Practice 7: Data retrieval using the SQL SELECT statement

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1 Introduction

Oracle's sql "Select" statement allows us to query a wide variety of data depending on which options we want to use to obtain a desired result. This sentence allows us to consult one or more data from one or more tables, with which we can build a query that gives us very specific information about what we want to know.

2 Developing

For the development of this practice we will be looking at the select statement, and the capabilities it has when it comes to querying the data from a database.

2.1 Activity 1:

Read all the choices carefully because there might be more than one correct answer.

- 1. Which query creates a projection of the DEPARTMENT_NAME and LOCATION_ID columns from the DEPARTMENTS table?
 - A. SELECT DISTINCT DEPARTMENT_NAME, LOCATION_ID FROM DEPARTMENTS;
 - B. SELECT DEPARTMENT_NAME AS "LOCATION_ID" FROM DE-PARTMENTS;
 - C. SELECT DEPT_NAME, LOC_ID FROM DEPT;
 - D. SELECT DEPARTMENT_NAME, LOCATION_ID FROM DEPARTMENTS;

It is only necessary to query the two columns of the table, without any other option.

- 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?
 - A. SALARY=12345678
 - B. **SALARY=12.34**
 - C. SALARY=12345.678
 - D. SALARY=123456
 - E. SALARY=123456.78

You can only have a maximum of 6 digits before the point and a maximum of 2 after the point.

- 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.
 - A. A value of DATE data type is returned.
 - B. The expression represents the days between the END_DATE and START_DATE less one day.
 - 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. A value of type NUMBER is returned.

When performing a subtraction of two dates, what results is the number of days of difference that exists between these dates, this number is of type date.

- 4. The DEPARTMENTS table contains a DEPARTMENT_NAME column with data type VARCHAR2(30).
 - A. This column can store character data up to a maximum of 30 characters.
 - B. This column can store data in a column with data type VARCHAR2(50) provided that the contents are at most 30 characters long.
 - C. The VARCHAR2 data type is replaced by the CHAR data type.
 - D. This column must store character data that is at least 30 characters long.

The column only supports a maximum of 30 characters, it does not store this in another column and the data that is stored does not have to be a minimum of 30 characters.

5. Which statement reports on unique JOB_ID values from the EMPLOY-EES table?

- A. SELECT JOB_ID FROM EMPLOYEES;
- B. SELECT DISTINCT JOB_ID FROM EMPLOYEES;
- C. SELECT DISTINCT JOB_ID, EMPLOYEE_ID FROM EMPLOY-EES;
- D. SELECT UNIQUE JOB_ID FROM EMPLOYEES;

You can make a select with a distinct or unique to see the nonrepeated data, if another column is placed it will take both so that the two values are not repeated.

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

The selected sentences have an error in that one is missing a (') and the other is an illegal sentence.

- 7. Which expressions do not return NULL values?
 - A. select ((12 + 90) * 55) + null from dual;
 - B. select null||'test'||null as "Test" from dual;
 - C. select null/0 from dual;
 - D. select 'this is a '||null||'test with nulls' from dual;

The chosen options do not return the concatenated null value but instead omit it

- 8. Choose the correct syntax to return all columns and rows of data from the EMPLOYEES table.
 - A. select * from employees;
 - B. select employee_id, first_name, last_name, first_name, department_id from employees;
 - C. select % from employees;
 - D. select all from employees;

E. select *.* from employees;

The asterisk selects all the columns and rows of the table, possibly part b may also be correct, this will depend on whether the columns that are selected are all the ones in the table.

- 9. The following character literal expression is selected from the DUAL table: SELECT 'Coda's favorite fetch toy is his orange ring' FROM DUAL;
 - 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

Two (') represent a single (') within the string and not an ending or beginning of a string.

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?

- A. 4 rows returned, Area column contains value 6 * 6 for all 4 rows
- B. 4 rows returned, Area column contains value 36 for all 4 rows
- C. 1 row returned, Area column contains value 6 * 6
- D. 1 row returned, Area column contains value 36
- E. A syntax error is returned

As there are 4 records in the queried table, the result will be four times the area query regardless of whether any column in the table has been queried.

2.2 Activity 2:

Propose an answer to the following issues:

- a) You want to construct and execute queries against tables stored in an Oracle database. Are you confined to using SQL Developer?
 - It is not necessary as there are other programs that can help you do this.
- b) To explore your database environment further, you would like a list of tables, owned by your current schema, available for you to query. How do you interrogate the database dictionary to provide this metadata?
 - SELECT * FROM all_objects;

- c) When querying the JOBS table for every row containing just the JOB_ID and MAX_SALARY columns, is a projection, selection, or join being performed?
 - It is a projection since only the two columns are being chosen.
- d) An alias provides a mechanism to rename a column or an expression. Under what conditions should you enclose an alias in double quotes?
 - When you want a specific name, such as a name with upper and lower case or if you want to put spaces.
- e) When working with character literal values that include single quotation marks, how should you specify these literals in the SELECT clause without raising an error?
 - With the "q" operator you can do this, encapsulating the string between q'[']', with this you can place single quotes in the string.

2.3 Activity **3**:

Connect to the OE schema and complete the following tasks.

 Obtain structural information for the PRODUCT_INFORMATION and ORDERS tables.

describe Product_information;

Nombre	¿Nu:	lo?	Tipo
PRODUCT_ID PRODUCT NAME	NOT	NULL	NUMBER (6) VARCHAR2 (50)
PRODUCT_DESCRIPTION			VARCHAR2 (2000)
CATEGORY_ID WEIGHT_CLASS			NUMBER (2) NUMBER (1)
WARRANTY_PERIOD			NUMBER (4)
SUPPLIER_ID PRODUCT_STATUS			NUMBER (6) VARCHAR2 (20)
LIST_PRICE			NUMBER (8,2)
MIN_PRICE CATALOG_URL			NUMBER (8,2) VARCHAR2 (50)

Figure 1: Product_Information table structure.

describe orders;

	Nombre	¿Nulo?		Tipo
l				
	ORDER_ID	NOT	NULL	NUMBER (12)
	ORDER_DATE	NOT	NULL	DATE
	ORDER_MODE			VARCHAR2(8)
	CUSTOMER_ID	NOT	NULL	NUMBER (6)
	ORDER_STATUS			NUMBER (2)
	ORDER_TOTAL			NUMBER(8,2)
	SALES_REP_ID			NUMBER (6)
	PROMOTION_ID			NUMBER (6)
п				

Figure 2: Orders table structure.

2. Select the unique SALES_REP_ID values from the ORDERS table. How man different sales representatives have been assigned to orders in the ORDERS table?

Select unique sales_rep_id from Orders;

	\$ SALES_REP_ID
1	153
2	(null)
3	155
4	161
5	163
6	154
7	158
8	156
9	159
10	160

Figure 3: Select the unique SALES_REP_ID values.

3. Create a results set based on the ORDERS table that includes the ORDER_ID, ORDER_DATE, and ORDER_TOTAL columns.

Select order_id,order_date,order_total from Orders;

	♦ ORDER_ID	♦ ORDER_DATE	♦ ORDER_TOTAL
1	2458	16/08/07	78279.6
2	2397	19/11/07	42283.2
3	2454	02/10/07	6653.4
4	2354	14/07/08	46257
5	2358	08/01/08	7826
6	2381	14/05/08	23034.6
7	2440	31/08/07	70576.9
8	2357	08/01/06	59872.4

Figure 4: Select ORDERS.

4. Extract product information in the format ¡PRODUCT_NAME; with code: ¡PRODUCT_ID¿ has status of: ¡PRODUCT_STATUS¿. Alias the expression as "Product." The results should provide the LIST_PRICE, the MIN_PRICE, the difference between LIST_PRICE, and MIN_PRICE aliased as "Max Actual Savings," along with an additional expression that takes the difference between LIST_PRICE and MIN_PRICE and divides it by the LIST_PRICE and then multiplies the total by 100. This last expression should be aliased as "Max Discount %."

Select (product_name || 'with code: ' || product_id || 'has status of: ' || product_status) as "Product", list_price, min_price,(list_price-min_price) as "Max Actual Savings",(((list_price-min_price)/list_price)*100) as "Max Discount %" from Product_Information;

♦ Product			Max Actual Savings	
Inkjet C/8/HQ with code: 1797 has status of: orderable	349	288	61	17.4785100
LaserPro 1200/8/BW with code: 2459 has status of: un	699	568	131	18.7410586
LaserPro 600/6/BW with code: 3127 has status of: ord	498	444	54	10.8433734
HD 10GB /I with code: 2254 has status of: obsolete	453	371	82	18.1015452
HD 10GB /R with code: 3353 has status of: obsolete	489	413	76	15.5419222
HD 10GB /S with code: 3069 has status of: obsolete	436	350	86	19.7247706
$\ensuremath{\mathtt{HD}}$ 10GB @5400 /SE with code: 2253 has status of: obs	399	322	77	19.2982456
HD 12GB /I with code: 3354 has status of: orderable	543	478	65	11.9705340
HD 12GB /N with code: 3072 has status of: orderable	567	507	60	10.5820105
HD 12GB /R with code: 3334 has status of: orderable	612	512	100	16.3398692
HD 12GB /S with code: 3071 has status of: orderable	633	553	80	12.6382306

Figure 5: Product information.

5. Calculate the surface area of the Earth using the DUAL table. Alias this expression as "Earth's Area." The formula for calculating the area of a sphere is: $4\pi^2$. Assume, for this example, that the earth is a simple sphere with a radius of 3,958.759 miles and that π is 22/7. This calculation approximates that planet Earth's surface area is 197016572.595304 square miles.

Select (4*(22/7)*power(3958.759,2)) as "Earth's Area" from Dual;



Figure 6: Earth's Area.

2.4 Activity 4:

In this step-by-step activity a connection is made using SQL Developer as the HR user. Use expressions and operators to answer three questions related to the SELECT statement:

- 1. **Question 1:** How many unique departments have employees currently working in them?
 - select distinct department_id from Employees;

	DEPARTMENT_ID
1	100
2	30
3	(null)
4	90
5	20
6	70
7	110
8	50
9	80
10	40
11	60
12	10

Figure 7: Unique departments.

- 2. Question 2: How many countries are there in the Europe region?
 - Select * from Regions where region_name = 'Europe';



Figure 8: REGION_ID of the Europe region.

• Select * from Countries where region_id = 1;

1	BE	Belgium	1
2	CH	Switzerland	1
3	DE	Germany	1
4	DK	Denmark	1
5	FR	France	1
6	IT	Italy	1
7	NL	Netherlands	1
8	UK	United Kingdom	1

Figure 9: European countries.

- 3. **Question 3:** Write the "DESCRIBE" command for the JOBS, JOB_HISTORY, LOCATIONS, COUNTRIES, and REGIONS tables.
 - DESCRIBE JOBS;

Nombre		¿Nu:	lo?	Tipo
	JOB ID	NOT	NULL	VARCHAR2 (10)
	JOB_TITLE	NOT	NULL	VARCHAR2 (35)
	MIN_SALARY			NUMBER (6)
	MAX_SALARY			NUMBER (6)

Figure 10: DESCRIBE JOBS.

 $\bullet \ \ DESCRIBE \ JOB_HISTORY;$

Nombre	¿Nulo?		Tipo
EMPLOYEE_ID		NULL	NUMBER (6)
START_DATE END_DATE		NULL	
JOB_ID DEPARTMENT_ID	NOT	NULL	VARCHAR2 (10) NUMBER (4)
DELTAKIILENI_ID			HOLLDER (4)

Figure 11: DESCRIBE JOB_HISTORY.

• DESCRIBE LOCATIONS;

Nombre	¿Nulo?		Tipo
LOCATION_ID	NOT	NULL	NUMBER (4)
STREET_ADDRESS			VARCHAR2 (40)
POSTAL_CODE			VARCHAR2 (12)
CITY	NOT	NULL	VARCHAR2 (30)
STATE_PROVINCE			VARCHAR2 (25)
COUNTRY_ID			CHAR(2)

Figure 12: DESCRIBE LOCATIONS.

$\bullet \ \ \mathsf{DESCRIBE} \ \ \mathsf{COUNTRIES};$

Nombre	¿Nulo?		Tipo
COUNTRY_ID COUNTRY_NAME REGION ID	NOT	NULL	CHAR (2) VARCHAR2 (40) NUMBER

Figure 13: DESCRIBE COUNTRIES.

• DESCRIBE REGIONS;

Nombre	¿Nulo?		Nulo?		Tipo
REGION_ID	NOT	NULL	NUMBER		
REGION_NAME			VARCHAR2 (25)		

Figure 14: DESCRIBE REGIONS.

 $\bullet\,$ View the table structure without commands.

COLUMN_N		NULLABLE	DATA_DEFAULT	COLUMN_ID	
LOCATION_ID	NUMBER(4,0)	No	(null)	1	Primary key of locations
STREET_ADDRESS	VARCHAR2 (40 BYTE)	Yes	(null)	2	Street address of an off
POSTAL_CODE	VARCHAR2 (12 BYTE)	Yes	(null)	3	Postal code of the locat
CITY	VARCHAR2 (30 BYTE)	No	(null)	4	A not null column that s
STATE_PROVINCE	VARCHAR2 (25 BYTE)	Yes	(null)	5	State or Province where
COUNTRY_ID	CHAR (2 BYTE)	Yes	(null)	6	Country where an office,

Figure 15: Table structure without commands.

- 4. **Question 4:** For how many years were staff employed while fulfilling these job roles and what were their EMPLOYEE_ID, JOB_ID, START_DATE, and END_DATE values?
 - SELECT EMPLOYEE_ID, JOB_ID, START_DATE, END_DATE, TO_CHAR((1 + (END_DATE-START_DATE))/365.25, '99999.99') AS "Years Employed" FROM JOB_HISTORY;

	JOB_ID	\$ START_DATE	END_DATE	
102	IT_PROG	13/01/01	24/07/06	5.53
101	AC_ACCOUNT	21/09/97	27/10/01	4.10
101	AC_MGR	28/10/01	15/03/05	3.38
201	MK_REP	17/02/04	19/12/07	3.84
114	ST_CLERK	24/03/06	31/12/07	1.77
122	ST_CLERK	01/01/07	31/12/07	1.00
200	AD_ASST	17/09/95	17/06/01	5.75
176	SA_REP	24/03/06	31/12/06	.77
176	SA_MAN	01/01/07	31/12/07	1.00
200	AC_ACCOUNT	01/07/02	31/12/06	4.50

Figure 16: Years Employed.

- 5. **Question 5:** Query the JOBS table and return a single expression of the form.
 - SELECT 'The Job Id for the '||JOB_TITLE||"'s job is: '||JOB_ID AS "Job Description" FROM JOBS WHERE JOB_ID = 'AD_PRES';

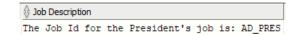


Figure 17: Single expression.

- 6. Question 6: Using the DUAL table, calculate the area of a circle with radius 6000 units, with pi being approximately 22/7. Use the formula: Area = pi × radius × radius. Alias the result as "Area."
 - SELECT TO_CHAR((22/7)*6000*6000,99999999999)||' square units' AS "Area" FROM DUAL;



Figure 18: Calculate the area of a circle.

2.5 Activity 5:

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

2.5.1 Part 1

Test your knowledge:

- 1. The following SELECT statement executes successfully: SELECT last_name, job_id, salary AS Sal FROM employees; Yes, since the columns that are queried are from the table and the alias does not give an error, only that it will show it in uppercase.
- 2. The following SELECT statement executes successfully: SELECT * FROM job_grades;
 - If this query is done in a schema in which the job_grades table appears if it is executed correctly, in this case in the hr schema it does not do it since there is no such table.
- 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;

One is that after consulting the last_name column, the comma is not placed, second, the table sal does not exist, third, the expression sal x 12 does not do it since this is not a valid expression, since x does not count as multiplication, and finally the alias you want to make cannot be because the expression to which you want to place the alias is not well defined.

2.5.2 Part 2

Your first task is to create some reports based on data from the Human Resources tables.

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

describe Departments;

Nombre	¿Nulo?		Tipo	
DEPARTMENT_ID	NOT	NULL	NUMBER (4)	
DEPARTMENT_NAME	NOT	NULL	VARCHAR2 (30)	
MANAGER_ID			NUMBER (6)	
LOCATION_ID			NUMBER (4)	

Figure 19: Structure of the DEPARTMENTS table.

select * from Departments;

			\$ LOCATION_ID
10	Administration	200	1700
20	Marketing	201	1800
30	Purchasing	114	1700
40	Human Resources	203	2400
50	Shipping	121	1500
60	IT	103	1400
70	Public Relations	204	2700
80	Sales	145	2500
90	Executive	100	1700

Figure 20: Content of the DEPARTMENTS table.

2. Determine the structure of the EMPLOYEES table. describe Employees;

Nombre	¿Nulo?		Tipo
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)

Figure 21: Structure of the EMPLOYEES table.

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_7_05.sql so that you can dispatch this file to the HR department.

This file (lab_ $7_05.sql$) was added as a plug-in along with this document.

3. Test your query in the lab_7_05.sql file to ensure that it runs correctly.

\$ EMPLOYEE_ID	LAST_NAME	JOB_ID	
100	King	AD_PRES	17/06/03
101	Kochhar	AD_VP	21/09/05
102	De Haan	AD_VP	13/01/01
103	Hunold	IT_PROG	03/01/06
104	Ernst	IT_PROG	21/05/07
105	Austin	IT_PROG	25/06/05
106	Pataballa	IT_PROG	05/02/06
107	Lorentz	IT_PROG	07/02/07
108	Greenberg	FI_MGR	17/08/02

Figure 22: Test query.

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

Select distinct job_id from Employees;

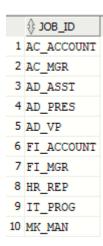


Figure 23: Unique job IDs from the EMPLOYEES table..

2.5.3 Part 3

1. The HR department wants more descriptive column headings for its report on employees. Copy the statement from lab_7_05.sql to a new SQL Worksheet. Name the column headings Emp #, Employee, Job, and Hire Date, respectively. Then run your query again.

Select employee_id as "Emp #",last_name as "Employee",job_id as "Job",hire_date as "Hire Date" from Employees;

				∜ Hire Date
1	100	King	AD_PRES	17/06/03
2	101	Kochhar	AD_VP	21/09/05
3	102	De Haan	AD_VP	13/01/01
4	103	Hunold	IT_PROG	03/01/06
5	104	Ernst	IT_PROG	21/05/07
6	105	Austin	IT_PROG	25/06/05
7	106	Pataballa	IT_PROG	05/02/06
8	107	Lorentz	IT_PROG	07/02/07
9	108	Greenberg	FI_MGR	17/08/02
10	109	Faviet	FI_ACCOUNT	16/08/02

Figure 24: More descriptive column headings.

2. 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.

Select last_name||', '||job_id as "Employee and Title" from Employees;

1	Abel, SA_REP			
2	Ande, SA_REP			
3	Atkinson, ST_CLERK			
4	Austin, IT_PROG			
5	Baer, PR_REP			
6	Baida, PU_CLERK			
7	Banda, SA_REP			
8	Bates, SA_REP			
9	Bell, SH_CLERK			
10	Bernstein, SA_REP			

Figure 25: Employees and their job IDs.

3. 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.

Select employee_id || ', ' || first_name || ', ' || last_name || ', ' || email || ', ' || phone_number || ', ' || hire_date || ', ' || job_id || ', ' || salary || ', ' || commission_pct || ', ' || manager_id || ', ' || department_id as "THE_OUTPUT" from Employees;

```
THE_OUTPUT

1 100, Steven, King, SKING, 515.123.4567, 17/06/03, AD_PRES, 24000, , , 90

2 101, Neena, Kochhar, NKOCHHAR, 515.123.4568, 21/09/05, AD_VP, 17000, , 100, 90

3 102, Lex, De Haan, LDEHAAN, 515.123.4569, 13/01/01, AD_VP, 17000, , 100, 90

4 103, Alexander, Hunold, AHUNOLD, 590.423.4567, 03/01/06, IT_PROG, 9000, , 102, 60

5 104, Bruce, Ernst, BERNST, 590.423.4568, 21/05/07, IT_PROG, 6000, , 103, 60

6 105, David, Austin, DAUSTIN, 590.423.4569, 25/06/05, IT_PROG, 4800, , 103, 60

7 106, Valli, Pataballa, VPATABAL, 590.423.4560, 05/02/06, IT_PROG, 4800, , 103, 60

8 107, Diana, Lorentz, DLORENTZ, 590.423.5567, 07/02/07, IT_PROG, 4200, , 103, 60

9 108, Nancy, Greenberg, NGREENBE, 515.124.4569, 17/08/02, FI_MGR, 12008, , 101, 100

10 109, Daniel, Faviet, DFAVIET, 515.124.4169, 16/08/02, FI_ACCOUNT, 9000, , 108, 100

11 110, John, Chen, JCHEN, 515.124.4269, 28/09/05, FI_ACCOUNT, 8200, , 108, 100

12 111, Ismael, Sciarra, ISCIARRA, 515.124.4369, 30/09/05, FI_ACCOUNT, 7700, , 108, 100

13 112, Jose Manuel, Urman, JMURMAN, 515.124.4469, 07/03/06, FI ACCOUNT, 7800, , 108, 100
```

Figure 26: Employees and their job IDs.

3 Pre-Assessment:

• Practices pre-Assessment for Database Systems Laboratory II

Practice	Pre-
	Assessment
COMPLIES WITH THE REQUESTED FUNCTIONALITY	X
HAS THE CORRECT INDENTATION	X
HAS AN EASY WAY TO ACCESS THE PROVIDED FILES	X
HAS A REPORT WITH IDC FORMAT	X
REPORT INFORMATION IS FREE OF SPELLING ERRORS	X
DELIVERED IN TIME AND FORM	X
IS FULLY COMPLETED (SPECIFY THE PERCENTAGE	100
COMPLETED)	

Table 1: Pre-Assessment.

4 Conclusion:

The select statements have a great capacity when it comes to querying data from a schema, since it has a great variety of options which can be used with each other to obtain a better result, and when executing the statement we obtain the data as as we want them.