HW #6

Q1. Look up websites containing the following data representations:

a) Using JSON

b) Using XML

Analyze the websites in terms of structure and composition. Name the technology/methods use for creating the web database.

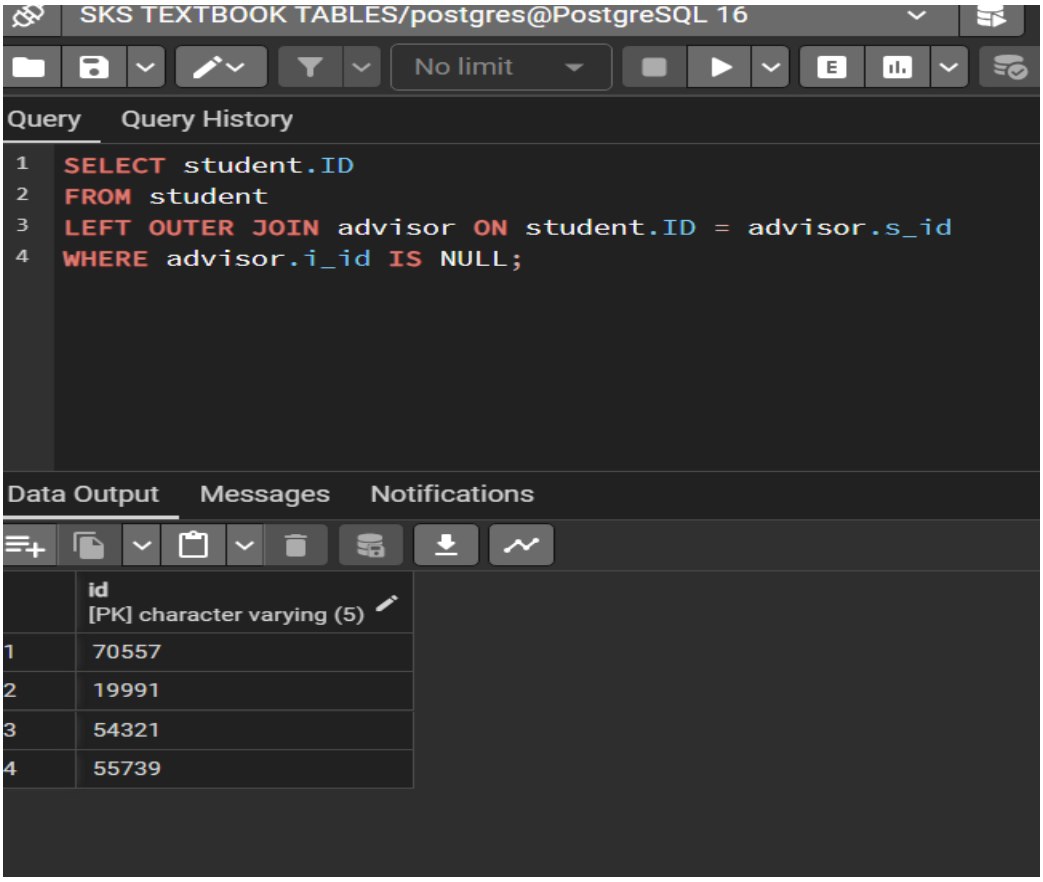
The technology/methods used to create the web database depend on the specific website. Some websites might use relational database management systems (RDBMS) like MySQL or PostgreSQL, while others might use NoSQL databases like MongoDB or Redis. Additionally, websites might use frameworks and libraries like Django, Ruby on Rails, or Express.js to interact with the database and serve data to the web front end.

2. SQL exercise*:*

i. Express the following query in SQL using no subqueries and no set operations. (Hint: left

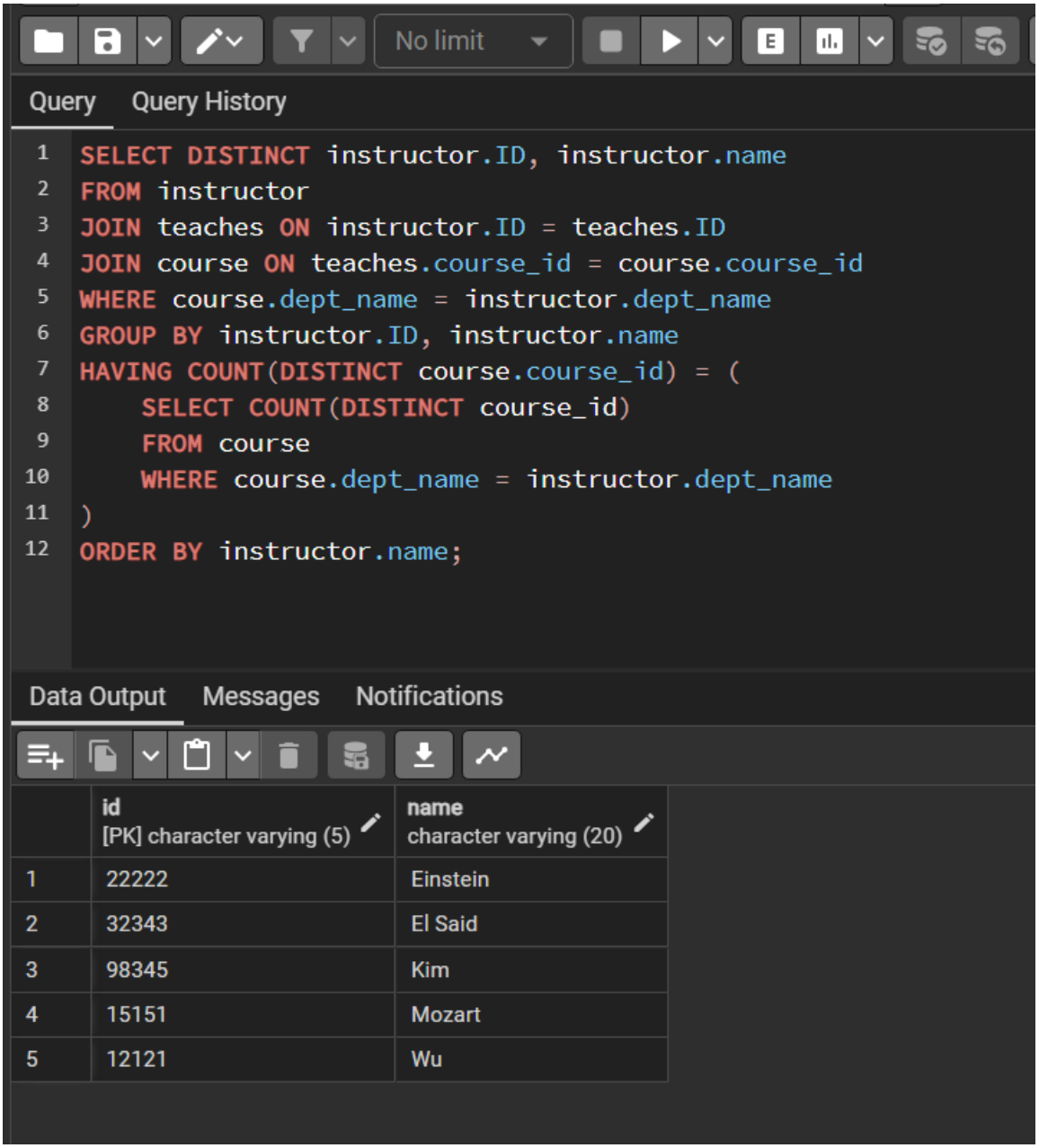
outer join)

```
select ID
from student
except
select s id
from advisor
where i ID is not null
```



This query retrieves the IDs from the **student** table where there's no corresponding **i_id** in the **advisor** table, using a left outer join.

ii. Using the university schema, write an SQL query to find the names and IDs of those instructors who teach every course taught in his or her department (i.e., every course that appears in the course relation with the instructor's department name). Order result by name.


No limit
Query
Query History
1 SELECT DISTINCT instructor.ID, instructor.name
2 FROM instructor
3 JOIN teaches ON instructor.ID = teaches.ID
4 JOIN course ON teaches.course_id = course.course_id
5 WHERE course.dept_name = instructor.dept_name
6 GROUP BY instructor.ID, instructor.name
7 HAVING COUNT(DISTINCT course.course_id) = (
8 SELECT COUNT(DISTINCT course_id)
9 FROM course
10 WHERE course.dept_name = instructor.dept_name
11)
12 ORDER BY instructor.name;
Data Output
Messages
Notifications
id
[PK] character varying (5)
name
character varying (20)
1 22222 Einstein
2 32343 El Said
3 98345 Kim
4 15151 Mozart
5 12121 Wu