```
SQL> @C:\Users\vaish\Desktop\dbms_lab\ex4\lab4.sql
SQL> REM 1. Create a view named Blue_Flavor, which display the
product details (product id,
SQL> REM food, price) of Blueberry flavor.
SQL>
SQL> CREATE VIEW Blue_Flavor AS
  2  SELECT PID,FOOD,PRICE
  3  FROM PRODUCTS
  4  WHERE FLAVOR='Blueberry';

View created.

SQL>
SQL> SELECT * FROM Blue_flavor;

PID             FOOD                      PRICE
--------------- -------------------- ----------
90-BLU-11       Tart                        3.25
51-BLU          Danish                      1.15

SQL>
SQL> SELECT COLUMN_NAME, UPDATABLE from
  2  USER_UPDATABLE_COLUMNS where TABLE_NAME='BLUE_FLAVOR';

COLUMN_NAME                    UPD
------------------------------ ---
PID                            YES
FOOD                           YES
PRICE                          YES

SQL>
SQL> SELECT * FROM PRODUCTS WHERE FLAVOR='Blueberry';

PID             FLAVOR     FOOD                      PRICE
--------------- ---------- -------------------- ----------
90-BLU-11       Blueberry  Tart                        3.25
51-BLU          Blueberry  Danish                      1.15

SQL>
SQL> INSERT INTO Blue_flavor values ('30-BLFV','PIZZA',34);

1 row created.

SQL> UPDATE Blue_flavor SET PRICE=25
  2  WHERE PID='90-BLU-11';

1 row updated.

SQL> DELETE FROM Blue_flavor
  2  WHERE FOOD='Danish';
```

```
DELETE FROM Blue_flavor
*
ERROR at line 1:
ORA-02292: integrity constraint (SYSTEM.ITEM_FK) violated - child
record found


SQL>
SQL> SELECT * FROM PRODUCTS WHERE FLAVOR='Blueberry';

PID             FLAVOR     FOOD                       PRICE
--------------- ---------- -------------------- ----------
90-BLU-11       Blueberry  Tart                         25
51-BLU          Blueberry  Danish                     1.15

SQL>
SQL> SELECT * FROM Blue_flavor;

PID             FOOD                       PRICE
--------------- -------------------- ----------
90-BLU-11       Tart                         25
51-BLU          Danish                     1.15

SQL>
SQL> INSERT INTO PRODUCTS values('35-BLFV','Blueberry','Cookie',19);

1 row created.

SQL> UPDATE PRODUCTS SET PRICE=25
  2  WHERE FLAVOR='Blueberry';

3 rows updated.

SQL> DELETE FROM PRODUCTS WHERE FOOD='Tart';
DELETE FROM PRODUCTS WHERE FOOD='Tart'
*
ERROR at line 1:
ORA-02292: integrity constraint (SYSTEM.ITEM_FK) violated - child
record found


SQL>
SQL> SELECT * FROM Blue_flavor;

PID             FOOD                       PRICE
--------------- -------------------- ----------
90-BLU-11       Tart                         25
51-BLU          Danish                       25
35-BLFV         Cookie                       25
```

```
SQL>
SQL> REM 2. Create a view named Cheap_Food, which display the details
(product id, flavor,
SQL> REM food, price) of products with price lesser than $1. Ensure
that, the price of these
SQL> REM food(s) should never rise above $1 through view.
SQL>
SQL> CREATE VIEW Cheap_Food AS
  2  SELECT *
  3  FROM PRODUCTS
  4  WHERE PRICE<1;

View created.

SQL>
SQL> SELECT * FROM Cheap_Food;

PID             FLAVOR     FOOD                       PRICE
--------------- ---------- -------------------- ----------
70-LEM          Lemon      Cookie                       .79
70-W            Walnut     Cookie                       .79

SQL>
SQL> SELECT COLUMN_NAME, UPDATABLE from
  2  USER_UPDATABLE_COLUMNS where TABLE_NAME='CHEAP_FOOD';

COLUMN_NAME                    UPD
------------------------------ ---
PID                            YES
FLAVOR                         YES
FOOD                           YES
PRICE                          YES

SQL>
SQL> SELECT * FROM PRODUCTS WHERE PRICE<1;

PID             FLAVOR     FOOD                       PRICE
--------------- ---------- -------------------- ----------
70-LEM          Lemon      Cookie                       .79
70-W            Walnut     Cookie                       .79

SQL>
SQL> INSERT INTO Cheap_Food values ('60-CPF','Veg','Nugget',0.32);

1 row created.

SQL> UPDATE Cheap_Food SET FOOD='IceCream'
  2  WHERE PID='70-W';

1 row updated.
```

```
SQL> DELETE FROM Cheap_Food
  2  WHERE FLAVOR='Lemon';
DELETE FROM Cheap_Food
*
ERROR at line 1:
ORA-02292: integrity constraint (SYSTEM.ITEM_FK) violated - child
record found


SQL>
SQL> SELECT * FROM PRODUCTS WHERE PRICE<1;

PID             FLAVOR     FOOD                       PRICE
--------------- ---------- -------------------- ----------
70-LEM          Lemon      Cookie                       .79
70-W            Walnut     IceCream                     .79
60-CPF          Veg        Nugget                       .32

SQL>
SQL> SELECT * FROM Cheap_Food;

PID             FLAVOR     FOOD                       PRICE
--------------- ---------- -------------------- ----------
70-LEM          Lemon      Cookie                       .79
70-W            Walnut     IceCream                     .79
60-CPF          Veg        Nugget                       .32

SQL>
SQL> INSERT INTO PRODUCTS values('18-CPF','Nuts','Twist',0.19);

1 row created.

SQL> UPDATE PRODUCTS SET PRICE=0.25
  2  WHERE FLAVOR='Lemon' and FOOD='Cookie';

1 row updated.

SQL> DELETE FROM PRODUCTS WHERE FOOD='Nugget';

1 row deleted.

SQL>
SQL> SELECT * FROM Cheap_Food;

PID             FLAVOR     FOOD                       PRICE
--------------- ---------- -------------------- ----------
70-LEM          Lemon      Cookie                       .25
70-W            Walnut     IceCream                     .79
18-CPF          Nuts       Twist                        .19
```

```
SQL>
SQL> REM 3.Create a view called Hot_Food that show the product id and
its quantity where the
SQL> REM same product is ordered more than once in the same receipt.
SQL>
SQL> CREATE VIEW Hot_Food AS
  2  SELECT ITEM,COUNT(*) AS QUANTITY
  3  FROM ITEM_LIST
  4  GROUP BY RNO,ITEM
  5  HAVING COUNT(*)>1;

View created.

SQL>
SQL> SELECT * FROM Hot_Food;

ITEM              QUANTITY
--------------- ----------
70-R                     2
90-APR-PF                2
50-APP                   2
51-ATW                   2
90-ALM-I                 2
90-BER-11                2
90-PEC-11                2
70-M-CH-DZ               2
46-11                    2
70-M-CH-DZ               2
90-CHR-11                2

ITEM              QUANTITY
--------------- ----------
90-BLU-11                2
50-CHS                   2
70-M-CH-DZ               2
70-R                     2
90-APP-11                2
70-MAR                   2
50-APR                   2
51-BC                    2
50-ALM                   2

20 rows selected.

SQL>
SQL> SELECT COLUMN_NAME, UPDATABLE from
  2  USER_UPDATABLE_COLUMNS where TABLE_NAME='HOT_FOOD';

COLUMN_NAME                    UPD
```

```
------------------------------ ---
ITEM                           NO
QUANTITY                       NO

SQL>
SQL> SELECT ITEM,COUNT(*) AS QUANTITY
  2  FROM ITEM_LIST
  3  GROUP BY RNO,ITEM
  4  HAVING COUNT(*)>1;

ITEM              QUANTITY
--------------- ----------
70-R                     2
90-APR-PF                2
50-APP                   2
51-ATW                   2
90-ALM-I                 2
90-BER-11                2
90-PEC-11                2
70-M-CH-DZ               2
46-11                    2
70-M-CH-DZ               2
90-CHR-11                2

ITEM              QUANTITY
--------------- ----------
90-BLU-11                2
50-CHS                   2
70-M-CH-DZ               2
70-R                     2
90-APP-11                2
70-MAR                   2
50-APR                   2
51-BC                    2
50-ALM                   2

20 rows selected.

SQL>
SQL> INSERT INTO Hot_Food values(
  2  '13-HF',3);
INSERT INTO Hot_Food values(
*
ERROR at line 1:
ORA-01733: virtual column not allowed here


SQL> UPDATE Hot_Food SET QUANTITY=10
  2  WHERE ITEM='46-11';
UPDATE Hot_Food SET QUANTITY=10
```

```
       *
ERROR at line 1:
ORA-01732: data manipulation operation not legal on this view


SQL> DELETE FROM Hot_Food
  2  WHERE ITEM='70-R';
DELETE FROM Hot_Food
            *
ERROR at line 1:
ORA-01732: data manipulation operation not legal on this view


SQL>
SQL> SELECT ITEM,COUNT(*) AS QUANTITY
  2  FROM ITEM_LIST
  3  GROUP BY RNO,ITEM
  4  HAVING COUNT(*)>1;

ITEM              QUANTITY
--------------- ----------
70-R                     2
90-APR-PF                2
50-APP                   2
51-ATW                   2
90-ALM-I                 2
90-BER-11                2
90-PEC-11                2
70-M-CH-DZ               2
46-11                    2
70-M-CH-DZ               2
90-CHR-11                2

ITEM              QUANTITY
--------------- ----------
90-BLU-11                2
50-CHS                   2
70-M-CH-DZ               2
70-R                     2
90-APP-11                2
70-MAR                   2
50-APR                   2
51-BC                    2
50-ALM                   2

20 rows selected.

SQL>
SQL> REM 4.Create a view named Pie_Food that will display the details
(customer lname, flavor,
```

```
SQL> REM receipt number and date, ordinal) who had ordered the Pie
food with receipt details.
SQL>
SQL> CREATE VIEW Pie_Food AS
  2  SELECT CID,LNAME,FLAVOR,RNO,RDATE,ORDINAL
  3  FROM CUSTOMERS NATURAL JOIN RECEIPTS NATURAL JOIN ITEM_LIST JOIN
PRODUCTS on ITEM=PID
  4  WHERE FOOD='Pie';

View created.

SQL>
SQL> SELECT * FROM Pie_Food;

       CID LNAME           FLAVOR             RNO RDATE        ORDINAL
---------- --------------- ---------- ---------- --------- ----------
         1 JULIET          Apple           39685 28-OCT-07          4
         1 JULIET          Apple           66227 10-OCT-07          2
         3 TRAVIS          Apple           48647 09-OCT-07          2
         6 JOSETTE         Apple           87454 21-OCT-07          1
         6 JOSETTE         Apple           47353 12-OCT-07          2
         8 RUPERT          Apple           53376 30-OCT-07          3
         9 CUC             Apple           50660 18-OCT-07          2
        13 KIP             Apple           11548 21-OCT-07          2
        14 RAYFORD         Apple           29226 26-OCT-07          2
        14 RAYFORD         Apple           51991 17-OCT-07          1
        16 ARIANE          Apple           39109 02-OCT-07          1

       CID LNAME           FLAVOR             RNO RDATE        ORDINAL
---------- --------------- ---------- ---------- --------- ----------
        16 ARIANE          Apple           44798 04-OCT-07          3
        17 CHARLENE        Apple           98806 15-OCT-07          3

13 rows selected.

SQL>
SQL> SELECT COLUMN_NAME, UPDATABLE from
  2  USER_UPDATABLE_COLUMNS where TABLE_NAME='PIE_FOOD';

COLUMN_NAME                    UPD
------------------------------ ---
CID                            NO
LNAME                          NO
FLAVOR                         NO
RNO                            YES
RDATE                          NO
ORDINAL                        YES

6 rows selected.
```

```
SQL>
SQL> SELECT CID,LNAME,FLAVOR,RNO,RDATE,ORDINAL
  2  FROM CUSTOMERS NATURAL JOIN RECEIPTS NATURAL JOIN ITEM_LIST JOIN
PRODUCTS on ITEM=PID
  3  WHERE FOOD='Pie';

       CID LNAME           FLAVOR             RNO RDATE        ORDINAL
---------- --------------- ---------- ---------- --------- ----------
         1 JULIET          Apple           39685 28-OCT-07          4
         1 JULIET          Apple           66227 10-OCT-07          2
         3 TRAVIS          Apple           48647 09-OCT-07          2
         6 JOSETTE         Apple           87454 21-OCT-07          1
         6 JOSETTE         Apple           47353 12-OCT-07          2
         8 RUPERT          Apple           53376 30-OCT-07          3
         9 CUC             Apple           50660 18-OCT-07          2
        13 KIP             Apple           11548 21-OCT-07          2
        14 RAYFORD         Apple           29226 26-OCT-07          2
        14 RAYFORD         Apple           51991 17-OCT-07          1
        16 ARIANE          Apple           39109 02-OCT-07          1

       CID LNAME           FLAVOR             RNO RDATE        ORDINAL
---------- --------------- ---------- ---------- --------- ----------
        16 ARIANE          Apple           44798 04-OCT-07          3
        17 CHARLENE        Apple           98806 15-OCT-07          3

13 rows selected.

SQL>
SQL> INSERT INTO Pie_Food values (30,'RAJEN','STRAWBERRY',87210,'13-
DEC-99',1);
INSERT INTO Pie_Food values (30,'RAJEN','STRAWBERRY',87210,'13-DEC-
99',1)
*
ERROR at line 1:
ORA-01779: cannot modify a column which maps to a non key-preserved
table


SQL> UPDATE Pie_Food SET LNAME='MARIE'
  2  WHERE ORDINAL=4;
UPDATE Pie_Food SET LNAME='MARIE'
                    *
ERROR at line 1:
ORA-01779: cannot modify a column which maps to a non key-preserved
table


SQL> DELETE FROM Pie_Food WHERE
  2  RNO=98806;
```

```
1 row deleted.

SQL>
SQL> SELECT CID,LNAME,FLAVOR,RNO,RDATE,ORDINAL
  2  FROM CUSTOMERS NATURAL JOIN RECEIPTS NATURAL JOIN ITEM_LIST JOIN
PRODUCTS on ITEM=PID
  3  WHERE FOOD='Pie';

       CID LNAME           FLAVOR             RNO RDATE        ORDINAL
---------- --------------- ---------- ---------- --------- ----------
         1 JULIET          Apple           39685 28-OCT-07          4
         1 JULIET          Apple           66227 10-OCT-07          2
         3 TRAVIS          Apple           48647 09-OCT-07          2
         6 JOSETTE         Apple           87454 21-OCT-07          1
         6 JOSETTE         Apple           47353 12-OCT-07          2
         8 RUPERT          Apple           53376 30-OCT-07          3
         9 CUC             Apple           50660 18-OCT-07          2
        13 KIP             Apple           11548 21-OCT-07          2
        14 RAYFORD         Apple           29226 26-OCT-07          2
        14 RAYFORD         Apple           51991 17-OCT-07          1
        16 ARIANE          Apple           39109 02-OCT-07          1

       CID LNAME           FLAVOR             RNO RDATE        ORDINAL
---------- --------------- ---------- ---------- --------- ----------
        16 ARIANE          Apple           44798 04-OCT-07          3

12 rows selected.

SQL>
SQL> REM 5. Create a view Cheap_View from Cheap_Food that shows only
the product id, flavor and food.
SQL>
SQL> CREATE VIEW Cheap_View AS
  2  SELECT PID,FLAVOR,FOOD
  3  FROM Cheap_Food;

View created.

SQL>
SQL> SELECT * FROM Cheap_View;

PID             FLAVOR     FOOD
--------------- ---------- --------------------
70-LEM          Lemon      Cookie
70-W            Walnut     IceCream
18-CPF          Nuts       Twist

SQL>
SQL> SELECT COLUMN_NAME, UPDATABLE from
  2  USER_UPDATABLE_COLUMNS where TABLE_NAME='CHEAP_VIEW';
```

```
COLUMN_NAME                    UPD
------------------------------ ---
PID                            YES
FLAVOR                         YES
FOOD                           YES

SQL>
SQL> SELECT *
  2  FROM Cheap_Food;

PID             FLAVOR     FOOD                      PRICE
--------------- ---------- -------------------- ----------
70-LEM          Lemon      Cookie                       .25
70-W            Walnut     IceCream                     .79
18-CPF          Nuts       Twist                        .19

SQL>
SQL> INSERT INTO Cheap_View values(
  2  '56-CV','Grape','Juice');

1 row created.

SQL> UPDATE Cheap_View SET FOOD='Chocolate'
  2  WHERE PID='70-W';

1 row updated.

SQL> DELETE FROM Cheap_View
  2  WHERE FLAVOR='Nuts';

1 row deleted.

SQL>
SQL> SELECT * FROM Cheap_Food;

PID             FLAVOR     FOOD                      PRICE
--------------- ---------- -------------------- ----------
70-LEM          Lemon      Cookie                       .25
70-W            Walnut     Chocolate                    .79

SQL>
SQL> SELECT * FROM Cheap_View;

PID             FLAVOR     FOOD
--------------- ---------- --------------------
70-LEM          Lemon      Cookie
70-W            Walnut     Chocolate

SQL>
```

```
SQL> INSERT INTO Cheap_Food values ('82-CPF','Non-
Veg','Nugget',0.62);

1 row created.

SQL> UPDATE Cheap_Food SET FOOD='IceCream'
  2  WHERE PID='70-W';

1 row updated.

SQL> DELETE FROM Cheap_Food
  2  WHERE FLAVOR='Lemon';
DELETE FROM Cheap_Food
*
ERROR at line 1:
ORA-02292: integrity constraint (SYSTEM.ITEM_FK) violated - child
record found


SQL>
SQL> SELECT * FROM Cheap_View;

PID             FLAVOR     FOOD
--------------- ---------- --------------------
70-LEM          Lemon      Cookie
70-W            Walnut     IceCream
82-CPF          Non-Veg    Nugget

SQL>
SQL> REM 6.Create a sequence named Ordinal_No_Seq which generates the
ordinal number
SQL> REM starting from 1, increment by 1, to a maximum of 10. Include
the options of cycle,
SQL> REM cache and order. Use this sequence to populate the item_list
table for a new order.
SQL>
SQL> CREATE SEQUENCE Ordinal_No_Seq
  2  MAXVALUE 10
  3  START WITH 1
  4  INCREMENT BY 1
  5  CACHE 5
  6  CYCLE
  7  ORDER;

Sequence created.

SQL>
SQL> INSERT INTO RECEIPTS values(491204,'20-Jan-2019',12);

1 row created.
```

```
SQL> INSERT INTO ITEM_LIST values(491204,Ordinal_No_Seq.nextval,'90-
CH-PF');

1 row created.

SQL> INSERT INTO ITEM_LIST values(491204,Ordinal_No_Seq.nextval,'70-
GA');

1 row created.

SQL> INSERT INTO ITEM_LIST values(491204,Ordinal_No_Seq.nextval,'51-
APP');

1 row created.

SQL>
SQL> SELECT * FROM ITEM_LIST WHERE RNO=491204;

       RNO    ORDINAL ITEM
---------- ---------- ---------------
    491204          1 90-CH-PF
    491204          2 70-GA
    491204          3 51-APP

SQL>
SQL> REM 7:Create a synonym named Product_details for the item_list
relation. Perform the DML operations on it.
SQL>
SQL> CREATE SYNONYM Product_details for ITEM_LIST;

Synonym created.

SQL>
SQL> INSERT INTO RECEIPTS values(181923,'10-Jul-2009',10);

1 row created.

SQL> INSERT INTO Product_details
  2  values(181923,8,'24-8x10');

1 row created.

SQL> SELECT * FROM Product_details WHERE RNO=181923;

       RNO    ORDINAL ITEM
---------- ---------- ---------------
    181923          8 24-8x10

SQL> SELECT * FROM ITEM_LIST WHERE RNO=181923;
```

```
       RNO    ORDINAL ITEM
---------- ---------- ---------------
    181923          8 24-8x10

SQL>
SQL> UPDATE Product_details
  2  SET ITEM='90-APR-PF'
  3  where RNO=181923 and ordinal='8';

1 row updated.

SQL> SELECT * FROM Product_details WHERE RNO=181923;

       RNO    ORDINAL ITEM
---------- ---------- ---------------
    181923          8 90-APR-PF

SQL> SELECT * FROM ITEM_LIST WHERE RNO=181923;

       RNO    ORDINAL ITEM
---------- ---------- ---------------
    181923          8 90-APR-PF

SQL>
SQL> DELETE FROM Product_details
  2  where RNO=181923;

1 row deleted.

SQL> SELECT * FROM Product_details WHERE RNO=181923;

no rows selected

SQL> SELECT * FROM ITEM_LIST WHERE RNO=181923;

no rows selected

SQL>
SQL> REM 8:Drop all the above created database objects.
SQL>
SQL> DROP VIEW Blue_flavor;

View dropped.

SQL> DROP VIEW Cheap_Food;

View dropped.

SQL> DROP VIEW Hot_Food ;
```

```
View dropped.

SQL> DROP VIEW Pie_Food;

View dropped.

SQL> DROP VIEW Cheap_View;

View dropped.

SQL> DROP SEQUENCE Ordinal_No_Seq;

Sequence dropped.

SQL> DROP SYNONYM Product_details;

Synonym dropped.

SQL> spool off
```