Department of Computer Science and Engineering
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Lab Report 3
CSE 4508 :RDBMS

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Task A-1:Creating Table For the given Scenario.

SQL:

```sql
CREATE TABLE Address (
    Division VARCHAR(50) NOT NULL,
    District VARCHAR(50) NOT NULL,
    PostCode INT PRIMARY KEY
);
CREATE TABLE Customer (
    CustomerID INT PRIMARY KEY,
    CustomerName VARCHAR(50),
    PostCode INT,
    DateOfBirth DATE,
    FOREIGN KEY(PostCode) REFERENCES Address(PostCode)
);
CREATE TABLE Subscription (
    SubscriptionID INT PRIMARY KEY,
    CustomerID INT ,
    Subscriber_Level VARCHAR(20),
    LifetimeUsage DECIMAL(10, 2),
    FOREIGN KEY(CustomerID) REFERENCES
Customer(CustomerID)
);
```

Result :

Task A-2:Inserting values in tables:

SQL:

```
-- Insert data into the Address table
INSERT INTO Address (Division, District, PostCode)
```

```sql
VALUES ('Dhaka', 'Gazipur', 1200);

INSERT INTO Address (Division, District, PostCode)
VALUES ('Khulna', 'Khulna', 9000);

INSERT INTO Address (Division, District, PostCode)
VALUES ('Chittagong', 'Cumilla', 3500);

INSERT INTO Address (Division, District, PostCode)
VALUES ('Chittagong', 'Feni', 2700);

INSERT INTO Address (Division, District, PostCode)
VALUES ('Dhaka', 'Tangail', 1500);


-- Insert data into the Customer table
INSERT INTO Customer (CustomerID, CustomerName, PostCode,
DateOfBirth)
VALUES (1, 'Rafin', 2700, TO_DATE('1990-05-15',
'YYYY-MM-DD'));

INSERT INTO Customer (CustomerID, CustomerName, PostCode,
DateOfBirth)
VALUES (2, 'Zahid', 3500, TO_DATE('1985-11-03',
'YYYY-MM-DD'));

INSERT INTO Customer (CustomerID, CustomerName, PostCode,
DateOfBirth)
VALUES (3, 'Salvi', 1200, TO_DATE('1995-02-20',
'YYYY-MM-DD'));
```

```sql
INSERT INTO Customer (CustomerID, CustomerName, PostCode,
DateOfBirth)
VALUES (4, 'Sahab', 1500, TO_DATE('1988-08-10',
'YYYY-MM-DD'));

INSERT INTO Customer (CustomerID, CustomerName, PostCode,
DateOfBirth)
VALUES (5, 'Abeer', 9000, TO_DATE('1992-03-25',
'YYYY-MM-DD'));

INSERT INTO Customer (CustomerID, CustomerName, PostCode,
DateOfBirth)
VALUES (6, 'Abesh', 1200, TO_DATE('1993-09-18',
'YYYY-MM-DD'));

INSERT INTO Customer (CustomerID, CustomerName, PostCode,
DateOfBirth)
VALUES (7, 'Amit', 1500, TO_DATE('1993-09-18',
'YYYY-MM-DD'));

-- Insert data into the Subscription table
INSERT INTO Subscription (SubscriptionID, CustomerID,
Subscriber_Level, LifetimeUsage)
VALUES (101, 1, 'Silver', 500.00);

INSERT INTO Subscription (SubscriptionID, CustomerID,
Subscriber_Level, LifetimeUsage)
VALUES (102, 2, 'Gold', 1200.50);

INSERT INTO Subscription (SubscriptionID, CustomerID,
Subscriber_Level, LifetimeUsage)
VALUES (103, 3, 'Bronze', 300.75);
```

```sql
INSERT INTO Subscription (SubscriptionID, CustomerID,
Subscriber_Level, LifetimeUsage)
VALUES (104, 4, 'Silver', 800.20);


INSERT INTO Subscription (SubscriptionID, CustomerID,
Subscriber_Level, LifetimeUsage)
VALUES (105, 5, 'Platinum', 2500.75);


INSERT INTO Subscription (SubscriptionID, CustomerID,
Subscriber_Level, LifetimeUsage)
VALUES (106, 6, 'Bronze', 150.50);


INSERT INTO Subscription (SubscriptionID, CustomerID,
Subscriber_Level, LifetimeUsage)
VALUES (107, 7, 'Bronze', 1500.50);
```

Results:

```
SQL> set line 200;
SQL> select *from Address;

DIVISION                                             DISTRICT                                               POSTCODE
---------------------------------------------------- ---------------------------------------------------- ----------
Dhaka                                                Gazipur                                                    1200
Khulna                                               Khulna                                                     9000
Chittagong                                           Cumilla                                                    3500
Chittagong                                           Feni                                                       2700
Dhaka                                                Tangail                                                    1500

SQL> select *from Customer;

CUSTOMERID CUSTOMERNAME                                        POSTCODE DATEOFBIR
---------- --------------------------------------------------- ---------- ---------
         1 Rafin                                                    2700 15-MAY-90
         2 Zahid                                                    3500 03-NOV-85
         3 Salvi                                                    1200 20-FEB-95
         4 Sahab                                                    1500 10-AUG-88
         5 Abeer                                                    9000 25-MAR-92
         6 Abesh                                                    1200 18-SEP-93
         7 Amit                                                     1500 18-SEP-93

7 rows selected.

SQL> select *from Subscription;

SUBSCRIPTIONID CUSTOMERID SUBSCRIBER_LEVEL     LIFETIMEUSAGE
-------------- ---------- -------------------- -------------
           101          1 Silver                         500
           102          2 Gold                        1200.5
           103          3 Bronze                      300.75
           104          4 Silver                       800.2
           105          5 Platinum                   2500.75
           106          6 Bronze                       150.5
           107          7 Bronze                      1500.5

7 rows selected.
```

Task A-3.i:Display the name, date of birth, district and division of all Platinum status individuals whose current lifetime usage is greater than twice the current highest Silver status.

SQL:

```
--Task-A-3-i--
SELECT c.CustomerName, c.DateOfBirth, a.District,
a.Division
FROM Customer c
JOIN Address a ON c.PostCode = a.PostCode
JOIN Subscription s ON c.CustomerID = s.CustomerID
WHERE s.Subscriber_Level = 'Platinum'
  AND s.LifetimeUsage > 2 * (SELECT MAX(LifetimeUsage)
FROM Subscription WHERE Subscriber_Level = 'Silver');
```

Result :

```
SQL> SELECT c.CustomerName, c.DateOfBirth, a.District, a.Division
  2  FROM Customer c
  3  JOIN Address a ON c.PostCode = a.PostCode
  4  JOIN Subscription s ON c.CustomerID = s.CustomerID
  5  WHERE s.Subscriber_Level = 'Platinum'
  6    AND s.LifetimeUsage > 2 * (SELECT MAX(LifetimeUsage) FROM Subscription WHERE Subscriber_Level = 'Silver');

CUSTOMERNAME                                      DATEOFBIR DISTRICT                                           DIVISION
------------------------------------------------- --------- -------------------------------------------------- --------------
------
Abeer                                             25-MAR-92 Khulna                                             Khulna
```

Task A-3.ii:Display the Name, Customer ID and Lifetime Usage of the top 5 highest users in OraclePHONE history.

SQL:

```
--Task-A-3-ii--
SELECT c.CustomerName, c.CustomerID, s.LifetimeUsage
FROM Customer c
JOIN Subscription s ON c.CustomerID = s.CustomerID
ORDER BY s.LifetimeUsage DESC
FETCH FIRST 5 ROWS ONLY;
```

Result:

```
SQL> SELECT c.CustomerName, c.CustomerID, s.LifetimeUsage
  2  FROM Customer c
  3  JOIN Subscription s ON c.CustomerID = s.CustomerID
  4  ORDER BY s.LifetimeUsage DESC
  5  FETCH FIRST 5 ROWS ONLY;

CUSTOMERNAME                                           CUSTOMERID LIFETIMEUSAGE
---------------------------------------------------- ---------- -------------
Abeer                                                         5       2500.75
Amit                                                          7        1500.5
Zahid                                                         2        1200.5
Sahab                                                         4         800.2
Rafin                                                         1           500

SQL>
```

Task A-3.iii:Update all 'Bronze' subscribers to 'Silver' who have lifetime usage greater than the average 'Silver' usage.

SQL:

```
UPDATE Subscription
SET Subscriber_Level='Elite'
where CustomerID IN(
SELECT CustomerID
 FROM(
SELECT c.CustomerID
FROM Customer c
JOIN Subscription s ON c.CustomerID = s.CustomerID
ORDER BY s.LifetimeUsage DESC
FETCH FIRST 5 ROWS ONLY )top_customers
);
```

Result:

```
SQL> UPDATE Subscription
  2  SET Subscriber_Level='Elite'
  3  where CustomerID IN(
  4  SELECT CustomerID
  5   FROM(
  6  SELECT c.CustomerID
  7  FROM Customer c
  8  JOIN Subscription s ON c.CustomerID = s.CustomerID
  9  ORDER BY s.LifetimeUsage DESC
 10  FETCH FIRST 5 ROWS ONLY )top_customers
 11  );

5 rows updated.

SQL>  SELECT c.CustomerName, c.CustomerID, s.LifetimeUsage,s.Subscriber_Level
  2  FROM Customer c
  3  JOIN Subscription s ON c.CustomerID = s.CustomerID;

CUSTOMERNAME                                         CUSTOMERID LIFETIMEUSAGE SUBSCRIBER_LEVEL
---------------------------------------------------- ---------- ------------- --------------------
Rafin                                                         1           500 Elite
Zahid                                                         2        1200.5 Elite
Salvi                                                         3        300.75 Bronze
Sahab                                                         4         800.2 Elite
Abeer                                                         5       2500.75 Elite
Abesh                                                         6         150.5 Bronze
Amit                                                          7        1500.5 Elite

7 rows selected.
```

Task A-3.iv:Update the Subscription Info table for those 5 individuals who fulfill the criteria set by the immediately previous query, such that their "Subscriber_Level" field is now set to "Elite"
(Hint: Use another level of subquery)

SQL:

```sql
UPDATE Subscription
SET Subscriber_Level='Silver'
 WHERE Subscriber_Level='Bronze' AND
 LifetimeUsage >(SELECT AVG(LifetimeUsage)
 FROM Subscription
 WHERE Subscriber_Level='Silver');
```

Result:

```
SQL> UPDATE Subscription
  2   SET Subscriber_Level='Silver'
  3    WHERE Subscriber_Level='Bronze' AND
  4    LifetimeUsage >(SELECT AVG(LifetimeUsage)
  5    FROM Subscription
  6    WHERE Subscriber_Level='Silver');

1 row updated.

SQL>  SELECT c.CustomerName, c.CustomerID, s.LifetimeUsage,s.Subscriber_Level
  2   FROM Customer c
  3   JOIN Subscription s ON c.CustomerID = s.CustomerID;

CUSTOMERNAME                                       CUSTOMERID LIFETIMEUSAGE SUBSCRIBER_LEVEL
-------------------------------------------------- ---------- ------------- --------------------
Rafin                                                       1           500 Silver
Zahid                                                       2        1200.5 Gold
Salvi                                                       3        300.75 Bronze
Sahab                                                       4         800.2 Silver
Abeer                                                       5       2500.75 Platinum
Abesh                                                       6         150.5 Bronze
Amit                                                        7        1500.5 Silver

7 rows selected.
```

N:B:Task A-3.iv query was done before Task A-3.iii

TASK B: Show with appropriate example the use of the following built-in functions:

CONCAT, INSTR, LOWER, UPPER, LENGTH, L/R PAD, L/R TRIM,

SUBSTR, COUNT

SQL:

```sql
SELECT CONCAT('Anm',' ','Zahid') as myName   FROM dual;
SELECT INSTR('Bismillahir Rahmanir Rahim','Rahman') as Indx
FROM dual;
SELECT LOWER('ANM ZAHID') as myName   FROM dual;
SELECT UPPER('anm zahid') as myName   FROM dual;
SELECT LENGTH('ANM ZAHID') as namelen FROM dual;
SELECT LPAD('ANM',3,'D') as leftpad FROM dual;
SELECT RPAD('ANM',3,'D') as rightpad FROM dual;
SELECT LTRIM('    ANM    ') as lefttrim FROM dual;
SELECT RTRIM('    ANM    ') as righttrim FROM dual;
SELECT SUBSTR('anm zahid',4,8) as myName FROM dual ;
SELECT COUNT(*) FROM Customer;
```

Result:

```
SQL> SELECT CONCAT('Anm','Zahid') as myName   FROM dual;

MYNAME
--------
AnmZahid

SQL> SELECT INSTR('Bismillahir Rahmanir Rahim','Rahman') as Indx FROM

      INDX
----------
        13

SQL> SELECT LOWER('ANM ZAHID') as myName   FROM dual;

MYNAME
---------
anm zahid

SQL> SELECT UPPER('anm zahid') as myName   FROM dual;

MYNAME
---------
ANM ZAHID

SQL> SELECT LENGTH('ANM ZAHID') as namelen FROM dual;

   NAMELEN
----------
         9
```

```
SQL> SELECT LPAD('ANM',3,'D') as leftpad FROM dual;

LEF
---
ANM

SQL> SELECT RPAD('ANM',3,'D') as rightpad FROM dual;

RIG
---
ANM

SQL> SELECT LTRIM('   ANM   ') as lefttrim FROM dual;

LEFTTR
------
ANM

SQL> SELECT RTRIM('   ANM   ') as righttrim FROM dual;

RIGHTT
------
   ANM

SQL> SELECT SUBSTR('anm zahid',4,8) as myName FROM dual ;

MYNAME
------
 zahid

SQL> SELECT COUNT(*) FROM Customer;

  COUNT(*)
----------
         7
```