Write and execute SQL functions- aggregate, numeric, date, string, and conversion.

Aishi De

```
SQL> CREATE TABLE Employees (
  2      EmployeeID NUMBER,
  3      Name VARCHAR2(100),
  4      Salary NUMBER,
  5      HireDate DATE,
  6      Department VARCHAR2(50)
  7  );

Table created.

SQL>
SQL> INSERT INTO Employees VALUES (1, 'Alice', 50000, TO_DATE('2020-01-15', 'YYYY-MM-DD'), 'HR');

1 row created.

SQL> INSERT INTO Employees VALUES (2, 'Bob', 60000, TO_DATE('2019-03-20', 'YYYY-MM-DD'), 'Finance');

1 row created.

SQL> INSERT INTO Employees VALUES (3, 'Charlie', 55000, TO_DATE('2021-07-10', 'YYYY-MM-DD'), 'IT');

1 row created.

SQL> INSERT INTO Employees VALUES (4, 'David', 62000, TO_DATE('2018-11-05', 'YYYY-MM-DD'), 'IT');

1 row created.

SQL> INSERT INTO Employees VALUES (5, 'Eve', 47000, TO_DATE('2022-02-25', 'YYYY-MM-DD'), 'HR');

1 row created.
```

```
SQL> Select * from Employees;

EMPLOYEEID
----------
NAME
--------------------------------------------------------------------------------
    SALARY HIREDATE  DEPARTMENT
---------- --------- --------------------------------------------------
         1
Alice
     50000 15-JAN-20 HR

         2
Bob
     60000 20-MAR-19 Finance

EMPLOYEEID
----------
NAME
--------------------------------------------------------------------------------
    SALARY HIREDATE  DEPARTMENT
---------- --------- --------------------------------------------------

         3
Charlie
     55000 10-JUL-21 IT

         4
David

EMPLOYEEID
----------
NAME
--------------------------------------------------------------------------------
    SALARY HIREDATE  DEPARTMENT
---------- --------- --------------------------------------------------
     62000 05-NOV-18 IT

         5
Eve
     47000 25-FEB-22 HR
```

```
SQL> SELECT COUNT(*) FROM Employees;

  COUNT(*)
----------
         5

SQL> SELECT MAX(Salary) FROM Employees;

MAX(SALARY)
-----------
      62000

SQL> SELECT MIN(Salary) FROM Employees;

MIN(SALARY)
-----------
      47000

SQL> SELECT AVG(Salary) FROM Employees;

AVG(SALARY)
-----------
      54800

SQL> SELECT SUM(Salary) FROM Employees;

SUM(SALARY)
-----------
     274000

SQL> SELECT COUNT(DISTINCT Department) FROM Employees;

COUNT(DISTINCTDEPARTMENT)
-------------------------
                        3

SQL> SELECT Department, AVG(Salary) FROM Employees GROUP BY Department;

DEPARTMENT                                       AVG(SALARY)
------------------------------------------------ -----------
IT                                                     58500
HR                                                     48500
Finance                                                60000

SQL> SELECT ROUND(Salary, -3) FROM Employees;

ROUND(SALARY,-3)
----------------
           50000
           60000
           55000
           62000
           47000
```

```
SQL> SELECT FLOOR(Salary / 1000) FROM Employees;

FLOOR(SALARY/1000)
------------------
                50
                60
                55
                62
                47

SQL> SELECT CEIL(Salary / 1000) FROM Employees;

CEIL(SALARY/1000)
-----------------
               50
               60
               55
               62
               47

SQL> SELECT MOD(Salary, 10000) FROM Employees;

MOD(SALARY,10000)
-----------------
                0
                0
             5000
             2000
             7000

SQL> SELECT ABS(Salary - 55000) FROM Employees;

ABS(SALARY-55000)
-----------------
             5000
             5000
                0
             7000
             8000

SQL> SELECT POWER(2, 3) FROM DUAL;

POWER(2,3)
----------
         8

SQL> SELECT SQRT(144) FROM DUAL;

 SQRT(144)
----------
        12

SQL> SELECT TRUNC(Salary, -3) FROM Employees;
```

```
SQL> SELECT TRUNC(Salary, -3) FROM Employees;

TRUNC(SALARY,-3)
----------------
           50000
           60000
           55000
           62000
           47000

SQL> SELECT SYSDATE FROM DUAL;

SYSDATE
---------
06-MAY-25

SQL> SELECT CURRENT_DATE FROM DUAL;

CURRENT_D
---------
06-MAY-25

SQL> SELECT HireDate, ADD_MONTHS(HireDate, 6) FROM Employees;

HIREDATE  ADD_MONTH
--------- ---------
15-JAN-20 15-JUL-20
20-MAR-19 20-SEP-19
10-JUL-21 10-JAN-22
05-NOV-18 05-MAY-19
25-FEB-22 25-AUG-22

SQL> SELECT HireDate, MONTHS_BETWEEN(SYSDATE, HireDate) FROM Employees;

HIREDATE  MONTHS_BETWEEN(SYSDATE,HIREDATE)
--------- ------------------------------
15-JAN-20                      63.7156668
20-MAR-19                      73.5543765
10-JUL-21                      45.8769571
05-NOV-18                      78.0382475
25-FEB-22                      38.3930862

SQL> SELECT HireDate, NEXT_DAY(HireDate, 'MONDAY') FROM Employees;

HIREDATE  NEXT_DAY(
--------- ---------
15-JAN-20 20-JAN-20
20-MAR-19 25-MAR-19
10-JUL-21 12-JUL-21
05-NOV-18 12-NOV-18
25-FEB-22 28-FEB-22
```

```
SQL> SELECT HireDate, LAST_DAY(HireDate) FROM Employees;

HIREDATE  LAST_DAY(
--------- ---------
15-JAN-20 31-JAN-20
20-MAR-19 31-MAR-19
10-JUL-21 31-JUL-21
05-NOV-18 30-NOV-18
25-FEB-22 28-FEB-22

SQL> SELECT HireDate, EXTRACT(YEAR FROM HireDate) FROM Employees;

HIREDATE  EXTRACT(YEARFROMHIREDATE)
--------- -------------------------
15-JAN-20                      2020
20-MAR-19                      2019
10-JUL-21                      2021
05-NOV-18                      2018
25-FEB-22                      2022

SQL> SELECT HireDate, EXTRACT(MONTH FROM HireDate) FROM Employees;

HIREDATE  EXTRACT(MONTHFROMHIREDATE)
--------- --------------------------
15-JAN-20                          1
20-MAR-19                          3
10-JUL-21                          7
05-NOV-18                         11
25-FEB-22                          2

SQL> SELECT HireDate, EXTRACT(DAY FROM HireDate) FROM Employees;

HIREDATE  EXTRACT(DAYFROMHIREDATE)
--------- ------------------------
15-JAN-20                       15
20-MAR-19                       20
10-JUL-21                       10
05-NOV-18                        5
25-FEB-22                       25

SQL> SELECT UPPER(Name) FROM Employees;

UPPER(NAME)
--------------------------------------------------------------------------------
ALICE
BOB
CHARLIE
DAVID
EVE
```

```
SQL> SELECT LOWER(Name) FROM Employees;

LOWER(NAME)
--------------------------------------------------------------------------------
alice
bob
charlie
david
eve

SQL> SELECT INITCAP(Name) FROM Employees;

INITCAP(NAME)
--------------------------------------------------------------------------------
Alice
Bob
Charlie
David
Eve

SQL> SELECT LENGTH(Name) FROM Employees;

LENGTH(NAME)
------------
           5
           3
           7
           5
           3

SQL> SELECT SUBSTR(Name, 2, 3) FROM Employees;

SUB
---
lic
ob
har
avi
ve

SQL> SELECT INSTR(Name, 'a') FROM Employees;

INSTR(NAME,'A')
---------------
              0
              0
              3
              2
              0
```

```
SQL> SELECT REPLACE(Name, 'a', '@') FROM Employees;

REPLACE(NAME,'A','@')
--------------------------------------------------------------------------------
Alice
Bob
Ch@rlie
D@vid
Eve

SQL> SELECT LTRIM('   Oracle') FROM DUAL;

LTRIM(
------
Oracle

SQL> SELECT RTRIM('Oracle   ') FROM DUAL;

RTRIM(
------
Oracle
```

```
SQL> SELECT CONCAT(Name, ' - Emp') FROM Employees;

CONCAT(NAME,'-EMP')
--------------------------------------------------------------------------------
Alice - Emp
Bob - Emp
Charlie - Emp
David - Emp
Eve - Emp

SQL> SELECT TO_CHAR(HireDate, 'DD-Mon-YYYY') FROM Employees;

TO_CHAR(HIR
-----------
15-Jan-2020
20-Mar-2019
10-Jul-2021
05-Nov-2018
25-Feb-2022

SQL> SELECT TO_CHAR(Salary, '$999,999.00') FROM Employees;

TO_CHAR(SALA
------------
  $50,000.00
  $60,000.00
  $55,000.00
  $62,000.00
  $47,000.00

SQL> SELECT TO_DATE('06-05-2025', 'DD-MM-YYYY') FROM DUAL;

TO_DATE('
---------
06-MAY-25

SQL> SELECT TO_NUMBER('12345') + 100 FROM DUAL;

TO_NUMBER('12345')+100
----------------------
                 12445

SQL> SELECT CAST(HireDate AS VARCHAR2(20)) FROM Employees;

CAST(HIREDATEASVARCH
--------------------
15-JAN-20
20-MAR-19
10-JUL-21
05-NOV-18
25-FEB-22
```

```
SQL> SELECT CAST('1000' AS NUMBER) + 500 FROM DUAL;

CAST('1000'ASNUMBER)+500
------------------------
                    1500
```