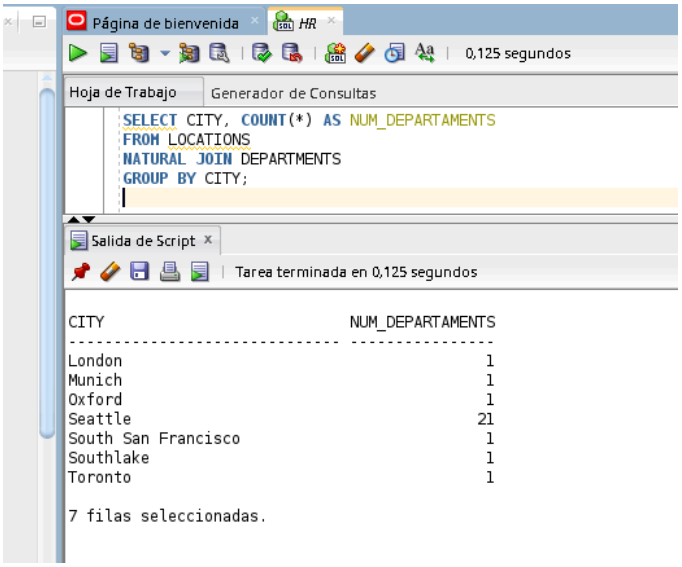
Nom:Nerehei Rodriguez

SELECT 4A PART 2

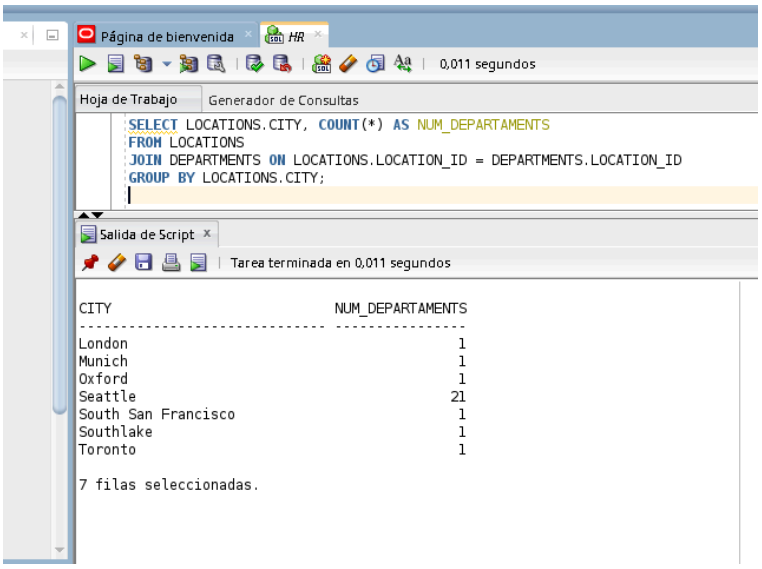
1. Versio amb NATURAL JOIN:

```
SELECT CITY, COUNT(*) AS NUM_DEPARTAMENTS
FROM LOCATIONS
NATURAL JOIN DEPARTMENTS
GROUP BY CITY;
```



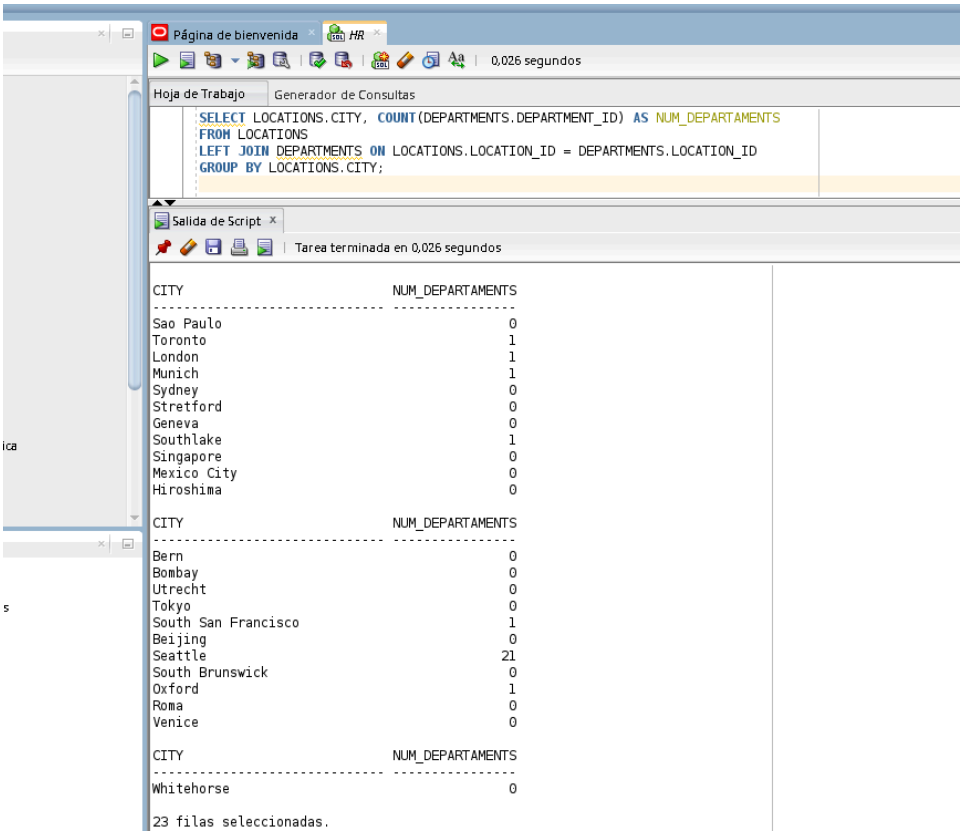
Versió amb JOIN explícit:

```
SELECT LOCATIONS.CITY, COUNT(*) AS NUM_DEPARTAMENTS
FROM LOCATIONS
JOIN DEPARTMENTS ON LOCATIONS.LOCATION_ID = DEPARTMENTS.LOCATION_ID
GROUP BY LOCATIONS.CITY;
```



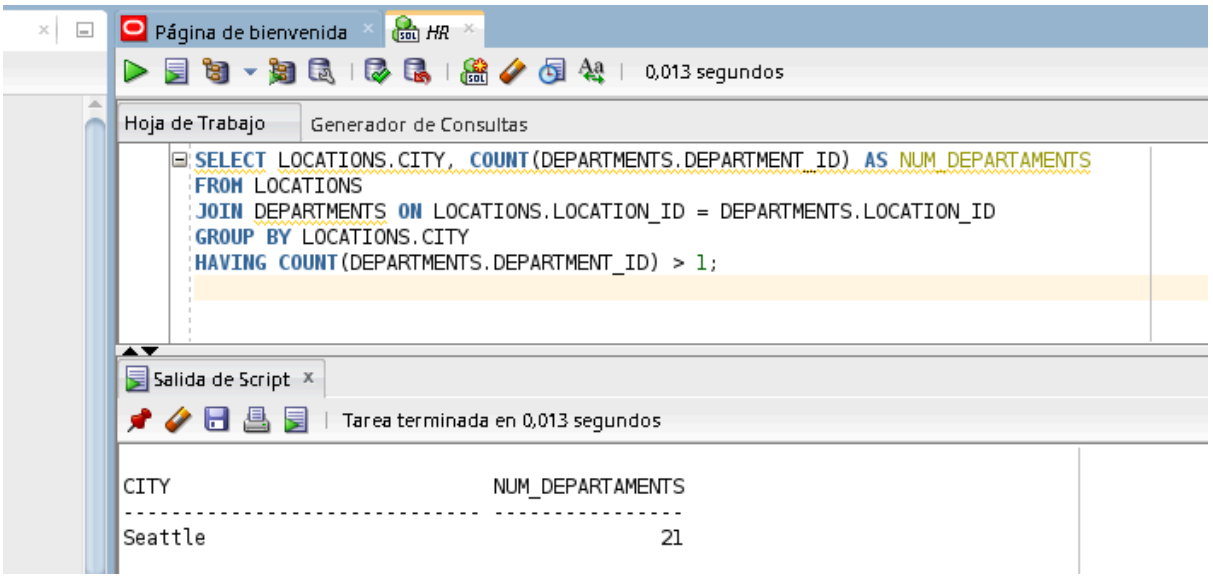
2. El NATURAL JOIN no permet unir amb un OUTER JOIN, així que no es pot aplicar

```
SELECT LOCATIONS.CITY, COUNT(DEPARTMENTS.DEPARTMENT_ID) AS
NUM_DEPARTAMENTS
FROM LOCATIONS
LEFT JOIN DEPARTMENTS ON LOCATIONS.LOCATION_ID =
DEPARTMENTS.LOCATION_ID
GROUP BY LOCATIONS.CITY;
```



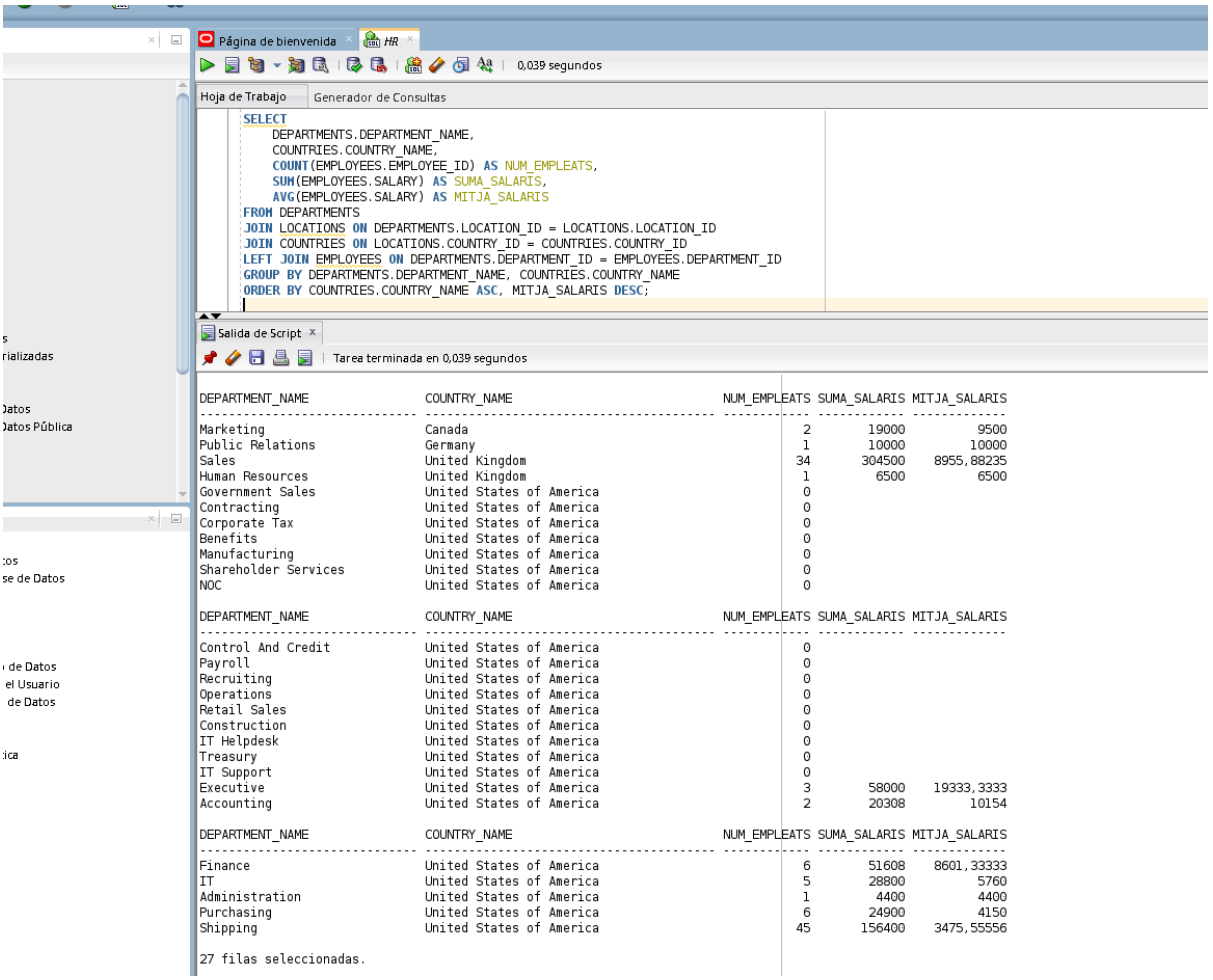
3. No es pot utilitzar en aquest cas, ja que el NATURAL JOIN no permet aplicar directament una condició com HAVING COUNT(*) > 1

```
SELECT LOCATIONS.CITY, COUNT(DEPARTMENTS.DEPARTMENT_ID) AS
NUM_DEPARTAMENTS
FROM LOCATIONS
JOIN DEPARTMENTS ON LOCATIONS.LOCATION_ID = DEPARTMENTS.LOCATION_ID
GROUP BY LOCATIONS.CITY
HAVING COUNT(DEPARTMENTS.DEPARTMENT_ID) > 1;
```



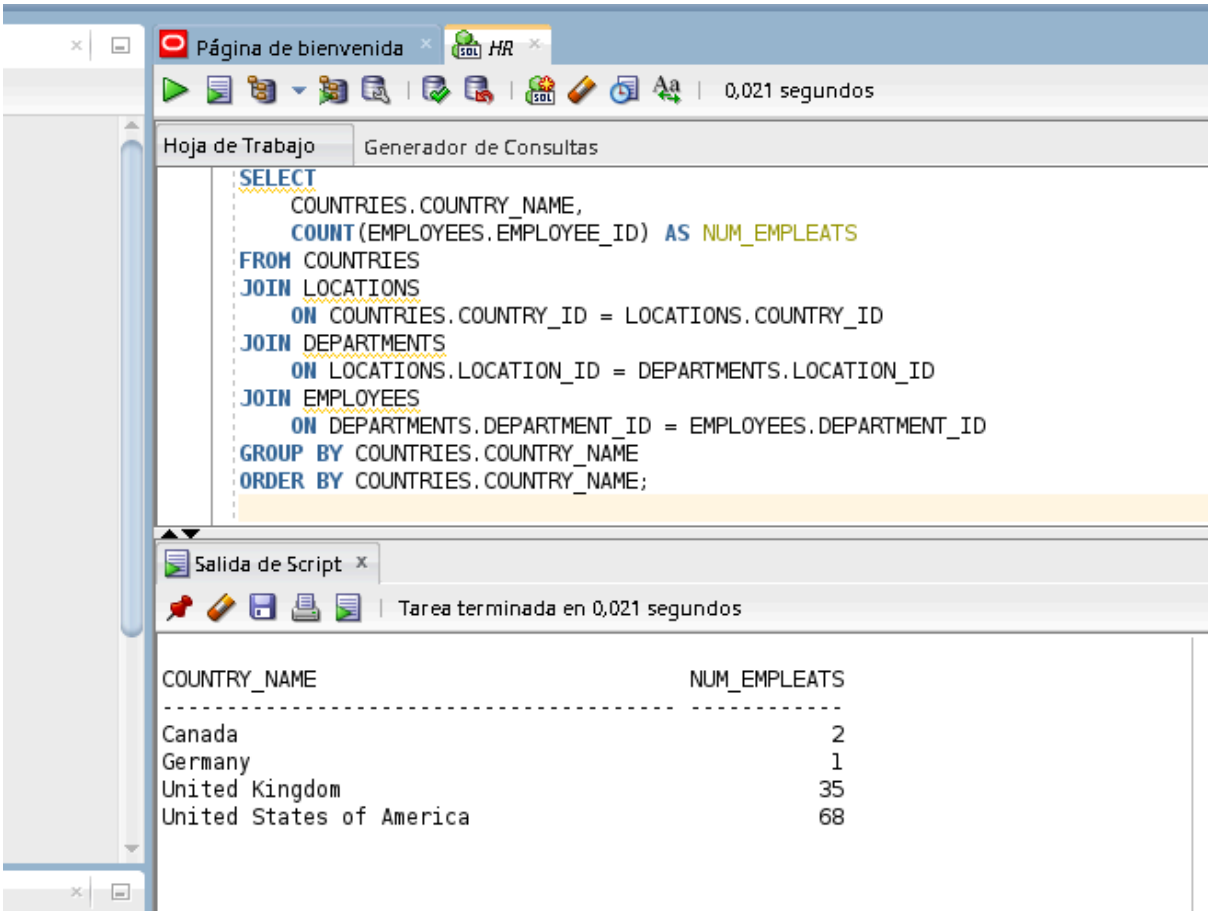
4. Com que cal manipular dades agregades el NATURAL JOIN no és la millor opció, ja que limita la flexibilitat en els càlculs.

```
SELECT
   DEPARTMENTS.DEPARTMENT_NAME,
   COUNTRIES.COUNTRY_NAME,
   COUNT(EMPLOYEES.EMPLOYEE_ID) AS NUM_EMPLEATS,
   SUM(EMPLOYEES.SALARY) AS SUMA_SALARIS,
   AVG(EMPLOYEES.SALARY) AS MITJA_SALARIS
FROM DEPARTMENTS
JOIN LOCATIONS ON DEPARTMENTS.LOCATION_ID = LOCATIONS.LOCATION_ID
JOIN COUNTRIES ON LOCATIONS.COUNTRY_ID = COUNTRIES.COUNTRY_ID
LEFT JOIN EMPLOYEES ON DEPARTMENTS.DEPARTMENT_ID =
EMPLOYEES.DEPARTMENT_ID
GROUP BY DEPARTMENTS.DEPARTMENT_NAME, COUNTRIES.COUNTRY_NAME
ORDER BY COUNTRIES.COUNTRY_NAME ASC, MITJA_SALARIS DESC;
```



5. Sense natural Join:

```
SELECT
   COUNTRIES.COUNTRY_NAME,
   COUNT(EMPLOYEES.EMPLOYEE_ID) AS NUM_EMPLEATS
FROM COUNTRIES
JOIN LOCATIONS
   ON COUNTRIES.COUNTRY_ID = LOCATIONS.COUNTRY_ID
JOIN DEPARTMENTS
   ON LOCATIONS.LOCATION_ID = DEPARTMENTS.LOCATION_ID
JOIN EMPLOYEES
   ON DEPARTMENTS.DEPARTMENT_ID = EMPLOYEES.DEPARTMENT_ID
GROUP BY COUNTRIES.COUNTRY_NAME
ORDER BY COUNTRIES.COUNTRY_NAME;
```



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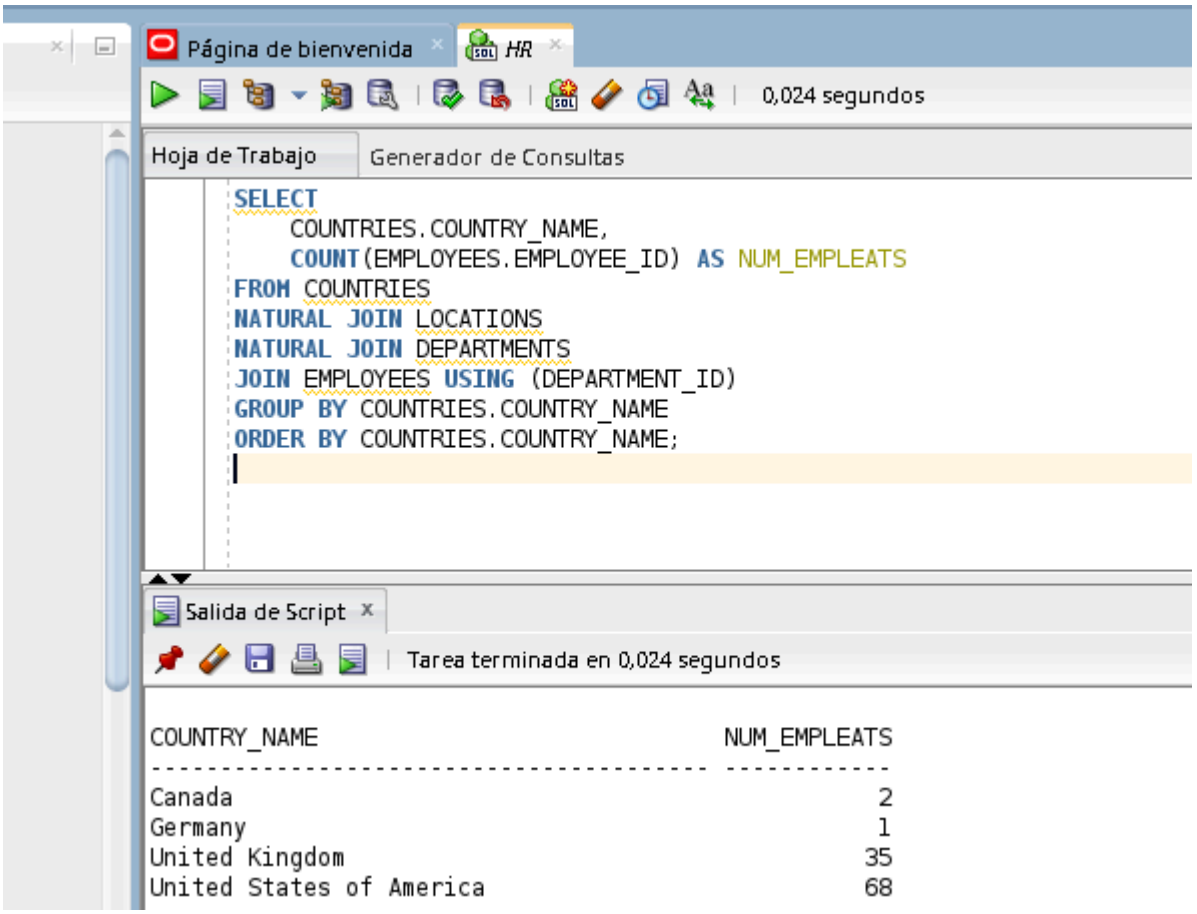
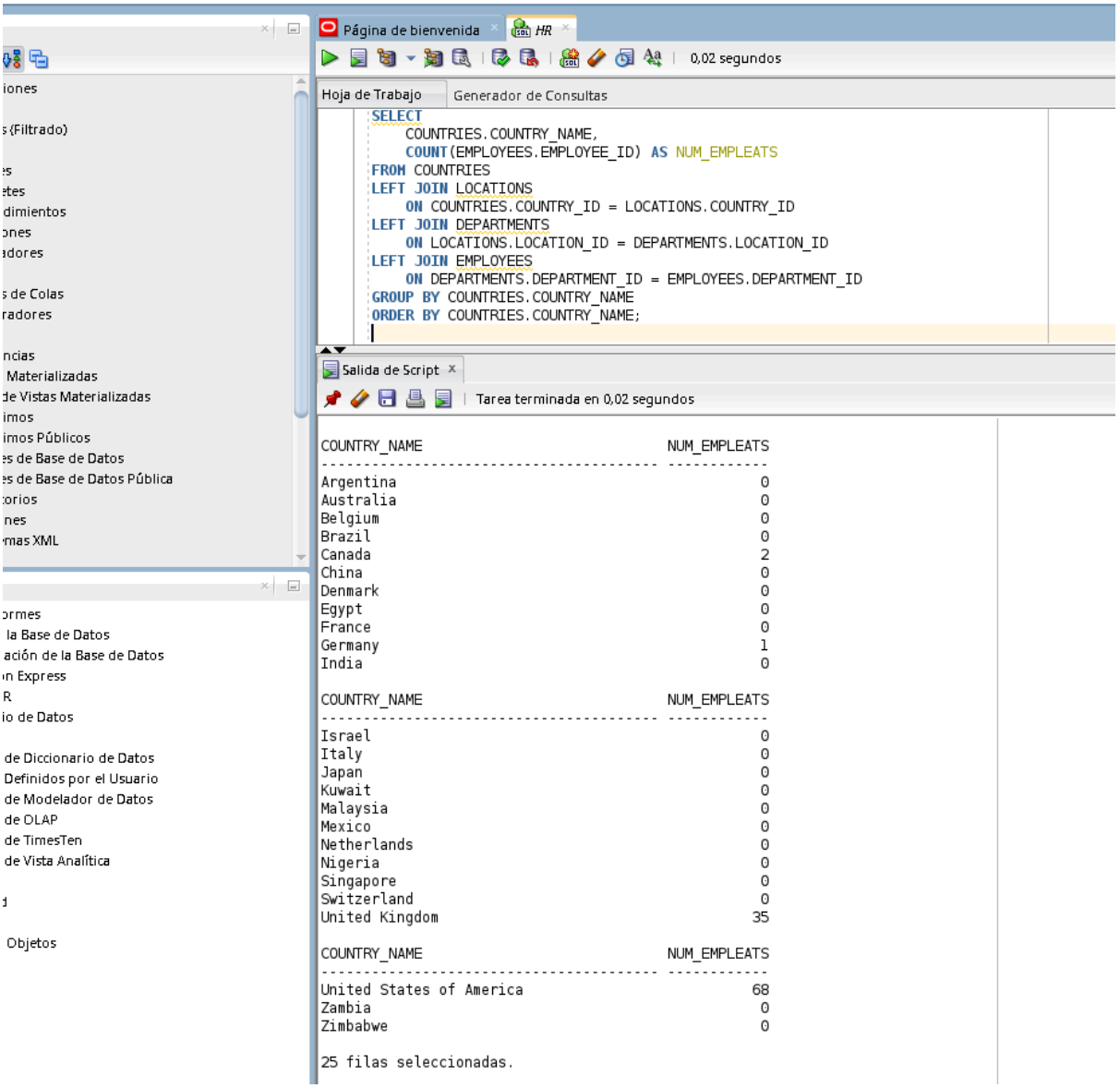
Amb NATURAL JOIN:

```
SELECT
   COUNTRIES.COUNTRY_NAME,
   COUNT(EMPLOYEES.EMPLOYEE_ID) AS NUM_EMPLEATS
FROM COUNTRIES
NATURAL JOIN LOCATIONS
NATURAL JOIN DEPARTMENTS
JOIN EMPLOYEES USING (DEPARTMENT_ID)
GROUP BY COUNTRIES.COUNTRY_NAME
ORDER BY COUNTRIES.COUNTRY_NAME;
```



7. Sense NATURAL JOIN

```
SELECT
   COUNTRIES.COUNTRY_NAME,
   COUNT(EMPLOYEES.EMPLOYEE_ID) AS NUM_EMPLEATS
FROM COUNTRIES
LEFT JOIN LOCATIONS
   ON COUNTRIES.COUNTRY_ID = LOCATIONS.COUNTRY_ID
LEFT JOIN DEPARTMENTS
   ON LOCATIONS.LOCATION_ID = DEPARTMENTS.LOCATION_ID
LEFT JOIN EMPLOYEES
   ON DEPARTMENTS.DEPARTMENT_ID = EMPLOYEES.DEPARTMENT_ID
GROUP BY COUNTRIES.COUNTRY_NAME
ORDER BY COUNTRIES.COUNTRY_NAME;
```



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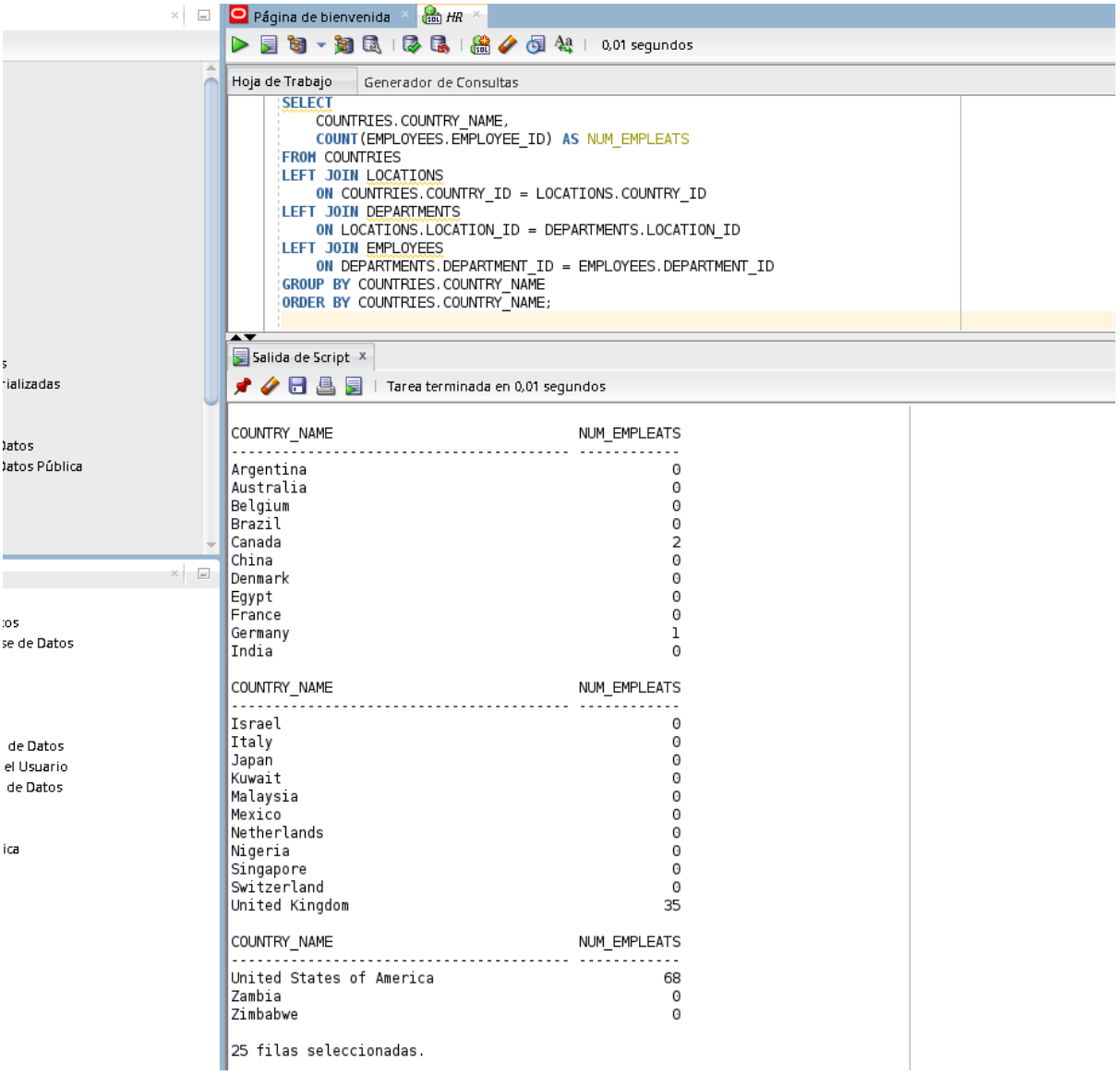
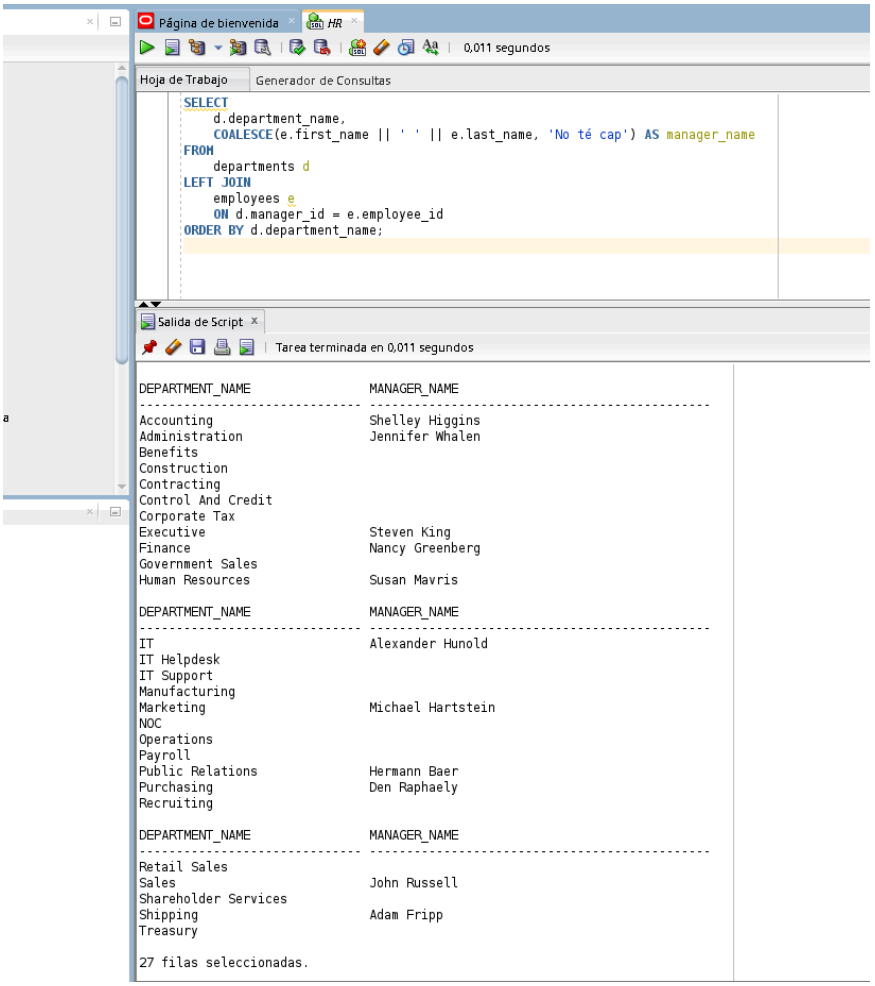
Amb NATURAL JOIN:

```
SELECT
   COUNTRIES.COUNTRY_NAME,
   COUNT(EMPLOYEES.EMPLOYEE_ID) AS NUM_EMPLEATS
FROM COUNTRIES
LEFT JOIN LOCATIONS
   ON COUNTRIES.COUNTRY_ID = LOCATIONS.COUNTRY_ID
LEFT JOIN DEPARTMENTS
   ON LOCATIONS.LOCATION_ID = DEPARTMENTS.LOCATION_ID
LEFT JOIN EMPLOYEES
   ON DEPARTMENTS.DEPARTMENT_ID = EMPLOYEES.DEPARTMENT_ID
GROUP BY COUNTRIES.COUNTRY_NAME
ORDER BY COUNTRIES.COUNTRY_NAME;
```



10. Amb NATURAL JOIN:

```
SELECT
    d.department_name,
    COALESCE(e.first_name || ' ' || e.last_name, 'No té cap') AS manager_name
FROM
    departments d
LEFT JOIN
    employees e
    ON d.manager_id = e.employee_id
ORDER BY d.department_name;
```



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Sense NATURAL JOIN:

```
SELECT
    d.department_name,
    COALESCE(e.first_name || ' ' || e.last_name, 'No té cap') AS manager_name
FROM
    departments d
LEFT JOIN
    employees e
    ON d.manager_id = e.employee_id
ORDER BY d.department_name;
```