Create a database named StudentManagement:-

mysql> create database StudentManagement;

Query OK, 1 row affected (0.03 sec)

Use the database:

mysql> use StudentManagement;

Database changed

Create table named Students:

mysql> create table Students(StudentID int PRIMARY KEY AUTO_INCREMENT,Name varchar(50),Gender varchar(1), Age int,Grade varchar(10),MathsScore int ,ScienceScore int ,EnglishScore int);

Query OK, 0 rows affected (0.06 sec)

mysql> desc Students;

```
mysql> desc Students;
+--------------+-------------+------+-----+---------+----------------+
| Field        | Type        | Null | Key | Default | Extra          |
+--------------+-------------+------+-----+---------+----------------+
| StudentID    | int         | NO   | PRI | NULL    | auto_increment |
| Name         | varchar(50) | YES  |     | NULL    |                |
| Gender       | varchar(1)  | YES  |     | NULL    |                |
| Age          | int         | YES  |     | NULL    |                |
| Grade        | varchar(10) | YES  |     | NULL    |                |
| MathsScore   | int         | YES  |     | NULL    |                |
| ScienceScore | int         | YES  |     | NULL    |                |
| EnglishScore | int         | YES  |     | NULL    |                |
+--------------+-------------+------+-----+---------+----------------+
8 rows in set (0.00 sec)
```

Insert values into table:

mysql> insert into Students values(101,'Noah Lewis','F',14,'A',90,89,96);

Query OK, 1 row affected (0.04 sec)

mysql> insert into Students values(102,'Amit Kumar','M',15,'B',60,75,78);

```
Query OK, 1 row affected (0.02 sec)

mysql> insert into Students values(103,'Gauri Rao','F',14,'A',89,85,91);
Query OK, 1 row affected (0.00 sec)

mysql> insert into Students values(104,'Manav Bhatt','M',15,'A',93,91,89);
Query OK, 1 row affected (0.00 sec)

mysql> insert into Students values(105,'Riya Kapoor','F',15,'C',45,56,67);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Students values(106,'John Doe','M',15,'B',88,78,80);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Students values(107,'Alice Johnson','F',15,'A',90,89,87);
Query OK, 1 row affected (0.02 sec)

mysql> insert into Students values(108,'Bob Williams','M',14,'B',77,82,85);
Query OK, 1 row affected (0.02 sec)

mysql> insert into Students values(109,'Jane Smith','M',15,'B',83,85,90);
Query OK, 1 row affected (0.02 sec)

mysql> insert into Students values(110,'Eisha Kaushik','F',15,'A',90,93,89);
Query OK, 1 row affected (0.02 sec)
```

Tasks to be Perform

1)Display all students and their details to get an overview of the data:

mysql> select * from Students;

```
mysql> select * from Students;
+-----------+---------------+--------+------+-------+------------+--------------+--------------+
| StudentID | Name          | Gender | Age  | Grade | MathsScore | ScienceScore | EnglishScore |
+-----------+---------------+--------+------+-------+------------+--------------+--------------+
|       101 | Noah Lewis    | F      |   14 | A     |         90 |           89 |           96 |
|       102 | Amit Kumar    | M      |   15 | B     |         60 |           75 |           78 |
|       103 | Gauri Rao     | F      |   14 | A     |         89 |           85 |           91 |
|       104 | Manav Bhatt   | M      |   15 | A     |         93 |           91 |           89 |
|       105 | Riya Kapoor   | F      |   15 | C     |         45 |           56 |           67 |
|       106 | John Doe      | M      |   15 | B     |         88 |           78 |           80 |
|       107 | Alice Johnson | F      |   15 | A     |         90 |           89 |           87 |
|       108 | Bob Williams  | M      |   14 | B     |         77 |           82 |           85 |
|       109 | Jane Smith    | M      |   15 | B     |         83 |           85 |           90 |
|       110 | Eisha Kaushik | F      |   15 | A     |         90 |           93 |           89 |
+-----------+---------------+--------+------+-------+------------+--------------+--------------+
10 rows in set (0.00 sec)
```

2) Calculate the average scores for each subject to understand subject-wise performance:-

mysql> select avg(MathsScore) as Average_MathsScore,avg(ScienceScore) as Average_ScienceScore,avg(EnglishScore) as Average_EnglishScore from Students;

```
mysql> select avg(MathsScore) as Average_MathsScore,avg(ScienceScore) as Average_ScienceScore,avg(EnglishScore) as Average_EnglishScore from Students;
+------------------+-------------------+--------------------+
| Average_MathsScore | Average_ScienceScore | Average_EnglishScore |
+------------------+-------------------+--------------------+
|          80.5000 |           82.3000 |            85.2000 |
+------------------+-------------------+--------------------+
1 row in set (0.00 sec)
```

3) Find the student(s) with the highest total score across all subjects to identify the top performer:-

mysql> select StudentID,Name,(MathsScore + ScienceScore + EnglishScore) as Average from Students order by Average DESC LIMIT 1;

```
mysql> select StudentID,Name,(MathsScore + ScienceScore + EnglishScore) as Average from Students order by Average DESC LIMIT 1;
+-----------+------------+---------+
| StudentID | Name       | Average |
+-----------+------------+---------+
|       101 | Noah Lewis |     275 |
+-----------+------------+---------+
1 row in set (0.00 sec)
```

4) Count the number of students in each grade to observe grade distributions:-

mysql> select Grade,count(StudentID) as No_of_Students from Students group by Grade;

```
mysql> select Grade,count(StudentID) as No_of_Students from Students group by Grade;
+-------+----------------+
| Grade | No_of_Students |
+-------+----------------+
| A     |              5 |
| B     |              4 |
| C     |              1 |
+-------+----------------+
3 rows in set (0.00 sec)
```

5) Find the average score for male and female students to compare performance by gender:-

mysql> select Gender,avg(MathsScore) as Average_Maths_Score,avg(ScienceScore) as Average_Science_Score,avg(EnglishScore) as Average_English_Score from Students group by Gender;

```
mysql> select Gender,avg(MathsScore) as Average_Maths_Score,avg(ScienceScore) as Average_Science_Score,avg(EnglishScore) as Average_English_Score from Stude
nts group by Gender;
+------+-------------------+--------------------+--------------------+
| Gender | Average_Maths_Score | Average_Science_Score | Average_English_Score |
+------+-------------------+--------------------+--------------------+
| F    |           80.8000 |            82.4000 |            86.0000 |
| M    |           80.2000 |            82.2000 |            84.4000 |
+------+-------------------+--------------------+--------------------+
2 rows in set (0.00 sec)
```

6) Identify students whose Math score is above 80 to highlight high achievers in Math:-

mysql> select StudentID,Name,MathsScore from Students where MathsScore > 80;

```
mysql> select StudentID,Name,MathsScore from Students where MathsScore > 80;
+-----------+---------------+------------+
| StudentID | Name          | MathsScore |
+-----------+---------------+------------+
|       101 | Noah Lewis    |         90 |
|       103 | Gauri Rao     |         89 |
|       104 | Manav Bhatt   |         93 |
|       106 | John Doe      |         88 |
|       107 | Alice Johnson |         90 |
|       109 | Jane Smith    |         83 |
|       110 | Eisha Kaushik |         90 |
+-----------+---------------+------------+
7 rows in set (0.01 sec)
```

7) Update the grade of a student with a specific Student ID to reflect changes or corrections:-

mysql> update Students SET Grade = 'A+' where StudentID = 101;

Query OK, 1 row affected (0.02 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select * from Students where StudentID = 101;

```
mysql> update Students SET Grade = 'A+' where StudentID = 101;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from Students where StudentID = 101;
+-----------+------------+--------+------+-------+------------+--------------+--------------+
| StudentID | Name       | Gender | Age  | Grade | MathsScore | ScienceScore | EnglishScore |
+-----------+------------+--------+------+-------+------------+--------------+--------------+
|       101 | Noah Lewis | F      |   14 | A+    |         90 |           89 |           96 |
+-----------+------------+--------+------+-------+------------+--------------+--------------+
1 row in set (0.00 sec)
```