**Task-1-SQL-Developer**

**Student Management System Project for SQL Developer domain**

**Objective**

The project focuses on providing students with practical experience in SQL database creation,data manipulation, and analysis using student performance data.

**Project Steps**

* Database Setup ● Create a database named StudentManagement. ● Create a table named Students with the following fields: ○ StudentID: Primary Key, INT, an auto-incrementing integer. ○ Name: Stores the student's name (up to 50 characters). ○ Gender: A single character (VARCHAR, 1 - 'M' for Male, 'F' for Female). ○ Age: INT ○ Grade: Academic grade (VARCHAR, 10 - e.g., 'A', 'B', 'C', etc.). ○ MathScore, ScienceScore, EnglishScore: Integers representing scores in respective subjects.
* Insert Data Populate the Students table with at least 10 sample records, including a variety of names, genders, grades, and scores in Math, Science, and English.
* Tasks to Perform
* Display all students and their details to get an overview of the data.
* Calculate the average scores for each subject to understand subject-wise performance.
* Find the student(s) with the highest total score across all subjects to identify the top performer.
* Count the number of students in each grade to observe grade distributions.
* Find the average score for male and female students to compare performance by gender.
* Identify students whose Math score is above 80 to highlight high achievers in Math.
* Update the grade of a student with a specific Student ID to reflect changes or corrections.

Insert Data.

Show Database

Create Database StudentManagement

use StudentManagement

CREATE TABLE Students (

StudentID INT AUTO\_INCREMENT,

Name VARCHAR(50),

Gender VARCHAR(1),

Age INT,

Grade VARCHAR(10),

MathScore INT,

ScienceScore INT,

EnglishScore INT,

PRIMARY KEY (StudentID)

);

INSERT INTO Students (Name, Gender, Age, Grade, MathScore, ScienceScore, EnglishScore)

VALUES

('Sagar', 'M', 16, 'A', 90, 85, 95),

('Shiwani, 'F', 17, 'A', 95, 90, 92),

('Aanand', 'M', 16, 'B', 80, 75, 85),

('Sneha', 'F', 17, 'A', 92, 88, 90),

('Aryan', 'M', 16, 'C', 70, 65, 75),

('Sarika', 'F', 17, 'B', 85, 80, 88),

('priyanshu', 'M', 16, 'B', 75, 70, 80),

('Sarah', 'F', 17, 'A', 98, 95, 92),

('Rahul', 'M', 16, 'C', 65, 60, 70),

('Nandini kumari', 'F', 17, 'A', 90, 85, 95);

Task 1:

* Display of all students and their details.

-> SELECT \* FROM Students;

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Student ID | Name | Gender | Age | Grade | Mathscore | Sciencescore | | English Score | |
| 101 | Sagar | male | 16 | A | 90 | 85 |  | 95 |  |
| 102 | Shiwani | female | 17 | A | 95 | 90 |  | 92 |  |
| 103 | Anand | male | 16 | B | 80 | 75 |  | 85 |  |
| 104 | Sneha | female | 17 | A | 92 | 88 |  | 90 |  |
| 105 | Aryan | male | 16 | C | 70 | 65 |  | 75 |  |
| 106 | Sarika | female | 17 | B | 85 | 80 |  | 88 |  |
| 107 | Priyanshu | male | 16 | B | 75 | 70 |  | 80 |  |
| 108 | Sarah | female | 17 | A | 98 | 95 |  | 92 |  |
| 109 | Rahul | male | 16 | C | 65 | 60 |  | 70 |  |
| 110 | Nandini | female | 17 | F | 90 | 85 |  | 95 |  |
|  |  |  |  |  |  |  |  |  |  |

2. Calculate the average scores for each subject.

-> SELECT

AVG(MathScore) AS AverageMathScore,

AVG(ScienceScore) AS AverageScienceScore,

AVG(EnglishScore) AS AverageEnglishScore

FROM Students;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **AvgMathScore** | | **AvgScienceScore** | | **AvgEnglishScore** | |
| **73.9** |  | **70.2** |  | **75.5** |  |
|  |  |  |  |  |  |

3. Find the students with the highest total scores.

-> SELECT

StudentID,

Name,

MathScore + ScienceScore + EnglishScore AS TotalScore

FROM Students

ORDER BY TotalScore DESC

LIMIT 1;

|  |  |  |
| --- | --- | --- |
|  |  | |
|  |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Name | Totalscore | |
| Sarah | 285 |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| |  | | --- | |  | |  |
|  |  |
|  |  |

4.Count the number of students in each grade.

-> SELECT

Grade,

COUNT(\*) AS NumberOfStudents

FROM Students

GROUP BY Grade;

|  |  |  |
| --- | --- | --- |
| Grade | StudentCount | |
| A | 4 |  |
| B | 3 |  |
| C | 2 |  |
| F | 1 |  |

5. Find the average score for male and female students.

-> SELECT

Gender,

AVG((MathScore + ScienceScore + EnglishScore) / 3) AS AverageScore

FROM Students

GROUP BY Gender;

Gender AvgMathScore AvgScienceScore AvgEnglishScore

Male 76 71 81

Female 92 87.6 91.4

6. Identify students whose math score is above 80.

-> SELECT

StudentID,

Name,

MathScore

FROM Students

WHERE MathScore > 80;

Name MathScore

Sagar 90

Shiwani 95

Sneha 92

Sarika 85

Sarah 98

Nandini 90

7.Update the grade of a student with a specific Student ID.

-> UPDATE Students

SET Grade = 'A'

WHERE StudentID = 110;

StudentID Name Gender Age Grade MathScore ScienceScore EnglishScore

110 Nandini Female 17 A 90 85 95