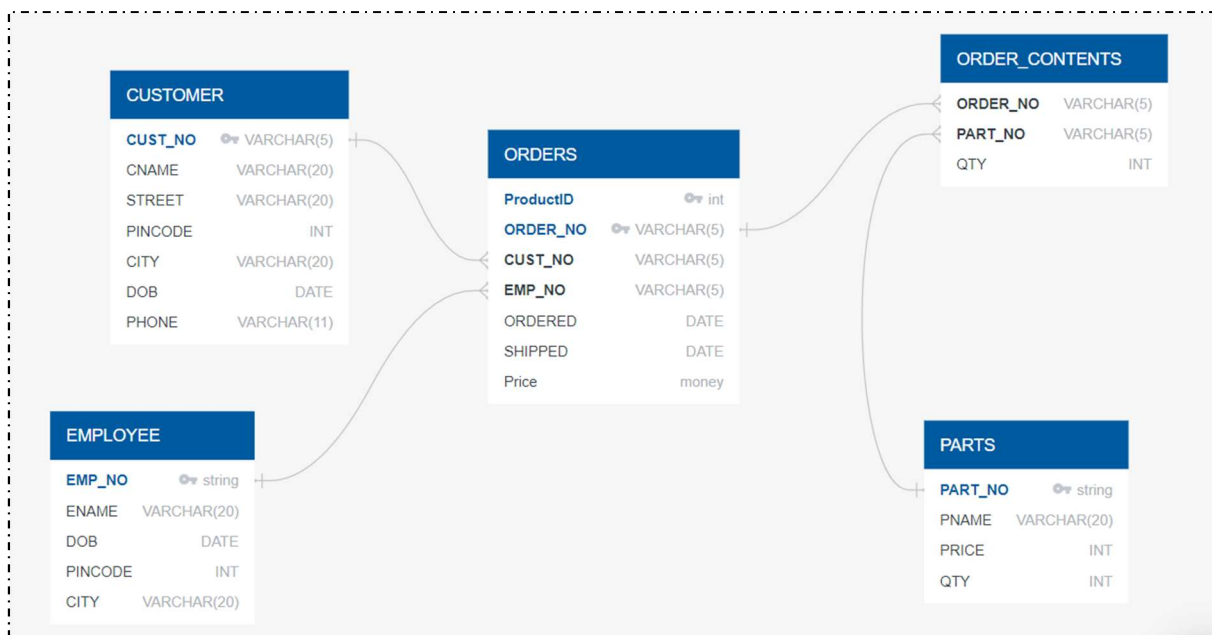*Name: Jayannthan P T*   *Dept: CSE 'A'*   *Roll No.: 205001049*

Title: DDL for Mail Order Database

Schema Diagram:

Observation Index Correction:

Spool File Output:

```
SQL> REM ***DROPPING TABLES***
SQL>
SQL> DROP TABLE ORDER_CONTENTS;

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>
SQL> REM ***CREATING TABLE EMPLOYEE***
SQL>
SQL> CREATE TABLE EMPLOYEE(
  2  EMP_NO VARCHAR(5) CONSTRAINT E_PRIMEKEY PRIMARY KEY,
  3  ENAME VARCHAR(20),
  4  DOB DATE,
  5  PINCODE INT,
  6  CITY VARCHAR(20),
  7  CONSTRAINT ESTART_LETTER CHECK(EMP_NO LIKE 'E%')
  8  );

Table created.

SQL> DESC EMPLOYEE;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_NO                                    NOT NULL VARCHAR2(5)
 ENAME                                              VARCHAR2(20)
 DOB                                                DATE
 PINCODE                                            NUMBER(38)
 CITY                                               VARCHAR2(20)

SQL>
SQL> REM ***INSERTING VALUES INTO EMPLOYEE***
SQL>
SQL> INSERT INTO EMPLOYEE VALUES
  2  ('E01','Tony','05-DEC-1992',601101,'Chennai');

1 row created.

SQL> INSERT INTO EMPLOYEE VALUES
  2  ('E02','Steve','23-MAR-1989',601050,'Madurai');

1 row created.

SQL> INSERT INTO EMPLOYEE VALUES
  2  ('E03','Peter','17-JUN-1995',601302,'Trichy');

1 row created.
```

```
SQL>
SQL> INSERT INTO EMPLOYEE VALUES
  2  ('E04','Chris','07-JAN-1985',601023,'Kovai');

1 row created.


SQL>
SQL>
SQL> REM ***check constraint ESTART_LETTER***
SQL> INSERT INTO Employee VALUES ('03','Roshan','29/MAR/2022',600006,'trichy');
INSERT INTO Employee VALUES ('03','Roshan','29/MAR/2022',600006,'trichy')
*
ERROR at line 1:
ORA-02290: check constraint (SYSTEM.ESTART_LETTER) violated



SQL>
SQL>
SQL> REM ***CREATING TABLE CUSTOMER***
SQL>
SQL> CREATE TABLE CUSTOMER(
  2  CUST_NO VARCHAR(5) CONSTRAINT C_PRIMEKEY PRIMARY KEY,
  3  CNAME VARCHAR(20),
  4  STREET VARCHAR(20),
  5  PINCODE INT,
  6  CITY VARCHAR(20),
  7  DOB DATE,
  8  PHONE VARCHAR(11) CONSTRAINT PHONE_UNIQUE UNIQUE,
  9  CONSTRAINT CSTART_LETTER CHECK(CUST_NO LIKE 'C%'));

Table created.

SQL> DESC CUSTOMER;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CUST_NO                                   NOT NULL VARCHAR2(5)
 CNAME                                              VARCHAR2(20)
 STREET                                             VARCHAR2(20)
 PINCODE                                            NUMBER(38)
 CITY                                               VARCHAR2(20)
 DOB                                                DATE
 PHONE                                              VARCHAR2(11)

SQL>
SQL> REM ***INSERTING VALUES INTO CUSTOMER***
SQL>
SQL> INSERT INTO CUSTOMER VALUES
  2  ('C01','Sam','Street1',501101,'Delhi','20-Jul-1999',9673125647);

1 row created.

SQL> INSERT INTO CUSTOMER VALUES
  2  ('C02','Shyam','Street2',501060,'Mumbai','19-Oct-1979',9670005647);
```

```
1 row created.

SQL> INSERT INTO CUSTOMER VALUES
  2  ('C03','Stark','Street3',501101,'Kolkata','20-Jul-1999',9848949218);

1 row created.

SQL> INSERT INTO CUSTOMER VALUES
  2  ('C04','Gwen','Street4',501101,'Hyderabad','20-Jul-1999',9676489841);

1 row created.

SQL>
SQL>
SQL> REM ***check constraint C_PRIMEKEY***
SQL> INSERT INTO CUSTOMER VALUES
('C03','Te','Street',620265,'Madurai','30/JUL/2022',9998865646);
INSERT INTO CUSTOMER VALUES
('C03','Te','Street',620265,'Madurai','30/JUL/2022',9998865646)
*
ERROR at line 1:
ORA-00001: unique constraint (SYSTEM.C_PRIMEKEY) violated


SQL> REM ***check constraint CSTART_LETTER***
SQL> INSERT INTO CUSTOMER VALUES
('04','Tem','Street',620275,'pondicherry','30/JUL/2022',999866546);
INSERT INTO CUSTOMER VALUES
('04','Tem','Street',620275,'pondicherry','30/JUL/2022',999866546)
*
ERROR at line 1:
ORA-02290: check constraint (SYSTEM.CSTART_LETTER) violated



SQL>
SQL>
SQL>
SQL> REM ***CREATING TABLE PARTS***
SQL>
SQL> CREATE TABLE PARTS(
  2  PART_NO VARCHAR(5) CONSTRAINT P_PRIMEKEY PRIMARY KEY,
  3  PNAME VARCHAR(20),
  4  PRICE INT CONSTRAINT PRICENOTNULL NOT NULL,
  5  QTY INT ,
  6  CONSTRAINT QTY_MORE CHECK(QTY > 0),
  7  CONSTRAINT PSTART_LETTER CHECK(PART_NO LIKE 'P%'));

Table created.

SQL> DESC PARTS;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 PART_NO                                   NOT NULL VARCHAR2(5)
 PNAME                                              VARCHAR2(20)
```

```
 PRICE                                         NOT NULL NUMBER(38)
 QTY                                                    NUMBER(38)

SQL>
SQL>
SQL> REM ***INSERTING VALUES INTO PARTS***
SQL>
SQL> INSERT INTO PARTS VALUES
  2  ('P01','Screw',70,1000);

1 row created.

SQL> INSERT INTO PARTS VALUES
  2  ('P02','Pipe',50,1500);

1 row created.

SQL> INSERT INTO PARTS VALUES
  2  ('P03','Wire',10,1200);

1 row created.

SQL> INSERT INTO PARTS VALUES
  2  ('P04','Wood',90,1100);

1 row created.

SQL>
SQL>
SQL> REM ***check constraint PSTART_LETTER***
SQL> INSERT INTO PARTS VALUES ('01', 'ABD', 2500, 25);
INSERT INTO PARTS VALUES ('01', 'ABD', 2500, 25)
*
ERROR at line 1:
ORA-02290: check constraint (SYSTEM.PSTART_LETTER) violated


SQL> REM ***check constraint P_PRIMEKEY***
SQL> INSERT INTO PARTS VALUES ('P04', 'ABD', 2500, 25);
INSERT INTO PARTS VALUES ('P04', 'ABD', 2500, 25)
*
ERROR at line 1:
ORA-00001: unique constraint (SYSTEM.P_PRIMEKEY) violated



SQL>
SQL>
SQL> REM ***CREATING TABLE ORDERS***
SQL>
SQL> CREATE TABLE ORDERS(
  2  ORDER_NO VARCHAR(5) CONSTRAINT O_PRIMEKEY PRIMARY KEY,
  3  CUST_NO VARCHAR(5),
  4  EMP_NO VARCHAR(5),
  5  ORDERED DATE,
```

```
  6   SHIPPED DATE,
  7   CONSTRAINT DATE_CHECK CHECK(SHIPPED > ORDERED),
  8   CONSTRAINT OSTART_LETTER CHECK(ORDER_NO LIKE 'O%'),
  9   CONSTRAINT FORKEYEMP FOREIGN KEY(EMP_NO) REFERENCES EMPLOYEE(EMP_NO),
 10   CONSTRAINT FORKEYCUS FOREIGN KEY(CUST_NO) REFERENCES CUSTOMER(CUST_NO));

Table created.

SQL> DESC ORDERS;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ORDER_NO                                  NOT NULL VARCHAR2(5)
 CUST_NO                                            VARCHAR2(5)
 EMP_NO                                             VARCHAR2(5)
 ORDERED                                            DATE
 SHIPPED                                            DATE

SQL>
SQL>
SQL> REM ***INSERTING VALUES INTO ORDERS***
SQL>
SQL> INSERT INTO ORDERS VALUES
  2  ('O01','C01','E02','26-Jan-2022','3-Feb-2022');

1 row created.

SQL> INSERT INTO ORDERS VALUES
  2  ('O02','C03','E01','29-Jan-2022','8-Feb-2022');

1 row created.

SQL> INSERT INTO ORDERS VALUES
  2  ('O03','C02','E04','8-Feb-2022','19-Feb-2022');

1 row created.

SQL> INSERT INTO ORDERS VALUES
  2  ('O04','C04','E03','13-Jan-2022','24-Jan-2022');

1 row created.

SQL>
SQL>
SQL> REM ***check constraint O_PRIMEKEY***
SQL> INSERT INTO Orders VALUES('O03', 'C02', 'E03', '12/JAN/2022', '24/JAN/2022');
INSERT INTO Orders VALUES('O03', 'C02', 'E03', '12/JAN/2022', '24/JAN/2022')
*
ERROR at line 1:
ORA-00001: unique constraint (SYSTEM.O_PRIMEKEY) violated


SQL> REM ***check constraint DATE_CHECK***
SQL> INSERT INTO Orders VALUES('O04','C04','E03','12/JAN/2022', '10/JAN/2022');
INSERT INTO Orders VALUES('O04','C04','E03','12/JAN/2022', '10/JAN/2022')
```

```
*
ERROR at line 1:
ORA-02290: check constraint (SYSTEM.DATE_CHECK) violated


SQL> REM ***check constraint FOREIGN KEYS***
SQL> INSERT INTO ORDERS VALUES ('O05','C00','E03','13-Jan-2022','24-Jan-2022');
INSERT INTO ORDERS VALUES ('O05','C00','E03','13-Jan-2022','24-Jan-2022')
*
ERROR at line 1:
ORA-02291: integrity constraint (SYSTEM.FORKEYCUS) violated - parent key not
found


SQL> INSERT INTO ORDERS VALUES ('O05','C01','E00','13-Jan-2022','24-Jan-2022');
INSERT INTO ORDERS VALUES ('O05','C01','E00','13-Jan-2022','24-Jan-2022')
*
ERROR at line 1:
ORA-02291: integrity constraint (SYSTEM.FORKEYEMP) violated - parent key not
found


SQL>
SQL> REM ***CREATING TABLE ORDER_CONTENTS***
SQL>
SQL> CREATE TABLE ORDER_CONTENTS(
  2  ORDER_NO VARCHAR(5),
  3  PART_NO VARCHAR(5),
  4  QTY INT,
  5  CONSTRAINT FORKEYORD FOREIGN KEY(ORDER_NO) REFERENCES ORDERS(ORDER_NO),
  6  CONSTRAINT FORKEYPART FOREIGN KEY(PART_NO) REFERENCES PARTS(PART_NO),
  7  CONSTRAINT ORDERCONTENTSPRIME PRIMARY KEY(ORDER_NO ,PART_NO));

Table created.

SQL> DESC ORDER_CONTENTS;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ORDER_NO                                  NOT NULL VARCHAR2(5)
 PART_NO                                   NOT NULL VARCHAR2(5)
 QTY                                                NUMBER(38)

SQL>
SQL> REM ***INSERTING VALUES INTO ORDER_CONTENTS***
SQL>
SQL> INSERT INTO ORDER_CONTENTS VALUES
  2  ('O01','P02', 50);

1 row created.


SQL> INSERT INTO ORDER_CONTENTS VALUES
  2  ('O03','P01', 45);

1 row created.
```

```
SQL> INSERT INTO ORDER_CONTENTS VALUES
  2  ('O02','P04', 55);

1 row created.

SQL> INSERT INTO ORDER_CONTENTS VALUES
  2  ('O01','P03', 78);

1 row created.

SQL> INSERT INTO ORDER_CONTENTS VALUES
  2  ('O04','P02', 25);

1 row created.

SQL>
SQL> REM ***check constraint FOREIGN KEYS***
SQL> INSERT INTO ORDER_CONTENTS VALUES('O03', 'P001',4);
INSERT INTO ORDER_CONTENTS VALUES('O03', 'P001',4)
*
ERROR at line 1:
ORA-02291: integrity constraint (SYSTEM.FORKEYPART) violated - parent key not
found


SQL> INSERT INTO ORDER_CONTENTS VALUES('O00', 'P04',4);
INSERT INTO ORDER_CONTENTS VALUES('O00', 'P04',4)
*
ERROR at line 1:
ORA-02291: integrity constraint (SYSTEM.FORKEYORD) violated - parent key not
found


SQL>
SQL>
SQL> REM ***ADDING REORDER_LEVEL IN PARTS***
SQL>
SQL> ALTER TABLE PARTS
  2  ADD REORDER_LEVEL INT;

Table altered.

SQL>
SQL>
SQL> REM ***ADDING HIRE_DATE IN EMPLOYEE***
SQL>
SQL> ALTER TABLE EMPLOYEE
  2  ADD HIRE_DATE DATE;

Table altered.

SQL>
SQL>
```

```
SQL> REM ***MODIFYING SIZE OF ENAME IN CUSTOMER***
SQL>
SQL> ALTER TABLE CUSTOMER
  2  MODIFY (CNAME  VARCHAR(25));

Table altered.


SQL>
SQL>
SQL> REM ***DELETING DOB IN CUSTOMER***
SQL>
SQL> ALTER TABLE CUSTOMER
  2  DROP COLUMN DOB;

Table altered.


SQL>
SQL>
SQL> REM ***MODIFYING SHIPPED NOT NULL IN ORDERS***
SQL>
SQL> ALTER TABLE ORDERS
  2  MODIFY (SHIPPED DATE CONSTRAINT RECIEVENOTNULL NOT NULL);

Table altered.


SQL>
SQL>
SQL>
SQL>
SQL> REM ***CASCADING***
SQL>
SQL> ALTER TABLE ORDER_CONTENTS
  2  DROP CONSTRAINT FORKEYORD;

Table altered.


SQL>
SQL>
SQL> ALTER TABLE ORDER_CONTENTS
  2  ADD CONSTRAINT FORKEYORD FOREIGN KEY(ORDER_NO) REFERENCES ORDERS(ORDER_NO) ON DELETE
CASCADE;

Table altered.


SQL>
SQL>
SQL>
SQL> REM ***VIEW TABLES***
SQL>
SQL> select * from employee;

EMP_N ENAME                DOB       PINCODE CITY                 HIRE_DATE
----- -------------------- --------- --------- -------------------- ---------
E01   Tony                 05-DEC-92    601101 Chennai
```

```
E02     Steve               23-MAR-89     601050 Madurai
E03     Peter               17-JUN-95     601302 Trichy
E04     Chris               07-JAN-85     601023 Kovai

SQL>
SQL> select * from customer;

CUST_ CNAME                     STREET               PINCODE
----- ------------------------- -------------------- ----------
CITY                 PHONE
-------------------- -----------
C01   Sam                       Street1                  501101
Delhi                9673125647

C02   Shyam                     Street2                  501060
Mumbai               9670005647

C03   Stark                     Street3                  501101
Kolkata              9848949218


CUST_ CNAME                     STREET               PINCODE
----- ------------------------- -------------------- ----------
CITY                 PHONE
-------------------- -----------
C04   Gwen                      Street4                  501101
Hyderabad            9676489841


SQL>
SQL> select * from parts;

PART_ PNAME                      PRICE        QTY REORDER_LEVEL
----- -------------------- ---------- ---------- --------------
P01   Screw                         70       1000
P02   Pipe                          50       1500
P03   Wire                          10       1200
P04   Wood                          90       1100

SQL> select * from orders;

ORDER CUST_ EMP_N ORDERED   SHIPPED
----- ----- ----- --------- ---------
O01   C01   E02   26-JAN-22 03-FEB-22
O02   C03   E01   29-JAN-22 08-FEB-22
O03   C02   E04   08-FEB-22 19-FEB-22
O04   C04   E03   13-JAN-22 24-JAN-22

SQL>
SQL> select * from order_contents;

ORDER PART_        QTY
----- ----- ----------
O01   P02           50
```

```
O03    P01              45
O02    P04              55
O01    P03              78
O04    P02              25


SQL>
SQL>
SQL>
SQL> REM ***CHECKING ON DELETE CASCADE***
SQL> DELETE FROM ORDERS WHERE ORDER_NO='O01';

1 row deleted.

SQL>
SQL>
SQL> select * from orders;

ORDER CUST_ EMP_N ORDERED   SHIPPED
----- ----- ----- --------- ---------
O02   C03   E01   29-JAN-22 08-FEB-22
O03   C02   E04   08-FEB-22 19-FEB-22
O04   C04   E03   13-JAN-22 24-JAN-22

SQL> select * from order_contents;

ORDER PART_         QTY
----- ----- ----------
O03   P01              45
O02   P04              55
O04   P02              25

SQL> spool off
```