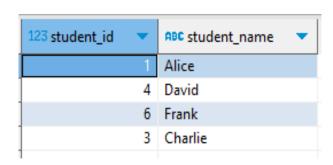
```
--Queries
```

```
-- 1. Find all students enrolled in the Math course
SELECT student_id, student_name
FROM Students
WHERE student_id IN (
    SELECT student_id
    FROM Enrollments
    WHERE course_id IN (
        SELECT course_id
        FROM Courses
        WHERE course_name = 'Math'
    )
);
```



## -- 2. List all courses taken by students named Bob

```
SELECT course_id, course_name
FROM Courses
WHERE course_id IN (
SELECT course_id
FROM Enrollments
WHERE student_id IN (
SELECT student_id
```

```
FROM Students
   WHERE student_name = 'Bob'
 )
);
```

```
123 course_id
                   ABC course_name
             102 Science
```

-- 3. Find the names of students who are enrolled in more than one course

```
SELECT student_id, student_name
```

```
FROM Students
```

);

```
WHERE student_id IN (
 SELECT student_id
 FROM Enrollments
 GROUP BY student_id
 HAVING COUNT(*) > 1
```

123 student_id		ABC student_name
	1	Alice
	3	Charlie
	4	David

-- 4. List all students who are in Grade A (grade\_id = 1)

SELECT student\_id, student\_name

**FROM Students** 

WHERE student\_grade\_id = 1;

123 student_id	ABC student_name
1	Alice
3	Charlie
5	Eve
8	Henry

-- 5. Find the number of students enrolled in each course

SELECT course\_id, course\_name,

(SELECT COUNT(\*)

**FROM Enrollments** 

WHERE course\_id = Courses.course\_id) AS num\_students

FROM Courses;

123 course_id	ABC course_name	123 num_students
101	Math	4
102	Science	4
103	History	2

-- 6. Retrieve the course with the highest number of enrollments

SELECT course\_id, course\_name,

(SELECT COUNT(\*)

**FROM Enrollments** 

WHERE course\_id = Courses.course\_id) AS num\_enrollments

**FROM Courses** 

WHERE (

SELECT COUNT(\*)

**FROM Enrollments** 

```
WHERE course_id = Courses.course_id
) = (
    SELECT MAX(enroll_count)
    FROM (
        SELECT COUNT(*) AS enroll_count
        FROM Enrollments
        GROUP BY course_id
    ) AS max_counts
);
```

123 course_id	ABC course_name	123 num_enrollments
101	Math	4
102	Science	4

```
-- 7. List students who are enrolled in all available courses

SELECT student_id, student_name

FROM Students

WHERE NOT EXISTS (

SELECT course_id

FROM Courses

WHERE NOT EXISTS (

SELECT 1

FROM Enrollments

WHERE student_id = Students.student_id AND course_id = Courses.course_id

)

);
```

123 student_id	ABC student_name

```
-- 8. Find students who are not enrolled in any courses

SELECT student_id, student_name

FROM Students

WHERE student_id NOT IN (

SELECT student_id

FROM Enrollments
);
```

123 student_id	ABC student_name
8	Henry
9	lvy
10	Jack

-- 9. Retrieve the average age of students enrolled in the Science course

SELECT AVG(student\_age) AS average\_age

FROM Students

WHERE student\_id IN (

SELECT student\_id

FROM Enrollments

WHERE course\_id IN (

```
123 average_age
16.5
```

-- 10. Find the grade of students enrolled in the History course

```
FROM Grades

WHERE grade_id IN (

SELECT student_grade_id

FROM Students

WHERE student_id IN (

SELECT student_id

FROM Enrollments

WHERE course_id IN (

SELECT course_id
```

SELECT course\_id

WHERE course\_name = 'Science'

**FROM Courses** 

)

);

```
FROM Courses

WHERE course_name = 'History'
)
)
);
```

