Lab 2 Report

Name   : Mashrur Ahsan

ID   : 200042115

Program   : SWE

Department : CSE

Course   : CSE 4308

This 2nd lab was all about SQL basics. From creating a new user to writing queries and executing SQL scripts etc. were covered in this lab.

Problem statement:

The task that was given wanted us to perform several queries.

One of them us to create a student table.

Write SQL statement to create a table 'STUDENT' which has 4 attributes:

- ID
- NAME
- DEPT_NAME
- TOT_CRED

And the student table looks like this:

ID	NAME	DEPT_NAME	TOT_CRED
00128	Zhang	Comp. Sci.	102
12345	Shankar	Comp. Sci.	32
19991	Brandt	History	80
23121	Chavez	Finance	110
44553	Peltier	Physics	56
45678	Levy	Physics	46
54321	Williams	Comp. Sci.	5
55739	Sanchez	Music	38
70557	Snow	Physics	0
76543	Brown	Comp. Sci.	58
76653	Aoi	Elec. Eng.	60
98765	Bourikas	Elec. Eng.	9
98988	Tanaka	Biology	120

These are the queries that needs to be performed:

Write SQL statements to perform the following queries:

(a) Display all records of 'STUDENT' table.

(b) Show student ID and name only.

(c) Find name and department of students who have completed more than 100 credits.

(d) Find name and department of students who have completed in between 80 and 120 credits (inclusive).

(e) Find ID and name of students of Comp. Sci. department.

(f) Find name and total credit of students of Physics department.

(g) Find ID and name of students of Comp. Sci. department or students who have completed less than 10 credits.

(h) Find the names of the department.

The "student" table is given below:

```
create table student
(
id varchar(6) primary key,
name varchar(20),
dept_name varchar(20),
tot_credits int
);
```

The insertion of data looks like this:

```
insert into STUDENT values('00128','Zhang','Comp. Sci.',102);
insert into STUDENT values ('12345', 'Shankar', 'Comp. Sci.', 32);
insert into STUDENT values('19991' ,'Brandt', 'History', 80);
insert into STUDENT values('23121' ,'Chavez' ,'Finance', 110);
insert into STUDENT values ('44553', 'Peltier', 'Physics' ,56);
insert into STUDENT values ('45678', 'Levy', 'Physics' ,46);
insert into STUDENT values ('54321' ,'Williams', 'Comp. Sci.' ,5);
insert into STUDENT values ('55739' ,'Sanchez', 'Music' ,38);
insert into STUDENT values ('70557' ,'Snow' ,'Physics' ,0);
insert into STUDENT values ('76543' ,'Brown' ,'Comp. Sci.', 58);
insert into STUDENT values ('76653' ,'Aoi' ,'Elec. Eng.', 60);
insert into STUDENT values ('98765' ,'Bourikas', 'Elec. Eng.', 9);
insert into STUDENT values ('98988' ,'Tanaka' ,'Biology' ,120);
```

Then the SQL statements the perform the actions are given below (in order, a to h):

```sql
SELECT id, name, dept_name,tot_credits FROM student;

SELECT id, name FROM student;

SELECT id, name FROM student WHERE tot_credits>100;

SELECT name, dept_name FROM student WHERE tot_credits>= 80 and tot_credits<=120;

SELECT id, name FROM student WHERE dept_name = 'Comp. Sci.';

SELECT name, tot_credits from student WHERE dept_name='Physics';

SELECT id, name FROM student WHERE dept_name='Comp. Sci.' or tot_credits>10;

SELECT DISTINCT dept_name FROM student;
```

Outputs of all the queries:

a)

```
ID      NAME                   DEPT_NAME              TOT_CREDITS
------  ------------------     ------------------     -----------
00128   Zhang                  Comp. Sci.                     102
12345   Shankar                Comp. Sci.                      32
19991   Brandt                 History                         80
23121   Chavez                 Finance                        110
44553   Peltier                Physics                         56
45678   Levy                   Physics                         46
54321   Williams               Comp. Sci.                       5
55739   Sanchez                Music                           38
70557   Snow                   Physics                          0
76543   Brown                  Comp. Sci.                      58
76653   Aoi                    Elec. Eng.                      60

ID      NAME                   DEPT_NAME              TOT_CREDITS
------  ------------------     ------------------     -----------
98765   Bourikas               Elec. Eng.                       9
98988   Tanaka                 Biology                        120
```

b)

```
ID       NAME
------   --------------------
00128    Zhang
12345    Shankar
19991    Brandt
23121    Chavez
44553    Peltier
45678    Levy
54321    Williams
55739    Sanchez
70557    Snow
76543    Brown
76653    Aoi

ID       NAME
------   --------------------
98765    Bourikas
98988    Tanaka
```

c)

```
ID       NAME
------   --------------------
00128    Zhang
23121    Chavez
98988    Tanaka
```

d)

```
NAME                    DEPT_NAME
--------------------    --------------------
Zhang                   Comp. Sci.
Brandt                  History
Chavez                  Finance
Tanaka                  Biology
```

e)

```
ID      NAME
------  --------------------
00128   Zhang
12345   Shankar
54321   Williams
76543   Brown
```

f)

```
NAME                    TOT_CREDITS
--------------------    -----------
Peltier                          56
Levy                             46
Snow                              0
```

g)

```
ID      NAME
------  --------------------
00128   Zhang
12345   Shankar
19991   Brandt
23121   Chavez
44553   Peltier
45678   Levy
54321   Williams
55739   Sanchez
76543   Brown
76653   Aoi
98988   Tanaka
```

h)

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

Working code in full:

```sql
1   DROP TABLE student;
2
3   create table student
4   (
5   id varchar(6) primary key,
6   name varchar(20),
7   dept_name varchar(20),
8   tot_credits int
9   );
10
11
12  insert into STUDENT values('00128','Zhang','Comp. Sci.',102);
13  insert into STUDENT values ('12345', 'Shankar', 'Comp. Sci.', 32);
14  insert into STUDENT values('19991' ,'Brandt', 'History', 80);
15  insert into STUDENT values('23121' ,'Chavez' ,'Finance', 110);
16  insert into STUDENT values ('44553', 'Peltier', 'Physics' ,56);
17  insert into STUDENT values ('45678', 'Levy', 'Physics' ,46);
18  insert into STUDENT values ('54321' ,'Williams', 'Comp. Sci.' ,5);
19  insert into STUDENT values ('55739' ,'Sanchez', 'Music' ,38);
20  insert into STUDENT values ('70557' ,'Snow' ,'Physics' ,0);
21  insert into STUDENT values ('76543' ,'Brown' ,'Comp. Sci.', 58);
22  insert into STUDENT values ('76653' ,'Aoi' ,'Elec. Eng.', 60);
23  insert into STUDENT values ('98765' ,'Bourikas', 'Elec. Eng.', 9);
24  insert into STUDENT values ('98988' ,'Tanaka' ,'Biology' ,120);
25
26
27  SELECT id, name, dept_name,tot_credits FROM student;
28
29  SELECT id, name FROM student;
30
31  SELECT id, name FROM student WHERE tot_credits>100;
32
33  SELECT name, dept_name FROM student WHERE tot_credits>= 80 and tot_credits<=120;
34
35  SELECT id, name FROM student WHERE dept_name = 'Comp. Sci.';
36
37  SELECT name, tot_credits from student WHERE dept_name='Physics';
38
39  SELECT id, name FROM student WHERE dept_name='Comp. Sci.' or tot_credits>10;
40
41  SELECT DISTINCT dept_name FROM student;
```