**\*\*\*\*\*\*\*\*\*\* EXPERIMENT : 02 \*\*\*\*\*\*\*\*\*\***

**Aim**: To create the mentioned database and execute SQL queries against it.

**Problem Statement**:

Establish an environment for executing the queries based on the logical schemata and the database structuring for the SalesCo database

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**Roll no** : 55

**Date** : 16-Aug-2020

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 02 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**For each table of SalesCo database, list all the enforced constraints.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**SELECT TABLE\_NAME, CONSTRAINT\_NAME, CONSTRAINT\_TYPE**

**FROM USER\_CONSTRAINTS**

**WHERE TABLE\_NAME IN ('CUSTOMER','INVOICE','LINE','PRODUCT','VENDOR');**

TABLE\_NAME CONSTRAINT\_NAME C

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

CUSTOMER SYS\_C0011620 C

CUSTOMER SYS\_C0011621 C

CUSTOMER SYS\_C0011622 C

CUSTOMER SYS\_C0011623 C

CUSTOMER SYS\_C0011624 C

CUSTOMER SYS\_C0011625 C

CUSTOMER CUSTOMER\_CK\_C\_CODE C

CUSTOMER CUSTOMER\_CK\_C\_AREA C

CUSTOMER CUSTOMER\_PK\_C\_CODE P

INVOICE SYS\_C0011629 C

INVOICE SYS\_C0011630 C

TABLE\_NAME CONSTRAINT\_NAME C

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INVOICE SYS\_C0011631 C

INVOICE INVOICE\_CK\_INV\_NUM C

INVOICE INVOICE\_PK\_INV\_NUM P

INVOICE INVOICE\_CUSTOMER\_FK\_C\_CODE R

LINE SYS\_C0011656 C

LINE SYS\_C0011657 C

LINE SYS\_C0011658 C

LINE SYS\_C0011659 C

LINE SYS\_C0011660 C

LINE LINE\_CK\_L\_NUM C

LINE LINE\_CK\_L\_UNITS C

TABLE\_NAME CONSTRAINT\_NAME C

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LINE LINE\_CK\_L\_PRICE C

LINE LINE\_PK\_INV\_NUM\_L\_NUM P

LINE LINE\_INVOICE\_FK\_INV\_NUM R

LINE LINE\_PRODUCT\_FK\_P\_CODE R

PRODUCT SYS\_C0011646 C

PRODUCT SYS\_C0011647 C

PRODUCT SYS\_C0011648 C

PRODUCT SYS\_C0011649 C

PRODUCT SYS\_C0011650 C

PRODUCT SYS\_C0011651 C

PRODUCT SYS\_C0011652 C

TABLE\_NAME CONSTRAINT\_NAME C

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

PRODUCT PRODUCT\_CK\_P\_MIN C

PRODUCT PRODUCT\_PK\_P\_CODE P

PRODUCT PRODUCT\_VENDOR\_FK\_V\_CODE R

VENDOR SYS\_C0011635 C

VENDOR SYS\_C0011636 C

VENDOR SYS\_C0011637 C

VENDOR SYS\_C0011638 C

VENDOR SYS\_C0011639 C

VENDOR SYS\_C0011640 C

VENDOR SYS\_C0011641 C

VENDOR VENDOR\_CK\_V\_CODE C

TABLE\_NAME CONSTRAINT\_NAME C

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

VENDOR VENDOR\_CK\_V\_AREA C

VENDOR VENDOR\_CK\_V\_STATE C

VENDOR VENDOR\_PK\_V\_CODE P

47 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 03 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write SQL code to insert a LINE record - 1009, 1, HW15X, 20, 15.50. What are the problems encountered? Assume that the 60 units of the product “HiVeld Hammer" were supplied by "Indian Masters” located in “KY' at unit price of 15.50 on January 10, 2020. Minimum stock quantity was anticipated to be 15. The line was billed to “You" located in area 904 with phone 3562098 and a balance of 500.00 on June 22, 2020. The supplier with ID 24992 has a contact named “Your Sibling" with phone 2863322.**

**Write appropriate SELECT statements to showcase the effects of the query.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**INSERT INTO LINE VALUES (1009, 1, 'HW15X', 20, 15.50);**

INSERT INTO LINE VALUES (1009, 1, 'HW15X’, 20, 15.50);

\*

ERROR at line 1:

ORA-02291: integrity constraint (CS555.LINE\_PRODUCT\_FK\_P\_CODE) violated-parent key not found

**REASON**: This means that you attempted to execute a reference to a certain table using a primary key. However, in the process of doing so, the columns that you specified failed to match the primary key. A foreign key value has no matching primary key value.

**INSERT INTO VENDOR VALUES (24992, 'Indian Masters', 'Aryan’, ‘Khandhadiya', 615, 2863322, 'KY', 'Y');**

1 row created.

**INSERT INTO PRODUCT VALUES ('HW15X','HiVeld Hammer','10-JAN 2020', 75, 15, 15.50, 0, 24992);**

1 row created.

**INSERT INTO CUSTOMER VALUES (10020, 'Mehul', ‘Khandhadiya', 904, 3562098, 500.00);**

1 row created.

**INSERT INTO INVOICE VALUES (1009, 10020,'22-JUN-20');**

1 row created.

**INSERT INTO LINE VALUES (1009, 1,'HW15X', 20, 15.50);**

1 row created.

**SELECT \* FROM VENDOR**

**WHERE V\_CODE = 24992;**

V\_CODE V\_NAME V\_CONTACT V\_AREA V\_PHONE V\_ V

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24992 Indian Masters Aryan Khandhadiya 615 2863322 KY Y

**SELECT \* FROM PRODUCT**

**WHERE DESCRIPT = 'HiVeld Hammer'**;

P\_COD DESCRIPT P\_DATE QTY P\_MIN P\_PRICE P\_DISC V\_CODE

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

HW15X HiVeld Hammer 10-JAN-20 75 15 15.5 0 24992

**SELECT \* FROM CUSTOMER**

**WHERE C\_PHONE = 3562098;**

C\_CODE LNAME FNAME C\_AREA C\_PHONE BALANCE

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10020 Khandhadiya Mehul 904 3562098 500

**SELECT \* FROM INVOICE**

**WHERE INV\_NUM = 1009;**

INV\_NUM C\_CODE INV\_DATE

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1009 10020 22-JUN-20

**SELECT \* FROM LINE**

**WHERE INV\_NUM = 1009;**

INV\_NUM L\_NUM P\_COD L\_UNITS L\_PRICE

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1009 1 HW15X 20 15.5

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 04 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write SQL code that will list P\_CODE, DESCRIPT, V\_CODE for all products that are some kind of hammers or screws.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**SELECT P\_CODE, DESCRIPT, V\_CODE**

**FROM PRODUCT**

**WHERE**

**DESCRIPT LIKE '%Hammer' OR DESCRIPT LIKE '%Screw';**

P\_COD DESCRIPT V\_CODE

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

CH10X Claw Hammer 21225

SH100 Sledge Hammer

MC001 Metal Screw 21225

WC025 2.5in wide Screw 21231

HW15X HiVeld Hammer 24992

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 05 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write the SQL code that will list all products which were added to inventory during 2020.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**SELECT P\_CODE, DESCRIPT, P\_DATE**

**FROM PRODUCT**

**WHERE EXTRACT (YEAR FROM P\_DATE) = 2020;**

P\_COD DESCRIPT P\_DATE

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

CD00X Cordless Drill 20-JAN-20

CH10X Claw Hammer 20-JAN-20

SH100 Sledge Hammer 02-JAN-20

HC100 Hicut Chain Saw 07-FEB-20

PP101 PVC Pipe 20-FEB-20

MC001 Metal Screw 01-MAR-20

WC025 2.5in wide Screw 24-FEB-20

SM48X Steel Malting Mesh 17-JAN-20

HW15X HiVeld Hammer 10-JAN-20

AB111 Power Drill 12-AUG-20

PP102 PVC Pipe 13-AUG-20

11 rows selected

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 06 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write SQL code that will list all invoices billed to customers Elena Johnson. Your query must account for combining the FNAME and LNAME attributes while creating and testing the predicate.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**SELECT CONCAT (FNAME, LNAME) CUST\_NAME, INV\_NUM, INV\_DATE**

**FROM INVOICE I, CUSTOMER C**

**WHERE**

**I.C\_CODE = C.C\_CODE**

**AND C.FNAME = 'Elena'**

**AND C.LNAME = 'Johnson’;**

CUST\_NAME INV\_NUM INV\_DATE

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ElenaJohnson 1002 16-JAN-20

ElenaJohnson 1008 17-JAN-20

ElenaJohnson 1005 17-JAN-20

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 08 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write SQL code that will remove the vendor 23119. Explain the problem(s) encountered (if any). Now, if the policy decision has been to allow such removals from vendor list by removing the depending relation tuples; modify the constraints in PRODUCT table. On modifying the constraints, remove the said vendor and check the changes in database.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**DELETE FROM VENDOR**

**WHERE V\_CODE=23119;**

DELETE FROM VENDOR

\*

ERROR at line 1:

ORA-02292: integrity constraint (CS555.PRODUCT\_VENDOR\_FK\_V\_CODE) violated-child record found

**REASON**: This indicates that the user attempted to delete a record from a parent table (which is referenced by a foreign key). To correct this error, the user will need to update or delete the value into the child table first and subsequently delete the corresponding information in the parent table.

BEFORE --

**SELECT \* FROM PRODUCT;**

P\_COD DESCRIPT P\_DATE QTY P\_MIN P\_PRICE P\_DISC V\_CODE

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

AB112 Power Drill 03-NOV-19 8 5 109.99 0 25595

SB725 7.25in Saw Blade 13-DEC-19 32 15 14.99 .05 21344

SB900 9.00 in Saw Blade 13-NOV-19 18 12 17.49 0 21344

CL025 Hrd.Spring 1/4in 15-JAN-20 15 8 39.95 0 23119

CL050 Hrd.Spring 1/2in 15-JAN-20 23 5 43.99 0 23119

JB012 Jigsaw 12in Blade 30-DEC-19 8 5 109.92 .05 24288

JB008 Jigsaw 8in Blade 24-DEC-19 6 5 99.87 .05 24288

CD00X Cordless Drill 20-JAN-20 12 5 38.95 .05 25595

CH10X Claw Hammer 20-JAN-20 23 10 9.95 .1 21225

SH100 Sledge Hammer 02-JAN-20 8 5 14.4 .05

RF100 Rat Tail File 15-DEC-19 43 20 4.99 0 21344

P\_COD DESC P\_DATE QTY P\_MIN P\_PRICE P\_DISC V\_CODE

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HC100 Hicut Chain Saw 07-FEB-20 11 5 256.99 .05 24288

HW15X HiVeld Hammer 10-JAN-20 60 15 15.5 0 24992

PP101 PVC Pipe 20-FEB-20 188 75 5.87 0

MC001 Metal Screw 01-MAR-20 172 75 6.99 0 21225

WC025 2.5in wide Screw 24-FEB-20 237 100 8.45 0 21231

SM48X Steel Malting Mesh 17-JAN-20 18 5 119.95 .01 25595

17 rows selected.

**SELECT CONSTRAINT\_NAME, CONSTRAINT\_TYPE, DELETE\_RULE FROM USER\_CONSTRAINTS**

**WHERE TABLE\_NAME='PRODUCT';**

CONSTRAINT\_NAME CONSTRAINT\_TYPE DELETE\_RULE

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SYS\_C0011646 C

SYS\_C0011647 C

SYS\_C0011648 C

SYS\_C0011649 C

SYS\_C0011650 C

SYS\_C0011651 C

SYS\_C0011652 C

PRODUCT\_CK\_P\_MIN C

PRODUCT\_PK\_P\_CODE P

PRODUCT\_VENDOR\_FK\_V\_ R NO ACTION

10 rows selected.

**ALTER TABLE PRODUCT DROP CONSTRAINT PRODUCT\_VENDOR\_FK\_V\_CODE;**

Table altered.

**ALTER TABLE PRODUCT**

**ADD CONSTRAINT ON\_DELETE FOREIGN KEY (V\_CODE)**

**REFERENCES VENDOR (V\_CODE) ON DELETE CASCADE;**

Table altered.

**DELETE FROM PRODUCT WHERE V\_CODE = 23119;**

2 rows deleted.

**SELECT \* FROM PRODUCT;**

P\_COD DESCRIPT P\_DATE QTY P\_MIN P\_PRICE P\_DISC V\_CODE

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AB112 Power Drill 03-NOV-19 8 5 109.99 0 25595

SB725 7.25in Saw Blade 13-DEC-19 32 15 14.99 .05 21344

SB900 9.00 in Saw Blade 13-NOV-19 18 12 17.49 0 21344

JB012 Jigsaw 12in Blade 30-DEC-19 8 5 109.92 .05 24288

JB008 Jigsaw 8in Blade 24-DEC-19 6 5 99.87 .05 24288

CD00X Cordless Drill 20-JAN-20 12 5 38.95 .05 25595

CH10X Claw Hammer 20-JAN-20 23 10 9.95 .1 21225

SH100 Sledge Hammer 02-JAN-20 8 5 14.4 .05

RF100 Rat Tail File 15-DEC-19 43 20 4.99 0 21344

HC100 Hicut Chain Saw 07-FEB-20 11 5 256.99 .05 24288

HW15X HiVeld Hammer 10-JAN-20 60 15 15.5 0 24992

P\_COD DESC P\_DATE QTY P\_MIN P\_PRICE P\_DISC V\_CODE

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PP101 PVC Pipe 20-FEB-20 188 75 5.87 0

MC001 Metal Screw 01-MAR-20 172 75 6.99 0 21225

WC025 2.5in wide Screw 24-FEB-20 237 100 8.45 0 21231

SM48X Steel Malting Mesh 17-JAN-20 18 5 119.95 .01 25595

15 rows selected.

**SELECT CONSTRAINT\_NAME, CONSTRAINT\_TYPE, DELETE\_RULE FROM USER\_CONSTRAINTS**

**WHERE TABLE\_NAME='PRODUCT';**

CONSTARINT\_NAME CONSTARINT\_TYPE DELETE\_RULE

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SYS\_C0011646 C

SYS\_C0011647 C

SYS\_C0011648 C

SYS\_C0011649 C

SYS\_C0011650 C

SYS\_C0011651 C

SYS\_C0011652 C

PRODUCT\_CK\_P\_MIN C

PRODUCT\_PK\_P\_CODE P

ON\_DELETE R CASCADE

10 rows selected.

**INSERT INTO PRODUCT VALUES('CL025','HRD.SPRING 1/4IN','15-JAN-20', 15, 8, 39.95, 0, 23119);**

1 row created.

**INSERT INTO PRODUCT VALUES('CL050','HRD.SPRING 1/2IN','15-JAN-20', 23, 5, 43.99, 0, 23119);**

1 row created.

**SELECT \* FROM PRODUCT;**

P\_COD DESCRIPT P\_DATE QTY P\_MIN P\_PRICE P\_DISC V\_CODE

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

AB112 Power Drill 03-NOV-19 8 5 109.99 0 25595

SB725 7.25in Saw Blade 13-DEC-19 32 15 14.99 .05 21344

SB900 9.00 in Saw Blade 13-NOV-19 18 12 17.49 0 21344

JB012 Jigsaw 12in Blade 30-DEC-19 8 5 109.92 .05 24288

JB008 Jigsaw 8in Blade 24-DEC-19 6 5 99.87 .05 24288

CD00X Cordless Drill 20-JAN-20 12 5 38.95 .05 25595

CH10X Claw Hammer 20-JAN-20 23 10 9.95 .1 21225

SH100 Sledge Hammer 02-JAN-20 8 5 14.4 .05

RF100 Rat Tail File 15-DEC-19 43 20 4.99 0 21344

HC100 Hicut Chain Saw 07-FEB-20 11 5 256.99 .05 24288

HW15X HiVeld Hammer 10-JAN-20 60 15 15.5 0 24992

P\_COD DESC P\_DATE QTY P\_MIN P\_PRICE P\_DISC V\_CODE

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

PP101 PVC Pipe 20-FEB-20 188 75 5.87 0

MC001 Metal Screw 01-MAR-20 172 75 6.99 0 21225

WC025 2.5in wide Screw 24-FEB-20 237 100 8.45 0 21231

SM48X Steel Malting Mesh 17-JAN-20 18 5 119.95 .01 25595

CL025 Hrd.Spring 1/4in 15-JAN-20 15 8 39.95 0 23119

CL050 Hrd.Spring 1/2in 15-JAN-20 23 5 43.99 0 23119

17 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 09 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write SQL code that lists all products that were supplied by vendors belonging to the state ‘KY' arranged in increasing sequence of vendor code. The output should include vendor code, vendor's name, product code, product description, vendor contact, and inventory purchase date.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**SELECT V.V\_CODE, V\_NAME, P\_CODE, DESCRIPT,V\_CONTACT,P\_DATE**

**FROM PRODUCT P, VENDOR V**

**WHERE**

**P.V\_CODE = V.V\_CODE**

**AND V.V\_STATE = 'KY'**

**ORDER BY V.V\_CODE ASC;**

V\_CODE V\_NAME P\_COD DESCRIPT V\_CONTACT P\_DATE

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21344 Gomez Sons SB900 9.00 in Saw Blade Mark Welder 13-NOV-19

21344 Gomez Sons SB725 7.25 in Saw Blade Mark Welder 13-DEC-19

21344 Gomez Sons RF100 Rat Tail File Mark Welder 15-DEC-19

24992 INDIAN MASTERS AB111 Power Drill SHASHWAT 12-AUG-20

24992 INDIAN MASTERS PP102 PVC Pipe SHASHWAT 13-AUG-20

24992 INDIAN MASTERS HW15X HiVeld Hammer SHASHWAT 10-JAN-20

6 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 10 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write SQL code that will list details of customers who purchased the products CDOOX or PP101. The output must include customer name (combination of FName & LName), product code and date of purchase.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**SELECT UNIQUE FNAME, LNAME, P\_CODE, INV\_DATE**

**FROM LINE L, INVOICE I, CUSTOMER C**

**WHERE**

**L.INV\_NUM = I.INV\_NUM**

**AND I.C\_CODE = C.C\_CODE**

**AND L.P\_CODE IN ('CD00X','PP101');**

FNAME LNAME P\_COD INV\_DATE

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Kathy Smith CD00X 16-JAN-20

Elena Johnson PP101 17-JAN-20

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 11 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write SQL code that for each customer lists invoices in decreasing order. You must but keep ascending sequence for customers in the output. The output should show customer code, invoice number, line units and line price**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**SELECT C\_CODE, I.INV\_NUM, L\_UNITS, L\_PRICE**

**FROM LINE L, INVOICE I**

**WHERE I.INV\_NUM = L.INV\_NUM**

**ORDER BY I.C\_CODE ASC, I.INV\_NUM DESC;**

C\_CODE INV\_NUM L\_UNITS L\_PRICE

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10011 1008 5 5.87

10011 1008 3 119.95

10011 1008 1 9.95

10011 1005 12 5.87

10011 1002 2 4.99

10012 1003 1 38.95

10012 1003 1 39.95

10012 1003 5 14.99

10014 1006 3 6.99

10014 1006 1 109.92

10014 1006 1 9.95

10014 1006 1 256.99

10014 1001 1 14.99

10014 1001 1 9.95

10015 1007 2 14.99

10015 1007 1 4.99

10018 1004 3 4.99

10018 1004 2 9.95

10020 1009 20 15.5

19 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* QUERY – 12 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Write SQL code that will modify Query-11, to include the subtotals for each of the line with invoice numbers. [You are required compute a derived column SUBTOTAL as L\_UNITS \* L\_PRICE].**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**SELECT C\_CODE, I.INV\_NUM, L\_UNITS, L\_PRICE, (L\_UNITS\*L\_PRICE)**

**AS SUBTOTAL**

**FROM LINE L, INVOICE I**

**WHERE I.INV\_NUM = L.INV\_NUM**

**ORDER BY I.C\_CODE ASC, I.INV\_NUM DESC**

C\_CODE INV\_NUM L\_UNITS L\_PRICE SUBTOTAL

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10011 1008 5 5.87 29.35

10011 1008 3 119.95 359.85

10011 1008 1 9.95 9.95

10011 1005 12 5.87 70.44

10011 1002 2 4.99 9.98

10012 1003 1 38.95 38.95

10012 1003 1 39.95 39.95

10012 1003 5 14.99 74.95

10014 1006 3 6.99 20.97

10014 1006 1 109.92 109.92

10014 1006 1 9.95 9.95

10014 1006 1 256.99 256.99

10014 1001 1 14.99 14.99

10014 1001 1 9.95 9.95

10015 1007 2 14.99 29.98

10015 1007 1 4.99 4.99

10018 1004 3 4.99 14.97

10018 1004 2 9.95 19.9

10020 1009 20 15.5 310

19 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* VIVA-VOCE \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Q1 – Bring out differences among super key, candidate key and primary key.**

a) Super key is a single key or a group of multiple keys that can uniquely identify tuples in a table and can contain redundant attributes that might not be important for identifying tuples.

b) Candidate key is a subset of Super keys. They contain only those attributes which are required to uniquely identify tuple. All Candidate keys are Super Keys but vice-versa is not true.

c) Primary key is a Candidate key chosen to uniquely identify tuples in the table. Primary key values should be unique and non-null.

d) There can be multiple Super keys and Candidate keys in a table, but there can be only one Primary key in a table.

**Q2 – Differentiate between primary key constraint and unique constraint.**

A UNIQUE constraint is similar to PRIMARY key, but you can have more than one UNIQUE constraint per table.

When you declare a UNIQUE constraint, SQL Server creates a UNIQUE index to speed up the process of searching for duplicates. In this case the index defaults to NONCLUSTERED index, because you can have only one CLUSTERED index per table.

The number of UNIQUE constraints per table is limited by the number of indexes on the table i.e. 249 NONCLUSTERED index and one possible CLUSTERED index.

Contrary to PRIMARY key UNIQUE constraints can accept NULL but just once. If the constraint is defined in a combination of fields, then every field can accept NULL and can have some values on them, as long as the combination values is unique.

**Q3 – How DROP TABLE differs from Truncate?**

DROP is a DDL (Data Definition Language) command and is used to remove table definition and indexes, data, constraints, triggers etc. for that table. Performance-wise the DROP command is quick to perform but slower than TRUNCATE because it gives rise to complications. Unlike DELETE we can’t rollback the data after using the DROP command. In the DROP command, table space is freed from memory because it permanently delete table as well as all its contents.

Whereas TRUNCATE is a DDL (Data Definition Language) command. It is used to delete all the tuples from the table. Like the DROP command, the TRUNCATE command also does not contain a WHERE clause. The TRUNCATE command is faster than both the DROP and the DELETE command. Like the DROP command we also can’t rollback the data after using this command.

**Q4 – How does Default differs from CHECK?**

The CHECK constraint in SQL is basically used to put a value limit on the values that can be put in a column.  
A DEFAULT constraint, on the other hand, is used to assign default values to the columns.

**INFERENCE**: In this practical, first of all we learnt to run the SQL script on Oracle and then executed different queries. The use of ORDER BY and various DDL commands was understood through this practical. Dealing and resolving the different types of error due to integrity constraints and etc. was also learnt.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* END \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***