Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)
School of Computing
B.Tech. – Computer Science and Engineering

VTR UGE2021- (CBCS)

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Course Code : 10211CS207

Course Name : Database Management Systems

Slot No : S4-L5

DBMS TASK - 6A REPORT

Submitted by:

VTUNO	REGISTER NUMBER	STUDENT NAME
VTU30200	24UECS1453	GANESWARA REDDY UPPALAPALLI

ABSTRACT

The purpose of this task is to **study and implement SQL subqueries** using the SELECT, INSERT, UPDATE, and DELETE statements.

A **subquery** (also called an inner query) is a query nested inside another SQL statement. It is used to fetch data dynamically based on the result of another query and can appear in the WHERE, FROM, or SELECT clauses.

Subqueries improve query flexibility and allow powerful data manipulations between multiple related tables.

This task demonstrates practical use cases of subqueries for selecting, inserting, updating, and deleting records from relational tables.

1. Create the Main Table

```
CREATE TABLE Products (

   product_id NUMBER(10) PRIMARY KEY,

   name VARCHAR2(100),

   quantity_in_stock NUMBER(5),

   unit_price NUMBER(6,2)

);

SQL> DESC PRODUCTS;

 Name                                 Null?    Type

 PRODUCT_ID                                 NOT NULL NUMBER(10)

 NAME                                         VARCHAR2(100)

 QUANTITY_IN_STOCK                                    NUMBER(5)

 UNIT_PRICE                                     NUMBER(6,2)
```

2. Insert Sample Records

```
INSERT INTO Products VALUES (1, 'Foam Dinner Plate', 70, 1.21);

INSERT INTO Products VALUES (2, 'Pork - Bacon, Back Peameal', 49, 4.65);

INSERT INTO Products VALUES (3, 'Lettuce - Romaine, Heart', 38, 3.35);

INSERT INTO Products VALUES (4, 'Broccolini - Gaylan, Chinese', 90, 4.53);

INSERT INTO Products VALUES (5, 'Sauce - Ranch Dressing', 94, 1.63);

INSERT INTO Products VALUES (6, 'Petit Baguette', 14, 2.39);

INSERT INTO Products VALUES (7, 'Sweet Pea Sprouts', 98, 3.29);

INSERT INTO Products VALUES (8, 'Island Oasis - Raspberry', 26, 0.74);
```

```
SQL>

SQL> SELECT*FROM PRODUCTS;


PRODUCT_ID

----------

NAME

--------------------------------------------------------------------------------

QUANTITY_IN_STOCK UNIT_PRICE

----------------- ----------

         1

Foam Dinner Plate
```

```
              70        1.21


         2
Pork - Bacon, Back Peameal
              49        4.65


PRODUCT_ID
------------
NAME
-----------------------------------------------------------------------------------------------
QUANTITY_IN_STOCK UNIT_PRICE
-------------------- ------------


         3
Lettuce - Romaine, Heart
              38        3.35


         4
Broccolini - Gaylan, Chinese


PRODUCT_ID
```

```
------------

NAME

----------------------------------------------------------------------------------------------

QUANTITY_IN_STOCK UNIT_PRICE

-------------------- ------------

             90       4.53



        5

Sauce - Ranch Dressing

             94       1.63



        6



PRODUCT_ID

------------

NAME

----------------------------------------------------------------------------------------------

QUANTITY_IN_STOCK UNIT_PRICE

-------------------- ------------

Petit Baguette

             14       2.39
```

```
         7
Sweet Pea Sprouts
               98       3.29



PRODUCT_ID
------------
NAME
--------------------------------------------------------------------------------------------
QUANTITY_IN_STOCK UNIT_PRICE
-------------------- ------------
         8
Island Oasis - Raspberry
               26        .74
```

3. Subquery with SELECT Statement

```
SELECT *
FROM Products
WHERE product_id IN (
    SELECT product_id
    FROM Products
    WHERE quantity_in_stock > 45
);


PRODUCT_ID
------------
NAME
----------------------------------------------------------------------------------------------
QUANTITY_IN_STOCK UNIT_PRICE
-------------------- ------------
         1
Foam Dinner Plate
               70       1.21


         2
Pork - Bacon, Back Peameal
               49       4.65


PRODUCT_ID
------------
NAME
----------------------------------------------------------------------------------------------
```

```
QUANTITY_IN_STOCK UNIT_PRICE

-------------------- ------------



         4

Broccolini - Gaylan, Chinese

                90       4.53



         5

Sauce - Ranch Dressing



PRODUCT_ID

------------

NAME

--------------------------------------------------------------------------------------------

QUANTITY_IN_STOCK UNIT_PRICE

-------------------- ------------

                94       1.63



         7

Sweet Pea Sprouts

                98       3.29
```

4. Create Backup Table (for Subquery Examples)

```
CREATE TABLE Products_Bkp AS

SELECT *

FROM Products

WHERE 1 = 0;


SQL> DESC PRODUCTS_BKP

 Name                                      Null?    Type

 ----------------------------------------- -------- ----------------------------

 PRODUCT_ID                                         NUMBER(10)

 NAME                                      VARCHAR2(100)

 QUANTITY_IN_STOCK                                  NUMBER(5)

 UNIT_PRICE                                         NUMBER(6,2)
```

5. Subquery with INSERT Statement

```
INSERT INTO Products_Bkp

SELECT *

FROM Products

WHERE product_id IN (

   SELECT product_id

   FROM Products

);
```

```
PRODUCT_ID

------------

NAME

-----------------------------------------------------------------------------------------------

QUANTITY_IN_STOCK UNIT_PRICE

-------------------- ------------

         1

Foam Dinner Plate

               70        1.21



         2

Pork - Bacon, Back Peameal

               49        4.65



PRODUCT_ID

------------

NAME

-----------------------------------------------------------------------------------------------

QUANTITY_IN_STOCK UNIT_PRICE

-------------------- ------------
```

```
         3

Lettuce - Romaine, Heart

               38       3.35


         4

Broccolini - Gaylan, Chinese


PRODUCT_ID

------------

NAME

--------------------------------------------------------------------------------------------

QUANTITY_IN_STOCK UNIT_PRICE

-------------------- ------------

               90       4.53


         5

Sauce - Ranch Dressing

               94       1.63


         6
```

```
PRODUCT_ID
------------
NAME
-----------------------------------------------------------------------------------------------
QUANTITY_IN_STOCK UNIT_PRICE
-------------------- ------------
Petit Baguette
                  14         2.39

           7
Sweet Pea Sprouts
                  98         3.29


PRODUCT_ID
------------
NAME
-----------------------------------------------------------------------------------------------
QUANTITY_IN_STOCK UNIT_PRICE
-------------------- ------------
```

```
      8

Island Oasis - Raspberry

            26      .74
```

6. Subquery with UPDATE Statement

```
UPDATE Products_Bkp

SET unit_price = 5

WHERE unit_price > (

    SELECT MIN(unit_price)

    FROM Products

);
```

6. Subquery with DELETE Statement

```
DELETE FROM Products_Bkp

WHERE unit_price < (

    SELECT MAX(unit_price)

    FROM Products

);
```

RESULT

All types of subqueries — including those used with **SELECT**, **INSERT**, **UPDATE**, and **DELETE** statements — were successfully implemented and executed, demonstrating the effective use of nested queries in SQL.