Operators and Functions

Table Creation

```
SQL> create table Employee(first_name varchar2(15),middle_name varchar2(30),last_name varchar2(30),SSN_number varchar2(30),birthday dat
e,address varchar2(30),sex varchar2(10),salary number(10),supervisor_ssn varchar(9),department_number number(10));

Table created.

SQL> desc Employee;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 FIRST_NAME                                         VARCHAR2(15)
 MIDDLE_NAME                                        VARCHAR2(30)
 LAST_NAME                                          VARCHAR2(30)
 SSN_NUMBER                                         VARCHAR2(30)
 BIRTHDAY                                           DATE
 ADDRESS                                            VARCHAR2(30)
 SEX                                                VARCHAR2(10)
 SALARY                                             NUMBER(10)
 SUPERVISOR_SSN                                     VARCHAR2(9)
 DEPARTMENT_NUMBER                                  NUMBER(10)
```

```
SQL> create table Department(dept_name varchar2(30),dept_no number(5),manager_ssn varchar2(10),managerstartdate date);

Table created.

SQL> desc Department;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DEPT_NAME                                          VARCHAR2(30)
 DEPT_NO                                            NUMBER(5)
 MANAGER_SSN                                        VARCHAR2(10)
 MANAGERSTARTDATE                                   DATE

SQL> create table Project(project_name varchar2(30),project_number number(5),project_location varchar2(30),dept_no number(5));

Table created.

SQL> desc Project;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 PROJECT_NAME                                       VARCHAR2(30)
 PROJECT_NUMBER                                     NUMBER(5)
 PROJECT_LOCATION                                   VARCHAR2(30)
 DEPT_NO                                            NUMBER(5)
```

Data entry into Employee table

```
SQL> INSERT INTO EMPLOYEE VALUES('Prashanth','S','Singaravelan',554433221,'20-April-60','11 S 59 E, Salt Lake City, UT','M',80000,NULL
, 3);

1 row created.

SQL> INSERT INTO EMPLOYEE VALUES('Mothishwaran','D','Durai',554433222,'24-May-70','11 S 59 E, Salt Lake City, UT','M',75000,NULL,2);

1 row created.

SQL> INSERT INTO EMPLOYEE VALUES('Praveen','S','Adithya',554433223,'29-June-80','638 Voss, Houston, TX','M',65000,554433222,2);

1 row created.

SQL> INSERT INTO EMPLOYEE VALUES('Varshini','A','Ramanan',554433224,'30-June-90','291 Berry, Bellaire, TX','F',90000,554433222,4);

1 row created.

SQL> INSERT INTO EMPLOYEE VALUES('Balaji','B','Sivanandham',554433225,'4-June-85','731 Fondren, Houston, TX','F',90000,333445555,5);

1 row created.
```

Successful Table and Data entry

```
SQL> select * from employee;

FIRST_NAME      MIDDLE_NAME                    LAST_NAME
--------------- ------------------------------ ------------------------------
SSN_NUMBER                     BIRTHDAY  ADDRESS
------------------------------ --------- ------------------------------
SEX            SALARY SUPERVISO DEPARTMENT_NUMBER
---------- ---------- --------- -----------------
Prashanth       S                              Singaravelan
554433221                      20-APR-60 11 S 59 E, Salt Lake City, UT
M              80000                           3

Mothishwaran    D                              Durai
554433222                      24-MAY-70 11 S 59 E, Salt Lake City, UT
M              75000                           2

FIRST_NAME      MIDDLE_NAME                    LAST_NAME
--------------- ------------------------------ ------------------------------
SSN_NUMBER                     BIRTHDAY  ADDRESS
------------------------------ --------- ------------------------------
SEX            SALARY SUPERVISO DEPARTMENT_NUMBER
---------- ---------- --------- -----------------

Praveen         S                              Adithya
554433223                      29-JUN-80 638 Voss, Houston, TX
M              65000 554433222                 2

Varshini        A                              Ramanan
554433224                      30-JUN-90 291 Berry, Bellaire, TX
```

```
FIRST_NAME      MIDDLE_NAME                    LAST_NAME
--------------- ------------------------------ ------------------------------
SSN_NUMBER                     BIRTHDAY  ADDRESS
------------------------------ --------- ------------------------------
SEX            SALARY SUPERVISO DEPARTMENT_NUMBER
---------- ---------- --------- -----------------
F              90000 554433222                 4

Balaji          B                              Sivanandham
554433225                      04-JUN-85 731 Fondren, Houston, TX
F              90000 333445555                 5
```

Data entry into Department table

```
SQL> INSERT INTO DEPARTMENT VALUES('Research_and_Development',1,554433223,'22-MAY-78');

1 row created.

SQL> INSERT INTO DEPARTMENT VALUES('Finance_administration',2,554433224,'01-JAN-85');

1 row created.

SQL> INSERT INTO DEPARTMENT VALUES('Headquarters',3,554433221,'22-SEP-55');

1 row created.

SQL> INSERT INTO DEPARTMENT VALUES('Administration_and_office',4,543216789,'04-JAN-99');

1 row created.

SQL> INSERT INTO DEPARTMENT VALUES('Manufacture_and_Production',5,888665555,'19-JUN-71');

1 row created.
```

Successful creation of Department table

```
SQL> select * from Department;

DEPT_NAME                      DEPT_NO MANAGER_SS MANAGERST
------------------------------ ---------- ---------- ---------
Research_and_Development                1 554433223  22-MAY-78
Finance_administration                  2 554433224  01-JAN-85
Headquarters                            3 554433221  22-SEP-55
Administration_and_office               4 543216789  04-JAN-99
Manufacture_and_Production              5 888665555  19-JUN-71
```

1)Find the employee names having salary greater than Rs.75000.

```
SQL> select first_name,last_name
  2  from employee
  3  where salary>75000;

FIRST_NAME      LAST_NAME
--------------- ------------------------------
Prashanth       Singaravelan
Varshini        Ramanan
Balaji          Sivanandham
```

2) Find the employee names whose salary lies in the range between 60000 and 70000.

```
SQL> select first_name,middle_name,last_name
  2  from employee
  3  where salary>=60000 and salary<=70000;

FIRST_NAME      MIDDLE_NAME                    LAST_NAME
--------------- ------------------------------ ------------------------------
Praveen         S                              Adithya
```

3) Find the employees who have no supervisor?

```
SQL> select first_name,middle_name,last_name
  2  from employee
  3  where supervisor_ssn is null;

FIRST_NAME      MIDDLE_NAME                    LAST_NAME
--------------- ------------------------------ ------------------------------
Prashanth       S                              Singaravelan
Mothishwaran    D                              Durai
```

4) Display the bdate of all employees in the format ‘DDthMonthYYYY’.

```
SQL> select birthday
  2  from employee;

BIRTHDAY
---------
20-APR-60
24-MAY-70
29-JUN-80
30-JUN-90
04-JUN-85
```

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

```
SQL> select first_name,middle_name,last_name
  2  from employee
  3  where birthday < '01-JAN-1978';

FIRST_NAME      MIDDLE_NAME                    LAST_NAME
--------------- ------------------------------ ------------------------------
Prashanth       S                              Singaravelan
Mothishwaran    D                              Durai
```

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

```
SQL> select first_name,middle_name,last_name
  2  from employee
  3  where address='salt_lake';

no rows selected
```

7) Display the department name that starts with ’M’.

```
SQL> select dept_name
  2  from department
  3  where dept_name LIKE 'M%';

DEPT_NAME
------------------------------
Manufacture_and_Production
```

8) Display the department names’ that ends with ‘E’.

```
SQL> select dept_name
  2  from department
  3  where dept_name LIKE '%E';

no rows selected
```

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

```
SQL> select first_name,supervisor_ssn
  2  from employee
  3  where supervisor_ssn in (554433221, 333445555);

FIRST_NAME      SUPERVISO
--------------- ---------
Balaji          333445555
```

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

```
SQL> select UPPER(dept_name)
  2  from department;

UPPER(DEPT_NAME)
------------------------------
RESEARCH_AND_DEVELOPMENT
FINANCE_ADMINISTRATION
HEADQUARTERS
ADMINISTRATION_AND_OFFICE
MANUFACTURE_AND_PRODUCTION

SQL> select LOWER(dept_name)
  2  from department;

LOWER(DEPT_NAME)
------------------------------
research_and_development
finance_administration
headquarters
administration_and_office
manufacture_and_production
```

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

```
SQL> select substr(dept_name,1,4) from department;

SUBSTR(DEPT_NAME
----------------
Rese
Fina
Head
Admi
Manu

SQL> select substr(dept_name,-4,4) from department;

SUBSTR(DEPT_NAME
----------------
ment
tion
ters
fice
tion
```

12. Display the substring of the Address (starting from 5th position to 11th position) of all employees.

```
SQL> select substr(address,5,11)
  2  from employee;

SUBSTR(ADDRESS,5,11)
--------------------------------------------
 59 E, Salt
 59 E, Salt
Voss, Houst
Berry, Bell
Fondren, Ho
```

13. Display the Mgrstartdate on adding three months to it.

```
SQL> select add_months(managerstartdate,3)
  2  from department;

ADD_MONTH
---------
22-AUG-78
01-APR-85
22-DEC-55
04-APR-99
19-SEP-71
```

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

```
SQL> select round((sysdate-birthday)/365.25,2)from employee;

ROUND((SYSDATE-BIRTHDAY)/365.25,2)
----------------------------------
                             60.36
                             50.27
                             40.17
                             30.17
                             35.24
```

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

```
SQL> select managerstartdate,last_day(managerstartdate),last_day(managerstartdate)+1 from department;

MANAGERST LAST_DAY( LAST_DAY(
--------- --------- ---------
22-MAY-78 31-MAY-78 01-JUN-78
01-JAN-85 31-JAN-85 01-FEB-85
22-SEP-55 30-SEP-55 01-OCT-55
04-JAN-99 31-JAN-99 01-FEB-99
19-JUN-71 30-JUN-71 01-JUL-71
```

16. Print a substring from the string ‘Harini’.

```
SQL> select substr('harini',1,4)from dual;

SUBS
----
hari
```

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

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

REPLAC
------
Harish
```

18. Print the length of all the department names.

```
SQL> select length(dept_name)from department;

LENGTH(DEPT_NAME)
-----------------
               24
               22
               12
               25
               26
```

19. Print the system date in the format 25 th May 2007.

```
SQL> select sysdate from dual;

SYSDATE
---------
29-AUG-20
```

20. Display the date after 10 months from current date.

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

ADD_MONTH
---------
27-JUN-21
```

21. Display the next occurrence of Friday in this month.

```
SQL> select NEXT_DAY(sysdate,'Friday')from dual;

NEXT_DAY(
---------
04-SEP-20
```

22. Convert SSN of employee to Number format and display.

```
SQL> select ssn_number from employee;

SSN_NUMBER
------------------------------
554433221
554433222
554433223
554433224
554433225
```

23. Display the department name padded with **** on left side.

```
SQL> select lpad(dept_name,length(dept_name)+3,'***') from department;

LPAD(DEPT_NAME,LENGTH(DEPT_NAME)+3,'***')
--------------------------------------------------------------------------------
***Research_and_Development
***Finance_administration
***Headquarters
***Administration_and_office
***Manufacture_and_Production
```

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

```
SQL> select first_name,last_name,ltrim(ssn_number,'5544')as ssn_number from employee;

FIRST_NAME      LAST_NAME                      SSN_NUMBER
--------------- ------------------------------ ------------------------------
Prashanth       Singaravelan                   33221
Mothishwaran    Durai                          33222
Praveen         Adithya                        33223
Varshini        Ramanan                        33224
Balaji          Sivanandham                    33225
```

25. Select the SSN of the employee whose dependent name is either Prashanth / Mothishwaran

```
SQL> select supervisor_ssn,(first_name)as name from employee where first_name in ('Prashanth','Mothishwaran');

SUPERVISO NAME
--------- ---------------
          Prashanth
          Mothishwaran
```