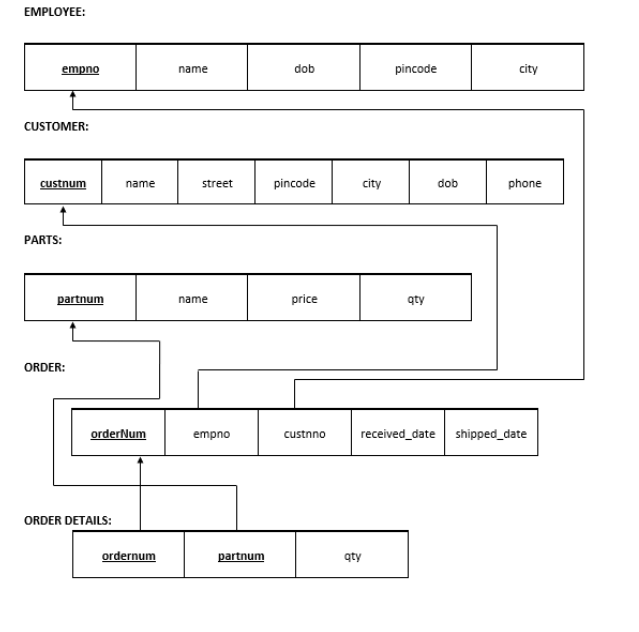
**UCS 1412 - DATABASE LAB**

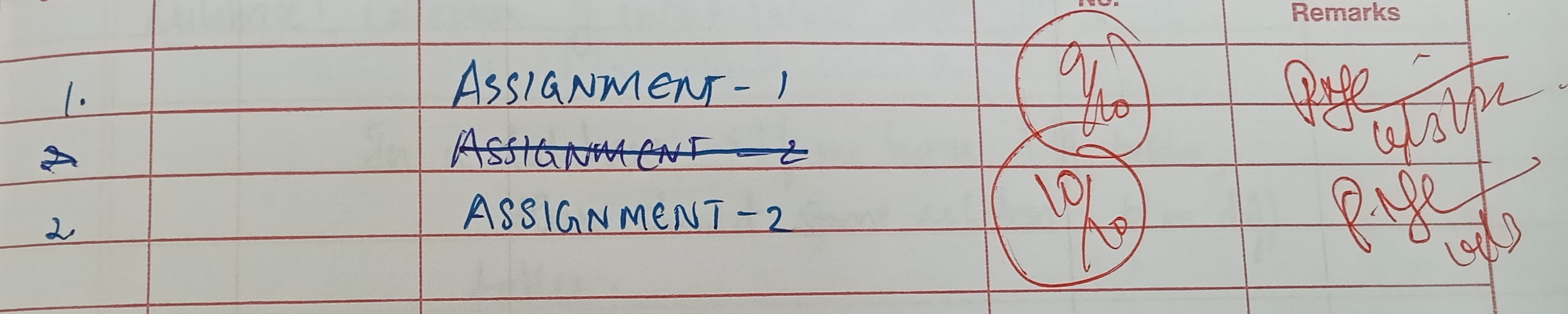
**ASSIGNMENT 1- DDL for Mail Order Database**

NAME: DIKSHITHA VANI V

ROLL NO: 205001032

**SCHEMA DIAGRAM:**

****

****

**SQL SCRIPT FILE:**

SQL SCRIPT

SQL> REM \*\*\*SSN COLLEGE OF ENGINEERING\*\*\*

SQL> REM \*\*\*DEPARTMENT OF COMPUTER SCIENCE ENGINEERING\*\*\*

SQL> REM \*\*\*AY: 2021 - 2022\*\*\*

SQL> REM \*\*\*UCS1412 - DATABASE MANAGEMENT SYSTEMS LAB\*\*\*

SQL> REM \*\*\*Name:DIKSHITHA VANI V\*\*\*

SQL> REM \*\*\*Register No.: 205001032\*\*\*

SQL> REM \*\*\*Date: 11.03.2022\*\*\*

SQL> REM \*\*\*Assignment 1: DDL and DML for Mail Order Database\*\*\*

SQL>

SQL>

SQL> REM \*\*\*Drop existing tables\*\*\*

SQL> drop table OrderDetails;

Table dropped.

SQL> drop table Orders;

Table dropped.

SQL> drop table Parts;

Table dropped.

SQL> drop table Customer;

Table dropped.

SQL> drop table Employee;

Table dropped.

SQL>

SQL> REM \*\*\*Creating Employee TABLE\*\*\*

SQL>

SQL> create table Employee ( empNo varchar2(4) CONSTRAINT pkEmp1 PRIMARY KEY ,

2 name varchar2(15) ,

3 DOB DATE, pincode NUMBER(6),

4 city varchar2(15),

5 constraint chc check (empNo like 'E%') );

Table created.

SQL>

SQL> REM \*\*\*\*\* Describing Employee table \*\*\*\*\*

SQL> desc Employee;

Name Null? Type

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

EMPNO NOT NULL VARCHAR2(4)

NAME VARCHAR2(15)

DOB DATE

PINCODE NUMBER(6)

CITY VARCHAR2(15)

SQL>

SQL> REM \*\*\*\*\* Inserting a valid tuple in Employee table \*\*\*\*\*

SQL>

SQL> insert into Employee Values ( 'E100' , 'AAA' , '12-DEC-1990' , 600010, 'chennai');

1 row created.

SQL> insert into Employee Values ( 'E101' , 'CCC' , '15-JUN-1990' , 600010, 'chennai');

1 row created.

SQL>

SQL> REM \*\*\*\*\* Violating constraints of employee table \*\*\*\*\*

SQL>

SQL> REM \*Violating primary key constraint for employee table\*

SQL> insert into Employee Values ( 'E100' , 'BBB' , '19-JUL-1999' , 600019, 'chennai');

insert into Employee Values ( 'E100' , 'BBB' , '19-JUL-1999' , 600019, 'chennai')

\*

ERROR at line 1:

ORA-00001: unique constraint (SYS.PKEMP1) violated

SQL>

SQL> REM \*violating check constraint for employee table\*

SQL> insert into Employee values ('F101' , 'ABC' , '12-DEC-1990' , 600100 , 'chennai');

insert into Employee values ('F101' , 'ABC' , '12-DEC-1990' , 600100 , 'chennai')

\*

ERROR at line 1:

ORA-02290: check constraint (SYS.CHC) violated

SQL>

SQL>

SQL> REM \*\* Displaying Table \*\*

SQL> select\*from Employee;

EMPN NAME DOB PINCODE CITY

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

E100 AAA 12-DEC-90 600010 chennai

E101 CCC 15-JUN-90 600010 chennai

SQL>

SQL> REM \*\*\*Creating Customer TABLE\*\*\*

SQL> create table Customer ( cusNo varchar2(4) CONSTRAINT pkcus2 PRIMARY KEY ,

2 cusName varchar2(15) ,

3 streetName varchar2(15),

4 pincode NUMBER(6),

5 city varchar2(15) ,

6 dob DATE ,

7 phNo Number(10) CONSTRAINT uqcus1 UNIQUE ,

8 constraint chc1 check (cusNo like 'C%'));

Table created.

SQL>

SQL>

SQL> REM \*\*\*\*\* Describing Customer table \*\*\*\*\*

SQL> desc Customer;

Name Null? Type

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

CUSNO NOT NULL VARCHAR2(4)

CUSNAME VARCHAR2(15)

STREETNAME VARCHAR2(15)

PINCODE NUMBER(6)

CITY VARCHAR2(15)

DOB DATE

PHNO NUMBER(10)

SQL>

SQL> REM \*\*\*\*\* Inserting valid tuples in customer table \*\*\*\*\*

SQL>

SQL> insert into Customer values ( 'C100' , 'KKK' , 'ABC street' , 600100 , 'chennai' , '15-JUN-1998' , 9840411123 );

1 row created.

SQL>

SQL> insert into Customer values ( 'C101' , 'KKL' , 'BBC street' , 600123 , 'chennai' , '19-JUL-1978' , 9840411129 );

1 row created.

SQL>

SQL>

SQL> REM \*violating primary key constraint of customer table\*

SQL> insert into Customer values ( 'C101' , 'BKL' , 'BBC street' , 600123 , 'chennai' , '19-JUL-1978' , 9040411129 );

insert into Customer values ( 'C101' , 'BKL' , 'BBC street' , 600123 , 'chennai' , '19-JUL-1978' , 9040411129 )

\*

ERROR at line 1:

ORA-00001: unique constraint (SYS.PKCUS2) violated

SQL>

SQL> REM \*violating unique key constraint of phone number attribute\*

SQL> insert into Customer values ( 'C105' , 'KKL' , 'BBC street' , 600123 , 'chennai' , '19-JUL-1978' , 9840411129 );

insert into Customer values ( 'C105' , 'KKL' , 'BBC street' , 600123 , 'chennai' , '19-JUL-1978' , 9840411129 )

\*

ERROR at line 1:

ORA-00001: unique constraint (SYS.UQCUS1) violated

SQL>

SQL> REM \*violating check constraint of customer table\*

SQL> insert into Customer values ( 'D101' , 'KKL' , 'BBC street' , 600123 , 'chennai' , '19-JUL-1978' , 9840411129 );

insert into Customer values ( 'D101' , 'KKL' , 'BBC street' , 600123 , 'chennai' , '19-JUL-1978' , 9840411129 )

\*

ERROR at line 1:

ORA-02290: check constraint (SYS.CHC1) violated

SQL>

SQL> REM \*\* Displaying Table \*\*

SQL> select\*from Customer;

CUSN CUSNAME STREETNAME PINCODE CITY DOB

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

PHNO

----------

C100 KKK ABC street 600100 chennai 15-JUN-98

9840411123

C101 KKL BBC street 600123 chennai 19-JUL-78

9840411129

SQL>

SQL> REM \*\*\*Creating Parts TABLE\*\*\*

SQL> create table Parts( partNum varchar2(4) CONSTRAINT pkparts PRIMARY KEY ,

2 pNAme varchar2(15) ,

3 price INT CONSTRAINT nullpart NOT NULL ,

4 quantity INT ,

5 constraint chc2 check (partNum like 'P%') ) ;

Table created.

SQL>

SQL>

SQL> REM \*\*\*\*\* Describing Parts table \*\*\*\*\*

SQL> desc Parts;

Name Null? Type

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

PARTNUM NOT NULL VARCHAR2(4)

PNAME VARCHAR2(15)

PRICE NOT NULL NUMBER(38)

QUANTITY NUMBER(38)

SQL>

SQL> REM \*\*\*\*\* Inserting valid tuples in part table \*\*\*\*\*

SQL> insert into Parts Values ( 'P100' , 'bat' , 1000 , 50 );

1 row created.

SQL> insert into Parts Values ( 'P101' , 'ball' , 100 , 100 );

1 row created.

SQL>

SQL> REM \*\*\*\*\* Violating constraints of part table \*\*\*\*\*

SQL>

SQL> REM \*violating primary key constraint of part table\*

SQL> insert into Parts Values ( 'P100' , 'toys' , 8000 , 10 );

insert into Parts Values ( 'P100' , 'toys' , 8000 , 10 )

\*

ERROR at line 1:

ORA-00001: unique constraint (SYS.PKPARTS) violated

SQL>

SQL> REM \*Violating not null constraint of price\*

SQL> insert into Parts Values ( 'P105' , 'toys' , NULL , 10 );

insert into Parts Values ( 'P105' , 'toys' , NULL , 10 )

\*

ERROR at line 1:

ORA-01400: cannot insert NULL into ("SYS"."PARTS"."PRICE")

SQL>

SQL> REM \*violating check constraint of part name\*

SQL> insert into Parts Values ( 'K105' , 'toys' , 8000 , 10 );

insert into Parts Values ( 'K105' , 'toys' , 8000 , 10 )

\*

ERROR at line 1:

ORA-02290: check constraint (SYS.CHC2) violated

SQL>

SQL>

SQL> REM \*\* Displaying Table \*\*

SQL> select\*from Parts;

PART PNAME PRICE QUANTITY

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

P100 bat 1000 50

P101 ball 100 100

SQL>

SQL>

SQL> REM \*\*\*Creating Orders TABLE\*\*\*

SQL> create table Orders ( oNum varchar2(4) CONSTRAINT pko1 PRIMARY KEY ,

2 eNum varchar2(4) CONSTRAINT fko2 REFERENCES Employee(empNo),

3 cNum varchar2(4) CONSTRAINT fko3 REFERENCES Customer(cusNo) ,

4 shipped DATE ,

5 received DATE,

6 CONSTRAINT chko2 check(received<shipped) );

Table created.

SQL>

SQL> REM \*\*\*\*\* Describing Orders table \*\*\*\*\*

SQL> desc Orders;

Name Null? Type

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

ONUM NOT NULL VARCHAR2(4)

ENUM VARCHAR2(4)

CNUM VARCHAR2(4)

SHIPPED DATE

RECEIVED DATE

SQL>

SQL> REM \*\*\*\*\* Inserting valid tuples in Orders table \*\*\*\*\*

SQL> insert into Orders VALUES ('O100' , 'E100' , 'C100' , '12-JUN-21' , '09-JUN-21');

1 row created.

SQL> insert into Orders VALUES ('O102' , 'E100' , 'C100' , '15-MAY-20' , '10-MAY-20');

1 row created.

SQL> insert into Orders VALUES ('O103' , 'E100' , 'C101' ,'16-JUL-20' , '05-JUL-20');

1 row created.

SQL> insert into Orders VALUES ('O104' , 'E101' , 'C101' ,'16-JUL-20' , '05-JUL-20');

1 row created.

SQL>

SQL> REM \*\*\*\*\* Violating constraints of Orders table \*\*\*\*\*

SQL>

SQL> REM \*violating primary key constraint of Orders table\*

SQL> insert into Orders VALUES ('O100' , 'E100' , 'C100' , '15-MAY-20' , '10-MAY-20');

insert into Orders VALUES ('O100' , 'E100' , 'C100' , '15-MAY-20' , '10-MAY-20')

\*

ERROR at line 1:

ORA-00001: unique constraint (SYS.PKO1) violated

SQL>

SQL> REM \*violating foreign key constraint of Orders table\*

SQL> insert into Orders VALUES ('O105' , 'E102' , 'C100' , '15-MAY-20' , '10-MAY-20');

insert into Orders VALUES ('O105' , 'E102' , 'C100' , '15-MAY-20' , '10-MAY-20')

\*

ERROR at line 1:

ORA-02291: integrity constraint (SYS.FKO2) violated - parent key not found

SQL> insert into Orders VALUES ('O105' , 'E101' , 'C105' , '15-MAY-20' , '10-MAY-20');

insert into Orders VALUES ('O105' , 'E101' , 'C105' , '15-MAY-20' , '10-MAY-20')

\*

ERROR at line 1:

ORA-02291: integrity constraint (SYS.FKO3) violated - parent key not found

SQL>

SQL> REM \*violating check constraint of Orders table\*

SQL> insert into Orders VALUES ('O105' , 'E101' , 'C101' , '10-MAY-20' , '15-MAY-20');

insert into Orders VALUES ('O105' , 'E101' , 'C101' , '10-MAY-20' , '15-MAY-20')

\*

ERROR at line 1:

ORA-02290: check constraint (SYS.CHKO2) violated

SQL>

SQL> REM \*\* Displaying Table \*\*

SQL> select\*from Orders;

ONUM ENUM CNUM SHIPPED RECEIVED

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

O100 E100 C100 12-JUN-21 09-JUN-21

O102 E100 C100 15-MAY-20 10-MAY-20

O103 E100 C101 16-JUL-20 05-JUL-20

O104 E101 C101 16-JUL-20 05-JUL-20

SQL>

SQL>

SQL> REM \*\*\*Creating OrderDetails TABLE\*\*\*

SQL>

SQL> create table OrderDetails ( oNum varchar2(4) CONSTRAINT fko5 REFERENCES Orders(oNum),

2 pnum varchar2(4) CONSTRAINT fko1 REFERENCES PARTS(partNum) ,

3 quantity INT CONSTRAINT chko CHECK (quantity>0),

4 CONSTRAINT pkor1 PRIMARY KEY (oNum,pnum) );

Table created.

SQL>

SQL>

SQL> REM \*\*\*\*\* Describing OrderDetails table \*\*\*\*\*

SQL> desc OrderDetails;

Name Null? Type

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

ONUM NOT NULL VARCHAR2(4)

PNUM NOT NULL VARCHAR2(4)

QUANTITY NUMBER(38)

SQL>

SQL> REM \*\*\*\*\* Inserting valid tuples in OrderDetails table \*\*\*\*\*

SQL> insert into OrderDetails VALUES ('O100' , 'P100' ,15);

1 row created.

SQL> insert into OrderDetails VALUES ('O102' , 'P101' ,15);

1 row created.

SQL> insert into OrderDetails VALUES ('O103' , 'P100' ,35);

1 row created.

SQL> insert into OrderDetails VALUES ('O100' , 'P101' ,55);

1 row created.

SQL>

SQL> REM \*\*\*\*\* Violating constraints of OrderDetails table \*\*\*\*\*

SQL> REM \*violating primary key constraint of Orders table\*

SQL> insert into OrderDetails VALUES ('O100' , 'P101' ,95);

insert into OrderDetails VALUES ('O100' , 'P101' ,95)

\*

ERROR at line 1:

ORA-00001: unique constraint (SYS.PKOR1) violated

SQL>

SQL> REM \*violating foreign key constraint of OrderDetails table\*

SQL> insert into OrderDetails VALUES ('O105' , 'P100' ,15);

insert into OrderDetails VALUES ('O105' , 'P100' ,15)

\*

ERROR at line 1:

ORA-02291: integrity constraint (SYS.FKO5) violated - parent key not found

SQL> insert into OrderDetails VALUES ('O100' , 'P105' ,15);

insert into OrderDetails VALUES ('O100' , 'P105' ,15)

\*

ERROR at line 1:

ORA-02291: integrity constraint (SYS.FKO1) violated - parent key not found

SQL>

SQL> REM \*violating check constraint of OrderDetails table\*

SQL> insert into OrderDetails VALUES ('O105' , 'P100' ,-50);

insert into OrderDetails VALUES ('O105' , 'P100' ,-50)

\*

ERROR at line 1:

ORA-02290: check constraint (SYS.CHKO) violated

SQL>

SQL>

SQL> REM \*\* Displaying Table \*\*

SQL> select\*from OrderDetails;

ONUM PNUM QUANTITY

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

O100 P100 15

O102 P101 15

O103 P100 35

O100 P101 55

SQL>

SQL> REM \*\* DML COMMANDS \*\*

SQL> REM \*\*\*\*\*Columns Parts (reorder level), Employees (hiredate) are added \*\*\*\*\*

SQL>

SQL> alter table Parts add reorder\_level Number(5);

Table altered.

SQL> alter table Employee add hiredate Date;

Table altered.

SQL>

SQL> REM \*\*Describing Employee and parts after adding a column\*\*

SQL> desc Employee;

Name Null? Type

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

EMPNO NOT NULL VARCHAR2(4)

NAME VARCHAR2(15)

DOB DATE

PINCODE NUMBER(6)

CITY VARCHAR2(15)

HIREDATE DATE

SQL> desc Parts;

Name Null? Type

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

PARTNUM NOT NULL VARCHAR2(4)

PNAME VARCHAR2(15)

PRICE NOT NULL NUMBER(38)

QUANTITY NUMBER(38)

REORDER\_LEVEL NUMBER(5)

SQL>

SQL> REM \*\*\*Domain constraint if size of variable is more than specified length \*\*\*

SQL> insert into Customer values ( 'C109' , 'abcdefghi jklmnop' , 'ABC street' , 600100 , 'chennai' , '15-JUN-1998' , 9840413456 );

insert into Customer values ( 'C109' , 'abcdefghi jklmnop' , 'ABC street' , 600100 , 'chennai' , '15-JUN-1998' , 9840413456 )

\*

ERROR at line 1:

ORA-12899: value too large for column "SYS"."CUSTOMER"."CUSNAME" (actual: 17,

maximum: 15)

SQL>

SQL> REM \*\*\* Increasing the width of customer name\*\*\*

SQL> alter table Customer modify cusname varchar2(25);

Table altered.

SQL>

SQL> REM \*\*\*Describing Customer \*\*\*

SQL> desc Customer;

Name Null? Type

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

CUSNO NOT NULL VARCHAR2(4)

CUSNAME VARCHAR2(25)

STREETNAME VARCHAR2(15)

PINCODE NUMBER(6)

CITY VARCHAR2(15)

DOB DATE

PHNO NUMBER(10)

SQL>

SQL> REM \*\*Inserting value after variable size is increased \*\*\*

SQL> insert into Customer values ( 'C109' , 'abcdefghi jklmnopqrs' , 'ABC street' , 600100 , 'chennai' , '15-JUN-1998' , 9840413456 );

1 row created.

SQL>

SQL> REM \*\*\*The date of birth of a customer can be addressed later / removed from the schema\*\*\*

SQL> alter table Customer drop column dob;

alter table Customer drop column dob

\*

ERROR at line 1:

ORA-12988: cannot drop column from table owned by SYS

SQL> desc Customer;

Name Null? Type

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

CUSNO NOT NULL VARCHAR2(4)

CUSNAME VARCHAR2(25)

STREETNAME VARCHAR2(15)

PINCODE NUMBER(6)

CITY VARCHAR2(15)

DOB DATE

PHNO NUMBER(10)

SQL> select\*from Customer;

CUSN CUSNAME STREETNAME PINCODE CITY

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

DOB PHNO

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

C100 KKK ABC street 600100 chennai

15-JUN-98 9840411123

C101 KKL BBC street 600123 chennai

19-JUL-78 9840411129

C109 abcdefghi jklmnopqrs ABC street 600100 chennai

15-JUN-98 9840413456

SQL>

SQL> REM \*\*\*An order can not be placed without the receive date \*\*\*

SQL> ALTER TABLE Orders MODIFY received date constraint received\_date\_nn not null;

Table altered.

SQL>

SQL> REM \*\*\*Describing Orders \*\*\*

SQL> desc Orders;

Name Null? Type

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

ONUM NOT NULL VARCHAR2(4)

ENUM VARCHAR2(4)

CNUM VARCHAR2(4)

SHIPPED DATE

RECEIVED NOT NULL DATE

SQL>

SQL> REM \*\*\*A customer may cancel an order or ordered part(s) may not be available in a stock.\*\*\*

SQL> REM\*\*\*Hence on removing the details of the order, ensure that all the corresponding details\*\*\*

SQL> REM \*\*\*are also deleted\*\*\*

SQL>

SQL> REM \*\*\*Displaying orders and OrderDetails table before deletion of a particular ONUM\*\*\*

SQL> select\* from Orders;

ONUM ENUM CNUM SHIPPED RECEIVED

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

O100 E100 C100 12-JUN-21 09-JUN-21

O102 E100 C100 15-MAY-20 10-MAY-20

O103 E100 C101 16-JUL-20 05-JUL-20

O104 E101 C101 16-JUL-20 05-JUL-20

SQL> select\* from OrderDetails;

ONUM PNUM QUANTITY

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

O100 P100 15

O102 P101 15

O103 P100 35

O100 P101 55

SQL>

SQL> REM \*\*integrity constraint violation \*\*

SQL> delete from Orders where Onum='O100';

delete from Orders where Onum='O100'

\*

ERROR at line 1:

ORA-02292: integrity constraint (SYS.FKO5) violated - child record found

SQL>

SQL> REM \*\*removing constraint and using DELETE CASCADE\*\*

SQL> alter table OrderDetails drop constraint fko5 ;

Table altered.

SQL> alter table OrderDetails ADD constraint fko5\_1 foreign key(ONUM) references Orders(ONUM) ON DELETE CASCADE;

Table altered.

SQL> delete from Orders where ONUM='O100';

1 row deleted.

SQL>

SQL> REM \*\*\*Displaying orders and OrderDetails table after deletion of a particular ONUM\*\*\*

SQL> select\* from Orders;

ONUM ENUM CNUM SHIPPED RECEIVED

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

O102 E100 C100 15-MAY-20 10-MAY-20

O103 E100 C101 16-JUL-20 05-JUL-20

O104 E101 C101 16-JUL-20 05-JUL-20

SQL> select\* from OrderDetails;

ONUM PNUM QUANTITY

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

O102 P101 15

O103 P100 35

SQL> select\*from Orders;

ONUM ENUM CNUM SHIPPED RECEIVED

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

O102 E100 C100 15-MAY-20 10-MAY-20

O103 E100 C101 16-JUL-20 05-JUL-20

O104 E101 C101 16-JUL-20 05-JUL-20

SQL> select\*from OrderDetails;

ONUM PNUM QUANTITY

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

O102 P101 15

O103 P100 35