Business Analytics | SQL Test Questions

By 2437022 | Diya Susan John

1. Find the average grade of all students across all courses:

Query:

```
SELECT AVG(grade)
FROM Enrollments;
```

Results

AVG(grade)
3.200000

2. List the names of students along with the courses they are enrolled in:

Query:

```
SELECT s.name, c.course_name
FROM Enrollments e
JOIN Students s ON e.student_id = s.student_id
JOIN Courses c ON e.course_id = c.course_id;
```

Results

name	course_name
Alice	Math
Bob	Math
Diana	Math
Alice	Science
Charlie	Science

3. Count the number of students in each grade level:

Query:

```
SELECT grade_level, COUNT(student_id)
FROM Students
GROUP BY grade_level;
```

Results

grade_level	COUNT(student_id)
3	3
4	2

4. Find the maximum grade achieved in each course:

Query:

```
SELECT c.course_name, MAX(e.grade)
FROM Enrollments e
JOIN Courses c ON e.course_id = c.course_id
GROUP BY c.course_name;
```

Results

course_name	MAX(e.grade)
Math	3.50
Science	4.00
History	4.00
Art	3.50

5. **Write a query to find the average grade of students who are in grade level 3**

Query:

```
SELECT AVG(e.grade) AS average_grade_level_3
FROM Enrollments e
JOIN Students s ON e.student_id = s.student_id
WHERE s.grade_level = 3;
```

Results

average_grade_level_3
3.166667

6. **Write a query to get a list of students, their enrolled courses, and the credit hours for each course.**

Query:

```
SELECT s.name AS student_name, c.course_name, c.credits
FROM Enrollments e
JOIN Students s ON e.student_id = s.student_id
JOIN Courses c ON e.course_id = c.course_id;
```

Results

student_name	course_name	credits
Alice	Math	3
Bob	Math	3
Diana	Math	3
Alice	Science	4
Charlie	Science	4

7. Write a query to find all courses that have an average grade greater than 3.0

Query:

```
SELECT c.course_name
FROM Enrollments e
JOIN Courses c ON e.course_id = c.course_id
GROUP BY c.course_name
HAVING AVG(e.grade) > 3.0;
```

Results

course_name
Math
Science
History

8. Write a query to find students who have not received a grade of 4.0 in any course.

Query:

```
SELECT DISTINCT s.name AS student_name
FROM Students s
WHERE s.student_id NOT IN (
    SELECT student_id
    FROM Enrollments
    WHERE grade = 4.0);
```

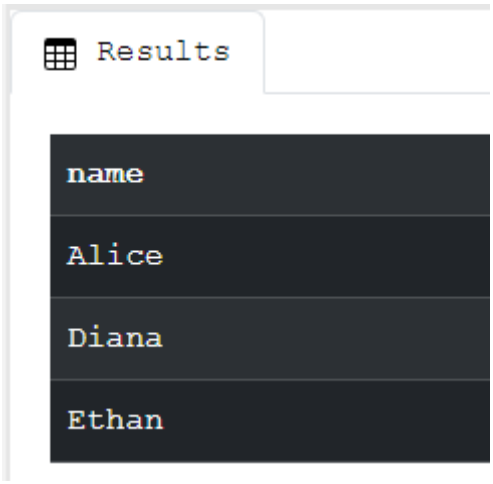
Results

student_name
Bob
Charlie
Ethan

9. Write a query to find the names of students whose average grade is greater than the average grade of all students.

Query:

```
WITH StudentAverage AS (
SELECT student_id, AVG(grade) AS avg_grade
FROM Enrollments
GROUP BY student_id)
SELECT s.name
FROM Students s
JOIN StudentAverage sa ON s.student_id = sa.student_id
WHERE sa.avg_grade > (SELECT AVG(grade) FROM Enrollments);
```



10. Write a query to display each student's name, the total number of courses they are enrolled in, and their average grade.

Query:

```
SELECT s.name AS student_name, COUNT(e.course_id) AS total_courses,
AVG(e.grade) AS average_grade

FROM Students s

JOIN Enrollments e ON s.student_id = e.student_id

GROUP BY s.name;
```

Results

student_name	total_courses	average_grade
Alice	2	3.750000
Bob	2	2.750000
Charlie	2	2.500000
Diana	2	3.750000
Ethan	2	3.250000