ASSIGNMENT

1. Create table with following structure with necessary constraints – Primary Key, Foreign Key, NOT NULL, Check.

SQL> create table Category_Master
2 (CId char(4) primary key check(CId like 'C%'),
3 Name char(15) NOT NULL, Qty_Hand number(3));

Table created.

```
SQL> create table Category_Master
  2  (CId char(4) primary key check(CId like 'C%'),
  3  Name char(15) NOT NULL, Qty_Hand number(3));

Table created.
```

SQL> create table SubCategory_Master
2 (SId char(4) primary key check(SId like 'S%'),
3 Name char(15) NOT NULL, Qty_Hand number(3),
4 CId char(4) references Category_Master(CId));

Table created.

```
SQL> create table SubCategory_Master
  2   (SId char(4) primary key check(SId like 'S%'),
  3   Name char(15) NOT NULL, Qty_Hand number(3),
  4   CId char(4) references Category_Master(CId));

Table created.
```

2. Describe the structure of the created table.

```
SQL> desc Category_Master;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL CHAR(4)
 NAME                                      NOT NULL CHAR(15)
 QTY_HAND                                           NUMBER(3)
```

```
SQL> desc SubCategory_Master;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                       NOT NULL CHAR(4)
 NAME                                      NOT NULL CHAR(15)
 QTY_HAND                                           NUMBER(3)
 CID                                                CHAR(4)
```

3. Insert following data into the tables.

- Data for Category_Master

```
SQL> select * from Category_Master;

CID  NAME             QTY_HAND
---- --------------- ----------
C101 Laptop               200
C102 Mobile               300
C103 Television           120
C104 Printer               80
```

SQL> insert into Category_Master values('&CId', '&Name', &Qty_Hand);
Enter value for cid: C101
Enter value for name: Laptop
Enter value for qty_hand: 200
old   1: insert into Category_Master values('&CId', '&Name', &Qty_Hand)
new   1: insert into Category_Master values('C101', 'Laptop', 200)

1 row created.

SQL> /
Enter value for cid: C102
Enter value for name: Mobile
Enter value for qty_hand: 300
old   1: insert into Category_Master values('&CId', '&Name', &Qty_Hand)
new   1: insert into Category_Master values('C102', 'Mobile', 300)

1 row created.

SQL> /
Enter value for cid: C103
Enter value for name: Television
Enter value for qty_hand: 120
old   1: insert into Category_Master values('&CId', '&Name', &Qty_Hand)
new   1: insert into Category_Master values('C103', 'Television', 120)

1 row created.

SQL> /
Enter value for cid: C104
Enter value for name: Printer
Enter value for qty_hand: 80
old   1: insert into Category_Master values('&CId', '&Name', &Qty_Hand)
new   1: insert into Category_Master values('C104', 'Printer', 80)

1 row created.

- Data for SubCategory_Master

```
SQL> select * from SubCategory_Master;

SID  NAME            QTY_HAND CID
---- --------------- ---------- ----
S101 Dell                  80 C101
S102 HP                    50 C101
S103 Oppo                  25 C102
S104 SamSung               33 C102
S105 LG                    55 C103
S106 Canon                 21 C104
S107 Intel                 12 C104
```

SQL> insert into SubCategory_Master values('&SId', '&Name', &Qty_Hand, '&CId');
Enter value for sid: S101
Enter value for name: Dell
Enter value for qty_hand: 80
Enter value for cid: C101
old   1: insert into SubCategory_Master values('&SId', '&Name', &Qty_Hand, '&CId')
new   1: insert into SubCategory_Master values('S101', 'Dell', 80, 'C101')

1 row created.

SQL> /
Enter value for sid: S102
Enter value for name: HP
Enter value for qty_hand: 50
Enter value for cid: C101
old   1: insert into SubCategory_Master values('&SId', '&Name', &Qty_Hand, '&CId')
new   1: insert into SubCategory_Master values('S102', 'HP', 50, 'C101')

1 row created.

SQL> /
Enter value for sid: S103
Enter value for name: Oppo
Enter value for qty_hand: 25
Enter value for cid: C102
old   1: insert into SubCategory_Master values('&SId', '&Name', &Qty_Hand, '&CId')

new   1: insert into SubCategory_Master values('S103', 'Oppo', 25, 'C102')

1 row created.

SQL> /
Enter value for sid: S104
Enter value for name: SamSung
Enter value for qty_hand: 33
Enter value for cid: C102
old   1: insert into SubCategory_Master values('&SId', '&Name', &Qty_Hand, '&CId')
new   1: insert into SubCategory_Master values('S104', 'SamSung', 33, 'C102')

1 row created.

SQL> /
Enter value for sid: S105
Enter value for name: LG
Enter value for qty_hand: 55
Enter value for cid: C103
old   1: insert into SubCategory_Master values('&SId', '&Name', &Qty_Hand, '&CId')
new   1: insert into SubCategory_Master values('S105', 'LG', 55, 'C103')

1 row created.

SQL> /
Enter value for sid: S106
Enter value for name: Canon
Enter value for qty_hand: 21
Enter value for cid: C104
old   1: insert into SubCategory_Master values('&SId', '&Name', &Qty_Hand, '&CId')
new   1: insert into SubCategory_Master values('S106', 'Canon', 21, 'C104')

1 row created.

SQL> /
Enter value for sid: S107
Enter value for name: Intel
Enter value for qty_hand: 12
Enter value for cid: C104
old   1: insert into SubCategory_Master values('&SId', '&Name', &Qty_Hand, '&CId')
new   1: insert into SubCategory_Master values('S107', 'Intel', 12, 'C104')

1 row created.

4. Exercise on retrieving records from a table
- Find out the names of all Categories.

```
SQL> select name from Category_Master;

NAME
---------------
Laptop
Mobile
Television
Printer
```

- Retrieve the entire contents of the Category _Master table

```
SQL> select * from Category_Master;

CID  NAME             QTY_HAND
---- --------------- ----------
C101 Laptop               200
C102 Mobile               300
C103 Television           120
C104 Printer               80
```

- Retrieve the list of names and quantity on hand of all the

```
SQL> select Name,Qty_Hand from Category_Master;

NAME             QTY_HAND
--------------- ----------
Laptop               200
Mobile               300
Television           120
Printer               80
```
categories.

- List the various SubCategories available from the SubCategory_Master

```
SQL> select name from SubCategory_Master;

NAME
---------------
Dell
HP
Oppo
SamSung
LG
Canon
Intel

7 rows selected.
```
table.

- List all categories whose quantity on hand is greater than 150.

```
SQL> select Name,Qty_Hand from Category_Master where Qty_Hand > 150;

NAME                QTY_HAND
--------------- ----------
Laptop                   200
Mobile                   300
```

- List all categories whose quantity is between 100 and 150.

```
SQL> select Name,Qty_Hand from Category_Master where Qty_Hand between 100 and 150;

NAME                QTY_HAND
--------------- ----------
Television               120
```

- Retrieve the list of Id and quantity on hand for category 'Laptop' and 'Printer'.

```
SQL> select CId,Qty_Hand from Category_Master where Name in ('Laptop','Printer');

CID     QTY_HAND
----  ----------
C101         200
C104          80
```

- List all SubCategories whose quantity on hand is not 50.

```
SQL> select Name,Qty_Hand from Category_Master where Qty_Hand not in 50;

NAME                QTY_HAND
--------------- ----------
Laptop                   200
Mobile                   300
Television               120
Printer                   80

SQL> select Name,Qty_Hand from SubCategory_Master where Qty_Hand not in 50;

NAME                QTY_HAND
--------------- ----------
Dell                      80
Oppo                      25
SamSung                   33
LG                        55
Canon                     21
Intel                     12

6 rows selected.
```

- Retrieve the list of Id, names and quantity on hand of those which are having quantity on hand greater than 10 and less than 50.

```
SQL> select CId, Name,Qty_Hand from SubCategory_Master where Qty_Hand between 10 and 50;

CID  NAME            QTY_HAND
---- --------------- ----------
C101 HP                   50
C102 Oppo                 25
C102 SamSung              33
C104 Canon                21
C104 Intel                12
```

- Retrieve the list of Id, names of categories whose name starts with 'L'.

```
SQL> select CID, Name from SubCategory_Master where Name like 'L%';

CID  NAME
---- ---------------
C103 LG
```

- Retrieve the list of Id, names of categories whose name starts with 'H' or 'I'.

```
SQL> select CID, Name from SubCategory_Master where Name like 'H%' or  Name like 'I%';

CID  NAME
---- ---------------
C101 HP
C104 Intel
```

5. Exercise on altering the structure of table.
   - Add column Supplier_Name char(10) to the Category_Master.

```
SQL> alter table Category_Master
  2  add Supplier_Name char(10);

Table altered.

SQL> desc Category_Master
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL CHAR(4)
 NAME                                      NOT NULL CHAR(15)
 QTY_HAND                                           NUMBER(3)
 SUPPLIER_NAME                                      CHAR(10)
```

- Add column Order_date to the

```
SQL> alter table SubCategory_Master
  2  modify Order_date char(50);

Table altered.

SQL> select * from SubCategory_Master;

SID  NAME            QTY_HAND CID
---- -------------- ---------- ----
ORDER_DATE
-------------------------------------------------
S101 Dell                  80 C101


S102 HP                    50 C101


S103 Oppo                  25 C102



SID  NAME            QTY_HAND CID
---- -------------- ---------- ----
ORDER_DATE
-------------------------------------------------
S104 SamSung               33 C102


S105 LG                    55 C103


S106 Canon                 21 C104



SID  NAME            QTY_HAND CID
---- -------------- ---------- ----
ORDER_DATE
-------------------------------------------------
S107 Intel                 12 C104



7 rows selected.
```

SubCategory_Master.

- Change data size of Supplier_Name to 15.

```
SQL> alter table Category_Master
  2  modify Supplier_Name char(15);

Table altered.

SQL> desc Category_Master;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL CHAR(4)
 NAME                                      NOT NULL CHAR(15)
 QTY_HAND                                           NUMBER(3)
 SUPPLIER_NAME                                      CHAR(15)
```

- Drop column Supplier_Name from Category_Master.

```
SQL> alter table Category_Master
  2  drop column Supplier_Name;

Table altered.

SQL> desc Category_Master;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL CHAR(4)
 NAME                                      NOT NULL CHAR(15)
 QTY_HAND                                           NUMBER(3)
```

6. Exercise on Rename
- Rename table Category_Master to Category_Master_Details.

```
SQL> alter table Category_Master
  2  rename to Category_Master_Details;

Table altered.

SQL> desc Category_Master_Details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL CHAR(4)
 NAME                                      NOT NULL CHAR(15)
 QTY_HAND                                           NUMBER(3)
```

7. Exercise on Updating the records
   - Change the quantity on hand of Category whose Id = C104 to

```
SQL> update Category_Master_details
  2  set Qty_Hand = 100 where CId ='C104';

1 row updated.

SQL> select * from Category_Master_Details;

CID  NAME             QTY_HAND
---- ---------------- ----------
C101 Laptop                200
C102 Mobile                300
C103 Television            120
C104 Printer               100
```

100.

- Update order date of SubCategory Id whose Id = S101, S102, S103 and S104 to 14-JUL-22.

```
SQL> update SubCategory_Master
  2  set Order_date ='14 Jul 2022' where SId in ('S101','S102', 'S103' , 'S104');

4 rows updated.

SQL> select * from SubCategory_Master;

SID  NAME            QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
--------------------------------------------------
S101 Dell                  80 C101
14 Jul 2022

S102 HP                    50 C101
14 Jul 2022

S103 Oppo                  25 C102
14 Jul 2022


SID  NAME            QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
--------------------------------------------------
S104 SamSung               33 C102
14 Jul 2022

S105 LG                    55 C103


S106 Canon                 21 C104



SID  NAME            QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
--------------------------------------------------
S107 Intel                 12 C104
```

- Update order date of SubCategory Id whose Id = S105, S106 and S107 to 16-JUL-22.

```
SQL> update SubCategory_Master
  2  set Order_date ='16 Jul 2022' where SId in ('S101','S102', 'S103' , 'S104');

4 rows updated.

SQL> select * from SubCategory_Master;

SID  NAME              QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
-------------------------------------------------
S101 Dell                    80 C101
16 Jul 2022

S102 HP                      50 C101
16 Jul 2022

S103 Oppo                    25 C102
16 Jul 2022


SID  NAME              QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
-------------------------------------------------
S104 SamSung                 33 C102
16 Jul 2022

S105 LG                      55 C103


S106 Canon                   21 C104



SID  NAME              QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
-------------------------------------------------
S107 Intel                   12 C104
```

8. Exercise on delete
   ● Delete from SubCategory_Master whose SID is S101 and
     S103.

```
SQL> delete SubCategory_Master where SId = 'S101' or SId= 'S103';

2 rows deleted.

SQL> select * from SubCategory_Master;

SID  NAME              QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
----------------------------------------------------
S102 HP                      50 C101
16 Jul 2022

S104 SamSung                 33 C102
16 Jul 2022

S105 LG                      55 C103


SID  NAME              QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
----------------------------------------------------
S106 Canon                   21 C104


S107 Intel                   12 C104
```

- Delete from SubCategory_Master whose quanity on hand is less than

```
SQL> delete SubCategory_Master where Qty_Hand < 25;

2 rows deleted.

SQL> select * from SubCategory_Master;

SID  NAME              QTY_HAND CID
---- --------------- ---------- ----
ORDER_DATE
----------------------------------------------------
S102 HP                      50 C101
16 Jul 2022

S104 SamSung                 33 C102
16 Jul 2022

S105 LG                      55 C103
```

25.