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COURSE CODE: CT-261
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TASK: DBMS LAB#04

Q1. Write a query to display the last name, department number, and department name for all employees.

SQL QUERY:

```
1   /*Write a query to display the last name,
2   department number, and department name for all employees.*/
3
4   SELECT e.last_name,d.department_id,d.department_name
5   FROM HR.employees e
6   INNER JOIN HR.DEPARTMENTS d
7   ON e.department_id=d.department_id;
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.002 seconds

	LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
1	Whalen	10	Administration
2	Martinez	20	Marketing
3	Davis	20	Marketing
4	Baida	30	Purchasing
5	Tobias	30	Purchasing
6	Li	30	Purchasing
7	Khoo	30	Purchasing
8	Himuro	30	Purchasing

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.002 seconds

	LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
99	Sciarra	100	Finance
100	Popp	100	Finance
101	Chen	100	Finance
102	Faviet	100	Finance
103	Urman	100	Finance
104	Gruenberg	100	Finance
105	Gietz	110	Accounting
106	Higgins	110	Accounting

Q2. Create a unique listing of all jobs that are in department 30. Include the location of department 90 in the output.

SQL QUERY:

```
1   /*Create a unique listing of all jobs that are in department 30.
2   Include the location of department 90 in the output.*/
3
4   SELECT DISTINCT e.job_id,l.location_id
5   FROM HR.EMPLOYEES e
6   INNER JOIN HR.DEPARTMENTS l
7   ON l.department_id=90
8   WHERE e.department_id=30
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.001 seconds

	JOB_ID	LOCATION_ID
1	PU_MAN	1700
2	PU_CLERK	1700

Q3. Write a query to display the employee last name, department name, location ID, and city of all employees who earn a commission.

SQL QUERY:

```
1   /*Write a query to display the employee last name, department name,
2   location ID, and city of all employees who earn a commission.*/
3
4   SELECT e.last_name AS "Last Name", d.department_name AS
5   "Department",l.location_id AS "Location ID", l.city AS "City"
6   FROM HR.EMPLOYEES e
7   INNER JOIN HR.DEPARTMENTS d
8   ON e.department_id=d.department_id
9   INNER JOIN HR.LOCATIONS l
10  ON d.location_id=l.location_id
11  WHERE e.commission_pct IS NOT NULL;
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.013 seconds

	LAST NAME	DEPARTMENT	LOCATION ID	CITY
1	Singh	Sales	2500	Oxford
2	Partners	Sales	2500	Oxford
3	Errazuriz	Sales	2500	Oxford
4	Cambrault	Sales	2500	Oxford
5	Zlotkey	Sales	2500	Oxford
6	Tucker	Sales	2500	Oxford
7	Bernstein	Sales	2500	Oxford
8	Hall	Sales	2500	Oxford

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.013 seconds

	LAST NAME	DEPARTMENT	LOCATION ID	CITY
27	Smith	Sales	2500	Oxford
28	Bates	Sales	2500	Oxford
29	Kumar	Sales	2500	Oxford
30	Abel	Sales	2500	Oxford
31	Hutton	Sales	2500	Oxford
32	Taylor	Sales	2500	Oxford
33	Livingston	Sales	2500	Oxford
34	Johnson	Sales	2500	Oxford

Q4. Display the employee last name and department name for all employees who have an *a* (lowercase) in their last names.

SQL QUERY:

```
1   /*Display the employee last name and department name for all
2   employees who have an a (lowercase) in their last names.*/
3
4   SELECT e.last_name,d.department_name
5   FROM HR.EMPLOYEES e
6   INNER JOIN HR.DEPARTMENTS d
7   ON e.department_id=d.department_id
8   WHERE last_name LIKE '%a%';
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.003 seconds

	LAST_NAME	DEPARTMENT_NAME
1	Whalen	Administration
2	Martinez	Marketing
3	Davis	Marketing
4	Colmenares	Purchasing
5	Baida	Purchasing
6	Tobias	Purchasing
7	Jacobs	Human Resources
8	Taylor	Shipping

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.003 seconds

	LAST_NAME	DEPARTMENT_NAME
42	Errazuriz	Sales
43	Doran	Sales
44	Tuvault	Sales
45	Yang	Executive
46	Garcia	Executive
47	Urman	Finance
48	Faviet	Finance
49	Sciarra	Finance

Q5. Write a query to display the last name, job, department number, and department name for all employees who work in Toronto.

SQL QUERY:

```
1   /*Write a query to display the last name, job,
2   department number, and department name for all
3   employees who work in Toronto.*/
4
5   SELECT e.last_name,e.job_id,d.department_id,
6   d.department_name
7   FROM HR.EMPLOYEES e
8   INNER JOIN HR.DEPARTMENTS d
9   ON e.department_id=d.department_id
10  INNER JOIN HR.LOCATIONS l
11  ON d.location_id=l.location_id
12  WHERE l.city='Toronto';
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.001 seconds

	LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPARTMENT_NAME
1	Martinez	MK_MAN	20	Marketing
2	Davis	MK_REP	20	Marketing

Q6. Display the employee last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, respectively.

SQL QUERY:

```
1   /* Display the employee last name and employee number along
2   with their manager's last name and manager number.
3   Label the columns Employee, Emp#, Manager, and Mgr#,
4   respectively.*/
5
6   SELECT e.last_name AS "Employee",e.employee_id AS "Emp#",
7   m.last_name AS "Manager",m.employee_id AS "Mgr#"
8   FROM HR.EMPLOYEES e JOIN HR.EMPLOYEES m
9   ON e.manager_id=m.employee_id;
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.008 seconds

	EMPLOYEE	EMP#	MANAGER	MGR#
1	Ozer	168	Cambrault	148
2	Bloom	169	Cambrault	148
3	Fox	170	Cambrault	148
4	Smith	171	Cambrault	148
5	Bates	172	Cambrault	148
6	Kumar	173	Cambrault	148
7	Vishney	162	Errazuriz	147
8	Greene	163	Errazuriz	147

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.008 seconds

	EMPLOYEE	EMP#	MANAGER	MGR#
99	Brown	204	Yang	101
100	Higgins	205	Yang	101
101	Abel	174	Zlotkey	149
102	Hutton	175	Zlotkey	149
103	Taylor	176	Zlotkey	149
104	Livingston	177	Zlotkey	149
105	Grant	178	Zlotkey	149
106	Johnson	179	Zlotkey	149

Q7. Modify Q6 to display all employees including King, who has no manager. Order the results by the employee number.

SQL QUERY:

```
1   /* Modify Q6 to display all employees including King,
2   who has no manager. Order the results by the employee number.*/
3
4   SELECT e.last_name AS "Employee",e.employee_id AS "Emp#",
5   m.last_name AS "Manager",m.employee_id AS "Mgr#"
6   FROM HR.EMPLOYEES e LEFT JOIN HR.EMPLOYEES m
7   ON e.manager_id=m.employee_id ORDER BY e.employee_id;
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.007 seconds

	EMPLOYEE	EMP#	MANAGER	MGR#
1	King	100	*(null)*	*(null)*
2	Yang	101	King	100
3	Garcia	102	King	100
4	James	103	Garcia	102
5	Miller	104	James	103
6	Williams	105	James	103
7	Jackson	106	James	103
8	Nguyen	107	James	103

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.007 seconds

	EMPLOYEE	EMP#	MANAGER	MGR#
100	Grant	199	Mourgos	124
101	Whalen	200	Yang	101
102	Martinez	201	King	100
103	Davis	202	Martinez	201
104	Jacobs	203	Yang	101
105	Brown	204	Yang	101
106	Higgins	205	Yang	101
107	Gietz	206	Higgins	205

Q8. Create a query that displays employee last names, department numbers, and all the employees who work in the same department as a given employee. Give each column an appropriate label.

SQL QUERY:

```
1   /*Create a query that displays employee last names,
2   department numbers, and all the employees who work in the
3   same department as a given employee.Give each column an
4   appropriate label.*/
5
6   SELECT e.last_name AS "Employee",e.department_id AS "Dept No",
7   p.last_name AS "Partner"
8   FROM HR.EMPLOYEES e
9   JOIN HR.EMPLOYEES p
10  ON e.department_id=p.department_id
11  WHERE e.employee_id <> p.employee_id
12  ORDER BY e.department_id;
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.008 seconds

	EMPLOYEE	DEPT NO	PARTNER
1	Davis	20	Martinez
2	Martinez	20	Davis
3	Himuro	30	Li
4	Colmenares	30	Li
5	Li	30	Khoo
6	Baida	30	Khoo
7	Tobias	30	Khoo
8	Himuro	30	Khoo

Q9. Show the structure of the JOB_GRADES table. Create a query that displays the name, job, department name, salary, and grade for all employees.

SQL QUERY:

```
1   /*Show the structure of the JOB_GRADES table.
2   Create a query that displays the name, job, department name,
3   salary, and grade for all employees.*/
4
5   DESC HR.JOBS --AS JOB_GRADES --FOR STRUCTURE
6   SELECT e.last_name AS "Last Name", d.department_name AS
7   "Department",l.location_id AS "Location ID",l.city AS "City"
8   FROM HR.EMPLOYEES e
9   INNER JOIN HR.DEPARTMENTS d
10  ON e.department_id=d.department_id
11  INNER JOIN HR.LOCATIONS l
12  ON d.location_id=l.location_id
13  WHERE e.commission_pct IS NOT NULL;
```

STRUCTURE OF HR.JOBS:

```
SQL> DESC HR.JOBS

Name        Null?    Type
----------- -------- ------------
JOB_ID      NOT NULL VARCHAR2(10)
JOB_TITLE   NOT NULL VARCHAR2(35)
MIN_SALARY           NUMBER(6)
MAX_SALARY           NUMBER(6)
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.01 seconds

	LAST NAME	JOB TITLE	DEPARTMENT	SALARY	JOB GRAD
1	Whalen	Administration Assistant	Administration	4400	AD_ASST
2	Martinez	Marketing Manager	Marketing	13000	MK_MAN
3	Davis	Marketing Representative	Marketing	6000	MK_REP
4	Baida	Purchasing Clerk	Purchasing	2900	PU_CLERK
5	Khoo	Purchasing Clerk	Purchasing	3100	PU_CLERK
6	Tobias	Purchasing Clerk	Purchasing	2800	PU_CLERK
7	Himuro	Purchasing Clerk	Purchasing	2600	PU_CLERK
8	Colmenares	Purchasing Clerk	Purchasing	2500	PU_CLERK

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.01 seconds

	LAST NAME	JOB TITLE	DEPARTMENT	SALARY	JOB GRAD
99	Chen	Accountant	Finance	8200	FI_ACCOU
100	Faviet	Accountant	Finance	9000	FI_ACCOU
101	Popp	Accountant	Finance	6900	FI_ACCOU
102	Sciarra	Accountant	Finance	7700	FI_ACCOU
103	Urman	Accountant	Finance	7800	FI_ACCOU
104	Gruenberg	Finance Manager	Finance	12008	FI_MGR
105	Gietz	Public Accountant	Accounting	8300	AC_ACCOU
106	Higgins	Accounting Manager	Accounting	12008	AC_MGR

Q10. Create a query to display the name and hire date of any employee hired after employee Davies.

SQL QUERY:

```
1   /*Create a query to display the name and hire date of any
2   employee hired after employee Davies.*/
3
4   SELECT e.last_name,e.hire_date
5   FROM HR.EMPLOYEES e
6   JOIN HR.EMPLOYEES d
7   ON e.hire_date>d.hire_date
8   WHERE d.last_name='Davies';
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.002 seconds

	LAST_NAME	HIRE_DATE
1	Yang	9/21/2015, 12:00:00 AM
2	James	1/3/2016, 12:00:00 AM
3	Miller	5/21/2017, 12:00:00 AM
4	Williams	6/25/2015, 12:00:00 AM
5	Jackson	2/5/2016, 12:00:00 AM
6	Nguyen	2/7/2017, 12:00:00 AM
7	Chen	9/28/2015, 12:00:00 AM
8	Sciarra	9/30/2015, 12:00:00 AM

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.002 seconds

	LAST_NAME	HIRE_DATE
74	Everett	3/3/2015, 12:00:00 AM
75	McLeod	7/1/2016, 12:00:00 AM
76	Jones	3/17/2017, 12:00:00 AM
77	Walsh	4/24/2016, 12:00:00 AM
78	Feeney	5/23/2016, 12:00:00 AM
79	OConnell	6/21/2017, 12:00:00 AM
80	Grant	1/13/2018, 12:00:00 AM
81	Davis	8/17/2015, 12:00:00 AM

Q11. Display the names and hire dates for all employees who were hired before their managers, along with their manager's names and hire dates. Label the columns Employee , Emp Hired , Manager , and Mgr Hired , respectively.

SQL QUERY:

```
1   /*Display the names and hire dates for all employees who were
2   hired before their managers, along with their manager's
3   names and hire dates. Label the columns Employee , Emp Hired ,
4   Manager , and Mgr Hired , respectively.*/
5
6   SELECT e.last_name AS "Employee",e.hire_date AS "Emp Hired",
7   m.last_name AS "Manager",m.hire_date AS "Mgr Hired"
8   FROM HR.EMPLOYEES e
9   JOIN HR.EMPLOYEES m
10  ON e.manager_id=m.employee_id
11  WHERE e.hire_date<m.hire_date;
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.006 seconds

	EMPLOYEE	EMP HIRED	MANAGER	MGR HIRED
1	Garcia	1/13/2011, 12:00:00 AM	King	6/17/2013, 12:00:00 AM
2	Li	12/7/2012, 12:00:00 AM	King	6/17/2013, 12:00:00 AM
3	Kaufling	5/1/2013, 12:00:00 AM	King	6/17/2013, 12:00:00 AM
4	Gruenberg	8/17/2012, 12:00:00 AM	Yang	9/21/2015, 12:00:00 AM
5	Whalen	9/17/2013, 12:00:00 AM	Yang	9/21/2015, 12:00:00 AM
6	Jacobs	6/7/2012, 12:00:00 AM	Yang	9/21/2015, 12:00:00 AM
7	Brown	6/7/2012, 12:00:00 AM	Yang	9/21/2015, 12:00:00 AM

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.006 seconds

	EMPLOYEE	EMP HIRED	MANAGER	MGR HIRED
31	Bates	3/24/2017, 12:00:00 AM	Cambrault	10/15/2017, 12:00:00 AM
32	Abel	5/11/2014, 12:00:00 AM	Zlotkey	1/29/2018, 12:00:00 AM
33	Hutton	3/19/2015, 12:00:00 AM	Zlotkey	1/29/2018, 12:00:00 AM
34	Taylor	3/24/2016, 12:00:00 AM	Zlotkey	1/29/2018, 12:00:00 AM
35	Livingston	4/23/2016, 12:00:00 AM	Zlotkey	1/29/2018, 12:00:00 AM
36	Grant	5/24/2017, 12:00:00 AM	Zlotkey	1/29/2018, 12:00:00 AM
37	Johnson	1/4/2018, 12:00:00 AM	Zlotkey	1/29/2018, 12:00:00 AM