Documentation for SQL Queries

TASK- 1

1. Display All Students

```
SELECT * FROM students;
```

Purpose: To get an overview of all the students and their details in the students table.

Observations: This query retrieves all records from the students table, providing a complete view of the data.

2. Calculate Average Scores for Each Subject

```
SELECT
    AVG(MathsScore) AS avg_mathsscore,
    AVG(ScienceScore) AS avg_ScienceScore,
    AVG(EnglishScore) AS avg_EnglishScore
FROM
    students;
```

Purpose: To understand the subject-wise performance by calculating the average scores for Math', Science, and English.

Observations: This query helps identify the overall performance in each subject, highlighting areas of strength and weakness.

3. Find the Top Performer

```
SELECT
    name,
    SUM(MathsScore + ScienceScore + EnglishScore) AS total_marks
FROM
```

```
    students
GROUP BY name
ORDER BY total_marks DESC
LIMIT 1;
```

Purpose: To identify the student with the highest total score across all subjects.

Observations: This query ranks students based on their total marks and returns the top performer.

4. Count Students in Each Grade

```
SELECT
    Grade, COUNT(Grade) AS total_student
FROM
    students
GROUP BY Grade;
```

Purpose: To observe the distribution of students across different grades.

Observations: This query provides insights into how students are distributed among various grades, helping to understand the overall academic performance.

5. Compare Performance by Gender

```
SELECT
    gender,
    AVG(MathsScore + ScienceScore + EnglishScore) AS avg_marks
FROM
    students
GROUP BY gender;
```

Purpose: To compare the average scores of male and female students.

Observations: This query helps in understanding the performance differences between genders.

6. Identify High Achievers in Math

SELECT * FROM students WHERE MathsScore > 80;

Purpose: To highlight students who have scored above 80 in Maths.

Observations: This query identifies high achievers in Maths, which can be useful for recognizing and rewarding top performers.

7. Update Grade for a Specific Student

UPDATE Students SET Grade = 'A', MathsScore = 90 WHERE StudentID = 8; SELECT * FROM students;

Purpose: To update the grade and Maths score of a student with a specific StudentID.

Observations: This query reflects changes or corrections in the student's record, ensuring data accuracy.