```
--
********************************************Products****************************
*

select * from products

CREATE TABLE Products

(

    product_id  number(30) PRIMARY key not null,

    product_name varchar2(60) not null,

    product_price number(12,4) ,

    product_color varchar2(30),

    product_size number(10),

    product_type VARCHAR2(10),

    product_categories varchar2(50),

    product_discount number(2,2) ,

    customers_id number(15) not null,

    order_id varchar2(15) UNIQUE

)

drop table products

 ALTER TABLE Products

 ADD constraint check_categories check (product_size = 3,4,6,7,8 );


 ALTER TABLE Products

 ADD constraint check_categories check (product_type = 'For Mens','For Kids', 'For Women' );


 ALTER TABLE Products

 ADD FOREIGN KEY (customers_id) REFERENCES Customers(customers_id);


 ALTER TABLE Products

 ADD FOREIGN KEY (order_id) REFERENCES Products_Order(order_id);

DESCRIBE Products;

--********************************************Order*********************

DROP TABLE Products;
```

```sql
CREATE TABLE Products_Order
(
    order_id VARCHAR2(15) PRIMARY KEY,
    delivery_date date,
    address_id VARCHAR2(5) not null,
    quantity number(8),
    product_id  number(20),
    customers_id number(15) not null

)
ALTER TABLE Products_Order
 ADD FOREIGN KEY (customers_id) REFERENCES Customers(customers_id);


ALTER TABLE Products_Order
 ADD FOREIGN KEY (product_id) REFERENCES Products(product_id);


ALTER TABLE Products_Order
 ADD FOREIGN KEY (address_id) REFERENCES Address(address_id);
--************************customers*********************
drop table customers
CREATE TABLE Customers (
    customers_id number(15) PRIMARY KEY ,
    customers_fname VARCHAR2(20) ,
    customers_lname VARCHAR2(20) not null,
    customers_email VARCHAR2(10) UNIQUE,
    customers_phone VARCHAR2(10) not null,
    address_id VARCHAR2(5) not null,
    order_id VARCHAR2(15) UNIQUE
)

ALTER TABLE Customers
```

ADD FOREIGN KEY (order_id) REFERENCES Products_Order(order_id);

ALTER TABLE Address

ADD FOREIGN KEY (address_id) REFERENCES Address(address_id);

--
****
****

CREATE TABLE Address (

    address_id VARCHAR2(5) PRIMARY KEY ,

    street VARCHAR2(20) ,

    states VARCHAR2(20) not null,

    pincode NUMBER(8) UNIQUE

)
--
****
****

/* insert values in Address table*/

select * from address

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('101','janpathcolony' ,'MP','460001');

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('102','kalyannagar' ,'MH','509410');

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('103','kasicolony' ,'UK','400001');

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('104','shyamcolony' ,'UP','390354');

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('105','nehrucolony' ,'CG','310031');

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('106','gandhiroad' ,'DL','100001');

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('107','veeradigali' ,'PB','950095');

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('108','sitanagar' ,'WB','646562');

INSERT INTO Address (address_id ,street ,states ,pincode)

VALUES ('109','redmondroad' ,'MP','747474');

```
****************************************************************************
***********
```
/* insert values in Products table*/

select * from products;

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1001,'LEAP7X',3999.00,'Grey',7,'For Mens','Sports Lacing Shoes',.1,11111,'547,245,1244');

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1002,'LEAP7X',999.00,'Black',7,'For Mens','Sports Lacing Shoes',.1,22222,'147,555,1244');

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1003,'Gliders',1500.00,'Tan',7,'For Mens','Casual Lacing Shoes',.15,33333,'777,222,4444');

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1004,'LucyandLuke',750.00,'Beige',3,'For Kids','Casual Non Lacing Shoes',.15,44444,'999,121,1111');

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1005,'LucyandLuke',750.00,'White',4,'For Kids','Casual Non Lacing Shoes',.25,55555,'877,245,1454');

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1006,'Gliders',650.00,'N Blue',8,'For Women','Casual Non Lacing Shoes',0,66666,'027,655,2544');

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1007,'LEAP7X',2199.00,'Green',6,'For Women','Sporty Casual Lacing Shoes',.5,77777,'007,200,0000');

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1008,'LEAP7X',2199.00,'White',9,'For Men','Sporty Casual Lacing Shoes',.5,88888,'927,215,1157');

INSERT INTO Products (product_id,product_name,product_price,product_color ,product_size ,product_type,product_categories ,product_discount,customers_id,order_id)

VALUES(1009,'LEAP7X',2199.00,'Blue',7,'For Women','Sporty Casual Lacing Shoes',.5,99999,'958,000,8582');

--
****
****
/* insert values in Products order table*/

drop table products_order

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('547,245,1244',(to_date('01/01/2020','dd/mm/yyyy')),'101',2,1001,11111);

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('147,555,1244',(to_date('25/05/2021','dd/mm/yyyy')),'102',4,1002,22222);

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('777,222,4444',(to_date('01/03/2022','dd/mm/yyyy')),'103',1,1003,33333);

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('999,121,1111',(to_date('11/11/2021','dd/mm/yyyy')),'104',2,1004,44444);

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('877,245,1454',(to_date('12/12/2020','dd/mm/yyyy')),'105',1,1005,55555);

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('027,655,2544',(to_date('10/12/2019','dd/mm/yyyy')),'106',1,1006,66666);

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('007,200,0000',(to_date('30/04/2020','dd/mm/yyyy')),'107',1,1007,77777);

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('927,215,1157',(to_date('31/08/2018','dd/mm/yyyy')),'108',1,1008,88888);

INSERT INTO Products_order(order_id ,delivery_date ,address_id ,quantity,product_id,customers_id)

VALUES ('958,000,8582',(to_date('25/11/2022','dd/mm/yyyy')),'109',2,1009,99999);

--
****
****
/* insert values in Customers table*/

INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email ,customers_phone,address_id,order_id)

VALUES (11111, 'John' ,'Smith' , 'john123', 1111155555, '101','547,245,1244') ;

INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email ,customers_phone,address_id,order_id)

VALUES (22222, 'Dave' ,'Franklin' , 'frank321', 1111122222, '102','147,555,1244') ;

INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email ,customers_phone,address_id,order_id)

VALUES (33333, 'Mary' ,'Gibson' , 'mary101', 1111133333, '103','777,222,4444') ;

INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email ,customers_phone,address_id,order_id)

VALUES (44444, 'Glory' ,'Anson' , 'anson222', 1111101010, '104' ,'999,121,1111') ;

INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email ,customers_phone,address_id,order_id)

VALUES (55555, 'Kerry' ,'Lysinger' , 'kerry783', 1111102020, '105','877,245,1454') ;

INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email ,customers_phone,address_id,order_id)

VALUES (66666, 'Harry' ,'Housen' , 'harry593', 1111188888, '106','027,655,2544') ;

INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email ,customers_phone,address_id,order_id)

VALUES (77777, 'Joseph' ,'Haun' , 'joseph555', 1111100000, '107','007,200,0000') ;

```sql
INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email
,customers_phone,address_id,order_id )

VALUES (88888, 'Jacob' ,'Sorenson' , 'jacob777', 1111178787, '108','927,215,1157') ;

INSERT INTO Customers(customers_id,customers_fname ,customers_lname ,customers_email
,customers_phone,address_id,order_id )

VALUES (99999, 'Chana' ,'Trimble' , 'chana454', 1111198989, '109','958,000,8582') ;



--
*******************************************************************************
*********************************************


select * from products


select * from customers


select * from address


select * from products_order


begin

p_adress('110','ranisatinagar','RJ','456456')

end;

--
*1*****************************************************************************
**********

CREATE or replace  PROCEDURE p_Address(

p_id Address.address_id%TYPE,

p_street Address.street%TYPE,

p_states Address.states%type,

p_pincode Address.pincode%type)

IS

BEGIN

INSERT INTO Address (address_id, street, states, pincode)
```

```
VALUES (p_id,p_street,p_states,p_pincode);

END;
```

--***

```
select * from address;

set serveroutput on

begin

p_Address(111,'nalasopara','mh',425202);

end;

desc address;
```


--2***

```
drop procedure  change_color;

create or replace procedure change_color

(p_product_id  products.product_id%type,

p_product_color products.product_color%type

)

is

begin

update products set product_color = p_product_color

where product_id =p_product_id;

end;




begin

change_color(100,'25000');

end;
```


3.
****
*

```
create or replace function update_pincode
```

```
(p_address_id Address.address_id%TYPE)

return number

is

v_pin Address.pincode%type;

begin

select pincode into v_pin from Address

where address_id=p_address_id;

return v_pin;

end update_pincode;


begin

    update_pincode('110');

END ;


--4*********************************************************************

create function get_customers_phone

(p_customers_id Customers.customers_id%type)

return number

is

v_customers_phone Customers.customers_phone%type;

begin

select customers_phone into v_customers_phone from Customers

where customers_id=p_customers_id;

return v_customers_phone;

end;


set serveroutput on

declare

v_return number;

begin

v_return  := get_customers_phone(11111);
```

```
dbms_output.put_line(v_return);

end;
```

--1111155555

--

--

--PL/SQL procedure successfully completed.

--1T 5***

```
CREATE OR REPLACE TRIGGER restrict_customers_phone

BEFORE UPDATE ON Customers

FOR EACH ROW

BEGIN

 IF (:old.customers_phone)=(:new.customers_phone) THEN

 RAISE_APPLICATION_ERROR (-20202,'Customer cannot repeat phone from current phone.');

 END IF;


END;

set serveroutput on

update Customers

set customers_phone ='1111155555'

where Customers_id=11111;
```

--where Customers_id=11111

--Error report -

--ORA-20202: Customer cannot repeat phone from current phone.

--ORA-06512: at "MERCURY1.RESTRICT_CUSTOMERS_PHONE", line 3

--ORA-04088: error during execution of trigger 'MERCURY1.RESTRICT_CUSTOMERS_PHONE'

```
--
6******************************************************************************
****************

drop procedure get_product_id;


create procedure get_product_id

(p_id Customers.customers_id%type,

p_product_id out varchar2

)

is

begin

    select product_id into p_product_id

    from Customers where customers_id=p_id;

end;


set serveroutput on

declare

v_product_id varchar2(30);


begin

get_product_id(11111,v_product_id);

dbms_output.put_line(v_product_id);

end;



--7
******************************************************************************
******

CREATE OR REPLACE TRIGGER order_quantity

before insert on Products_Order

for each row

begin
```

```
if(quantity = 0)
 THEN
 RAISE_APPLICATION_ERROR (-20202,'No quantity selected.');
 END IF;
end;
```

--
8***
****

```
CREATE OR REPLACE PROCEDURE deleteaddress_id(p_address_id IN
Products_Order.address_id%TYPE)
IS
BEGIN
  DELETE Products_Order where address_id = p_address_id;
END;


select * from  Address


BEGIN
  deleteaddress_id(111);
END;
```

--
9***
****

```
drop procedure query_product_id;


create procedure query_product_id
(p_id Customers.customers_id%type,
p_product_id out varchar2
)
is
```

```
begin
    select product_id into p_product_id
    from Customers where customers_id=p_id;
end;


set serveroutput on
declare
v_product_id varchar2(30);


begin
query_product_id(100,v_product_id);
dbms_output.put_line(v_product_id);
end;


--
10**********************************************************************
******************

drop procedure query_order_id;


create procedure query_order_id
(p_id Customers.customers_id%type,
p_order_id out varchar2
)
is
begin
    select order_id into p_order_id
    from Customers where customers_id=p_id;
end;


set serveroutput on
declare
```

```
v_order_id varchar2(30);

begin
query_order_id(100,v_order_id);
dbms_output.put_line(v_order_id);
end;
```