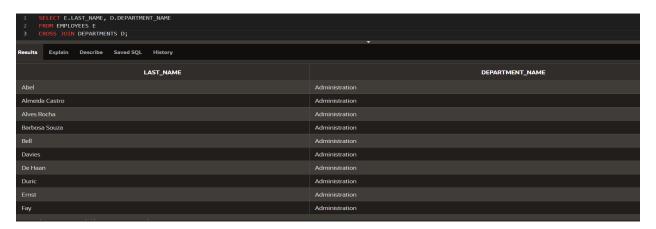
# Database Programming with SQL

#### 6-1: Cross Joins and Natural Joins

1. Create a cross-join that displays the last name and department name from the employees and departments tables.



2. Create a query that uses a natural join to join the departments table and the locations table. Display the department id, department name, location id, and city.



3. Create a query that uses a natural join to join the departments table and the locations table. Restrict the output to only department IDs of 20 and 50. Display the department id, department name, location id, and city



#### 6-2: Join Clauses

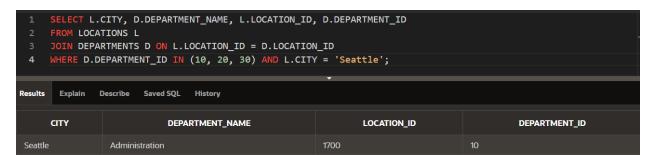
1. Join the Oracle database locations and departments table using the location\_id column. Limit the results to location 1400 only.



2. Join DJs on Demand d\_play\_list\_items, d\_track\_listings, and d\_cds tables with the JOIN USING syntax. Include the song ID, CD number, title, and comments in the output.



3. Display the city, department name, location ID, and department ID for departments 10, 20, and 30 for the city of Seattle.



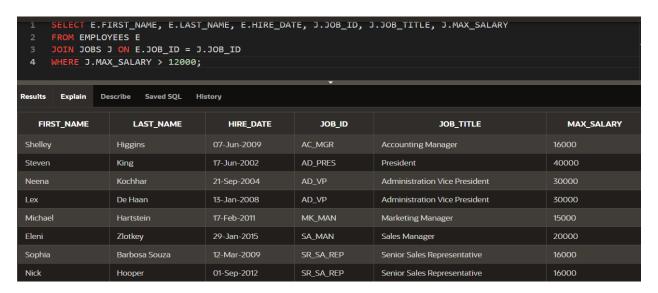
4. Display country name, region ID, and region name for Americas.

```
1 SELECT C.COUNTRY_NAME, R.REGION_ID, R.REGION_NAME
2 FROM COUNTRIES C
3 JOIN REGIONS R ON C.REGION_ID = R.REGION_ID
4 WHERE R.REGION_NAME = 'Americas';

Results Explain Describe Saved SQL History

no data found
```

5. Write a statement joining the employees and jobs tables. Display the first and last names, hire date, job id, job title, and maximum salary. Limit the query to those employees who are in jobs that can earn more than \$12,000.

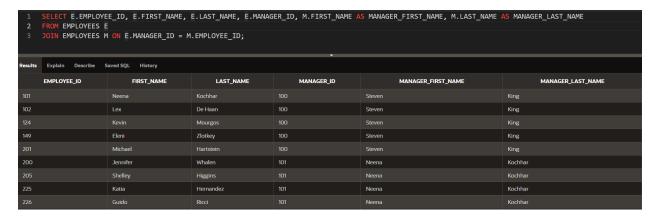


6. Display job title, employee first name, last name, and email for all employees who are stock clerks.



The following questions use the JOIN...ON syntax:

7. Write a statement that displays the employee ID, first name, last name, manager ID, manager first name, and manager last name for every employee in the employees table. Hint: this is a self-join.



8. Use JOIN ON syntax to query and display the location ID, city, and department name for all Canadian locations.



9. Query and display manager ID, department ID, department name, first name, and last name for all employees in departments 80, 90, 110, and 190.



10. Display employee ID, last name, department ID, department name, and hire date for those employees whose hire date was June 7, 1994

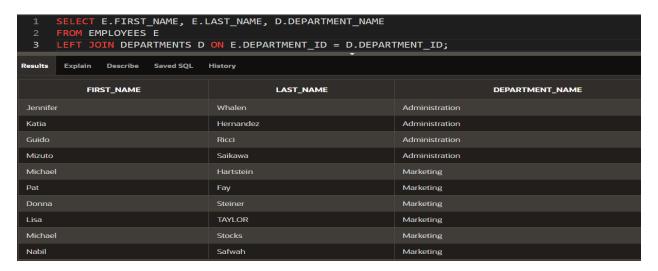
```
1 SELECT E.EMPLOYEE_ID, E.LAST_NAME, E.DEPARTMENT_ID, D.DEPARTMENT_NAME, E.HIRE_DATE
2 FROM EMPLOYEES E
3 JOIN DEPARTMENTS D ON E.DEPARTMENT_ID = D.DEPARTMENT_ID
4 WHERE E.HIRE_DATE = TO_DATE('07-JUN-1994', 'DD-MON-YYYY');

Results Explain Describe Saved SQL History

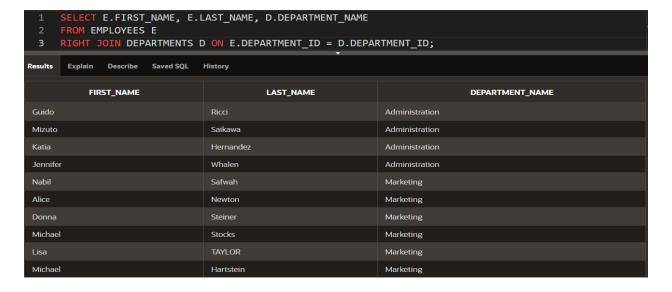
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### 6-3: Inner vs Outer Joins

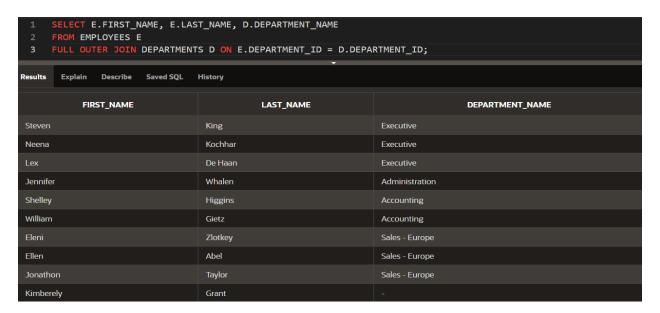
1. Return the first name, last name, and department name for all employees including those employees not assigned to a department.



2. Return the first name, last name, and department name for all employees including those departments that do not have an employee assigned to them.



3. Return the first name, last name, and department name for all employees including those departments that do not have an employee assigned to them and those employees not assigned to a department.



4. Create a query of the DJs on Demand database to return the first name, last name, event date, and description of the event the client held. Include all the clients even if they have not had an event scheduled.



5. Using the Global Fast Foods database, show the shift description and shift assignment date even if there is no date assigned for each shift description.

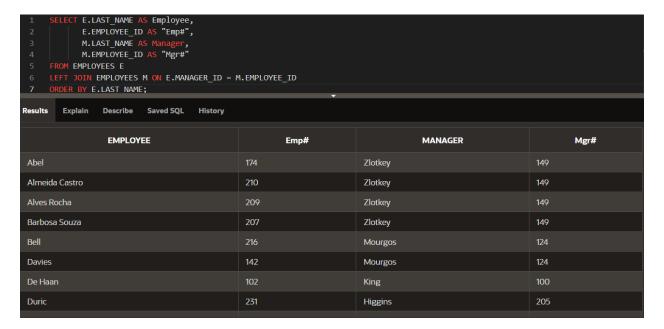


## 6-4: Self Joins and Hierarchical Queries

1. Display the employee's last name and employee number along with the manager's last name and manager number. Label the columns: Employee, Emp#, Manager, and Mgr#, respectively.

1 SELECT E.LAST_NAME AS Employee, 2					
EMPLOYEE	Emp#	MANAGER	Mgr#		
Hunold	103	De Haan	102		
Fay	202	Hartstein	201		
Newton	235	Hartstein	201		
Safwah	228	Hartstein	201		
Steiner	215	Hartstein	201		
Stocks	219	Hartstein	201		
TAYLOR	217	Hartstein	201		
Duric	231	Higgins	205		
Gietz	206	Higgins	205		

2. Modify question 1 to display all employees and their managers, even if the employee does not have a manager. Order the list alphabetically by the last name of the employee.



3. Display the names and hire dates for all employees who were hired before their managers, along with their managers' names and hire dates. Label the columns Employee, Emp Hired, Manager and Mgr Hired, respectively.

1 SELECT E.LAST_NAME AS Employee, 2					
EMPLOYEE	Emp Hired	MANAGER	Mgr Hired		
Whalen	17-Sep-2002	Kochhar	21-Sep-2004		
Hunold	03-Jan-2005	De Haan	13-Jan-2008		
Rajs	17-Oct-2010	Mourgos	16-Nov-2014		
Davies	29-Jan-2012	Mourgos	16-Nov-2014		
Matos	15-Mar-2013	Mourgos	16-Nov-2014		
Vargas	09-Jul-2013	Mourgos	16-Nov-2014		
Bell	01-Apr-2014	Mourgos	16-Nov-2014		
Abel	11-May-2011	Zlotkey	29-Jan-2015		

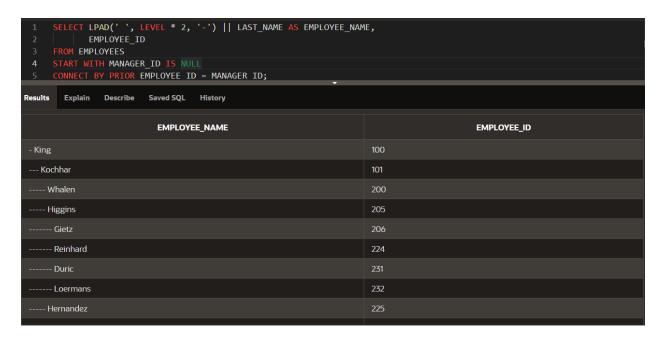
4. Write a report that shows the hierarchy for Lex De Haans department. Include last name, salary, and department id in the report.



5. What is wrong in the following statement? SELECT last\_name, department\_id, salary FROM employees START WITH last\_name = 'King' CONNECT BY PRIOR manager id = employee id;



6. Create a report that shows the organization chart for the entire employee table. Write the report so that each level will indent each employee 2 spaces. Since Oracle Application Express cannot display the spaces in front of the column, use - (minus) instead.



7. Re-write the report from 6 to exclude De Haan and all the people working for him.

