUP BY city ORDER BY students\_avg DESC;

--with case statement

SELECT city, AVG(CASE WHEN percentage>95 THEN percentage ELSE NULL END) AS students\_avg FROM Students GROUP BY city ORDER BY students\_avg DESC;

## 4. Output:

```

17  ---Without Case Statement
18  SELECT CITY , COUNT(*) AS STUDET_COUNT FROM Students
19  WHERE percentage> 95
20  GROUP BY city;

```

	city character varying (50)	studet_count bigint
1	Delhi	2
2	Mumbai	1
3	Chandigarh	2

```

33  SELECT CITY , AVG(CASE WHEN PERCENTAGE>95 THEN PERCENTAGE ELSE
34  NULL END) AS STUDENT_AVG FROM Students
35  GROUP BY city
36  ORDER BY STUDENT_AVG DESC;

```

	city character varying (50)	student_avg numeric
1	Mumbai	98.1000000000000000
2	Delhi	97.1500000000000000
3	Chandigarh	95.9000000000000000

```
25 SELECT CITY, SUM(CASE WHEN percentage > 95 THEN 1
26 ELSE 0 END) AS STUDENT_COUNTS FROM Students
27 GROUP BY city
28
```

Data Output Messages Notifications

Showing rows: 1 to 3 of 1

	city character varying (50)	student_counts bigint
1	Mumbai	1
2	Delhi	2
3	Chandigarh	2

## 5. Learning Outcomes:

1. Learn how to use the CASE statement in SQL to count students based on specific conditions.
2. Understand how to calculate the average percentage for selected students using SQL.
3. Know how to group data by city and filter results to focus on high-performing students.
4. Be able to sort results to easily identify which cities have the best-performing students.