



Islamic University of Technology (IUT)

CSE 4308: Database Management Systems Lab

Lab Report # 2

Submitted to:

Md. Bakhtiar Hasan,

Lecturer, CSE.

Zannatun Naim Srsity,

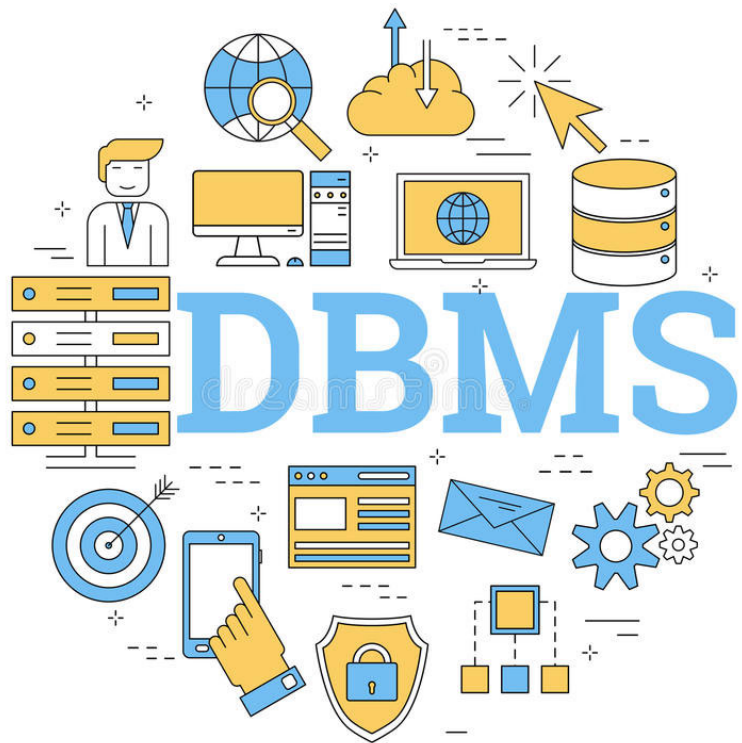
Lecturer, CSE.

Submitted by:

M M Nazmul Hossain

ID 200042118

CSE (SWE)



Submission Date:

31.08.2022

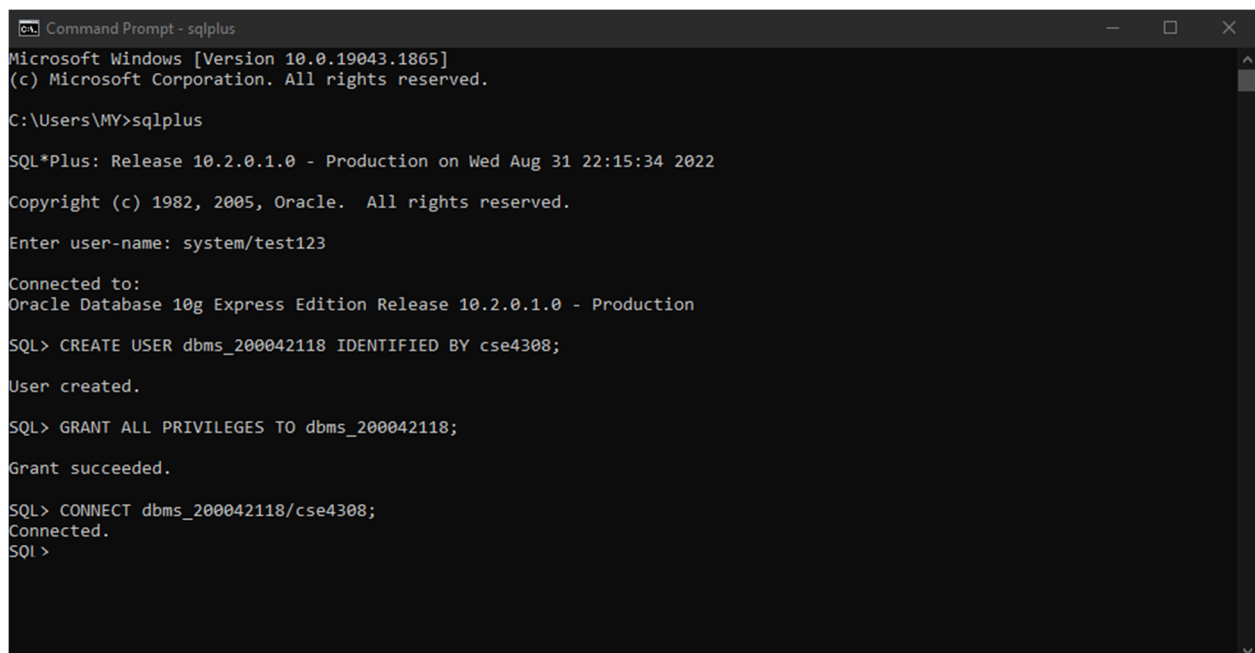
Introduction

In our second database management systems lab, the goal of this lab was to install and learn how to use Oracle.

Method

The first half of this lab was spent installing oracle 11g on our computers. I was unable to participate in that activity due to not having a laptop compatible with Oracle. I used a lab computer, which came with oracle pre-installed.

Next we had to create a new user to begin our tasks. I opened the cmd prompt and input "sqlplus" and then logged in as system. I created a new user "dbms_200042118" which is to be identified by "cse4308". Then I granted it all the required permissions and logged in as that new user.



```
Command Prompt - sqlplus
Microsoft Windows [Version 10.0.19043.1865]
(c) Microsoft Corporation. All rights reserved.

C:\Users\MY>sqlplus

SQL*Plus: Release 10.2.0.1.0 - Production on Wed Aug 31 22:15:34 2022

Copyright (c) 1982, 2005, Oracle. All rights reserved.

Enter user-name: system/test123

Connected to:
Oracle Database 10g Express Edition Release 10.2.0.1.0 - Production

SQL> CREATE USER dbms_200042118 IDENTIFIED BY cse4308;

User created.

SQL> GRANT ALL PRIVILEGES TO dbms_200042118;

Grant succeeded.

SQL> CONNECT dbms_200042118/cse4308;
Connected.
SQL>
```

Next, I followed the instructions to create a test table with id, name, and birthdate attributes, each with different datatypes. I also inserted some values into the table. Then, I used the SELECT statement to display all records of a field (National_ID) FROM the test table. I also learned the use of the WHERE statement to select specific records which meet certain conditions. Finally, I used the SELECT * command to display all available records.

```
Command Prompt - sqlplus
Microsoft Windows [Version 10.0.19043.1865]
(c) Microsoft Corporation. All rights reserved.

C:\Users\MY>sqlplus

SQL*Plus: Release 10.2.0.1.0 - Production on Wed Aug 31 22:30:39 2022

Copyright (c) 1982, 2005, Oracle. All rights reserved.

Enter user-name: dbms_200042118/cse4308

Connected to:
Oracle Database 10g Express Edition Release 10.2.0.1.0 - Production

SQL> CREATE TABLE TEST
2 (
3   NATIONAL_ID NUMBER NOT NULL ,
4   NAME VARCHAR2 (50) NOT NULL ,
5   BIRTH_DATE DATE
6 );

Table created.

SQL> INSERT INTO TEST VALUES (2015001 , 'X', '01 -JAN -81 ');

1 row created.

SQL> INSERT INTO TEST VALUES (2042118,'n','16-JUL-00');

1 row created.
```

```
Command Prompt - sqlplus

SQL> SELECT NATIONAL_ID FROM TEST ;

NATIONAL_ID
-----
2015001
2042118

SQL> SELECT NATIONAL_ID FROM TEST WHERE NATIONAL_ID = 2015001;

NATIONAL_ID
-----
2015001

SQL> SELECT * FROM TEST ;

NATIONAL_ID NAME                BIRTH_DAT
-----
2015001 X                01-JAN-81
2042118 n                16-JUL-00

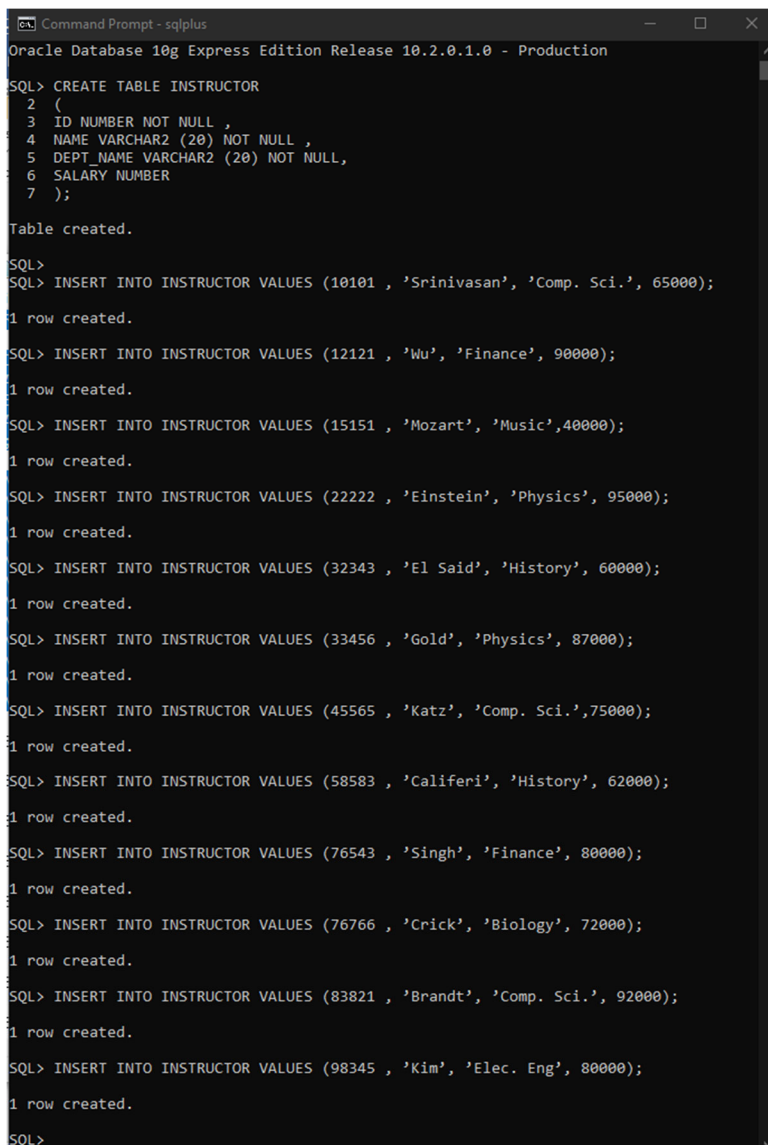
SQL>
```

The Code

At the end of the tutorial section, we began the lab task. We had to create an INSTRUCTOR table with given data about instructors of different departments, their names, id, and salary. We then had to implement SELECT statements that would fulfill various requirements mentioned in the lab task.

First, I created the table and inserted the given values into the table.

I set the ID as Number, Name as VARCHAR(20), DEPT NAME as VARCHAR(20) , none of which would take null as input, and SALARY as NUMBER. I used INSERT INTO command to insert different values into the INSTRUCTOR table.



```
Command Prompt - sqlplus
Oracle Database 10g Express Edition Release 10.2.0.1.0 - Production

SQL> CREATE TABLE INSTRUCTOR
  2  (
  3  ID NUMBER NOT NULL ,
  4  NAME VARCHAR2 (20) NOT NULL ,
  5  DEPT_NAME VARCHAR2 (20) NOT NULL,
  6  SALARY NUMBER
  7  );

Table created.

SQL>
SQL> INSERT INTO INSTRUCTOR VALUES (10101 , 'Srinivasan', 'Comp. Sci.', 65000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (12121 , 'Wu', 'Finance', 90000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (15151 , 'Mozart', 'Music', 40000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (22222 , 'Einstein', 'Physics', 95000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (32343 , 'El Said', 'History', 60000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (33456 , 'Gold', 'Physics', 87000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (45565 , 'Katz', 'Comp. Sci.', 75000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (58583 , 'Califeri', 'History', 62000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (76543 , 'Singh', 'Finance', 80000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (76766 , 'Crick', 'Biology', 72000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (83821 , 'Brandt', 'Comp. Sci.', 92000);

1 row created.

SQL> INSERT INTO INSTRUCTOR VALUES (98345 , 'Kim', 'Elec. Eng', 80000);

1 row created.

SQL>
```

I used set PAGESIZE and set LINESIZE commands to ensure all the columns fit the console nicely. Then I began completing the tasks.

First, I had to display all the records present in the INSTRUCTOR table.

I used the select * command to select all the records.

```
Command Prompt - sqlplus
SQL> SET PAGESIZE 100
SQL> SET LINESIZE 100
SQL> SELECT * FROM INSTRUCTOR;
```

ID	NAME	DEPT_NAME	SALARY
10101	Srinivasan	Comp. Sci.	65000
12121	Wu	Finance	90000
15151	Mozart	Music	40000
22222	Einstein	Physics	95000
32343	El Said	History	60000
33456	Gold	Physics	87000
45565	Katz	Comp. Sci.	75000
58583	Califeri	History	62000
76543	Singh	Finance	80000
76766	Crick	Biology	72000
83821	Brandt	Comp. Sci.	92000
98345	Kim	Elec. Eng	80000

```
12 rows selected.
SQL>
```

The second task was to display only the instructor ID and Name only.

I used Select ID, Name command to select only ID and Name.

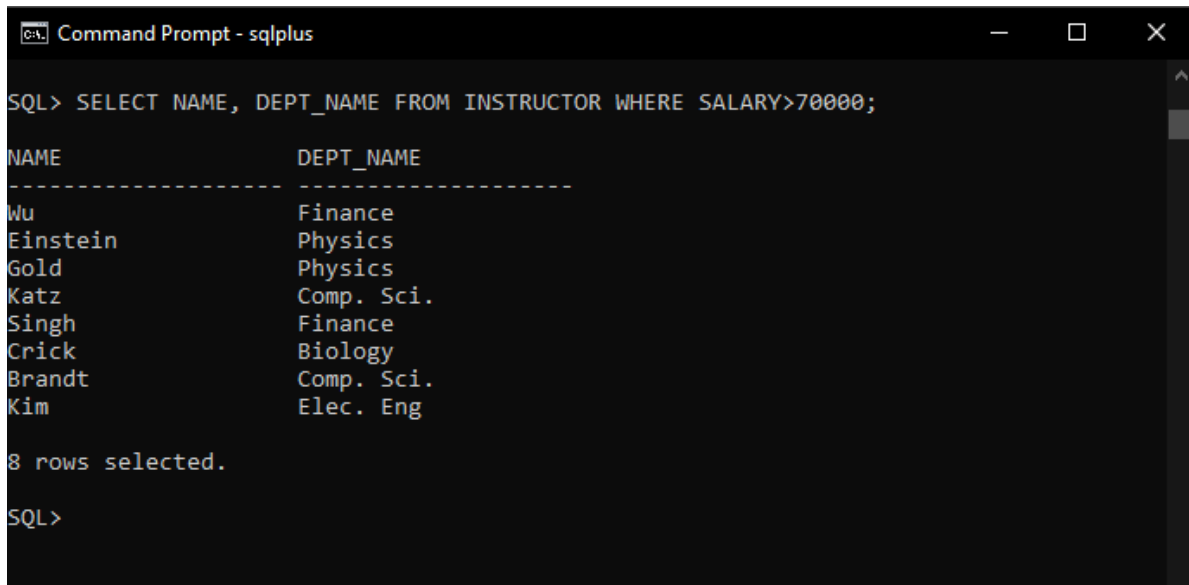
```
Command Prompt - sqlplus
SQL> SELECT ID, NAME FROM INSTRUCTOR;
```

ID	NAME
10101	Srinivasan
12121	Wu
15151	Mozart
22222	Einstein
32343	El Said
33456	Gold
45565	Katz
58583	Califeri
76543	Singh
76766	Crick
83821	Brandt
98345	Kim

```
12 rows selected.
SQL>
```

Thirdly, we had to select and display the Name and Department of instructors who had a Salary more than 70,000.

I used the WHERE command to set the condition of Salary having to be more than 70,000. And the Select Name, Dept_Name to select only Name and Department Name.



```
Command Prompt - sqlplus

SQL> SELECT NAME, DEPT_NAME FROM INSTRUCTOR WHERE SALARY>70000;

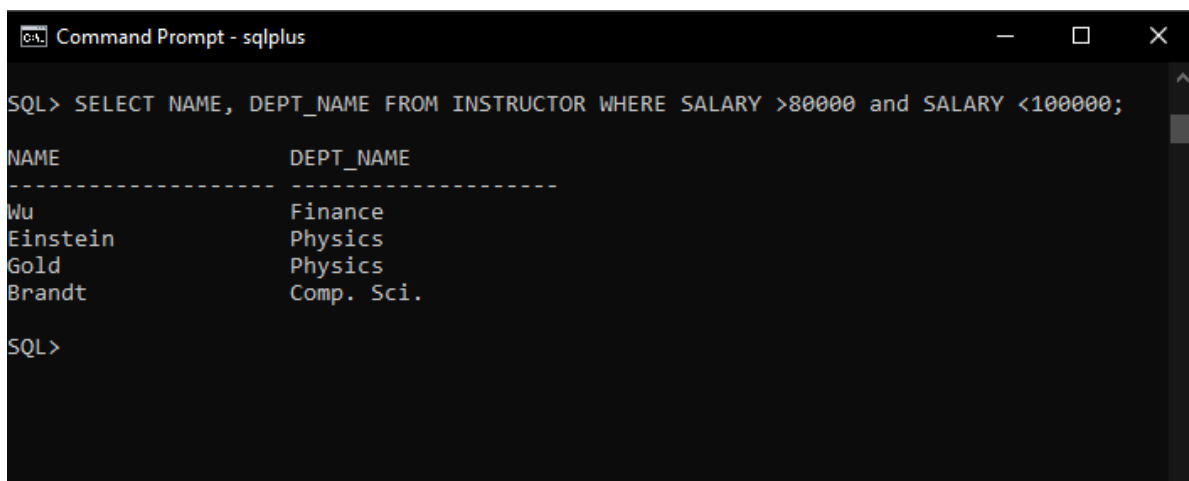
NAME                DEPT_NAME
-----
Wu                  Finance
Einstein            Physics
Gold                Physics
Katz                Comp. Sci.
Singh               Finance
Crick               Biology
Brandt              Comp. Sci.
Kim                 Elec. Eng

8 rows selected.

SQL>
```

After that, we had to find the Name and Department of instructors who had a modest Salary of between 80,000 and 100,000.

I used the WHERE command and the “and” command to provide two conditions in the Select command. I used the SELECT Name, Dept_Name to select only Name and Department Name.



```
Command Prompt - sqlplus

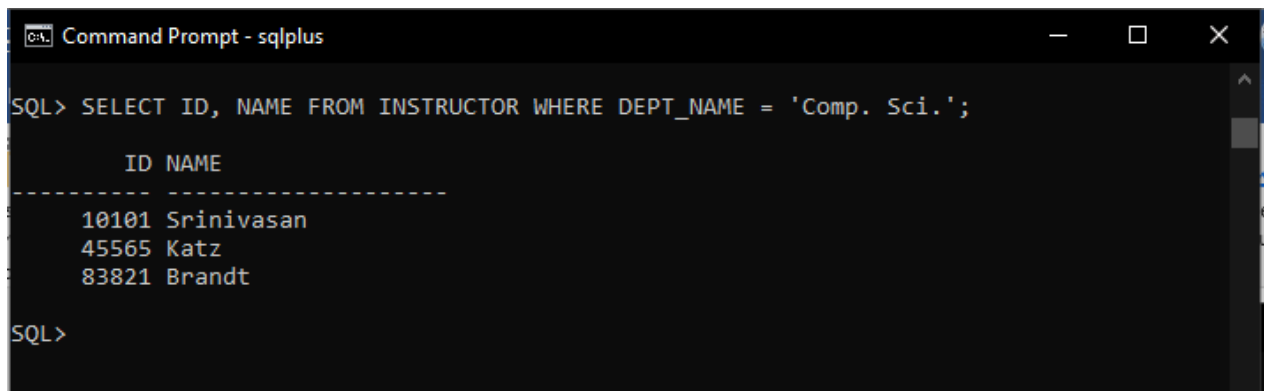
SQL> SELECT NAME, DEPT_NAME FROM INSTRUCTOR WHERE SALARY >80000 and SALARY <100000;

NAME                DEPT_NAME
-----
Wu                  Finance
Einstein            Physics
Gold                Physics
Brandt              Comp. Sci.

SQL>
```

Then, we had to find and select the ID and Name of instructors of Computer Science Department.

I used the Select ID, Name command to select only ID and Name. I used the WHERE command to select records where the Department name was Comp. Sci.



```
Command Prompt - sqlplus

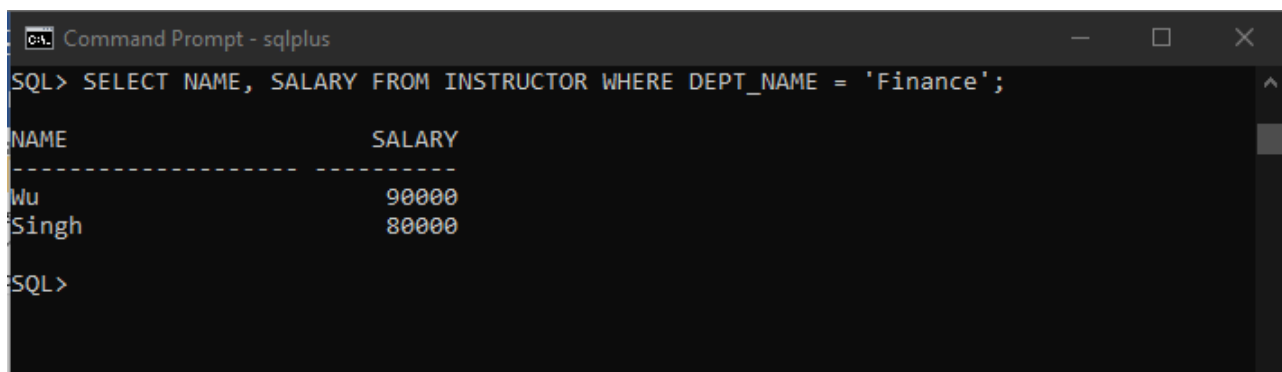
SQL> SELECT ID, NAME FROM INSTRUCTOR WHERE DEPT_NAME = 'Comp. Sci.';

      ID NAME
-----
    10101 Srinivasan
    45565 Katz
    83821 Brandt

SQL>
```

Then, we had to find and select the Name and Salary of instructors of Finance department.

I used the Select Name, Salary command to select only the Name and Salary. I used the WHERE command to select records where the Department name was Finance.



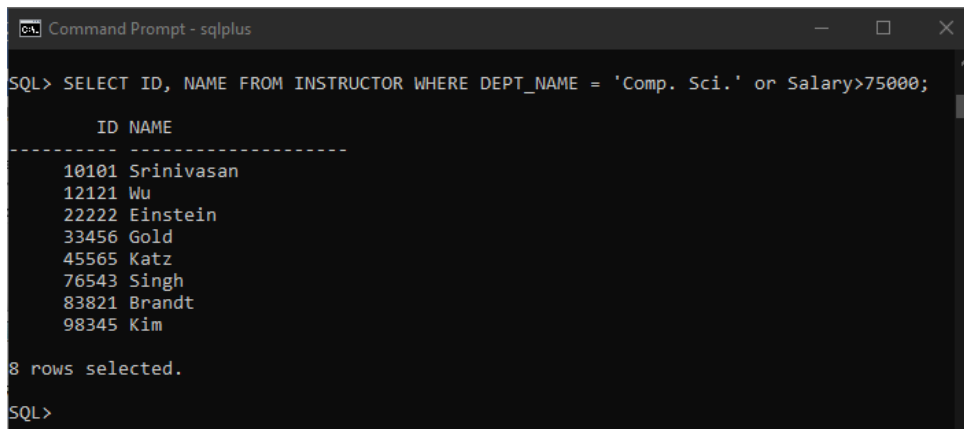
```
Command Prompt - sqlplus

SQL> SELECT NAME, SALARY FROM INSTRUCTOR WHERE DEPT_NAME = 'Finance';

NAME          SALARY
-----
Wu            90000
Singh         80000

SQL>
```

Penultimately, we had to find and select the ID and Name of instructors of Computer Science department or the instructors who had a Salary of more than 75,000. I used the Select ID, Name to select only the ID and Name.



```
SQL> SELECT ID, NAME FROM INSTRUCTOR WHERE DEPT_NAME = 'Comp. Sci.' or Salary>75000;

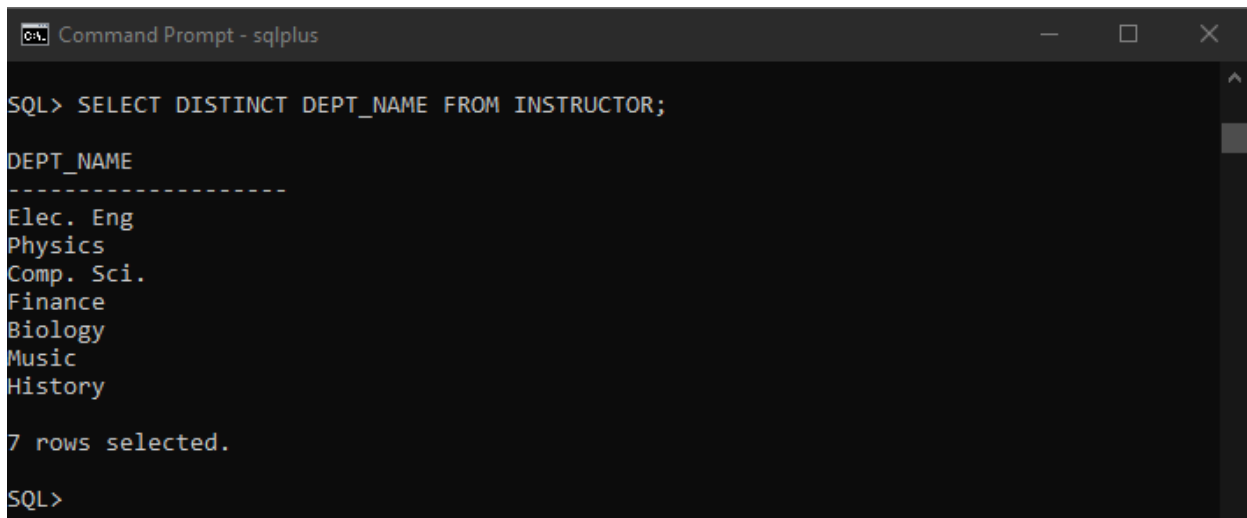
  ID NAME
-----
10101 Srinivasan
12121 Wu
22222 Einstein
33456 Gold
45565 Katz
76543 Singh
83821 Brandt
98345 Kim

8 rows selected.

SQL>
```

Finally, we had to find the names of all the departments.

I used the Select Distinct Dept_Name command to select only the unique Department Names in the Department Names columns from the Instructor table.



```
SQL> SELECT DISTINCT DEPT_NAME FROM INSTRUCTOR;

DEPT_NAME
-----
Elec. Eng
Physics
Comp. Sci.
Finance
Biology
Music
History

7 rows selected.

SQL>
```


Problems

I was supposed to write all of this code in a text document and save it as a .sql file. Then use the directory of that file to open the file directly from the cmd prompt. However, in this method, during insertion, there was an error while reading the single quotation " ' " marks. But when I copied the same code and pasted it in the cmd prompt, it worked. So, at least the code I wrote worked. So instead of opening the file from the directory, I copy and paste my code. I didn't face any other problems while doing the tasks.

Conclusion

With that, I had successfully completed another task. All in all, it was a pleasant introduction to Oracle. All this time, I was a bit afraid of database since I didn't even know where to begin. This was a good starting point, and I am excited to see where this will take me.