UNIVERSIDAD AUTÓNOMA DE ZACATECAS
INGENIERÍA DE SOFTWARE
LABORATORIO DE SISTEMAS DE BASE DE DATOS II
FORMATO DE PRÁCTICAS

PRÁCTICA:	**4**
TITULO:	**Retrieving Data Using the SQL SELECT Statement**
OBJETIVO:	**Realizar ejercicios sobre los temas del capítulo 1: Retrieving Data Using the SQL SELECT Statement**
DURACIÓN:	**4 horas**
FECHA:	
FECHA DE ENTREGA:	

ACTIVIDADES A REALIZAR:

Ejercicio 1:

Practices for Lesson 1

In this practice, you write simple SELECT queries. The queries cover most of the SELECT clauses and operations that you learned in this lesson.

Practice 1-1: Retrieving Data Using the SQL `SELECT` Statement

Part 1

Test your knowledge:

1) The following `SELECT` statement executes successfully:

```
SELECT last_name, job_id, salary AS Sal
FROM   employees;
```

True/False

2) The following `SELECT` statement executes successfully:

```
SELECT *
FROM   job_grades;
```

True/False

3) There are four coding errors in the following statement. Can you identify them?

```
SELECT    employee_id, last_name
sal x 12  ANNUAL SALARY
FROM      employees;
```

Part 2

Note the following points before you begin with the practices:

- Save all your lab files at the following location:
  `/home/oracle/labs/sql1/labs`
- Enter your SQL statements in a SQL Worksheet. To save a script in SQL Developer, make sure that the required SQL worksheet is active and then from the File menu, select Save As to save your SQL statement as a `lab_<lessonno>_<stepno>.sql` script. When you are modifying an existing script, make sure that you use Save As to save it with a different file name.
- To run the query, click the Execute Statement icon in the SQL Worksheet. Alternatively, you can press [F9]. For DML and DDL statements, use the Run Script icon or press [F5].
- After you have executed the query, make sure that you do not enter your next query in the same worksheet. Open a new worksheet.

You have been hired as a SQL programmer for Acme Corporation. Your first task is to create some reports based on data from the Human Resources tables.

4) Your first task is to determine the structure of the DEPARTMENTS table and its contents.

```
Name                           Null     Type
------------------------------ -------- --------------
DEPARTMENT_ID                  NOT NULL NUMBER(4)
DEPARTMENT_NAME                NOT NULL VARCHAR2(30)
MANAGER_ID                              NUMBER(6)
LOCATION_ID                             NUMBER(4)

4 rows selected
```

	DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID
1	10	Administration	200	1700
2	20	Marketing	201	1800
3	50	Shipping	124	1500
4	60	IT	103	1400
5	80	Sales	149	2500
6	90	Executive	100	1700
7	110	Accounting	205	1700
8	190	Contracting	(null)	1700

5) Determine the structure of the EMPLOYEES table.

```
Name                          Null     Type
----------------------------- -------- --------------
EMPLOYEE_ID                   NOT NULL NUMBER(6)
FIRST_NAME                             VARCHAR2(20)
LAST_NAME                     NOT NULL VARCHAR2(25)
EMAIL                         NOT NULL VARCHAR2(25)
PHONE_NUMBER                           VARCHAR2(20)
HIRE_DATE                     NOT NULL DATE
JOB_ID                        NOT NULL VARCHAR2(10)
SALARY                                 NUMBER(8,2)
COMMISSION_PCT                         NUMBER(2,2)
MANAGER_ID                             NUMBER(6)
DEPARTMENT_ID                          NUMBER(4)

11 rows selected
```

The HR department wants a query to display the last name, job ID, hire date, and employee ID for each employee, with the employee ID appearing first. Provide an alias STARTDATE for the HIRE_DATE column. Save your SQL statement to a file named `lab_01_05.sql` so that you can dispatch this file to the HR department.

6) Test your query in the `lab_01_05.sql` file to ensure that it runs correctly.

Note: After you have executed the query, make sure that you do not enter your next query in the same worksheet. Open a new worksheet.

	EMPLOYEE_ID	LAST_NAME	JOB_ID	STARTDATE
1	200	Whalen	AD_ASST	17-SEP-87
2	201	Hartstein	MK_MAN	17-FEB-96
3	202	Fay	MK_REP	17-AUG-97
4	205	Higgins	AC_MGR	07-JUN-94
5	206	Gietz	AC_ACCOUNT	07-JUN-94

...

19	176	Taylor	SA_REP	24-MAR-98
20	178	Grant	SA_REP	24-MAY-99

7) The HR department wants a query to display all unique job IDs from the EMPLOYEES table.

	JOB_ID
1	AC_ACCOUNT
2	AC_MGR
3	AD_ASST
4	AD_PRES
5	AD_VP
6	IT_PROG
7	MK_MAN
8	MK_REP
9	SA_MAN
10	SA_REP
11	ST_CLERK
12	ST_MAN

Part 3

If you have time, complete the following exercises:

8) The HR department wants more descriptive column headings for its report on employees. Copy the statement from `lab_01_05.sql` to a new SQL Worksheet. Name the column headings `Emp #`, `Employee`, `Job`, and `Hire Date`, respectively. Then run the query again.

	Emp #	Employee	Job	Hire Date
1	200	Whalen	AD_ASST	17-SEP-87
2	201	Hartstein	MK_MAN	17-FEB-96
3	202	Fay	MK_REP	17-AUG-97
4	205	Higgins	AC_MGR	07-JUN-94
5	206	Gietz	AC_ACCOUNT	07-JUN-94

...

19	176	Taylor	SA_REP	24-MAR-98
20	178	Grant	SA_REP	24-MAY-99

9) The HR department has requested a report of all employees and their job IDs. Display the last name concatenated with the job ID (separated by a comma and space) and name the column `Employee and Title`.

	Employee and Title
1	Abel, SA_REP
2	Davies, ST_CLERK
3	De Haan, AD_VP
4	Ernst, IT_PROG
5	Fay, MK_REP

...

19	Whalen, AD_ASST
20	Zlotkey, SA_MAN

If you want an extra challenge, complete the following exercise:

10) To familiarize yourself with the data in the `EMPLOYEES` table, create a query to display all the data from that table. Separate each column output by a comma. Name the column title `THE_OUTPUT`.

	THE_OUTPUT
1	200,Jennifer,Whalen,JWHALEN,515.123.4444,AD_ASST,101,17-SEP-87,4400,,10
2	201,Michael,Hartstein,MHARTSTE,515.123.5555,MK_MAN,100,17-FEB-96,13000,,20
3	202,Pat,Fay,PFAY,603.123.6666,MK_REP,201,17-AUG-97,6000,,20
4	205,Shelley,Higgins,SHIGGINS,515.123.8080,AC_MGR,101,07-JUN-94,12000,,110
5	206,William,Gietz,WGIETZ,515.123.8181,AC_ACCOUNT,205,07-JUN-94,8300,,110

...

19	176,Jonathon,Taylor,JTAYLOR,011.44.1644.429265,SA_REP,149,24-MAR-98,8600,.2,80
20	178,Kimberely,Grant,KGRANT,011.44.1644.429263,SA_REP,149,24-MAY-99,7000,.15,

Ejercicio 2:

The following questions will help you measure your understanding of the material presented in this topic. Read all the choices carefully because there might be more than one correct answer. Choose all the correct answers for each question.

The following test is typical of the questions and format of the OCP 11g examination for the topic "Retrieving Data using the SQL SELECT Statement." These questions often make use of the Human Resources schema.

LIST THE CAPABILITIES OF SQL SELECT STATEMENTS

1. Which query creates a projection of the DEPARTMENT_NAME and LOCATION_ID columns from the DEPARTMENTS table? (Choose the best answer.)

A. SELECT DISTINCT DEPARTMENT_NAME, LOCATION_ID FROM DEPARTMENTS;

B. SELECT DEPARTMENT_NAME, LOCATION_ID

FROM DEPARTMENTS;

C. SELECT DEPT_NAME, LOC_ID FROM DEPT;

D. SELECT DEPARTMENT_NAME AS "LOCATION_ID" FROM DEPARTMENTS;

2. After describing the EMPLOYEES table, you discover that the SALARY column has a data type of NUMBER(8,2). Which SALARY value(s) will not be permitted in this column?

(Choose all that apply.)

A. SALARY=12345678

B. SALARY=123456.78

C. SALARY=12345.678

D. SALARY=123456

E. SALARY=12.34

3. After describing the JOB_HISTORY table, you discover that the START_DATE and END_DATE columns have a data type of DATE. Consider the expression END_DATE-START_DATE. (Choose two correct statements.)

A. A value of DATE data type is returned.

B. A value of type NUMBER is returned.

C. A value of type VARCHAR2 is returned.

D. The expression is invalid since arithmetic cannot be performed on columns with DATE data types.

E. The expression represents the days between the END_DATE and START_DATE less one day.

4. The DEPARTMENTS table contains a DEPARTMENT_NAME column with data type VARCHAR2(30). (Choose two true statements about this column.)

A. This column can store character data up to a maximum of 30 characters.

B. This column must store character data that is at least 30 characters long.

C. The VARCHAR2 data type is replaced by the CHAR data type.

D. This column can store data in a column with data type VARCHAR2(50) provided that the contents are at most 30 characters long.

EXECUTE A BASIC SELECT STATEMENT

5. Which statement reports on unique JOB_ID values from the EMPLOYEES table? (Choose all that apply.)

A. SELECT JOB_ID FROM EMPLOYEES;

B. SELECT UNIQUE JOB_ID FROM EMPLOYEES;

C. SELECT DISTINCT JOB_ID, EMPLOYEE_ID FROM EMPLOYEES;

D. SELECT DISTINCT JOB_ID FROM EMPLOYEES;

6. Choose the two illegal statements. The two correct statements produce identical results. The two illegal statements will cause an error to be raised:

A. SELECT DEPARTMENT_ID|| ' represents the ' || DEPARTMENT_NAME || 'Department' as "Department Info" FROM DEPARTMENTS;

B. SELECT DEPARTMENT_ID|| ' represents the || DEPARTMENT_NAME || 'Department' as "Department Info" FROM DEPARTMENTS;

C. select department_id || ' represents the '|| department_name || ' Department' "Department Info" from departments;

D. SELECT DEPARTMENT_ID represents the DEPARTMENT_NAME Department as "Department Info" FROM DEPARTMENTS;

7. Which expressions do not return NULL values? (Choose all that apply.)

A. select ((10 + 20) * 50) + null from dual;

B. select 'this is a '||null||'test with nulls' from dual;

C. select null/0 from dual;

D. select null||'test'||null as “Test” from dual;

8. Choose the correct syntax to return all columns and rows of data from the EMPLOYEES table.

A. select all from employees;

B. select employee_id, first_name, last_name, first_name, department_id

from employees;

C. select % from employees;

D. select * from employees;

E. select *.* from employees;

9. The following character literal expression is selected from the DUAL table:

SELECT 'Coda''s favorite fetch toy is his orange ring' FROM DUAL;

(Choose the result that is returned.)

A. An error would be returned due to the presence of two adjacent quotes

B. Coda's favorite fetch toy is his orange ring

C. Coda"s favorite fetch toy is his orange ring

D. 'Coda"s favorite fetch toy is his orange ring'

10. There are four rows of data in the REGIONS table. Consider the following SQL statement:

SELECT '6 * 6' "Area" FROM REGIONS;

How many rows of results are returned and what value is returned by the Area column? (Choose the best answer.)

A. 1 row returned, Area column contains value 36

B. 4 rows returned, Area column contains value 36 for all 4 rows

C. 1 row returned, Area column contains value 6 * 6

D. 4 rows returned, Area column contains value 6 * 6 for all 4 rows

E. A syntax error is returned.

Ejercicio 3:

Elabore para la base de datos "Hotel", enunciados y sentencias Select (3 para cada punto) que incluyan:

- **Expresiones**
- **Concatenación**
- **Concatenación con valor literal**
- **Operador Q**
- **Alias (para cada tipo)**
- **Distinct**