UNIVERSITY OF CHITTAGONG

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Chapter 6

Practice 6

1. Write a query for the HR department to produce the addresses of all the departments. Use the LOCATIONS and COUNTRIES tables. Show the location ID, street address, city, state or province, and country in the output. Use a NATURAL JOIN to produce the results.

	LOCATION_ID	STREET_ADDRESS	CITY	STATE_PROVINCE	COUNTRY_NAME
1	1400	2014 Jabberwocky Rd	Southlake	Texas	United States of America
2	1500	2011 Interiors Blvd	South San Francisco	California	United States of America
3	1700	2004 Charade Rd	Seattle	Washington	United States of America
4	1800	460 Bloor St. W.	Toronto	Ontario	Canada
5	2500	Magdalen Centre, The ...	Oxford	Oxford	United Kingdom

Solution:

```
SELECT location_id,
    street_address,
    city,
    state_province,
    country_name
FROM hr.LOCATIONS
NATURAL JOIN hr.COUNTRIES;
```

2. The HR department needs a report of all employees. Write a query to display the last name, department number, and department name for all the employees.

	LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
1	Whalen	10	Administration
2	Hartstein	20	Marketing
3	Fay	20	Marketing
4	Davies	50	Shipping
5	Vargas	50	Shipping
6	Rajs	50	Shipping
7	Mourgos	50	Shipping
8	Matos	50	Shipping
9	Hunold	60	IT
10	Ernst	60	IT

...

18	Higgins	110	Accounting
19	Gietz	110	Accounting

Solution:

```
SELECT e.last_name,
    e.department_id,
    d.department_name
FROM hr.EMPLOYEES e
LEFT JOIN hr.DEPARTMENTS d
    ON e.department_id = d.department_id;
```

3. The HR department needs a report of employees in Toronto. Display the last name, job, department number, and the department name for all employees who work in Toronto.

	LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPARTMENT_NAME
1	Hartstein	MK_MAN	20	Marketing
2	Fay	MK_REP	20	Marketing

Solution:

```
SELECT last_name,
       job_id,
       department_id,
       department_name
FROM hr.employees
JOIN hr.departments USING (department_id)
JOIN hr.locations USING (location_id)
WHERE city = 'Toronto';
```

4. Create a report to display employees' last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, respectively. Save your SQL statement as `lab_06_04.sql`. Run the query.

	Employee	EMP#	Manager	Mgr#
1	Kochhar	101	King	100
2	De Haan	102	King	100
3	Hunold	103	De Haan	102
4	Ernst	104	Hunold	103
5	Lorentz	107	Hunold	103
6	Mourgos	124	King	100
7	Rajs	141	Mourgos	124
8	Davies	142	Mourgos	124
9	Matos	143	Mourgos	124
10	Vargas	144	Mourgos	124

...

15	Whalen	200	Kochhar	101
16	Hartstein	201	King	100
17	Fay	202	Hartstein	201
18	Higgins	205	Kochhar	101
19	Gietz	206	Higgins	205

Solution:

```
SELECT e.last_name AS Employee,
    e.employee_id AS Emp#,
    m.last_name AS Manager,
    m.employee_id AS Mgr#
FROM hr.EMPLOYEES e
JOIN hr.EMPLOYEES m
    ON e.manager_id = m.employee_id;
```

5. Modify `lab_06_04.sql` to display all employees including King, who has no manager. Order the results by the employee number. Save your SQL statement as `lab_06_05.sql`. Run the query in `lab_06_05.sql`.

	Employee	EMP#	Manager	Mgr#
1	King	100	(null)	(null)
2	Kochhar	101	King	100
3	De Haan	102	King	100
4	Hunold	103	De Haan	102
5	Ernst	104	Hunold	103
6	Lorentz	107	Hunold	103
7	Mourgos	124	King	100
8	Rajs	141	Mourgos	124
9	Davies	142	Mourgos	124
10	Matos	143	Mourgos	124

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18	Fay	202	Hartstein	201
19	Higgins	205	Kochhar	101
20	Gietz	206	Higgins	205

Solution:

```
SELECT e.last_name AS Employee,
    e.employee_id AS Emp#,
    m.last_name AS Manager,
    m.employee_id AS Mgr#
FROM hr.EMPLOYEES e
LEFT JOIN hr.EMPLOYEES m
    ON e.manager_id = m.employee_id
ORDER BY e.employee_id;
```

6. Create a report for the HR department 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. Save the script to a file named `lab_06_06.sql`.

	DEPARTMENT	EMPLOYEE	COLLEAGUE
1	20	Fay	Hartstein
2	20	Hartstein	Fay
3	50	Davies	Matos
4	50	Davies	Mourgos
5	50	Davies	Rajs
6	50	Davies	Vargas
7	50	Matos	Davies
8	50	Matos	Mourgos
9	50	Matos	Rajs
10	50	Matos	Vargas
...			
42	110	Higgins	Gietz

Solution:

```sql
SELECT
    e1.department_id AS Department#,
    e1.last_name AS Employee,
    e2.last_name AS Colleague
FROM hr.EMPLOYEES e1
JOIN hr.EMPLOYEES e2
    ON e1.department_id = e2.department_id
WHERE e1.employee_id != e2.employee_id
ORDER BY e1.department_id,
    e1.last_name,
    e2.last_name;
```

7. The HR department needs a report on job grades and salaries. To familiarize yourself with the `JOB_GRADES` table, first show the structure of the `JOB_GRADES` table. Then create a query that displays the name, job, department name, salary, and grade for all employees.

```
DESC JOB_GRADES
Name                          Null     Type
----------------------------- -------- ----------
GRADE_LEVEL                            VARCHAR2(3)
LOWEST_SAL                             NUMBER
HIGHEST_SAL                            NUMBER

3 rows selected
```

	LAST_NAME	JOB_ID	DEPARTMENT_NAME	SALARY	GRADE_LEVEL
1	Vargas	ST_CLERK	Shipping	2500	A
2	Matos	ST_CLERK	Shipping	2600	A
3	Davies	ST_CLERK	Shipping	3100	B
4	Rajs	ST_CLERK	Shipping	3500	B
5	Lorentz	IT_PROG	IT	4200	B
6	Whalen	AD_ASST	Administration	4400	B
7	Mourgos	ST_MAN	Shipping	5800	B
8	Ernst	IT_PROG	IT	6000	C
9	Fay	MK_REP	Marketing	6000	C
10	Gietz	AC_ACCOUNT	Accounting	8300	C
...					
18	De Haan	AD_VP	Executive	17000	E
19	King	AD_PRES	Executive	24000	E

Solution:

```
SELECT last_name,
       job_id,
       department_name,
       salary,
       grade_level
FROM employees
JOIN departments USING (department_id)
JOIN job_grades
    ON (salary BETWEEN lowest_sal AND highest_sal)
ORDER BY salary;
```

8. The HR department wants to determine the names of all the employees who were hired after Davies. Create a query to display the name and hire date of any employee hired after employee Davies.

	LAST_NAME	HIRE_DATE
1	Lorentz	07-FEB-99
2	Mourgos	16-NOV-99
3	Matos	15-MAR-98
4	Vargas	09-JUL-98
5	Zlotkey	29-JAN-00
6	Taylor	24-MAR-98
7	Grant	24-MAY-99
8	Fay	17-AUG-97

Solution:

```
SELECT last_name ,hire_date
FROM hr.EMPLOYEES e
WHERE hire_date > (
        SELECT hire_date
        FROM hr.EMPLOYEES
        WHERE last_name = 'Davies'
    );
```

9. The HR department needs to find the names and hire dates of all the employees who were hired before their managers, along with their managers' names and hire dates. Save the script to a file named `lab_06_09.sql`.

	LAST_NAME	HIRE_DATE	LAST_NAME_1	HIRE_DATE_1
1	Whalen	17-SEP-87	Kochhar	21-SEP-89
2	Hunold	03-JAN-90	De Haan	13-JAN-93
3	Vargas	09-JUL-98	Mourgos	16-NOV-99
4	Matos	15-MAR-98	Mourgos	16-NOV-99
5	Davies	29-JAN-97	Mourgos	16-NOV-99
6	Rajs	17-OCT-95	Mourgos	16-NOV-99
7	Grant	24-MAY-99	Zlotkey	29-JAN-00
8	Taylor	24-MAR-98	Zlotkey	29-JAN-00
9	Abel	11-MAY-96	Zlotkey	29-JAN-00

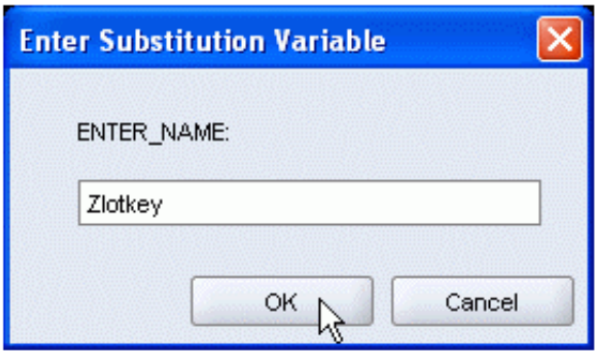
Solution:

```
SELECT e.last_name,
    e.hire_date,
    m.last_name as last_name_1,
    m.hire_date as hire_date_1
FROM hr.EMPLOYEES e
JOIN hr.EMPLOYEES m
        ON e.manager_id = m.employee_id
WHERE e.hire_date < m.hire_date;
```

Chapter 7

Practice 7

1. The HR department needs a query that prompts the user for an employee last name. The query then displays the last name and hire date of any employee in the same department as the employee whose name they supply (excluding that employee). For example, if the user enters Zlotkey, find all employees who work with Zlotkey (excluding Zlotkey).



	LAST_NAME	HIRE_DATE
1	Abel	11-MAY-96
2	Taylor	24-MAR-98

Solution: Skipped. (sql*plus required.)

2. Create a report that displays the employee number, last name, and salary of all employees who earn more than the average salary. Sort the results in order of ascending salary.

	EMPLOYEE_ID	LAST_NAME	SALARY
1	103	Hunold	9000
2	149	Zlotkey	10500
3	174	Abel	11000
4	205	Higgins	12000
5	201	Hartstein	13000
6	101	Kochhar	17000
7	102	De Haan	17000
8	100	King	24000

Solution:

```
SELECT
    employee_id,
    last_name,
    salary
FROM
```

```
    hr.employees
WHERE salary > (SELECT AVG(salary)
                FROM hr.employees)
order by salary;
```

3. Write a query that displays the employee number and last name of all employees who work in a department with any employee whose last name contains the letter "u." Save your SQL statement as `lab_07_03.sql`. Run your query.

	EMPLOYEE_ID	LAST_NAME
1	124	Mourgos
2	141	Rajs
3	142	Davies
4	143	Matos
5	144	Vargas
6	103	Hunold
7	104	Ernst
8	107	Lorentz

Solution:

```
SELECT employee_id,
    last_name
FROM hr.employees
WHERE department_id IN (
   SELECT department_id
   FROM hr.employees
   WHERE last_name LIKE '%u%'
);
```

4. The HR department needs a report that displays the last name, department number, and job ID of all employees whose department location ID is 1700.

	LAST_NAME	DEPARTMENT_ID	JOB_ID
1	Whalen	10	AD_ASST
2	King	90	AD_PRES
3	Kochhar	90	AD_VP
4	De Haan	90	AD_VP
5	Higgins	110	AC_MGR
6	Gietz	110	AC_ACCOUNT

Solution:

```
SELECT last_name,
    department_id,
    job_id
FROM hr.employees
WHERE department_id IN (
   SELECT department_id
   FROM departments
   WHERE location_id = 1700
)
ORDER BY department_id;
```

Modify the query so that the user is prompted for a location ID. Save this to a file named `lab_07_04.sql`.

Skipped (sql*plus required.

5. Create a report for HR that displays the last name and salary of every employee who reports to King.

	LAST_NAME	SALARY
1	Kochhar	17000
2	De Haan	17000
3	Mourgos	5800
4	Zlotkey	10500
5	Hartstein	13000

Solution:

```
SELECT last_name,salary
FROM hr.employees
WHERE manager_id in (
   SELECT manager_id
   FROM hr.employees
   WHERE last_name = 'King'
);
```

6. Create a report for HR that displays the department number, last name, and job ID for every employee in the Executive department.

	DEPARTMENT_ID	LAST_NAME	JOB_ID
1	90	King	AD_PRES
2	90	Kochhar	AD_VP
3	90	De Haan	AD_VP

Solution:

```
select department_id, last_name, job_id
from hr.employees
where department_id=(
    select department_id
    from hr.departments
    where department_name = 'Executive'
);
```

7. Modify the query in `lab_07_03.sql` to display the employee number, last name, and salary of all employees who earn more than the average salary, and who work in a department with any employee whose last name contains a "u." Resave `lab_07_03.sql` as `lab_07_07.sql`. Run the statement in `lab_07_07.sql`.

	EMPLOYEE_ID	LAST_NAME	SALARY
1	103	Hunold	9000

Solution:

```
SELECT employee_id,
    last_name,
    salary
FROM hr.employees
WHERE salary > (
        SELECT AVG (salary)
        FROM hr.employees
    )
    AND department_id IN (
        SELECT department_id
        FROM hr.employees
        WHERE last_name LIKE '%u%'
    );
```