SQL Assignment

Table Structure -:

Student Table

```
-- Creating Student Table
CREATE TABLE student (
    student_id INT PRIMARY KEY,
    First_Name VARCHAR(30),
    last_Name VARCHAR(30),
    Enrollment_date DATE
);
```

```
insert into student values(201, "Shivansh", "Mahajan", 8.79,"2021-09-01", "Computer Science"),
(202,"Umesh", "Sharma", 8.44, "2021-09-01","Mathematics"),
(203, "Rakesh", "Kumar", 5.60, "2021-09-01", "Biology"),
(204, "Radha", "Sharma", 9.20, "2021-09-01","Chemistry"),
(205,"Kush", "Kumar", 7.85,"2021-09-01", "Physics"),
(206, "Prem", "Chopra", 9.56, "2021-09-01", "History"),
(207, "Pankaj", "Vats", 9.78, "2021-09-01", "English"),
(208, "Navleen", "Kaur", 7.00, "2021-09-01","Mathematics");
```

```
select*from Student;
```

Program Table

```
-- creating Progam table
CREATE TABLE Program (
    student_ref_id INT,
    program_name TEXT,
    program_star_time DATE,
    FOREIGN KEY (student_ref_id)
        REFERENCES Student (Student_id)
);
```

```
insert into Program values(201, "Computer Science", "2021-09-01"),
(202, "Mathematics", "2021-09-01"),
(208, "Mathematics", "2021-09-01"),
(205,"Physics","2021-09-01"),
(204, "Chemistry", "2021-09-01"),
(207, "Psychology", "2021-09-01"),
(206,"History", "2021-09-01"),
(207, "Biologyy", "2021-09-01");
select*from program;
```

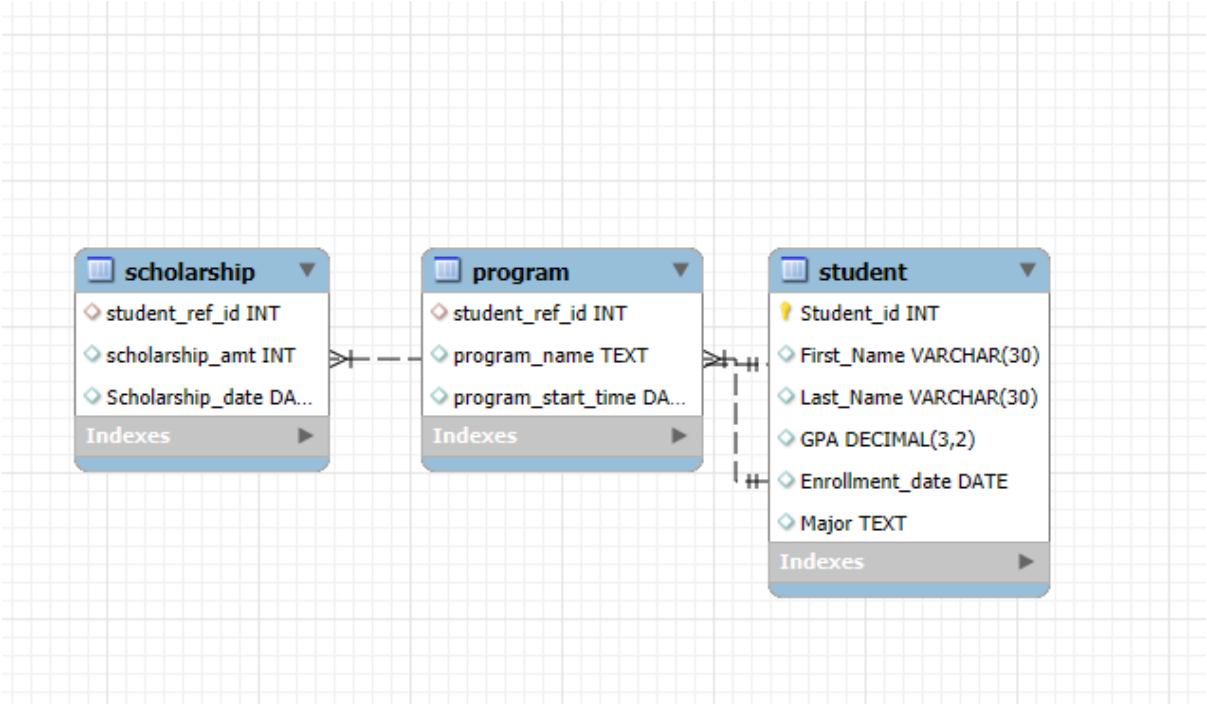
Scholarship Table

```sql
-- Creatinng Table Scholarship
CREATE TABLE Scholarship (
    student_ref_id INT,
    scholarship_amt INT,
    Scholarship_date DATE,
    foreign key (student_ref_id) references Student(Student_id)
);

insert into Scholarship value (201, 5000, "2021-10-15"),
(202,4500,"2022-08-18"),
(203,3000,"2022-01-25"),
(204,4000, "2021-10-15");

select*from Scholarship;
```

ER Diagram



Queries -:

```sql
/*1. Write a SQL query to fetch "FIRST_NAME" from
the Student table in upper case and use ALIAS name as STUDENT_NAME*/
SELECT
    UPPER(First_Name) AS Student_Name
FROM
    Student;
```

Result Grid | Filter

Student_Name
SHIVANSH
UMESH
RAKESH
RADHA
KUSH
PREM
PANKAJ
NAVLEEN

```
/*2. Write a SQL query to fetch unique values of MAJOR Subjects from Student table*/

   SELECT DISTINCT
       major
   FROM
       Student;
```

major
Computer Science
Mathematics
Biology
Chemistry
Physics
History
English

```
/*3. Write a SQL query to print the first 3 characters of FIRST_NAME from Student table.*/
SELECT
    LEFT(First_Name, 3)
FROM
    STudent;
```

LEFT(First_Name, 3)
Shi
Ume
Rak
Rad
Kus
Pre
Pan
Nav

```sql
/*4. Write a SQL query to find the position of alphabet ('a') int the first name
  column 'Shivansh' from Student table.*/
SELECT
    INSTR(LOWER(First_Name), 'a')
FROM
    Student
WHERE
    First_Name = 'Shivansh';
```

Result Grid | Filter Rows:

INSTR(LOWER(First_Name), 'a')
5

```sql
/*5. Write a SQL query that fetches the unique values of MAJOR Subjects
from Student table and print its length.    */
SELECT DISTINCT
    major, LENGTH(major)
FROM
    student;
```

Result Grid | Filter Rows:

major	LENGTH(major)
Computer Science	16
Mathematics	11
Biology	7
Chemistry	9
Physics	7
History	7
English	7

```sql
/*6. Write a SQL query to print FIRST_NAME from the Student table after replacing 'a' with 'A'.*/
SELECT
    REPLACE(First_Name, 'a', 'A')
FROM
    Student;
```

Result Grid | Filter Rows:

REPLACE(First_Name, 'a', 'A')
ShivAnsh
Umesh
RAkesh
RAdhA
Kush
Prem
PAnkAj

```sql
/*7. Write a SQL query to print the FIRST_NAME and LAST_NAME
from Student table into single column COMPLETE_NAME.    */

  SELECT
      CONCAT(First_Name, ' ', Last_Name) AS COMPLETE_NAME
  FROM
      Student;
```

COMPLETE_NAME
Shivansh Mahajan
Umesh Sharma
Rakesh Kumar
Radha Sharma
Kush Kumar
Prem Chopra
Pankaj Vats
Navleen Kaur

```sql
/*8. Write a SQL query to print all Student details from Student table order by FIRST_NAME
 Ascending and MAJOR Subject descending . */
SELECT
    *
FROM
    Student
ORDER BY First_Name ASC , major DESC;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
205	Kush	Kumar	7.85	2021-09-01	Physics
208	Navleen	Kaur	7.00	2021-09-01	Mathematics
207	Pankaj	Vats	9.78	2021-09-01	English
206	Prem	Chopra	9.56	2021-09-01	History
204	Radha	Sharma	9.20	2021-09-01	Chemistry
203	Rakesh	Kumar	5.60	2021-09-01	Biology
201	Shivansh	Mahajan	8.79	2021-09-01	Computer Science
202	Umesh	Sharma	8.44	2021-09-01	Mathematics

```sql
/*9. Write a SQL query to print details of the Students with the FIRST_NAME as
 'Prem' and 'Shivansh' from Student table*/
SELECT
    *
FROM
    student
WHERE
    First_Name IN ('Prem' , 'Shivansh');
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
201	Shivansh	Mahajan	8.79	2021-09-01	Computer Science
206	Prem	Chopra	9.56	2021-09-01	History

```
/*10. Write a SQL query to print details of the Students excluding FIRST_NAME as
'Prem' and 'Shivansh' from Student table   */
SELECT
    *
FROM
    student
WHERE
    First_Name not IN ('Prem' , 'Shivansh');
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
202	Umesh	Sharma	8.44	2021-09-01	Mathematics
203	Rakesh	Kumar	5.60	2021-09-01	Biology
204	Radha	Sharma	9.20	2021-09-01	Chemistry
205	Kush	Kumar	7.85	2021-09-01	Physics
207	Pankaj	Vats	9.78	2021-09-01	English
208	Navleen	Kaur	7.00	2021-09-01	Mathematics

```
/*11. Write a SQL query to print details of the Students whose FIRST_NAME ends with 'a'.*/
SELECT
    *
FROM
    Student
WHERE
    First_Name LIKE '%a';
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
204	Radha	Sharma	9.20	2021-09-01	Chemistry
NULL	NULL	NULL	NULL	NULL	NULL

```
/*12. Write an SQL query to print details of
the Students whose FIRST_NAME ends with ‘a’ and contains five alphabets. */
SELECT
    *
FROM
    student
WHERE
    first_Name LIKE '____a';
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
204	Radha	Sharma	9.20	2021-09-01	Chemistry
NULL	NULL	NULL	NULL	NULL	NULL

```sql
/*13. Write an SQL query to print details of the Students whose GPA lies between 9.00 and 9.99.*/
SELECT
    *
FROM
    Student
WHERE
    GPA BETWEEN 9.00 AND 9.99;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
204	Radha	Sharma	9.20	2021-09-01	Chemistry
206	Prem	Chopra	9.56	2021-09-01	History
207	Pankaj	Vats	9.78	2021-09-01	English
NULL	NULL	NULL	NULL	NULL	NULL

```sql
/*14. Write an SQL query to fetch the count of Students having Major Subject 'Computer Science'.*/
SELECT
    major, COUNT(*) AS Total_count
FROM
    student
WHERE
    major = 'Computer Science';
```

Result Grid | Filter Rows:

major	Total_count
Computer Science	1

```sql
-- 15. Write an SQL query to fetch Students full names with GPA >= 8.5 and <= 9.5.
SELECT
    *
FROM
    Student
WHERE
    Gpa BETWEEN 8.5 AND 9.5;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
201	Shivansh	Mahajan	8.79	2021-09-01	Computer Science
204	Radha	Sharma	9.20	2021-09-01	Chemistry
NULL	NULL	NULL	NULL	NULL	NULL

```sql
/*16. Write an SQL query to fetch the no. of Students for
each MAJOR subject in the descending order. */
SELECT
    Major, COUNT(major)
FROM
    Student
GROUP BY Major
ORDER BY COUNT(major) DESC;
```

Major	COUNT(major)
Mathematics	2
Computer Science	1
Biology	1
Chemistry	1
Physics	1
History	1
English	1

```sql
/*17. Display the details of students who have received scholarships,
including their names, scholarship amounts, and scholarship dates.*/
SELECT
    CONCAT(a.first_name, " ",a.last_name) AS Name,
    b.Scholarship_amt,
    b.Scholarship_date
FROM
    Student AS a
        INNER JOIN
    scholarship AS b ON a.student_id = b.student_ref_id;
```

Name	Scholarship_amt	Scholarship_date
Shivansh Mahajan	5000	2021-10-15
Umesh Sharma	4500	2022-08-18
Rakesh Kumar	3000	2022-01-25
Radha Sharma	4000	2021-10-15

```sql
/*18. Write an SQL query to show only odd rows from Student table.*/
SELECT
    *
FROM
    Student
WHERE
    Student_id % 2 != 0;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
201	Shivansh	Mahajan	8.79	2021-09-01	Computer Science
203	Rakesh	Kumar	5.60	2021-09-01	Biology
205	Kush	Kumar	7.85	2021-09-01	Physics
207	Pankaj	Vats	9.78	2021-09-01	English
NULL	NULL	NULL	NULL	NULL	NULL

```sql
-- 19. Write an SQL query to show only even rows from Student table
SELECT
    *
FROM
    Student
WHERE
    Student_id % 2 = 0;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
202	Umesh	Sharma	8.44	2021-09-01	Mathematics
204	Radha	Sharma	9.20	2021-09-01	Chemistry
206	Prem	Chopra	9.56	2021-09-01	History
208	Navleen	Kaur	7.00	2021-09-01	Mathematics

```
/*20. List all students and their scholarship amounts if they have received any.
If a student has not received a scholarship, display NULL for the scholarship details */

SELECT
    concat(First_Name, " ",Last_Name) As Student_Name, Scholarship_amt, Scholarship_date
FROM
    Student AS a
        LEFT JOIN
    Scholarship AS b ON a.student_id = b.Student_ref_id;
```

Result Grid | Filter Rows: | Expor

Student_Name	Scholarship_amt	Scholarship_date
Shivansh Mahajan	5000	2021-10-15
Umesh Sharma	4500	2022-08-18
Rakesh Kumar	3000	2022-01-25
Radha Sharma	4000	2021-10-15
Kush Kumar	NULL	NULL
Prem Chopra	NULL	NULL
Pankaj Vats	NULL	NULL
Navleen Kaur	NULL	NULL

```
/*21. Write an SQL query to show the top n (say 5) records of Student table order by descending GPA*/
SELECT
    *
FROM
    Student
ORDER BY GPA DESC
LIMIT 5;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
207	Pankaj	Vats	9.78	2021-09-01	English
206	Prem	Chopra	9.56	2021-09-01	History
204	Radha	Sharma	9.20	2021-09-01	Chemistry
201	Shivansh	Mahajan	8.79	2021-09-01	Computer Science
202	Umesh	Sharma	8.44	2021-09-01	Mathematics
NULL	NULL	NULL	NULL	NULL	NULL

```
/*22. Write an SQL query to determine the nth (say n=5) highest GPA from a table.*/
SELECT
    *
FROM
    Student
LIMIT 4 , 1;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
205	Kush	Kumar	7.85	2021-09-01	Physics

```sql
/*23. Write an SQL query to determine the 5th highest GPA without using LIMIT keyword.*/
SELECT
    *
FROM
    student AS a
WHERE
    (SELECT
            COUNT(DISTINCT GPa)
        FROM
            Student AS b
        WHERE
            b.gpa > a.gpa) = 4;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
202	Umesh	Sharma	8.44	2021-09-01	Mathematics

```sql
/*24. Write an SQL query to fetch the list of Students with the same GPA.*/
SELECT
    *
FROM
    Student AS a,
    student AS b
WHERE
    a.gpa = b.gpa
        AND a.student_id != b.student_id;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major	Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major

```sql
/*25. Write an SQL query to show the second highest GPA from a Student table using sub-query.*/
SELECT
    MAX(GPA)
FROM
    Student
WHERE
    GPA < (SELECT
            MAX(GPA)
        FROM
            STUDENT);
```

MAX(GPA)
9.56

```sql
/*26. Write an SQL query to show one row twice in results from a table.*/
```

```sql
SELECT
    *
FROM
    Student
UNION ALL SELECT
    *
FROM
    Student
ORDER BY Student_ID;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
201	Shivansh	Mahajan	8.79	2021-09-01	Computer Science
201	Shivansh	Mahajan	8.79	2021-09-01	Computer Science
202	Umesh	Sharma	8.44	2021-09-01	Mathematics
202	Umesh	Sharma	8.44	2021-09-01	Mathematics
203	Rakesh	Kumar	5.60	2021-09-01	Biology
203	Rakesh	Kumar	5.60	2021-09-01	Biology
204	Radha	Sharma	9.20	2021-09-01	Chemistry
204	Radha	Sharma	9.20	2021-09-01	Chemistry
205	Kush	Kumar	7.85	2021-09-01	Physics
205	Kush	Kumar	7.85	2021-09-01	Physics
206	Prem	Chopra	9.56	2021-09-01	History
206	Prem	Chopra	9.56	2021-09-01	History
207	Pankaj	Vats	9.78	2021-09-01	English
207	Pankaj	Vats	9.78	2021-09-01	English

```sql
/*27. Write an SQL query to list STUDENT_ID who does not get Scholarship.*/

SELECT
    STudent_Id
FROM
    Student
WHERE
    Student_Id NOT IN (SELECT
            STudent_ref_id
        FROM
            Scholarship);
```

STudent_Id
205
206
207
208

```sql
/*28. Write an SQL query to fetch the MAJOR subject that have less than 4 people in it.*/
SELECT
    Major, COUNT(major) AS Major_Count
FROM
    Student
GROUP BY Major
HAVING COUNT(major) < 4;
```

Major	Major_Count
Computer Science	1
Mathematics	2
Biology	1
Chemistry	1
Physics	1
History	1

```sql
/*29. Write an SQL query to show the last record from a table.*/
SELECT
    *
FROM
    student
WHERE
    student_id = (SELECT
            MAX(student_id)
        FROM
            Student);
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
208	Navleen	Kaur	7.00	2021-09-01	Mathematics

```sql
/*30 Write an SQL query to fetch the first row of a table.*/
SELECT
    *
FROM
    Student
ORDER BY Student_id ASC
LIMIT 1;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
201	Shivansh	Mahajan	8.79	2021-09-01	Computer Science

```sql
/*31. Write an SQL query to fetch the last five records from a table.*/
SELECT
    *
FROM
    (SELECT
        *
    FROM
        Student
    ORDER BY Student_id DESC
    LIMIT 5) AS Subquery
ORDER BY Student_id;
```

Student_id	First_Name	Last_Name	GPA	Enrollment_date	Major
204	Radha	Sharma	9.20	2021-09-01	Chemistry
205	Kush	Kumar	7.85	2021-09-01	Physics
206	Prem	Chopra	9.56	2021-09-01	History
207	Pankaj	Vats	9.78	2021-09-01	English
208	Navleen	Kaur	7.00	2021-09-01	Mathematics

```sql
/*32  Write an SQL query to fetch three max GPA from a table using co-related subquery.*/
SELECT DISTINCT
    GPA
FROM
    Student AS a
WHERE
    3 >= (SELECT
            COUNT(DISTINCT GPa)
        FROM
            Student AS b
        WHERE
            a.GPA <= b.GPA)
ORDER BY a.GPA DESC;
```

Result Grid

GPA
9.78
9.56
9.20

```sql
/*33. Write an SQL query to fetch three min GPA from a table using Correlated subquery.*/
  SELECT DISTINCT
     GPA
 FROM
     Student AS a
 WHERE
     3 >= (SELECT
             COUNT(DISTINCT GPa)
         FROM
             Student AS b
         WHERE
             a.GPA >= b.GPA)
 ORDER BY a.GPA;
```

Result Grid

GPA
5.60
7.00
7.85

```sql
/*34  Write an SQL query to fetch MAJOR subjects along with the max GPA in each of these MAJOR subjects.*/
```

```sql
SELECT
    Major, MAX(GPA)
FROM
    Student
GROUP BY MAjor;
```

Major	MAX(GPA)
Computer Science	8.79
Mathematics	8.44
Biology	5.60
Chemistry	9.20
Physics	7.85
History	9.56
English	9.78

```sql
/*35 Write an SQL query to fetch the names of Students who has highest GPA*/
SELECT
    First_Name, GPA
FROM
    Student
WHERE
    GPA = (SELECT
            MAX(GPA)
        FROM
            Student);
```

First_Name	GPA
Pankaj	9.78

```sql
/*36 Write an SQL query to show the current date and time.*/
select curdate() as "Date";
select now() as "Date&time";
```

Date
2025-06-21

Date&time
2025-06-21 01:06:37

```sql
/*37  Write an SQL query to update the GPA of all
 the students in 'Computer Science' MAJOR subject to 7.5.*/
 UPDATE student
 SET
     GPA = 7.5
 WHERE
     major = 'Computer Science';
```

```
52  01:08:54  UPDATE student  SET  GPA = 7.5 WHERE  major = 'Computer Science'  1 row(s) affected Rows matched: 1  Changed: 1  Warnings: 0
```

Thank You!