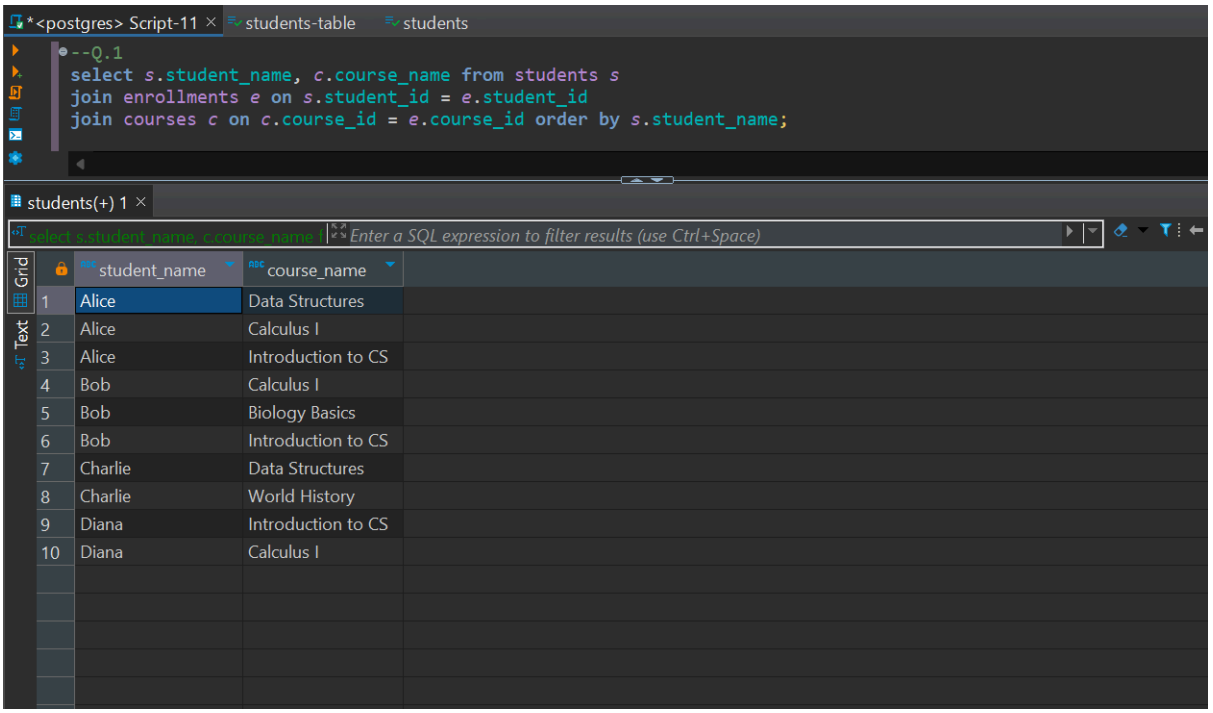
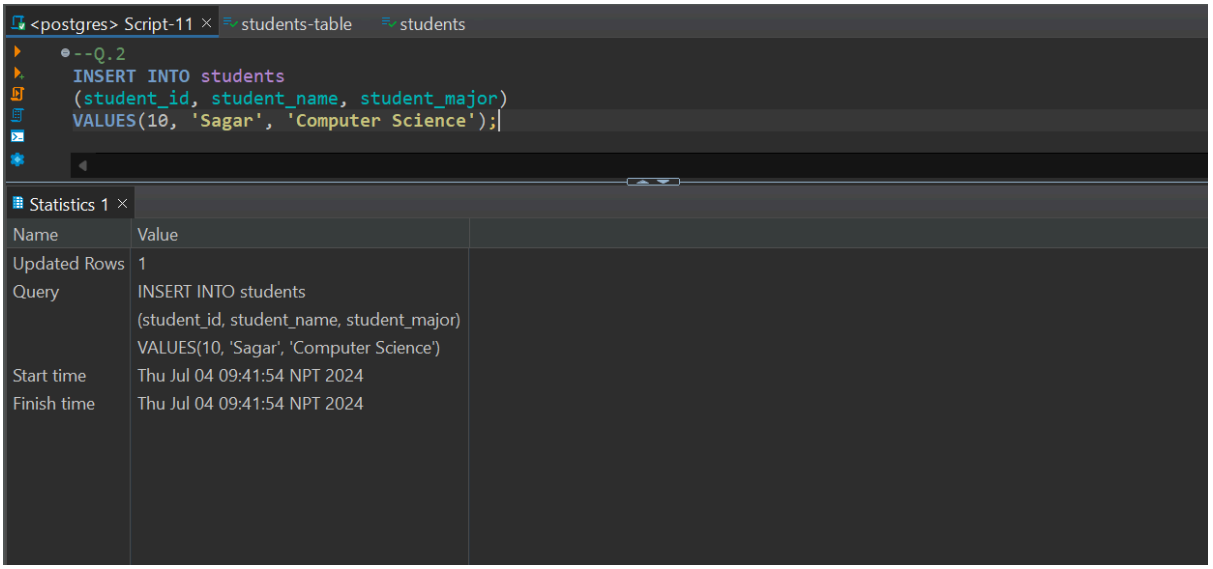
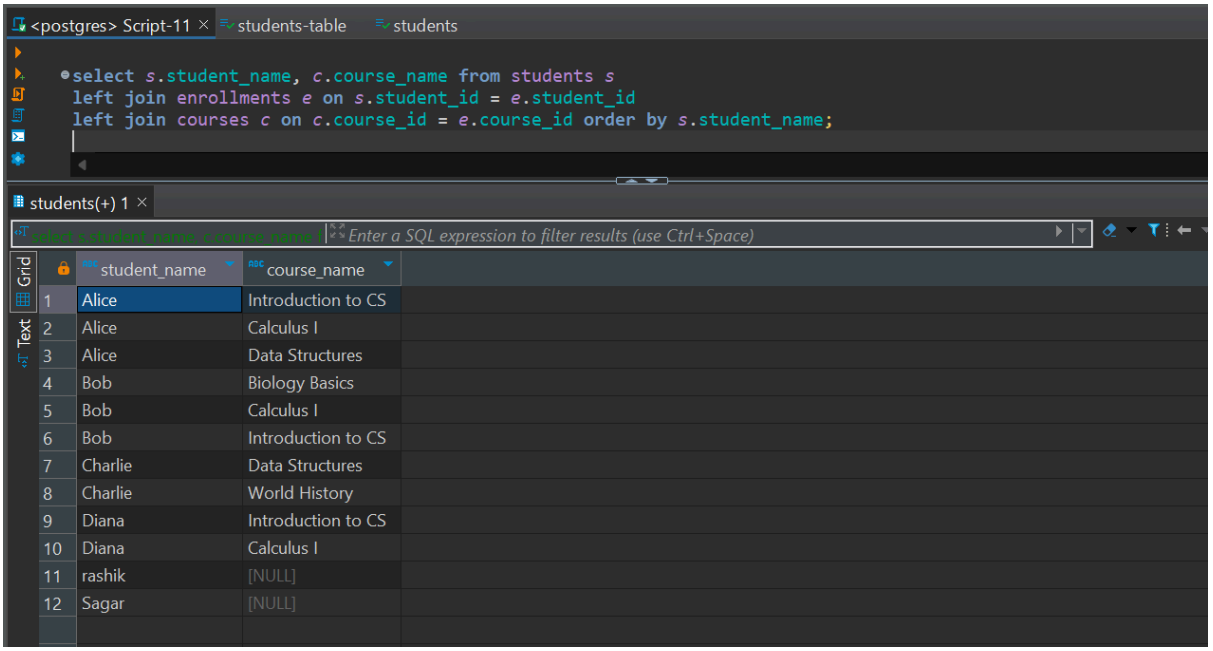
Q1.

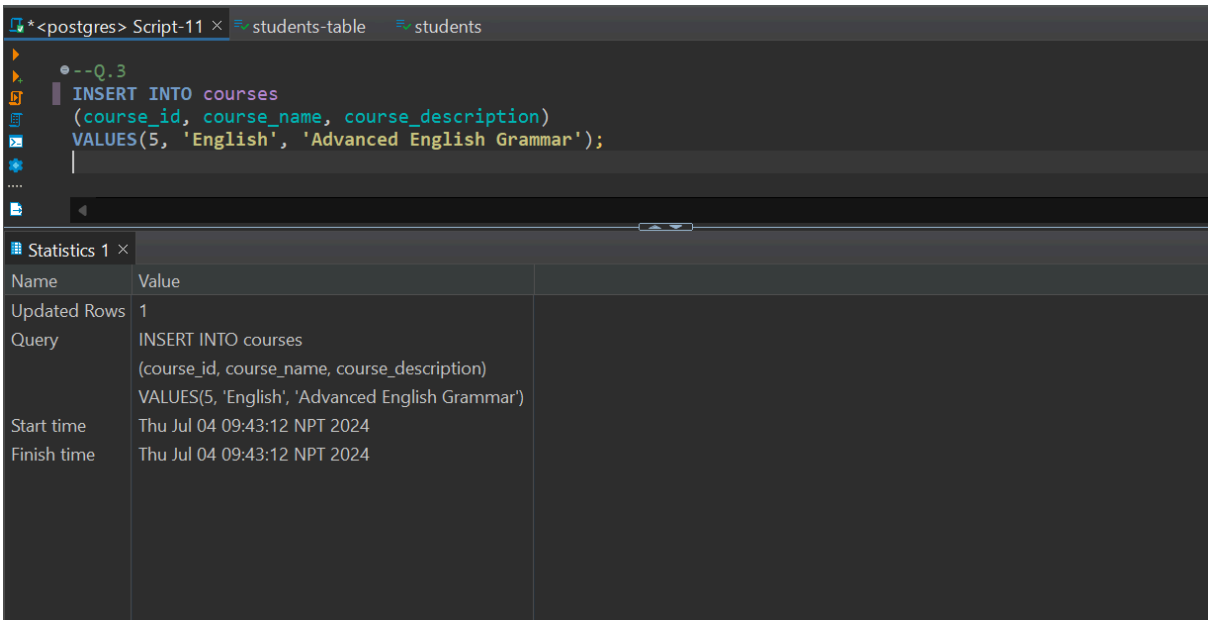

*<postgres> Script-11
students-table
students
--Q.1
select s.student_name, c.course_name from students s
join enrollments e on s.student_id = e.student_id
join courses c on c.course_id = e.course_id order by s.student_name;
students(+) 1
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
student_name
course_name
1 Alice Data Structures
2 Alice Calculus I
3 Alice Introduction to CS
4 Bob Calculus I
5 Bob Biology Basics
6 Bob Introduction to CS
7 Charlie Data Structures
8 Charlie World History
9 Diana Introduction to CS
10 Diana Calculus I

Q2.


<postgres> Script-11
students-table
students
--Q.2
INSERT INTO students
(student_id, student_name, student_major)
VALUES(10, 'Sagar', 'Computer Science');
Statistics 1
Name
Value
Updated Rows 1
Query INSERT INTO students
(student_id, student_name, student_major)
VALUES(10, 'Sagar', 'Computer Science')
Start time Thu Jul 04 09:41:54 NPT 2024
Finish time Thu Jul 04 09:41:54 NPT 2024


<postgres> Script-11
students-table
students
select s.student_name, c.course_name from students s
left join enrollments e on s.student_id = e.student_id
left join courses c on c.course_id = e.course_id order by s.student_name;
students(+) 1
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
student_name
course_name
1 Alice Introduction to CS
2 Alice Calculus I
3 Alice Data Structures
4 Bob Biology Basics
5 Bob Calculus I
6 Bob Introduction to CS
7 Charlie Data Structures
8 Charlie World History
9 Diana Introduction to CS
10 Diana Calculus I
11 rashik [NULL]
12 Sagar [NULL]

Q3.


*<postgres> Script-11
students-table
students
--Q.3
INSERT INTO courses
(course_id, course_name, course_description)
VALUES(5, 'English', 'Advanced English Grammar');
Statistics 1
Name
Value
Updated Rows 1
Query INSERT INTO courses
(course_id, course_name, course_description)
VALUES(5, 'English', 'Advanced English Grammar')
Start time Thu Jul 04 09:43:12 NPT 2024
Finish time Thu Jul 04 09:43:12 NPT 2024

```sql
select s.student_name, c.course_name from students s
right join enrollments e on s.student_id = e.student_id
right join courses c on c.course_id = e.course_id order by s.student_name;
```

students(+) 1

Enter a SQL expression to filter results (use Ctrl+Space)

	student_name	course_name
1	Alice	Data Structures
2	Alice	Introduction to CS
3	Alice	Calculus I
4	Bob	Introduction to CS
5	Bob	Biology Basics
6	Bob	Calculus I
7	Charlie	Data Structures
8	Charlie	World History
9	Diana	Introduction to CS
10	Diana	Calculus I
11	[NULL]	English

Q4.

*<postgres> Script-11 | students-table | students

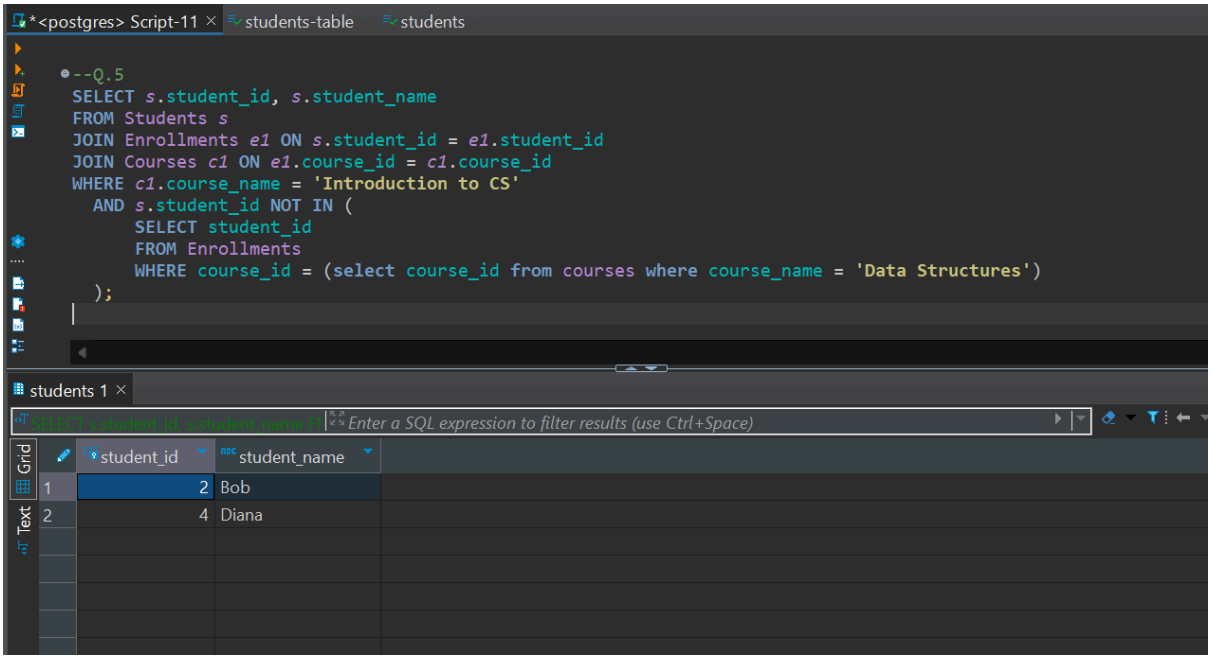
```sql
--Q.4
SELECT
    (select student_name from students where student_id = e1.student_id),
    (select student_name from students where student_id = e2.student_id),
    c.course_name
FROM
    Enrollments e1
    JOIN Enrollments e2 ON e1.course_id = e2.course_id AND e1.student_id < e2.student_id
    JOIN Courses c ON e1.course_id = c.course_id
ORDER BY
    c.course_name;
```

courses 1

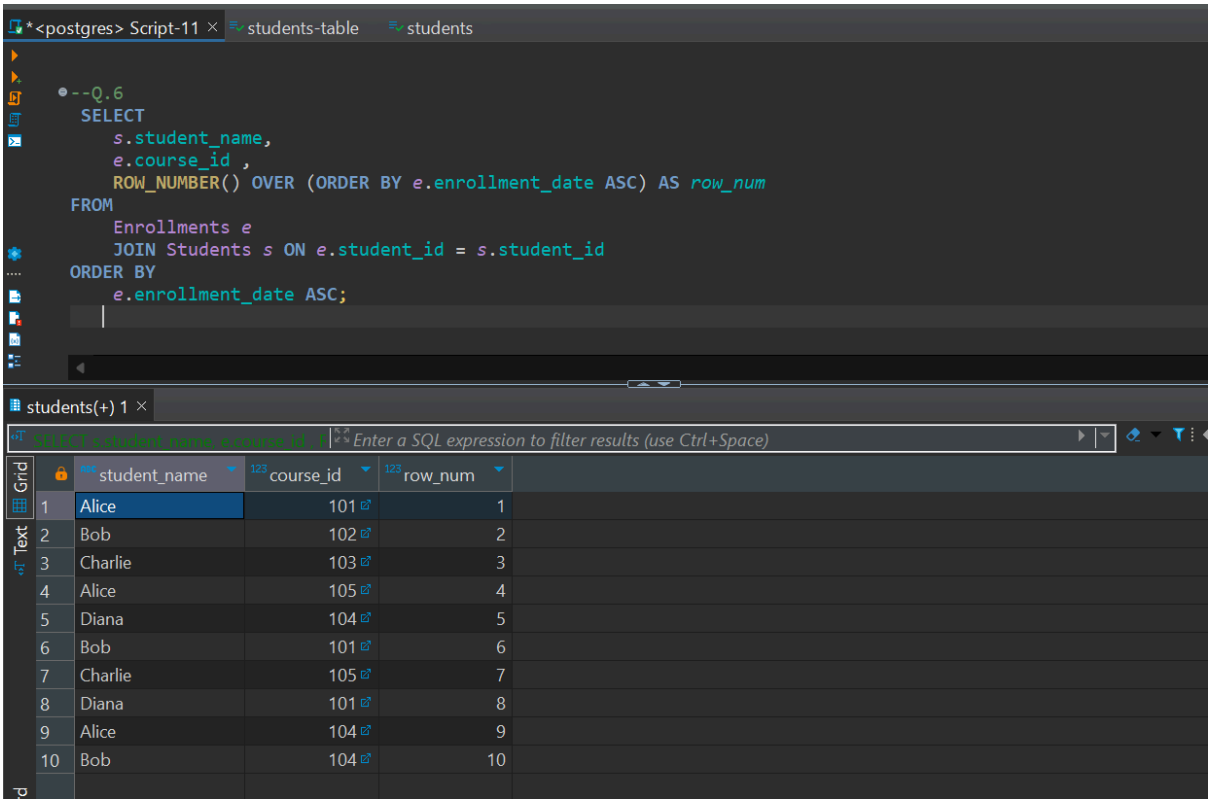
Enter a SQL expression to filter results (use Ctrl+Space)

	student_name	student_name	course_name
1	Alice	Diana	Calculus I
2	Alice	Bob	Calculus I
3	Bob	Diana	Calculus I
4	Alice	Charlie	Data Structures
5	Alice	Bob	Introduction to CS
6	Alice	Diana	Introduction to CS
7	Bob	Diana	Introduction to CS

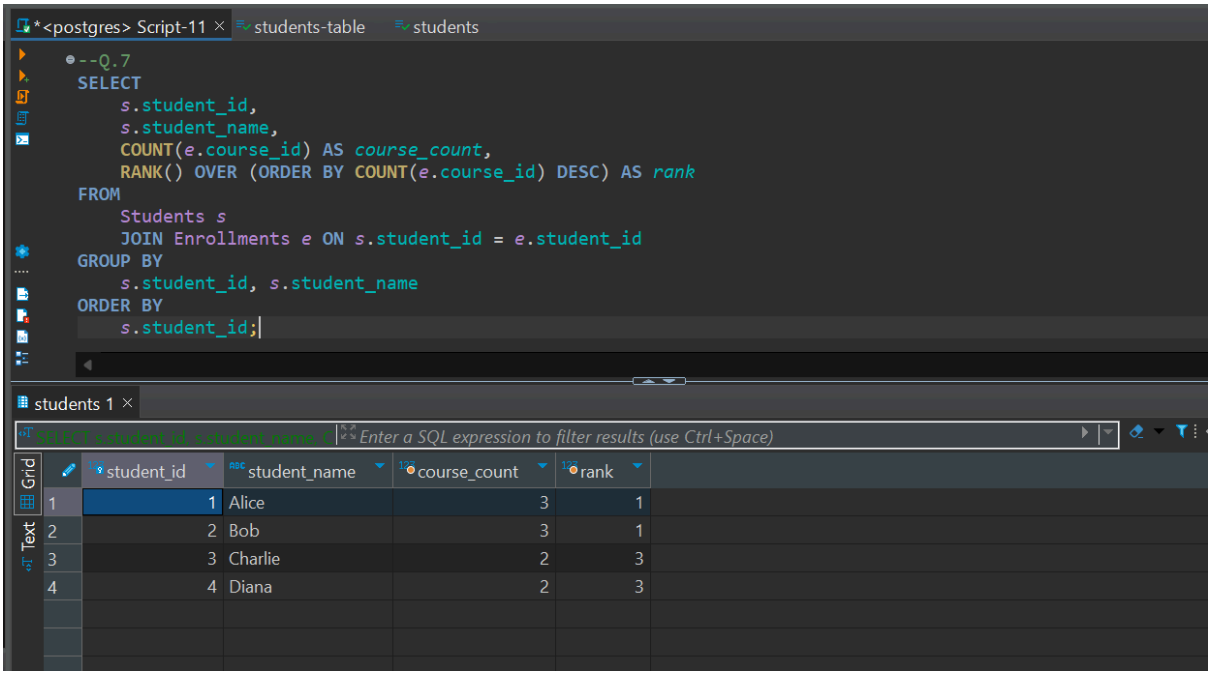
Q5.


*<postgres> Script-11
students-table
students
--Q.5
SELECT s.student_id, s.student_name
FROM Students s
JOIN Enrollments e1 ON s.student_id = e1.student_id
JOIN Courses c1 ON e1.course_id = c1.course_id
WHERE c1.course_name = 'Introduction to CS'
AND s.student_id NOT IN (
SELECT student_id
FROM Enrollments
WHERE course_id = (select course_id from courses where course_name = 'Data Structures')
);
students 1
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
student_id
student_name
1 2 Bob
2 4 Diana

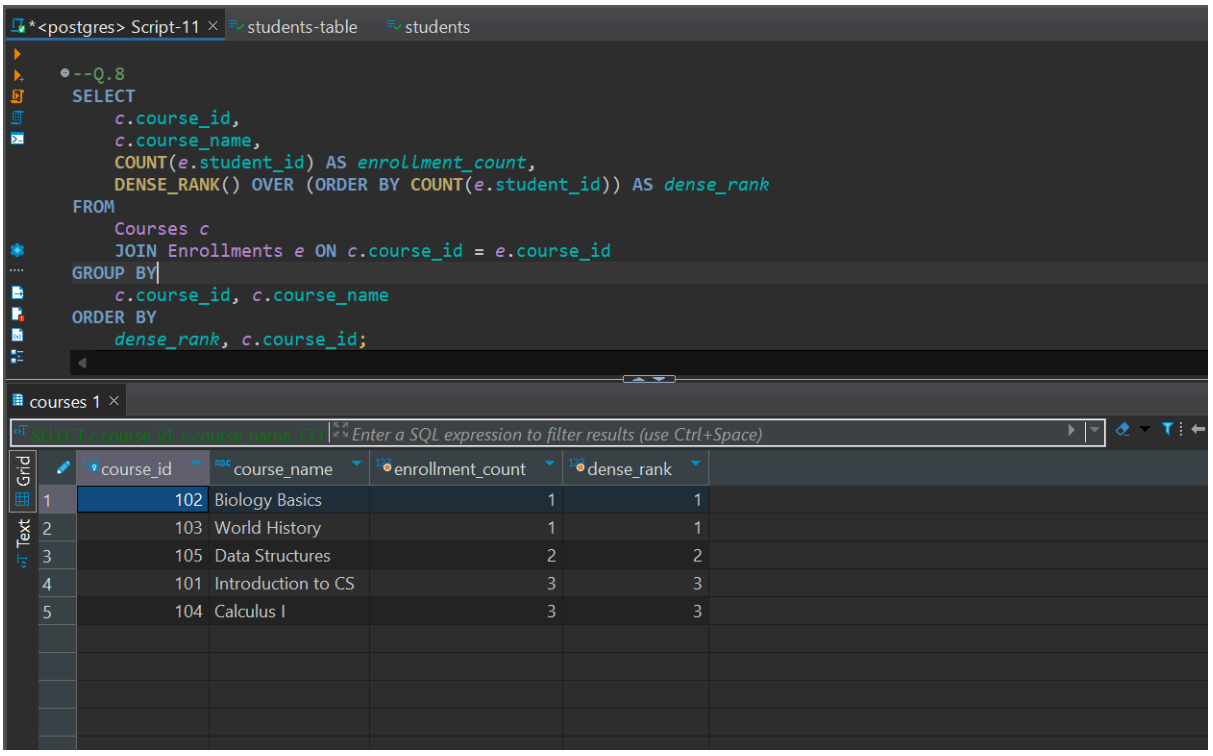
Q6.


*<postgres> Script-11
students-table
students
--Q.6
SELECT
s.student_name,
e.course_id ,
ROW_NUMBER() OVER (ORDER BY e.enrollment_date ASC) AS row_num
FROM
Enrollments e
JOIN Students s ON e.student_id = s.student_id
ORDER BY
e.enrollment_date ASC;
students(+) 1
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
student_name
course_id
row_num
1 Alice 101 1
2 Bob 102 2
3 Charlie 103 3
4 Alice 105 4
5 Diana 104 5
6 Bob 101 6
7 Charlie 105 7
8 Diana 101 8
9 Alice 104 9
10 Bob 104 10

Q7.


*<postgres> Script-11
students-table
students
--Q.7
SELECT
s.student_id,
s.student_name,
COUNT(e.course_id) AS course_count,
RANK() OVER (ORDER BY COUNT(e.course_id) DESC) AS rank
FROM
Students s
JOIN Enrollments e ON s.student_id = e.student_id
GROUP BY
s.student_id, s.student_name
ORDER BY
s.student_id;
students 1
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
student_id
student_name
course_count
rank
1 1 Alice 3 1
2 2 Bob 3 1
3 3 Charlie 2 3
4 4 Diana 2 3

Q8.


*<postgres> Script-11
students-table
students
--Q.8
SELECT
c.course_id,
c.course_name,
COUNT(e.student_id) AS enrollment_count,
DENSE_RANK() OVER (ORDER BY COUNT(e.student_id)) AS dense_rank
FROM
Courses c
JOIN Enrollments e ON c.course_id = e.course_id
GROUP BY
c.course_id, c.course_name
ORDER BY
dense_rank, c.course_id;
courses 1
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
course_id
course_name
enrollment_count
dense_rank
1 102 Biology Basics 1 1
2 103 World History 1 1
3 105 Data Structures 2 2
4 101 Introduction to CS 3 3
5 104 Calculus I 3 3