

Branch: MCA (Data Science) Kargil	Semester: 2
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Subject Name: Technical Training - I Lab	Subject Code: 25CAP-652
Section/Group: A	Date of Performance: 13-01-2026

Experiment No. 1

1. Aim/Overview of the practical:

To analyze student performance data using SQL aggregate functions, grouping, and conditional logic to compute city-wise topper counts and average topper percentages.

2. Software Requirement: Oracle Database Express Edition and pgAdmin

3. Objective:

To gain practical experience in writing and executing SQL queries using aggregate functions, conditional expressions, and grouping clauses to perform meaningful data analysis and derive insights from relational data.

4. Task:

An academic institution wants to analyze student performance data to identify city-wise toppers. The task is to write SQL queries that compute topper counts and average topper percentages using aggregate functions, grouping, and conditional logic.

5. Queries for Practical:

```
create table students(
    studID int primary key,
    studName varchar(30) not null,
    city varchar(30),
```

```
percentage decimal(5,2) not null  
);
```

```
INSERT INTO Students VALUES
```

```
(1, 'Amit', 'Delhi', 96.5),  
(2, 'Riya', 'Mumbai', 94.2),  
(3, 'Rahul', 'Delhi', 97.8),  
(4, 'Sneha', 'Mumbai', 98.1),  
(5, 'Ankit', 'Chandigarh', 95.6),  
(6, 'Pooja', 'Delhi', 93.4),  
(7, 'Karan', 'Chandigarh', 96.2);
```

```
-- All Toppers(percentage>95) in each city without using case statement
```

```
select city,count(studID) as topper_count  
from students  
where percentage>95  
group by city;
```

```
-- All Toppers(percentage>95) in each city with case statement
```

```
select city,sum(case when percentage>95 then 1 else 0 end)  
from students  
group by city;
```

```
-- Average percentage of toppers city-wise
```

```
select city, avg(case when percentage > 95 then percentage else NULL end)  
as average_toppers  
from students  
group by city  
order by average_toppers desc;
```

6. Output:


a) Topper Count without using case statement

	city character varying (30)	topper_count bigint
1	Delhi	2
2	Mumbai	1
3	Chandigarh	2

b) Topper Count using case statement

	city character varying (30)	sum bigint
1	Mumbai	1
2	Delhi	2
3	Chandigarh	2

c) Average percentage of toppers

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	city character varying (30)	average_toppers numeric
1	Mumbai	98.1000000000000000
2	Delhi	97.1500000000000000
3	Chandigarh	95.9000000000000000

7. Learning outcomes (What I have learnt):

- Applied SQL aggregate functions such as COUNT and AVG to summarize student performance data.
- Used GROUP BY and conditional filtering to perform city-wise data analysis.
- Implemented CASE expressions for conditional aggregation in SQL queries.