21BDS0340

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Database Management Systems

Exercise – III

1. Find employee names with salary > 25000

Command:
select f_name, m_name, l_name from employee_bds0340 where salary>25000;

Output:

```
SQL> select f_name, m_name, l_name from employee_bds0340 where salary>25000;

F_NAME                    M L_NAME
------------------------- - -------------------------
Doug                      E Glibert
Joyce                     Y Pan
Frankin                   T Wong
Jennifer                  S Wallace
John                      B Smith
Ramesh                    K Narayan
James                     E Borg

7 rows selected.
```

2. Find the employee names whose salary lies in the range between 30000 and 70000

Command:
select f_name, m_name, l_name from employee_bds0340 where salary > 30000 and salary < 70000;

Output:

```
SQL> select f_name, m_name, l_name from employee_bds0340 where salary > 30000 and salary < 70000;

F_NAME                    M L_NAME
------------------------- - -------------------------
Frankin                   T Wong
Jennifer                  S Wallace
Ramesh                    K Narayan
James                     E Borg
```

3. Find the employees who have no supervisor

Command:
select f_name, m_name, l_name from employee_bds0340 where super_ssn is null;

Output:

```
SQL> select f_name, m_name, l_name from employee_bds0340 where super_ssn is null;

F_NAME                    M L_NAME
------------------------- - -------------------------
Doug                      E Glibert
Joyce                     Y Pan
```

4. Display the birthday of all employees in the format DDth Month YYYY

Command:
select to_char(bday, 'DDth MON YYYY') from employee_bds0340;

Output:

```
SQL> select to_char(bday, 'DDth MON YYYY') from employee_bds0340;

TO_CHAR(BDAY,'DDTHMONY
----------------------
09TH JUN 1960
07TH FEB 1978
08TH DEC 2045
20TH JUN 2031
09TH JAN 1955
15TH SEP 1952
31ST JUL 1962
10TH NOV 2027
19TH JUL 1958
29TH MAR 1959

10 rows selected.
```

5. Display the employee names whose birthday is on or before 1978

Command:
select f_name, m_name, l_name from employee_bds0340 where bday < '1-JAN-1979';

Output:

```
SQL> select f_name, m_name, l_name from employee_bds0340 where bday < '1-JAN-1979';

F_NAME                    M L_NAME
------------------------- - -------------------------
Doug                      E Glibert
Joyce                     Y Pan
John                      B Smith
Ramesh                    K Narayan
Joyce                     A English
Alicia                    J Zelaya
Ahmad                     V Jabbar

7 rows selected.
```

6. Display the employee names having ‘salt lake’ in their address

Command:
select f_name, m_name, l_name from employee_bds0340 where lower(address) like '%' || 'salt lake' || '%';

Output:

```
SQL> select f_name, m_name, l_name from employee_bds0340 where lower(address) like '%' || 'salt lake' || '%'
  2  ;

F_NAME                    M L_NAME
------------------------- - -------------------------
Doug                      E Glibert
Joyce                     Y Pan
```

7. Display the department names that start with ‘M’

Command:
select name from department_bds0340 where name like 'M%';

Output:

```
SQL> select name from department_bds0340 where name like 'M%';

NAME
-------------------------
Manufacture
```

8. Display the department names that end with ‘E’

Command:
select name from department_bds0340 where name like '%e';

Output:

```
SQL> select name from department_bds0340 where name like '%e';

NAME
-------------------------
Manufacture
Finance
```

9. Display the names of all the employees having supervisor with any of the following ssn – 554433221, 333445555

Command:
select f_name, m_name, l_name from employee_bds0340 where super_ssn in (554433221, 3334455555);

Output:

```
SQL> select f_name, m_name, l_name from employee_bds0340 where super_ssn in (554433221, 3334455555);

F_NAME                    M L_NAME
------------------------- - -------------------------
Frankin                   T Wong
Jennifer                  S Wallace
```

10. Display all the department names in upper and lower case

Command:
select lower(name), upper(name) from department_bds0340;

Output:

```
SQL> select lower(name), upper(name) from department_bds0340;

LOWER(NAME)               UPPER(NAME)
------------------------- -------------------------
manufacture               MANUFACTURE
administration            ADMINISTRATION
headquarter               HEADQUARTER
finance                   FINANCE
research                  RESEARCH
```

11. Display the first four characters and last four characters of the department names using ltrim and rtrim

Command:

```
select ltrim(substr(name, 0, 4)) from department_bds0340;
select rtrim(substr(name, -4)) from department_bds0340;
```

Output:

```
SQL> select ltrim(substr(name, 0, 4)) from department_bds0340;

LTRIM(SUBSTR(NAM
----------------
Manu
Admi
Head
Fina
Rese

SQL> select rtrim(substr(name, -4)) from department_bds0340;

RTRIM(SUBSTR(NAM
----------------
ture
tion
rter
ance
arch
```

12. Display the substring of the address from 5th to 11th position of all employees

Command:

```
select substr(address, 5, 12) from employee_bds0340;
```

Output:

```
SQL> select substr(address, 5, 12) from employee_bds0340;

SUBSTR(ADDRESS,5,12)
------------------------------------------------
 59 E, Salt
 18 E, Salt
Voss, Housto
Berry, Bella
Fondren, Hou
Fire Oak, Hu
 Rice, Houst
Stone, Houst
 Castle, Spr
Dallas, Hous

10 rows selected.
```

13. Display the manager start date on adding 3 months to it

Command:
select add_months(mgr_start_date, 3) from department_bds0340;

Output:

```
SQL> select add_months(mgr_start_date, 3) from department_bds0340;

ADD_MONTHS(MGR_STA
------------------
19-SEP-71
04-APR-99
22-DEC-55
01-APR-85
22-AUG-78
```

14. Display the age of all the employees rounded to 2 digits

Command:
select round((sysdate – bday) / 365, 2) from employee_bds0340;

Output:

```
SQL> select round((sysdate - bday) / 365, 2) from employee_bds0340;

ROUND((SYSDATE-BDAY)/365,2)
---------------------------
                      63.03
                      45.36
                     -22.52
                      -8.04
                      68.45
                      70.77
                      60.89
                      -4.43
                      64.93
                      64.23

10 rows selected.
```

15. Find the last day and the next day of the month in which each manager has joined

Command:
select mgr_start_date - 1 as last_day, mgr_start_date + 1 as next_day from department_bds0340;

Output:

```
SQL> select mgr_start_date - 1 as last_day, mgr_start_date + 1 as next_day from department_bds0340;

LAST_DAY            NEXT_DAY
------------------- -------------------
18-JUN-71           20-JUN-71
03-JAN-99           05-JAN-99
21-SEP-55           23-SEP-55
31-DEC-84           02-JAN-85
21-MAY-78           23-MAY-78
```

16. Print a substring from the string ‘Harini’

Command:
select substr('Harini', 0, 4) from dual;

Output:

```
SQL> select substr('Harini', 0, 4) from dual;

SUBS
----
Hari
```

17. Replace the string ‘ni’ from ‘Harini’ by ‘sh’

Command:
select replace('Harini', 'ni', 'sh') from dual;

Output:

```
SQL> select replace('Harini', 'ni', 'sh') from dual;

REPLAC
------
Harish
```

18. Print the length of all department names

Command:
select length(name) from department_bds0340;

Output:

```
SQL> select length(name) from department_bds0340;

LENGTH(NAME)
------------
          11
          14
          11
           7
           8
```

19. Print the system date in the format DDth MON YYYY

Command:
select to_char(sysdate, 'DDth MON YYYY') from dual;

Output:

```
SQL> select to_char(sysdate, 'DDth MON YYYY') from dual;

TO_CHAR(SYSDATE,'DDTHM
----------------------
06TH JUN 2023
```

20. Display the date after 10 months from current date

Command:
```
select add_months(sysdate, 10) from dual;
```

Output:
```
SQL> select add_months(sysdate, 10) from dual;

ADD_MONTHS(SYSDATE
------------------
06-APR-24
```

21. Display the next occurrence of Friday in this month

Command:
select next_day(sysdate, 'FRIDAY') from dual;

Output:
```
SQL> select next_day(sysdate, 'FRIDAY') from dual;

NEXT_DAY(SYSDATE,'
------------------
09-JUN-23
```

22. Convert ssn of an employee to number format and display

Command:
select ssn from employee_bds0340;

Output:
```
SQL> select ssn from employee_bds0340;

       SSN
----------
 554433221
 543216789
 333445555
 987654321
 123456789
 666884444
 453453453
 888665555
 999887777
 987987987

10 rows selected.
```

23. Display the project location padded with **** on left side

Command:
select concat('****', location) from project_bds0340;

Output:

```
SQL> select concat('****', location) from project_bds0340;

CONCAT('****',LOCATION)
------------------------------
****Houston
****Salt Lake City
****Houston
****Bellaire
****Sugarland
****Salt Lake City
****New York
****Stafford
****Chicago
****San Francisco

10 rows selected.
```

24. Remove the word ‘project’ from the project names and display it

Command:

select replace(name, 'project', '') from project_bds0340;

Output:

```
SQL> select replace(name, 'project', '') from project_bds0340;

RE
--
A
B
C
D
E
F
G
H
I
J

10 rows selected.
```

25. Select the ssn of the employee whose dependent name is Michael or Abner

Command:

select emp_ssn from dependent_bds0340 where name in ('Michael', 'Abner');

Output:

```
SQL> select emp_ssn from dependent_bds0340 where name in ('Michael', 'Abner');

   EMP_SSN
----------
 987654321
```

Exercise – IV

1. How many different departments are there in the ‘employee’ table

Command:
select distinct dept from employee_bds0340;

Output:

```
SQL> select distinct dept from employee_bds0340;

      DEPT
----------
         3
         2
         5
         4
         1
```

2. For each department display the minimum and maximum salaries

Command:
select dept, min(salary), max(salary) from employee_bds0340 group by dept;

Output:

```
SQL> select dept, min(salary), max(salary) from employee_bds0340 group by dept;

      DEPT MIN(SALARY) MAX(SALARY)
---------- ----------- -----------
         3       80000       80000
         2       70000       70000
         5       25000       40000
         4       25000       43000
         1       55000       55000
```

3. Print the average annual salary

Command:
select avg(salary) from employee_bds0340;

Output:

```
SQL> select avg(salary) from employee_bds0340;

AVG(SALARY)
-----------
      43100
```

4. Count the number of employees over age 30

Command:
select count(*) from employee_bds0340 where floor(months_between(sysdate, bday) / 12) >= 30;

Output:
```
SQL> select count(*) from employee_bds0340 where floor(months_between(sysdate, bday) / 12) >= 30;

  COUNT(*)
----------
        10
```

5. Print the department name and average salary of each department

Command:
select d.name, avg(e.salary) from employee_bds0340 e join department_bds0340 d on e.dept = d.num group by d.name;

Output:
```
SQL> select d.name, avg(e.salary) from employee_bds0340 e join department_bds0340 d on e.dept = d
up by d.name;

NAME                      AVG(E.SALARY)
------------------------- -------------
Headquarter                       80000
Administration                    70000
Research                          33250
Finance                           31000
Manufacture                       55000
```

6. Display the department name which contains more than 30 employees

Command:
select d.name from employee_bds0340 e join department_bds0340 d on e.dept = d.num group by d.name having count(*) >= 30;

Output:
```
SQL> select d.name from employee_bds0340 e join department_bds0340 d on e.dept = d.num group by d
ving count(*) >= 30;

no rows selected
```

7. Calculate the average salary of employees by department and age

Command:
select d.name, floor(months_between(sysdate, e.bday) / 12) as age, avg(e.salary) from employee_bds0340 e join department_bds0340 d on e.dept = d.num group by d.name, floor(months_between(sysdate, e.bday) / 12);

Output:

```
SQL> select d.name, floor(months_between(sysdate, e.bday) / 12) as age, avg(e.salary) from employ
40 e join department_bds0340 d on e.dept = d.num group by d.name, floor(months_between(sysdate, e
 12);

NAME                           AGE AVG(E.SALARY)
------------------------ ---------- -------------
Headquarter                     63         80000
Administration                  45         70000
Research                        77         40000
Finance                         91         43000
Research                        68         30000
Research                        70         38000
Research                        60         25000
Manufacture                     95         55000
Finance                         64         25000

9 rows selected.
```

8. Count separately the number the number of employees in the research and finance department

Command:

select d.name, count(*) from employee_bds0340 e join department_bds0340 d on e.dept = d.num where d.name in ('Research', 'Finance') group by d.name;

Output:

```
SQL> select d.name, count(*) from employee_bds0340 e join department_bds0340 d on e.dept = d.num
name in ('Research', 'Finance') group by d.name;

NAME                     COUNT(*)
------------------------ ----------
Research                          4
Finance                           3
```

9. List out all the employees based on seniority

Command:

select l_name, m_name, l_name from employee_bds0340 order by months_between(sysdate, bday);

Output:

```
SQL> select l_name, m_name, l_name from employee_bds0340 order by months_between(sysdate, bday);

L_NAME                   M L_NAME
------------------------ - ------------------------
Pan                      Y Pan
English                  A English
Glibert                  E Glibert
Jabbar                   V Jabbar
Zelaya                   J Zelaya
Smith                    B Smith
Narayan                  K Narayan
Wong                     T Wong
Wallace                  S Wallace
Borg                     E Borg

10 rows selected.
```

10. List out all the employees who works in manufacturing department and group by first name

Command:

```
select f_name from employee_bds0340 where dept = (select num from
department_bds0340 where name = 'Manufacture') order by f_name;
```

Output:

```
SQL> select f_name from employee_bds0340 where dept = (select num from department_bds0340 where n
anufacture') order by f_name;

F_NAME
-------------------------
James
```