Assigment 3

Solution-

1. use sain;
   select Name , Email from Student;

Name	Email
► John Doe	john.doe@example.com
Jane Smith	jane.smith@example.com
Robert Johnson	robert.j@example.com
Emily White	emily.white@example.com
Michael Lee	michael.lee@example.com
Sarah Brown	sarah.brown@example.com
David Clark	david.clark@example.com
Melissa Turner	melissa.turner@example.com

2. select CourseName,Credits from course where credits>3;

CourseName	Credits
► History	4
Chemistry	4
Physics	4
Biology	4

3. select ExamID,ExamDate from exam where ExamDate> '2023-11-15';

ExamID	ExamDate
► 204	2023-11-18
205	2023-11-20
* NULL	NULL

4. select * from faculty where department='Mathematics';

FacultyID	Name	Email	Phone	Department
► 301	Dr. Smith	smith@example.com	111-222-3333	Mathematics
* NULL	NULL	NULL	NULL	NULL

5. SELECT Student.Name, Course.CourseName
   FROM Student
   JOIN Enrollment ON Student.StudentID = Enrollment.StudentID
   JOIN Course ON Enrollment.CourseID = Course.CourseID;

Name	CourseName
► John Doe	Mathematics
John Doe	History
Jane Smith	Mathematics
Robert Johnson	Computer science
Emily White	Literature
Michael Lee	Chemistry
Sarah Brown	Physics
David Clark	Economics
Melissa Turner	Biology

6. SELECT ExamID, AVG(Score) AS AverageScore
   FROM ExamResults
   GROUP BY ExamID;

ExamID	AverageScore
► 201	89.333333
202	95.500000
203	89.000000
204	94.500000
205	91.000000

7. SELECT DISTINCT Student.Name, ExamResults.Score
   FROM Student
   JOIN ExamResults ON Student.StudentID = ExamResults.StudentID
   WHERE Score > 90;

Name	Score
► John Doe	92.50
Robert Johnson	95.50
Michael Lee	94.50
Sarah Brown	91.00

8. SELECT Faculty.Name, COUNT(*) AS CourseCount
   FROM Teaching
   JOIN Faculty ON Teaching.FacultyID = Faculty.FacultyID
   GROUP BY Faculty.FacultyID
   HAVING CourseCount > 1;

Name	CourseCount

9. SELECT Student.Name
   FROM Student
   WHERE StudentID NOT IN (SELECT StudentID FROM ExamRegistration);

Name

10. SELECT Course.CourseName, COUNT(Enrollment.CourseID) AS TotalEnrollments
    FROM Course
    LEFT JOIN Enrollment ON Course.CourseID = Enrollment.CourseID
    GROUP BY Course.CourseID;

CourseName	TotalEnrollments
► Mathematics	2
History	1
Computer science	1
Literature	1
Chemistry	1
Physics	1
Economics	1
Biology	1

11. SELECT Student.Name
    FROM Student
    JOIN Enrollment ON Student.StudentID = Enrollment.StudentID
    JOIN Course ON Enrollment.CourseID = Course.CourseID
    WHERE Course.CourseName = 'History';

	Name	CourseName
▶	John Doe	History

12. SELECT ExamID, ExamDate, Location
    FROM Exam
    WHERE YEAR(ExamDate) = 2023 AND MONTH(ExamDate) = 11;

	ExamID	ExamDate	Location
▶	201	2023-11-10	Exam Hall A
	202	2023-11-12	Exam Hall B
	203	2023-11-15	Exam Hall C
	204	2023-11-18	Exam Hall D
	205	2023-11-20	Exam Hall E
*	NULL	NULL	NULL

13. SELECT c.CourseName, MAX(e.Enrollments) AS MaxEnrollments
    FROM Course c
    LEFT JOIN (
        SELECT CourseID, COUNT(StudentID) AS Enrollments
        FROM Enrollment
        GROUP BY CourseID
) e ON c.CourseID = e.CourseID
    GROUP BY c.CourseName;

	CourseName	MaxEnrollments
▶	Mathematics	2
	History	1
	Computer science	1
	Literature	1
	Chemistry	1
	Physics	1
	Economics	1
	Biology	1

14. SELECT Student.Name, AVG(Score) AS AverageScore
    FROM Student
    JOIN ExamResults ON Student.StudentID = ExamResults.StudentID
    GROUP BY Student.StudentID;

	Name	AverageScore
▶	John Doe	92.500000
	Jane Smith	88.000000
	Robert Johnson	95.500000
	Emily White	89.000000
	Michael Lee	94.500000
	Sarah Brown	91.000000
	David Clark	87.500000

15. SELECT E.ExamID, E.ExamDate
    FROM Exam E
    LEFT JOIN ExamRegistration ER ON E.ExamID = ER.ExamID
    WHERE ER.ExamID IS NULL;

	ExamID	ExamDate

16. SELECT Faculty.Name
    FROM Faculty
    LEFT JOIN Teaching ON Faculty.FacultyID = Teaching.FacultyID
    WHERE Teaching.FacultyID IS NULL;

	Name

17. SELECT Student.Name
    FROM Student
    JOIN Enrollment ON Student.StudentID = Enrollment.StudentID
    JOIN Course ON Enrollment.CourseID = Course.CourseID
    JOIN Teaching ON Course.CourseID = Teaching.CourseID
    JOIN Faculty ON Teaching.FacultyID = Faculty.FacultyID
    WHERE Faculty.Department IN ('Mathematics', 'Computer Science')
    GROUP BY Student.StudentID
    HAVING COUNT(DISTINCT Faculty.Department) = 2;

Result Grid

Name

18. SELECT ExamResults.ExamID, Student.Name, ExamResults.Score
    FROM ExamResults
    JOIN Student ON ExamResults.StudentID = Student.StudentID
    WHERE (ExamResults.ExamID, ExamResults.Score) IN (
        SELECT ExamID, MAX(Score)
        FROM ExamResults
        GROUP BY ExamID);

	ExamID	Name	Score
▶	201	John Doe	92.50
	202	Robert Johnson	95.50
	203	Emily White	89.00
	204	Michael Lee	94.50
	205	Sarah Brown	91.00

19. SELECT CourseName
    FROM Course

LEFT JOIN Enrollment ON Course.CourseID = Enrollment.CourseID
WHERE Enrollment.StudentID IS NULL;

CourseName

20. SELECT Faculty.Name, AVG(Enrollments) AS AverageEnrollments
FROM Faculty
JOIN Teaching ON Faculty.FacultyID = Teaching.FacultyID
JOIN (
    SELECT Course.CourseID, COUNT(Enrollment.StudentID) AS Enrollments
    FROM Course
    LEFT JOIN Enrollment ON Course.CourseID = Enrollment.CourseID
    GROUP BY Course.CourseID
) AS CourseEnrollments ON Teaching.CourseID = CourseEnrollments.CourseID
GROUP BY Faculty.Name
HAVING AVG(Enrollments) > 10;

Name	AverageEnrollments