

SSN COLLEGE OF ENGINEERING, KALAVAKKAM  
(An Autonomous Institution, Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

UCS1412 – DBMS Lab  
Assignment – 1

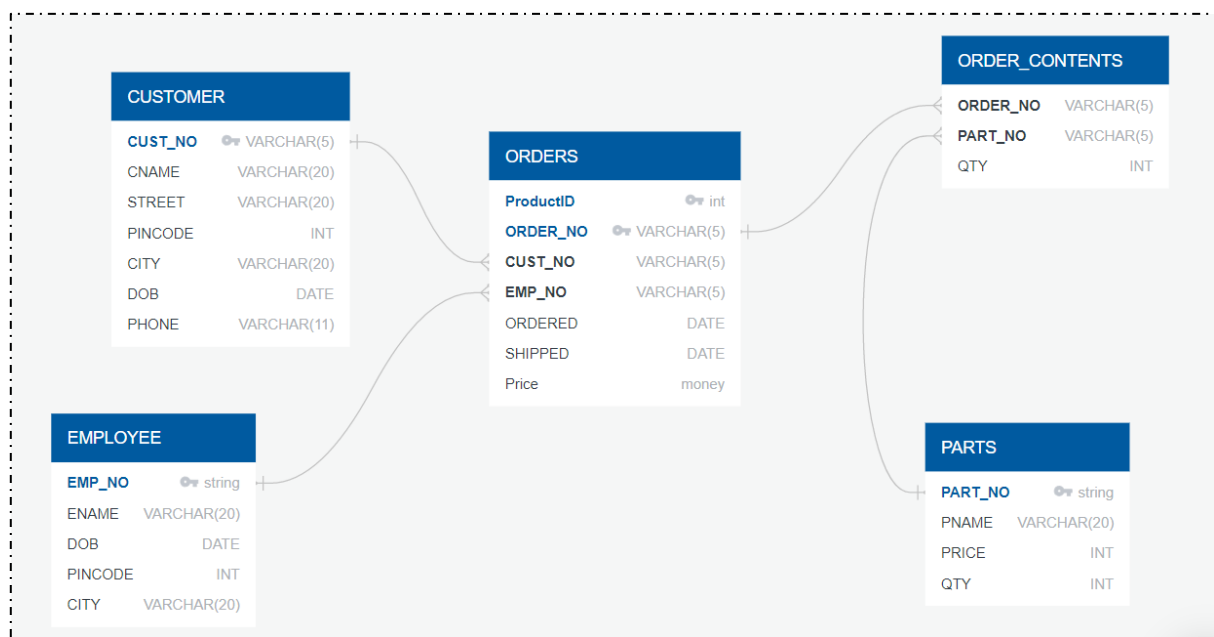
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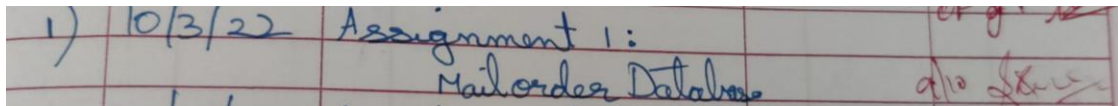
Roll No.: 205001049

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 '0%'),
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 ('001','C01','E02','26-Jan-2022','3-Feb-2022');
```

1 row created.

```
SQL> INSERT INTO ORDERS VALUES
```

```
2 ('002','C03','E01','29-Jan-2022','8-Feb-2022');
```

1 row created.

```
SQL> INSERT INTO ORDERS VALUES
```

```
2 ('003','C02','E04','8-Feb-2022','19-Feb-2022');
```

1 row created.

```
SQL> INSERT INTO ORDERS VALUES
```

```
2 ('004','C04','E03','13-Jan-2022','24-Jan-2022');
```

1 row created.

```
SQL>
```

```
SQL>
```

```
SQL> REM ***check constraint O_PRIMEKEY***
```

```
SQL> INSERT INTO Orders VALUES('003', 'C02', 'E03', '12/JAN/2022', '24/JAN/2022');
```

```
INSERT INTO Orders VALUES('003', '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('004','C04','E03','12/JAN/2022','10/JAN/2022');
```

```
INSERT INTO Orders VALUES('004','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 ('005','C00','E03','13-Jan-2022','24-Jan-2022');
INSERT INTO ORDERS VALUES ('005','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 ('005','C01','E00','13-Jan-2022','24-Jan-2022');
INSERT INTO ORDERS VALUES ('005','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  ('001','P02', 50);

1 row created.

SQL> INSERT INTO ORDER_CONTENTS VALUES
  2  ('003','P01', 45);

1 row created.

```

```
SQL> INSERT INTO ORDER_CONTENTS VALUES
2 ('002','P04', 55);
```

1 row created.

```
SQL> INSERT INTO ORDER_CONTENTS VALUES
2 ('001','P03', 78);
```

1 row created.

```
SQL> INSERT INTO ORDER_CONTENTS VALUES
2 ('004','P02', 25);
```

1 row created.

```
SQL>
```

```
SQL> REM ***check constraint FOREIGN KEYS***
```

```
SQL> INSERT INTO ORDER_CONTENTS VALUES('003', 'P001',4);
```

```
INSERT INTO ORDER_CONTENTS VALUES('003', 'P001',4)
```

```
*
```

ERROR at line 1:

ORA-02291: integrity constraint (SYSTEM.FORKEYPART) violated - parent key not found

```
SQL> INSERT INTO ORDER_CONTENTS VALUES('000', 'P04',4);
```

```
INSERT INTO ORDER_CONTENTS VALUES('000', '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
C01	Sam	Street1	501101
	Delhi	9673125647	
C02	Shyam	Street2	501060
	Mumbai	9670005647	
C03	Stark	Street3	501101
	Kolkata	9848949218	

CUST_	CNAME	STREET	PINCODE
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
001	C01	E02	26-JAN-22	03-FEB-22
002	C03	E01	29-JAN-22	08-FEB-22
003	C02	E04	08-FEB-22	19-FEB-22
004	C04	E03	13-JAN-22	24-JAN-22

SQL>

```
SQL> select * from order_contents;
```

ORDER	PART_	QTY
001	P02	50

003	P01	45
002	P04	55
001	P03	78
004	P02	25

SQL>

SQL>

SQL>

SQL> REM \*\*\*CHECKING ON DELETE CASCADE\*\*\*

SQL> DELETE FROM ORDERS WHERE ORDER\_NO='001';

1 row deleted.

SQL>

SQL>

SQL> select \* from orders;

ORDER	CUST_	EMP_N	ORDERED	SHIPPED
002	C03	E01	29-JAN-22	08-FEB-22
003	C02	E04	08-FEB-22	19-FEB-22
004	C04	E03	13-JAN-22	24-JAN-22

SQL> select \* from order\_contents;

ORDER	PART_	QTY
003	P01	45
002	P04	55
004	P02	25

SQL> spool off