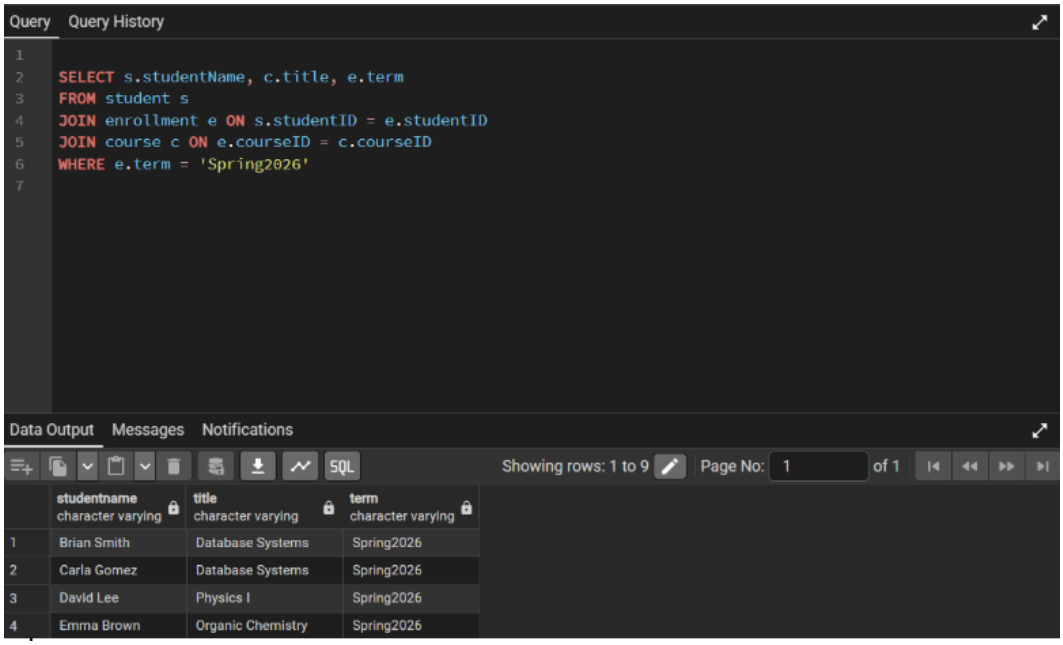
Patrick Murray

Professor Rivas

Database Management

26 February 2026

Part A:



Query Query History

```
1  SELECT c.courseID, c.title, COUNT (e.courseID) AS enrollments
2  FROM course c
3  Left join enrollment e
4  ON c.courseID = e.courseID
5  AND e.term = 'Spring2026'
6  GROUP BY c.courseID, c.title
7
```

Data Output Messages Notifications

Showing rows: 1 to 10 Page No: 1 of 1

	courseid [PK] integer	title character varying	enrollments bigint
1	108	Microeconomics	1
2	106	World History	1
3	102	Calculus I	0
4	107	Engineering Design	0
5	110	Database Manageme...	1
6	101	Database Systems	3
7	103	General Biology	0
8	104	Physics I	1
9	105	Organic Chemistry	2
10	109	Intro to Unity	0

```
Query  Query History
1  SELECT s.major, COUNT (s.studentID) as majorCount
2  FROM student s
3  GROUP BY s.major
4  ORDER BY majorCount desc
5
6
7
```

Data Output Messages Notifications

Showing rows: 1 to 9 Page No: 1 of 1

	major character varying	majorcount bigint
1	Computer Science	2
2	Chemistry	1
3	Mathematics	1
4	History	1
5	Economics	1
6	Physics	1
7	Engineering	1
8	Data Science	1
9	Biology	1

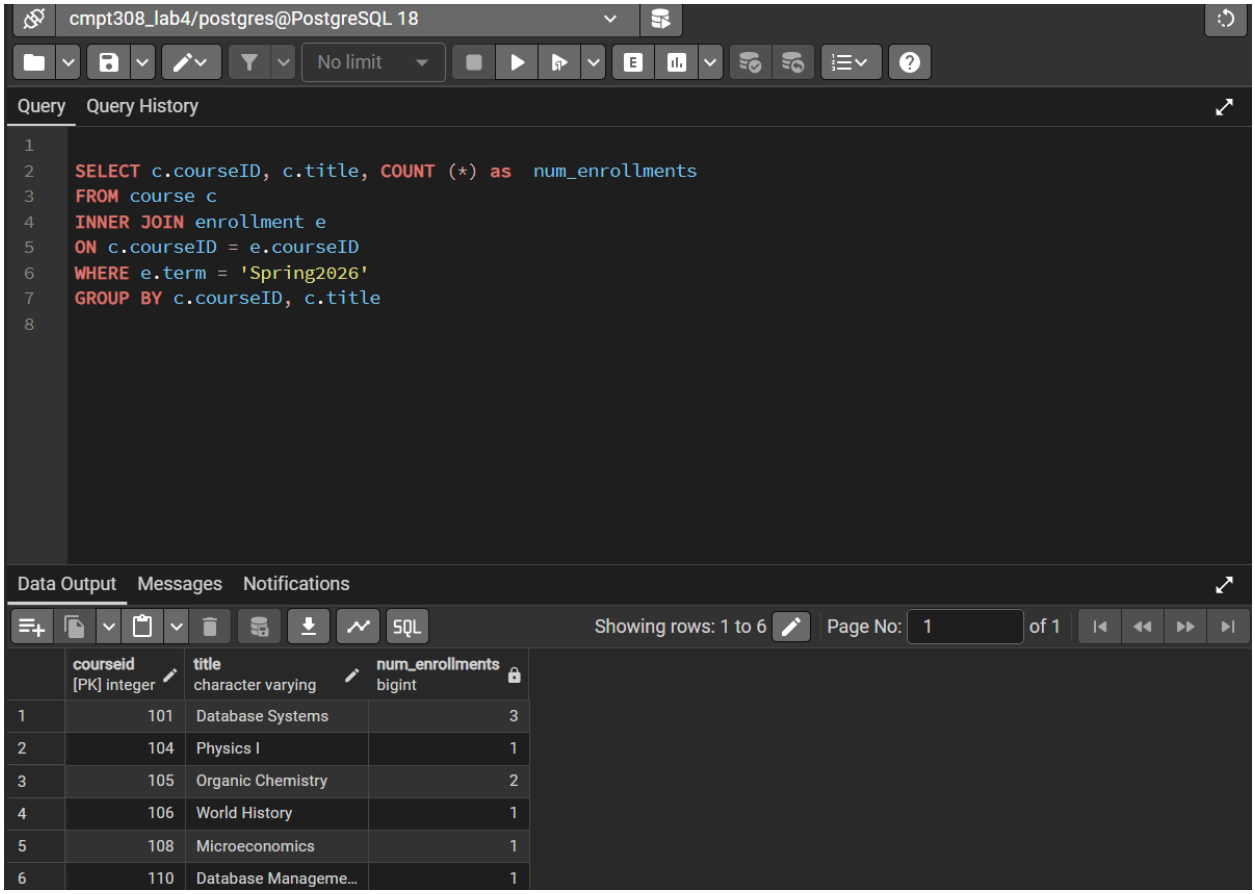
Part B:

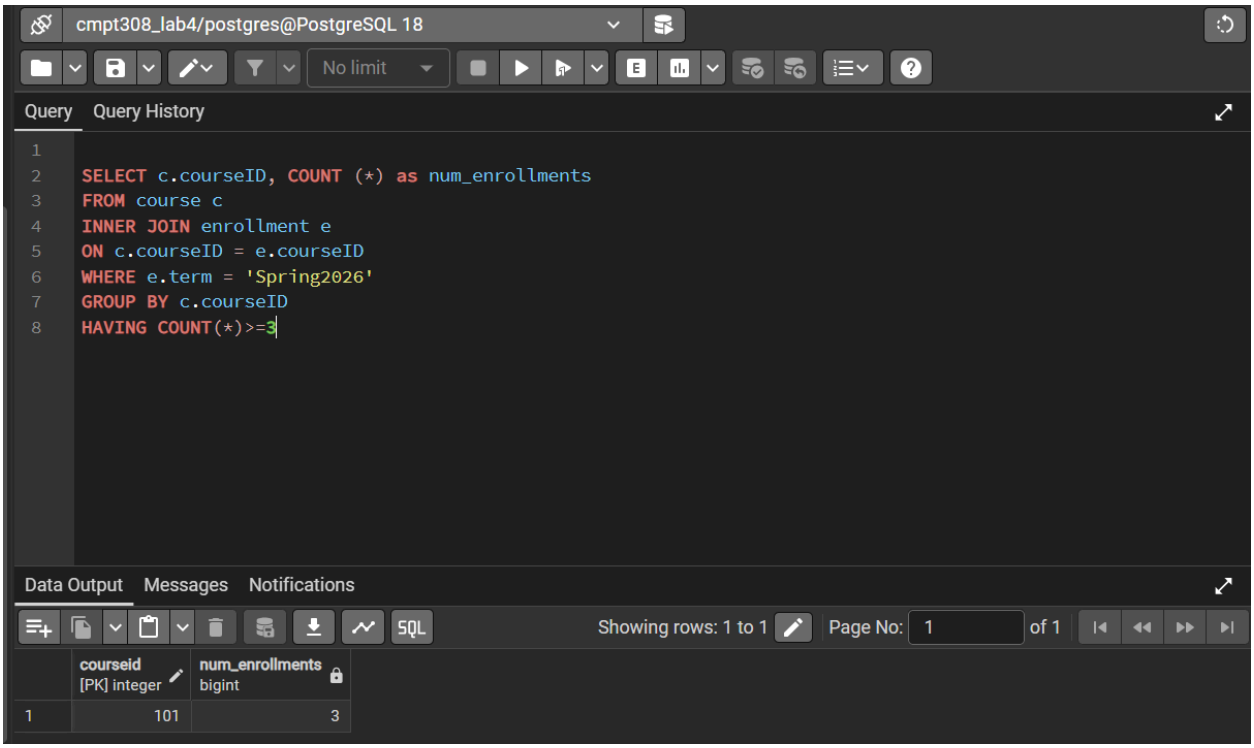
```
Query  Query History
1  SELECT s.studentName from student s
2  WHERE s.studentID IN (
3      SELECT e.studentID
4      FROM enrollment e
5      WHERE e.courseID = 110 AND e.term = 'Spring2026'
6  )
7
```

Data Output Messages Notifications

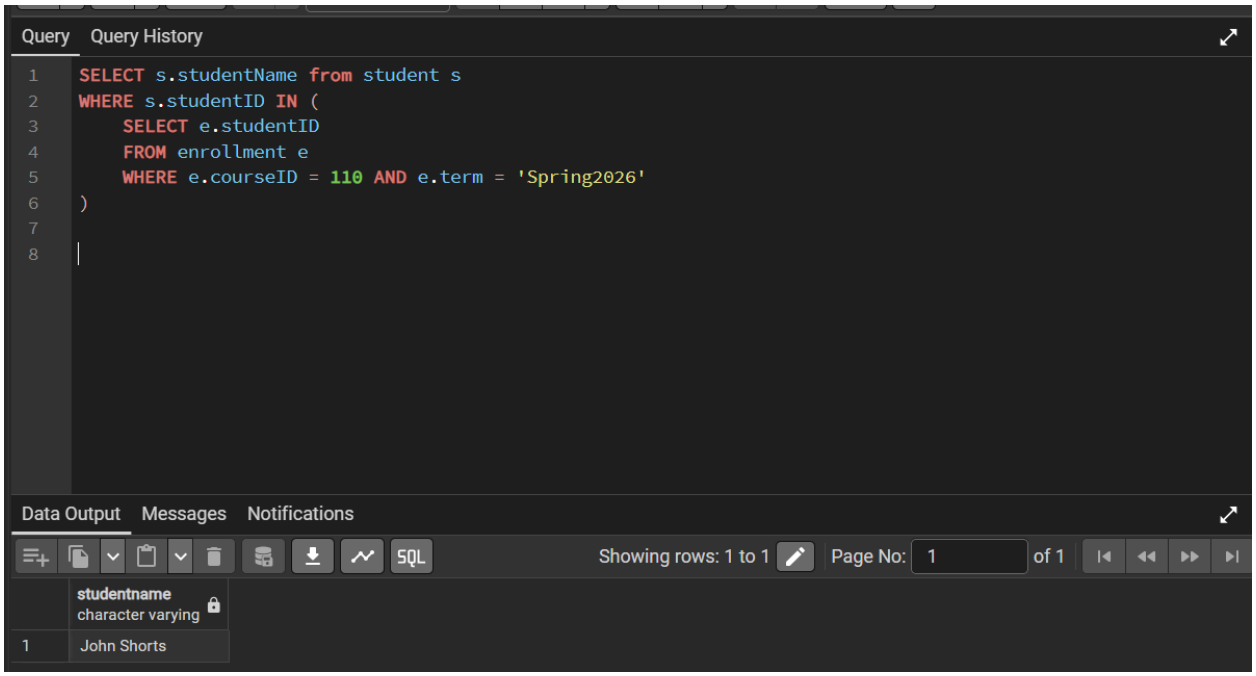
Showing rows: 1 to 1 Page No: 1 of 1

	studentname character varying
1	John Shorts


cmpt308_lab4/postgres@PostgreSQL 18
No limit
Query
Query History
SELECT c.courseID, c.title, COUNT (*) as num_enrollments
FROM course c
INNER JOIN enrollment e
ON c.courseID = e.courseID
WHERE e.term = 'Spring2026'
GROUP BY c.courseID, c.title
Data Output
Messages
Notifications
SQL
Showing rows: 1 to 6
Page No: 1
of 1
courseid [PK] integer
title character varying
num_enrollments bigint
1 101 Database Systems 3
2 104 Physics I 1
3 105 Organic Chemistry 2
4 106 World History 1
5 108 Microeconomics 1
6 110 Database Manageme... 1


cmpt308_lab4/postgres@PostgreSQL 18
No limit
Query
Query History
SELECT c.courseID, COUNT (*) as num_enrollments
FROM course c
INNER JOIN enrollment e
ON c.courseID = e.courseID
WHERE e.term = 'Spring2026'
GROUP BY c.courseID
HAVING COUNT(*)>=3
Data Output
Messages
Notifications
SQL
Showing rows: 1 to 1
Page No: 1
of 1
courseid [PK] integer
num_enrollments bigint
1 101 3

Part C:


Query
Query History
SELECT s.studentName from student s
WHERE s.studentID IN (
SELECT e.studentID
FROM enrollment e
WHERE e.courseID = 110 AND e.term = 'Spring2026'
)
Data Output
Messages
Notifications
SQL
Showing rows: 1 to 1
Page No: 1
of 1
studentname
character varying
1
John Shorts

Query Query History

```
1  SELECT c.courseID, c.title
2  FROM course c
3  WHERE EXISTS (
4      SELECT 1
5      FROM enrollment e
6      WHERE c.courseID = e.courseID AND e.term = 'Spring2026'
7
8  )
```

Data Output Messages Notifications

SQL Showing rows: 1 to 6 Page No: 1 of 1

	courseid [PK] integer	title character varying
1	110	Database Manageme...
2	101	Database Systems
3	105	Organic Chemistry
4	108	Microeconomics
5	106	World History
6	104	Physics I

cmpt308_lab4/postgres@PostgreSQL 18

No limit

Query Query History

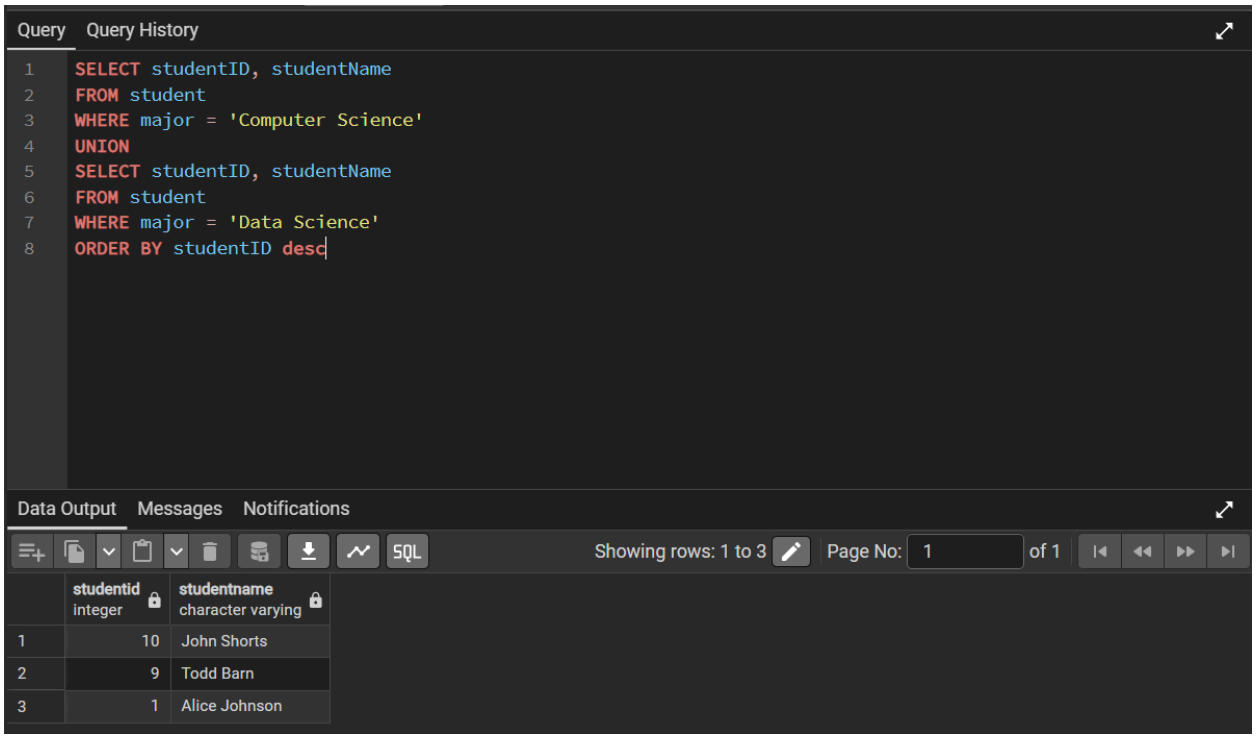
```
1  SELECT studentID FROM enrollment
2  WHERE term = 'Spring2026'
3  GROUP BY studentID
4  HAVING COUNT (*) >=2
```

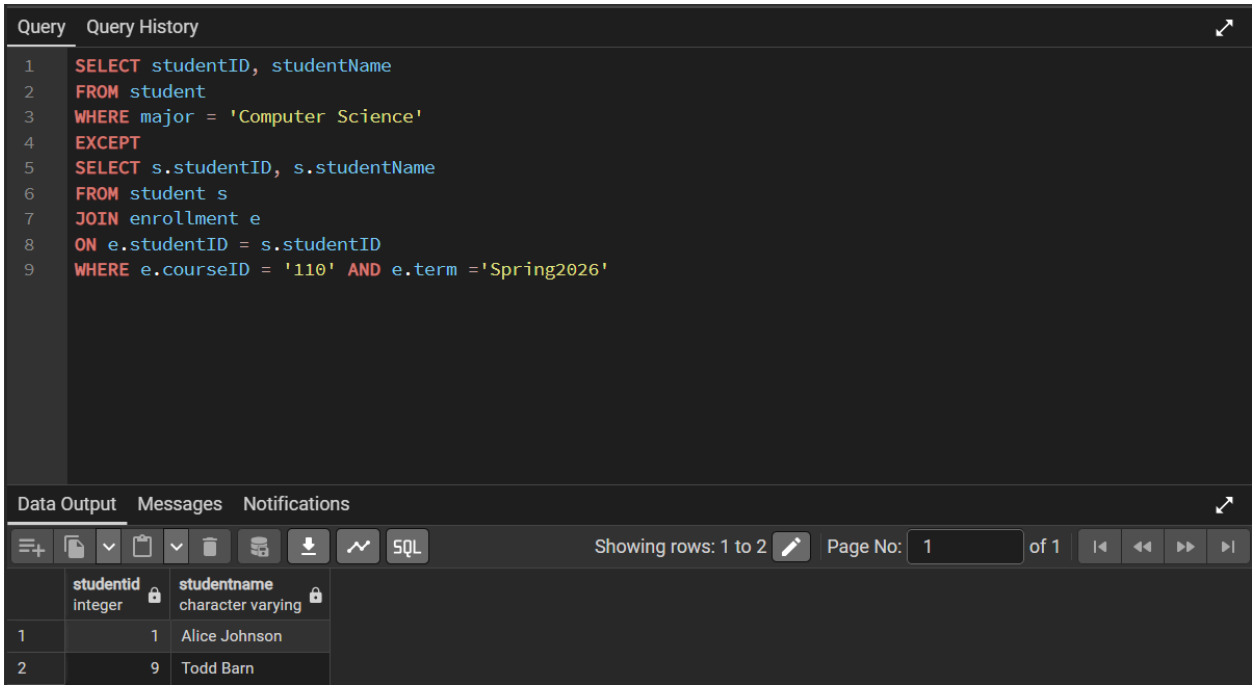
Data Output Messages Notifications

SQL Showing rows: 1 to 1 Page No: 1 of 1

	studentid integer
1	10

Part D:


Query
Query History
1 SELECT studentID, studentName
2 FROM student
3 WHERE major = 'Computer Science'
4 UNION
5 SELECT studentID, studentName
6 FROM student
7 WHERE major = 'Data Science'
8 ORDER BY studentID desc
Data Output
Messages
Notifications
SQL
Showing rows: 1 to 3
Page No: 1
of 1
studentid integer
studentname character varying
1 10 John Shorts
2 9 Todd Barn
3 1 Alice Johnson

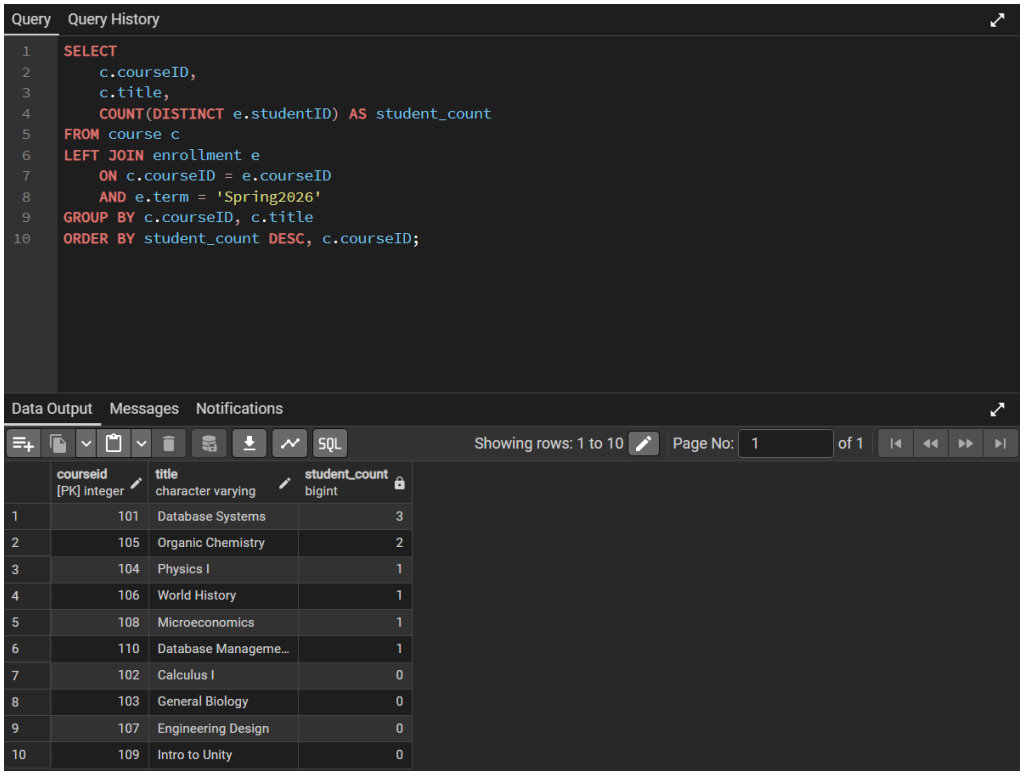

Query
Query History
1 SELECT studentID, studentName
2 FROM student
3 WHERE major = 'Computer Science'
4 EXCEPT
5 SELECT s.studentID, s.studentName
6 FROM student s
7 JOIN enrollment e
8 ON e.studentID = s.studentID
9 WHERE e.courseID = '110' AND e.term ='Spring2026'
Data Output
Messages
Notifications
SQL
Showing rows: 1 to 2
Page No: 1
of 1
studentid integer
studentname character varying
1 1 Alice Johnson
2 9 Todd Barn

Part E:

The second tool that I decided to use was ChatGPT since it's my go to AI. I first pasted all of my creation and insertion statements before I followed up with the prompt which was, "This is the basis of my database. I need you to make a query that returns a list of course_id and title for all courses, and also returns the number of distinct students enrolled in each course for term 'Spring2026'. Include courses with zero enrollments. Sort by the count (highest to lowest), then by course_id."

ChatGPT:

```
SELECT
    c.courseID,
    c.title,
    COUNT(DISTINCT e.studentID) AS student_count
FROM course c
LEFT JOIN enrollment e
    ON c.courseID = e.courseID
    AND e.term = 'Spring2026'
GROUP BY c.courseID, c.title
ORDER BY student_count DESC, c.courseID;
```



Query | Query History

```
SELECT
    c.courseID,
    c.title,
    COUNT(DISTINCT e.studentID) AS student_count
FROM course c
LEFT JOIN enrollment e
    ON c.courseID = e.courseID
    AND e.term = 'Spring2026'
GROUP BY c.courseID, c.title
ORDER BY student_count DESC, c.courseID;
```

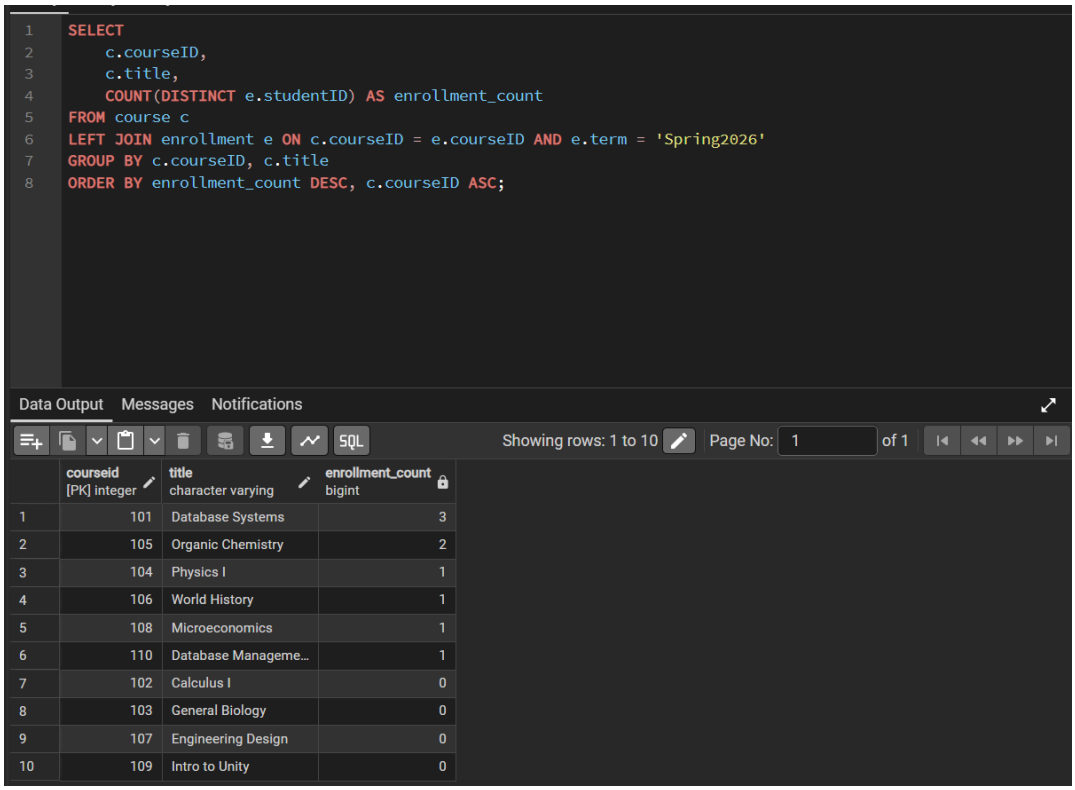
Data Output | Messages | Notifications

Showing rows: 1 to 10 | Page No: 1 of 1

	courseid [PK] integer	title character varying	student_count bigint
1	101	Database Systems	3
2	105	Organic Chemistry	2
3	104	Physics I	1
4	106	World History	1
5	108	Microeconomics	1
6	110	Database Manageme...	1
7	102	Calculus I	0
8	103	General Biology	0
9	107	Engineering Design	0
10	109	Intro to Unity	0

Copilot:

```
SELECT
    c.courseID,
    c.title,
    COUNT(DISTINCT e.studentID) AS enrollment_count
FROM course c
LEFT JOIN enrollment e ON c.courseID = e.courseID AND e.term = 'Spring2026'
GROUP BY c.courseID, c.title
ORDER BY enrollment_count DESC, c.courseID ASC;
```



```
SELECT
    c.courseID,
    c.title,
    COUNT(DISTINCT e.studentID) AS enrollment_count
FROM course c
LEFT JOIN enrollment e ON c.courseID = e.courseID AND e.term = 'Spring2026'
GROUP BY c.courseID, c.title
ORDER BY enrollment_count DESC, c.courseID ASC;
```

Data Output | Messages | Notifications

Showing rows: 1 to 10 | Page No: 1 of 1

	courseid [PK] integer	title character varying	enrollment_count bigint
1	101	Database Systems	3
2	105	Organic Chemistry	2
3	104	Physics I	1
4	106	World History	1
5	108	Microeconomics	1
6	110	Database Manageme...	1
7	102	Calculus I	0
8	103	General Biology	0
9	107	Engineering Design	0
10	109	Intro to Unity	0

Both of these queries worked and gave the exact same output when I ran them. I'd say Copilot was better for this task overall. The explanations it gave for the key components of the query were both shorter and more informative than ChatGPT.

Github repo: Not-Patrick1/DatabaseLabs: First lab for DB management.