1. **Query to find the average grade of all students across all courses**:

SELECT AVG(grade) AS average\_grade

FROM Enrollments;

|  |
| --- |
| average\_grade |
| 3.2 |

1. **Query to list the names of students along with the courses they are enrolled in (include the course name)**:

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;

|  |  |
| --- | --- |
| name | course\_name |
| Alice | Math |
| Alice | Science |
| Bob | Math |
| Bob | History |
| Charlie | Science |
| Charlie | Art |
| Diana | Math |
| Diana | History |
| Ethan | Science |
| Ethan | Art |

1. Query to count the number of students in each grade level

SELECT grade\_level, COUNT(student\_id) AS student\_count

FROM Students

GROUP BY grade\_level;

| **grade\_level** | **student\_count** |
| --- | --- |
| 3 | 3 |
| 4 | 2 |

1. **Query to find the maximum grade achieved in each course**:

SELECT C.course\_name, MAX(E.grade) AS max\_grade

FROM Enrollments E

JOIN Courses C ON E.course\_id = C.course\_id

GROUP BY C.course\_name;

|  |  |
| --- | --- |
| course\_name | max\_grade |
| Art | 3.5 |
| History | 4 |
| Math | 3.5 |
| Science | 4 |

1. Query to find the average grade of students who are in grade level 3

SELECT AVG(E.grade) AS average\_grade

FROM Enrollments E

JOIN Students S ON E.student\_id = S.student\_id

WHERE S.grade\_level = 3;

|  |
| --- |
| average\_grade |
| 3.1666666666666665 |

1. **Query to get a list of students, their enrolled courses, and the credit hours for each course**:

SELECT S.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;

| **name** | **course\_name** | **credits** |
| --- | --- | --- |
| Alice | Math | 3 |
| Alice | Science | 4 |
| Bob | Math | 3 |
| Bob | History | 3 |
| Charlie | Science | 4 |
| Charlie | Art | 2 |
| Diana | Math | 3 |
| Diana | History | 3 |
| Ethan | Science | 4 |
| Ethan | Art | 2 |

1. **Query to find all courses that have an average grade greater than 3.0**:

SELECT C.course\_name, AVG(E.grade) AS average\_grade

FROM Enrollments E

JOIN Courses C ON E.course\_id = C.course\_id

GROUP BY C.course\_name

HAVING AVG(E.grade) > 3.0;

| **course\_name** | **average\_grade** |
| --- | --- |
| History | 3.5 |
| Math | 3.1666666666666665 |
| Science | 3.3333333333333335 |

1. **Query to find students who have not received a grade of 4.0 in any course**:

SELECT DISTINCT S.name

FROM Students S

WHERE S.student\_id NOT IN (

SELECT E.student\_id

FROM Enrollments E

WHERE E.grade = 4.0

);

|  |
| --- |
| name |
| Bob |
| Charlie |
| Ethan |

1. **Query to find the names of students whose average grade is greater than the average grade of all students**:

SELECT S.name

FROM Students S

JOIN Enrollments E ON S.student\_id = E.student\_id

GROUP BY S.name

HAVING AVG(E.grade) > (SELECT AVG(grade) FROM Enrollments);

| **name** |
| --- |
| Alice |
| Diana |
| Ethan |

1. **Query to display each student's name, the total number of courses they are enrolled in, and their average grade**:

SELECT S.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;

|  |  |  |
| --- | --- | --- |
| name | total\_courses | average\_grade |
| Alice | 2 | 3.75 |
| Bob | 2 | 2.75 |
| Charlie | 2 | 2.5 |
| Diana | 2 | 3.75 |
| Ethan | 2 | 3.25 |