Database Management System Project

B. Tech ICT (4th Semester)

Project Title: Online Shopping System

Under the Guidance of Prof. Shefali Naik

Group Members

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Description:

Online shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the Internet using a web browser. Here we have developed an Online Shopping System with the help of Java for Frontend and Oracle Database Management System in the Backend.

Online Shopping System provides an user friendly Interactive system from which users can buy goods. This System allows the user to buy different kinds of goods from the System and it will maintain a history record for that user.

In this Shopping System the Admin of the System can add different Categories in the System and he/she can also add different products under that particular category.

Main Functionalities of the Online Shopping System are:

- Functionalities for the Admin
 - Admin can sign in to the System with his Admin ID
 - Admin can Add New Categories in the System
 - Admin can Add Product corresponding to that Category and if that Category is not Present then first that Category is created and then that Product is added.
 - Admin can see the data of all the Registered Customer of the System
 - Admin can see the Order placed by all the Customers
 - Admin can see the Order placed by a Specific Customer
- Functionalities for the User
 - User need to Register to the System by entering his personal details

- Users can Sign In to the System in order to place an order from the System.
- User can select category his favourite from the list of categories provided to him/her
- After Selecting the category, User can see all the available products of that Category Available to him
- Now User Can Select any product from the given list and he needs to give the quantity of the product he wants to buy.
- Now User will see all the Products added by him in the Cart menu and he will also see the total amount to pay for all the products he has selected.
- Here User can clear his whole Shopping Cart or he can Update the Quantities of the Product in the Shopping Cart.
- Now when the user will place an order for the selected products then he needs to fill details where the order is to be placed.
- After Adding the Details User can choose his Favourable Method for Payment of his order.
- After Placing the Order the Shopping Cart of the User will be emptied automatically.
- Users can also see his order history of the system i.e how many orders have been placed from this System.

Triggers are use to check the password satisfies required conditions(first character should be a special character and minimum length should be 8) and whether the phone no. is 10 digit or not. It is also used while adding to the shopping cart whether the entered no. of quantity is available or not. Also when the order is placed the no. of quantity of that product is subtracted from the database which is purchased by the customer.

Entity-Relationship Diagram:

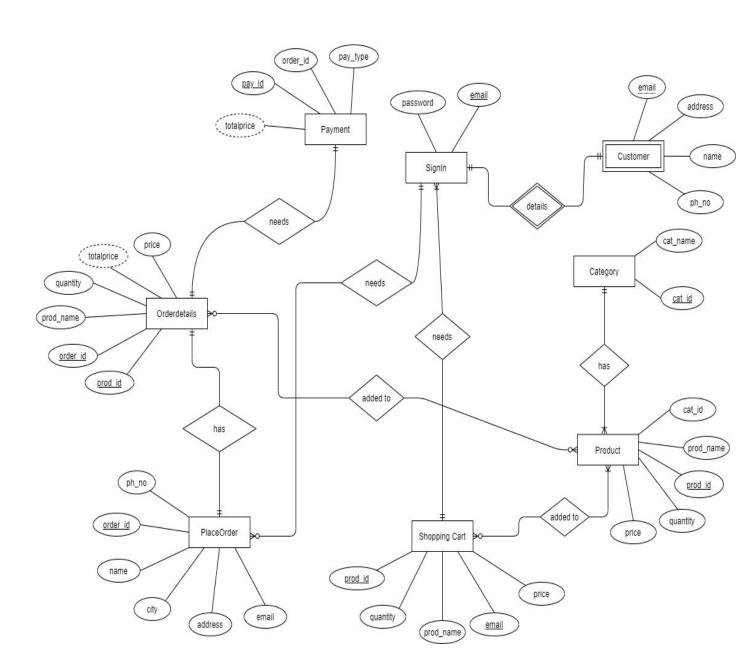


Table Design(Data Dictionary):

 $\textbf{Table} \to \textbf{SignIn}$

Attribute	Data Type	Size	Constraint	Description
EMAIL	VARCHAR2	50	PRIMARY KEY	Email for Login (Mandatory)
PASSWORD	VARCHAR2	20	NOT NULL	Password for Login (Mandatory)

$\textbf{Table} \rightarrow \ \textbf{Customer}$

Attribute	Data Type	Size	Constraint	Description
EMAIL	VARCHAR2	50	FORIEGN KEY, NOT	Customer Email for profile (Mandatory)
NAME	VARCHAR2	50	NOT NULL	Customer name for profile
PH_NO	VARCHAR2	10	NOT NULL	Customer ph no. For profile

ADDRESS	VARCHAR2	100	NOT NULL	Customer address for profile
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$\textbf{Table} \rightarrow \ \textbf{Category}$

Attribute	Data Type	Size	Constraint	Description
CAT_ID	INT		PRIMARY KEY	Uniquely identify Category
CAT_NAME	VARCHAR2	50	UNIQUE, NOT NULL	Category Name

$\textbf{Table} \rightarrow \textbf{Product}$

Attribute	Data Type	Size	Constraint	Description
PROD_ID	INT		PRIMARY KEY	Uniquely identify Products
CAT_ID	INT		FORIEGN KEY, NOT NULL	Category Id of Product to identify which category it belongs
PROD_NAME	VARCHAR2	50	UNIQUE, NOT NULL	Product Names
PRICE	INT		NOT NULL	Price of product added

QUANTITY	INT	NOT NULL	Quantity of Product
			Available

$\textbf{Table} \rightarrow \textbf{ShoppingCart}$

Attribute	Data Type	Size	Constraint	Description
EMAIL	VARCHAR2	50	PRIMARY KEY,FOREIGN KEY	Email of customer adding products to cart
PROD_ID	INT		PRIMARY KEY,FOREIGN KEY	Product ID of product added to cart
PROD_NAME	VARCHAR2	50	NOT NULL	Product name of product added to cart
PRICE	INT		NOT NULL	Price of product added to cart
QUANTITY	INT		NOT NULL	Quantity of product added to cart

 $\textbf{Table} \rightarrow \textbf{PlaceOrder}$

Attribute	Data Type	Size	Constraint	Description
ORDER_ID	INT		PRIMARY KEY	Uniquely identify orders
EMAIL	VARCHAR2	50	FOREIGN KEY,NOTNULL	Email of customer to whom order belongs to
NAME	VARCHAR2	50	NOT NULL	Name of customer
CITY	VARCHAR2	10	NOT NULL	City in which order has to be deliver
ADDRESS	VARCHAR2	50	NOT NULL	Address on which order has to be deliver
PH_NO	VARCHAR2	10	NOT NULL	Ph_no of customer to contact during emergency

 $\textbf{Table} \rightarrow \textbf{OrderDetails}$

Attribute	Data Type	Size	Constraint	Description
ORDER_ID	INT		PRIMARY KEY,FOREIGN KEY	Uniquely identify orders which is placed
PROD_ID	INT		PRIMARY KEY,FOREIGN KEY	Uniquely identify products that has to order
PROD_NAME	VARCHAR2	50	NOT NULL	Product name which is ordered
EMAIL	VARCHAR2	50	NOT NULL	Email of customer to whom order belongs to
PRICE	INT		NOT NULL	Price of product which is ordered
QUANTITY	INT		NOT NULL	Quantity of ordered products
TOTALPRICE	INT		NOT NULL	Total amount to be paid by customer after placing order

$\textbf{Table} \rightarrow \textbf{Payment}$

Attribute	Data Type	Size	Constraint	Description
PAY_ID	INT		PRIMARY KEY	Uniquely identify payment
ORDER_ID	INT		FORIEGN KEY, NOT NULL	Uniquely identify order belongs to whom
PAY_TYPE	VARCHAR2	50	NOT NULL	Mode of payment
TOTALPRICE	INT		NOT NULL	Total amount has to be paid after order is places

Procedures:

Procedure 1:

```
CREATE OR REPLACE PROCEDURE create_user(mail IN
signin.email%TYPE,pass IN signin.password%TYPE, result OUT INT)

AS
BEGIN

result:=0;
INSERT INTO signin(email,password) VALUES(mail,pass);
COMMIT;
result := 1;
exception
WHEN others THEN
result := 0;
ROLLBACK;
END;
/
CallableStatement ps = myConnect.prepareCall("{call create_user(?,?,?)}");
```

Procedure 2:

```
CREATE OR REPLACE PROCEDURE add_user(mail IN
customer.email%TYPE,uname IN customer.name%TYPE,phone IN
customer.ph_no%TYPE,add IN customer.address%TYPE, result OUT
INT) AS
BEGIN
    result:=0
    INSERT INTO customer(email,name,ph_no,address)
VALUES(mail,uname,phone,add);
```

```
COMMIT;
  result := 1;
  exception
  WHEN others THEN
  result := 0;
  ROLLBACK;
END;
/
CallableStatement ps1 = myConnect.prepareCall("{call
add_user(?,?,?,?,?)}");
```

Procedure 3:

```
CREATE OR REPLACE PROCEDURE check_user(mail IN
signin.email%TYPE,pass IN signin.password%TYPE, result OUT
VARCHAR2) AS
BEGIN
SELECT email INTO result FROM signin WHERE email=mail AND
password=pass;
exception
WHEN NO_DATA_FOUND THEN
result := 'USER ID AND PASSWORD INCORRECT';
END;
CallableStatement stmt = myConnect.prepareCall("{call check_user(?,?,?)}");
```

Procedure 4:

```
CREATE OR REPLACE PROCEDURE get_details(mail IN signin.email%TYPE,uname OUT VARCHAR2,phone OUT VARCHAR2,adr OUT VARCHAR2,pwd OUT VARCHAR2,result out int) AS BEGIN
```

```
result:=0
    SELECT name,ph_no,address INTO uname,phone,adr FROM customer
WHERE email=mail;
    SELECT password INTO pwd FROM signin WHERE email=mail;
    result:=1;
    exception
    WHEN others THEN
    result:=0;
    ROLLBACK;
END;
/
CallableStatement st = myConnect.prepareCall("{call
get_details(?,?,?,?,?)");
```

Procedure 5:

```
CREATE OR REPLACE PROCEDURE update details (mail IN
signin.email%TYPE, uname IN customer.name%TYPE, phone IN
customer.ph no%TYPE, adr IN customer.address%TYPE, pwd IN
signin.password%TYPE, result OUT INT) AS
BEGIN
   result:=0;
   UPDATE customer SET name=uname, ph no=phone,address=adr
WHERE email=mail;
   UPDATE signin SET password=pwd WHERE email=mail;
   result:=1;
   exception
   WHEN others THEN
   result:=0;
   ROLLBACK;
END;
CallableStatement st = myConnect.prepareCall("{call
update details(?,?,?,?,?,?)");
```

Procedure 6:

```
CREATE OR REPLACE PROCEDURE add product (
                     IN product.prod name%TYPE,
       prod name
                      IN product.price%TYPE,
       price
       quantity IN product.quantity%TYPE,
       catt name IN category.cat name%TYPE,
       result OUT INT
   ) AS
       cursor c name IS SELECT cat id FROM category WHERE
cat name = catt name;
       r_name c_name%ROWTYPE;
   BEGIN
       OPEN c name;
       LOOP
           FETCH c name INTO r name;
           IF c name%NOTfound THEN
                       INSERT INTO category
VALUES(dept seq.nextval,catt name);
                   ELSE
       INSERT INTO
product(prod id,cat id,prod name,price,quantity) VALUES (
           prod seq.nextval,
           r name.cat id,
           prod name,
           price,
       quantity
           );
   result := 1;
   END IF;
   exit;
   END LOOP;
```

```
CLOSE c_name;
COMMIT;
exception
WHEN others THEN
result := 0;
ROLLBACK;
END add_product;
/
CallableStatement ps = myConnect.prepareCall("{call
add_product(?,?,?,?,?)}");
```

Procedure 7:

```
create or replace procedure add cart(prodname IN
product.prod name%TYPE,email IN signin.email%TYPE,quantity IN
product.quantity%TYPE,result out int) as
cursor c prodid is select * from product where
prod name=prodname;
r prodid c prodid%rowtype;
begin
result:=0
open c prodid;
   loop
   fetch c prodid into r prodid;
   if c prodid%notfound then
        result:=0;
   exit;
    else
      insert into
shoppingcart(email,prod id,prod name,price,quantity)
values(email,r prodid.prod id,prodname,r prodid.price*quantity,q
uantity);
```

```
result:=1;
    exit;
    end if;
end loop;
close c_prodid;
exception
when others then
result:=0;
end;
/
CallableStatement ps = myConnect.prepareCall("{call
add_cart(?,?,?,?)}");
```

Procedure 8:

```
CREATE OR REPLACE PROCEDURE resetcart(emailin IN
signin.email%TYPE,result OUT INT) AS
BEGIN

DELETE FROM shoppingcart WHERE email=emailin;
result:=1;
exception
WHEN others THEN
result:=0;
ROLLBACK;
END;

/
CallableStatement ps = myConnect.prepareCall("{call
resetcart(?,?)}");
```

Procedure 9:

```
CREATE OR REPLACE PROCEDURE getcart_details(emailin IN
shoppingcart.email%TYPE, cart_details OUT SYS_REFCURSOR) AS
BEGIN
     OPEN cart_details for SELECT prod_name,price,quantity FROM
shoppingcart WHERE email=emailin;
END;
/
CallableStatement ps = myConnect.prepareCall("{call
getcart_details(?,?)}");
```

Procedure 10:

```
CREATE OR REPLACE PROCEDURE getproduct_details(catname IN
    category.cat_name%TYPE, prod_details OUT SYS_REFCURSOR) AS
BEGIN
        OPEN prod_details for SELECT prod_name,price FROM product
WHERE cat_id=(SELECT cat_id FROM category WHERE
    cat_name=catname);
END;
/
CallableStatement ps = myConnect.prepareCall("{call
    getproduct_details(?,?)}");
```

Procedure 11:

```
CREATE OR REPLACE PROCEDURE getuser_details(user_details OUT

SYS_REFCURSOR) AS

BEGIN

OPEN user_details for SELECT * FROM signin join customer ON signin.email=customer.email;

END;

/
```

```
CallableStatement ps = myConnect.prepareCall("{call
getuser_details(?)}");
```

Procedure 12:

```
CREATE OR REPLACE PROCEDURE addyourorder(orderid IN INT,emailid
IN signin.email%TYPE, tprice IN INT, result OUT INT) AS
cursor c addorder IS SELECT * FROM shoppingcart WHERE email =
emailid;
r addorder c addorder%ROWTYPE;
BEGIN
result:=0;
OPEN c addorder;
LOOP
 FETCH c addorder INTO r addorder;
   IF c addorder%NOTfound THEN
   exit;
   ELSE
      INSERT INTO
orderdetails(order id,prod id,email,prod name,price,quantity,tot
alprice);
VALUES(orderid,r addorder.prod id,emailid,r addorder.prod name,r
addorder.price,r addorder.quantity,tprice);
           result:=1;
   END IF;
END LOOP;
CLOSE c addorder;
exception
WHEN others THEN
result:=0;
```

```
ROLLBACK;
END;
/
CallableStatement ps2 = myConnect.prepareCall("{call
addyourorder(?,?,?,?)}");
```

Procedure 13:

```
CREATE OR REPLACE PROCEDURE orderplace(orderid IN INT,emailid IN
placeorder.email%TYPE,add IN placeorder.address%TYPE,phnnumber
IN placeorder.ph_no%TYPE,name IN customer.name%TYPE, city IN

VARCHAR2, result OUT INT) AS

BEGIN

result:=0;
INSERT INTO placeorder

VALUES(orderid,emailid,name,city,add,phnnumber);
result:=1;
exception
WHEN others THEN
result:=0;
END;
/
CallableStatement ps = myConnect.prepareCall("{call
orderplace(?,?,?,?,?,?,?,?)}");
```

Procedure 14:

```
CREATE OR REPLACE PROCEDURE getorder_id (mail IN signin.email%TYPE,ord_id OUT sys_refcursor) AS
```

```
BEGIN

OPEN ord_id for SELECT order_id FROM placeorder WHERE
email=mail;

END;

CallableStatement ps1 = myConnect.prepareCall("{call
getorder_id(?,?)}");
```

Procedure 15:

```
CREATE OR REPLACE PROCEDURE disorder (mail IN
signin.email%TYPE,cnt OUT INT) AS
BEGIN
SELECT DISTINCT COUNT(order_id) INTO cnt FROM placeorder WHERE
email=mail;
END;
/
CallableStatement ps = myConnect.prepareCall("{call
disorder(?,?)}");
```

Procedure 16:

```
CREATE OR REPLACE PROCEDURE getinvoice(ordid IN INT,get_inv OUT
sys_refcursor) AS
BEGIN
OPEN get_inv for SELECT * FROM orderdetails WHERE
order_id=ordid;
END;
/
CallableStatement ps1 = myConnect.prepareCall("{call
getinvoice(?,?)}");
```

Procedure 17:

```
CREATE OR REPLACE PROCEDURE ordident(ordid IN INT, ent OUT INT)

AS

BEGIN

SELECT COUNT(order_id) INTO ent FROM orderdetails WHERE

order_id=ordid;

END;

/

CallableStatement ps1 = myConnect.prepareCall("{call
ordident(?,?)}");
```

Procedure 18:

```
CREATE OR REPLACE PROCEDURE getallorders(allorder OUT
sys_refcursor) AS
BEGIN
OPEN allorder for SELECT * FROM orderdetails;
END;
/
CallableStatement ps = myConnect.prepareCall("{call
getallorders(?)}");
```

Procedure 19:

```
CREATE OR REPLACE PROCEDURE getuserorders(mail IN
signin.email%TYPE,allorder OUT sys_refcursor) AS
BEGIN
OPEN allorder for SELECT * FROM orderdetails WHERE email=mail;
END;
CallableStatement ps = myConnect.prepareCall("{call
getuserorders(?,?)}");
```

Procedure 20:

```
CREATE OR REPLACE PROCEDURE add_pay(ord_id IN INT,paytype IN
VARCHAR,tprice IN INT, result OUT INT) AS
BEGIN
INSERT INTO payment(pay_id,order_id,pay_type,totalprice)
VALUES(pay_seq.nextval,ord_id,paytype,tprice);
END;
/
CallableStatement ps3 = myConnect.prepareCall("{call
add_pay(?,?,?,?)}");
```

Procedure 21:

```
CREATE OR REPLACE PROCEDURE getpaydetails(ord_id IN INT,paytype

OUT VARCHAR, tprice OUT INT) AS

BEGIN

SELECT pay_type,totalprice INTO paytype,tprice FROM payment

WHERE order_id=ord_id;

END;

/

CallableStatement ps = myConnect.prepareCall("call
getpaydetails(?,?,?)");
```

Triggers:

Trigger 1:To Auto Increment Category_Id

```
CREATE SEQUENCE dept_seq START WITH 1

INCREMENT BY 1

CACHE 100;
```

```
CREATE OR REPLACE TRIGGER cat_bir

BEFORE INSERT ON category

FOR EACH ROW

BEGIN

SELECT dept_seq.NEXTVAL

INTO :new.cat_id

FROM dual;

END;

/
```

Trigger 2:To Auto Increment Product_Id

Trigger 3:To Auto Increment Payment_Id

```
CREATE SEQUENCE pay_seq START WITH 1

INCREMENT BY 1 CACHE 100;

CREATE OR REPLACE TRIGGER pay_bir
```

```
BEFORE INSERT ON payment

FOR EACH ROW

BEGIN

SELECT pay_seq.NEXTVAL

INTO :new.pay_id

FROM dual;

END;

/
```

Trigger 4: To Auto Increment Order_Id

```
CREATE SEQUENCE ord_seq START WITH 1

INCREMENT BY 1 CACHE 100;

CREATE OR REPLACE TRIGGER ord_bir

BEFORE INSERT ON placeorder

FOR EACH ROW

BEGIN

SELECT ord_seq.NEXTVAL

INTO :new.order_id

FROM dual;

END;

/
```

Trigger 5: To check email and password

```
CREATE OR REPLACE TRIGGER check signin
BEFORE INSERT ON signin
FOR EACH ROW
DECLARE
    prefix VARCHAR2(1);
     CURSOR cu signin IS SELECT * FROM signin;
BEGIN
FOR r signin IN cu signin LOOP
        IF(r signin.email = :new.email) THEN
           dbms output.Put line('Username already exists....Try
aNOTher one.');
           Raise Application Error (-20001, 'Duplicate username
found');
        END IF:
END LOOP;
prefix := substr(:new.password,1,1);
IF(LENGTH(:new.password) != 8) THEN
    dbms output. Put line ('The length of the password must be 8
characters');
    Raise Application Error (-20002, 'Password Length must be
8');
END IF;
IF( (REGEXP LIKE(prefix, '[a-z]')) OR (REGEXP_LIKE(prefix,
'[0-9]')) OR (REGEXP LIKE(prefix, '[A-Z]'))) THEN
    dbms output. Put line ('The first letter of the password must
be special character');
   Raise Application Error (-20004, 'first letter of the
password must be special character');
END IF;
END;
```

Trigger 6:To check length of Phone no. in customer details

```
CREATE OR REPLACE TRIGGER check_customer

BEFORE INSERT ON customer

FOR EACH ROW

DECLARE

prefix VARCHAR2(1);

CURSOR cu_cus IS SELECT * FROM customer;

BEGIN

IF (LENGTH(:new.ph_no) != 10) THEN

dbms_output.Put_line('The length of the phone number must be 10');

Raise_Application_Error (-20003, 'Phone number must be size of 10');

END IF;

END;

/
```

Trigger 7: To subtract quantity from database after order is placed

```
CREATE OR REPLACE TRIGGER quan_sub BEFORE INSERT ON orderdetails

FOR EACH ROW

DECLARE

cursor c_quan IS SELECT quantity FROM product WHERE prod_name =
   :new.prod_name;

r_quan c_quan%rowtype;

BEGIN

OPEN c_quan;

FETCH c_quan INTO r_quan;

IF (r_quan.quantity<:new.quantity) THEN

   raise_application_error(-20001,'Enough quantity not

available');

ELSE
```

```
UPDATE product SET quantity = (r_quan.quantity -
:new.quantity) WHERE prod_name = :new.prod_name;
END IF;
CLOSE c_quan;
END;
/
```

Trigger 8: To check that quantity which is added is available or not

```
CREATE OR REPLACE TRIGGER check quan BEFORE INSERT ON
shoppingcart
FOR EACH ROW
DECLARE
cursor c_quan IS SELECT quantity FROM product WHERE prod name =
:new.prod name;
r quan c quan%rowtype;
BEGIN
OPEN c quan;
LOOP
FETCH c quan INTO r quan;
IF c quan%notfound THEN
exit;
ELSE
    IF (r quan.quantity<:new.quantity) THEN</pre>
      raise application error(-20001, 'Enough quantity not
available');
END IF;
END IF;
END LOOP;
CLOSE c quan;
END:
```

Trigger 9:To check length of Phone no. in placeorder

```
CREATE OR REPLACE TRIGGER CHECK_PH

BEFORE INSERT ON placeorder

FOR EACH ROW

DECLARE

BEGIN

IF (LENGTH(:new.ph_no) != 10) THEN

dbms_output.Put_line('The length of the phone number must be 10');

Raise_Application_Error (-20003, 'Phone number must be size of 10');

END IF;

END;

/
```

Functions:

Function 1: To Calculate Total Amount

```
CREATE OR REPLACE FUNCTION tot_amt(shopemail IN
shoppingcart.email%TYPE) RETURN INT AS tot_amt INT;
cursor c_shop IS SELECT price, quantity FROM shoppingcart WHERE
email = shopemail;
r_shop c_shop%ROWTYPE;
BEGIN
tot_amt:=0;
OPEN c_shop;
LOOP
FETCH c_shop INTO r_shop;
IF c_shop%NOTfound THEN
```

```
exit;
ELSE
     tot_amt:=tot_amt+(r_shop.price);
END IF;
END LOOP;
CLOSE c_shop;
RETURN tot_amt;
END;
/
CallableStatement ps1 = myConnect.prepareCall("{? = call tot_amt(?)}");
```

Images of Output of Functions Triggers and Procedures on the Frontend:

OUTPUT 1:



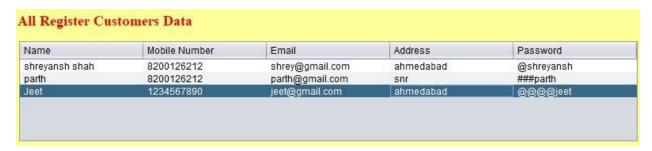
Output of Login Admin to the System.

OUTPUT 2:			



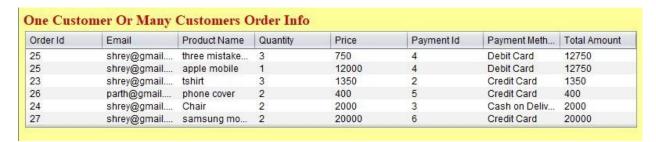
Output of Admin adding Product in the Fashion Category

OUTPUT 3:



Output of Admin can see all the Registered User and their Details

OUTPUT 4:



Output of Admin Seeing the Order of a Specific Customer Shrey

OUTPUT 5:



Output of Admin Selecting a Specific User and seeing his information

OUTPUT 6:



Output of a Cart of User Shreyansh

OUTPUT 7:



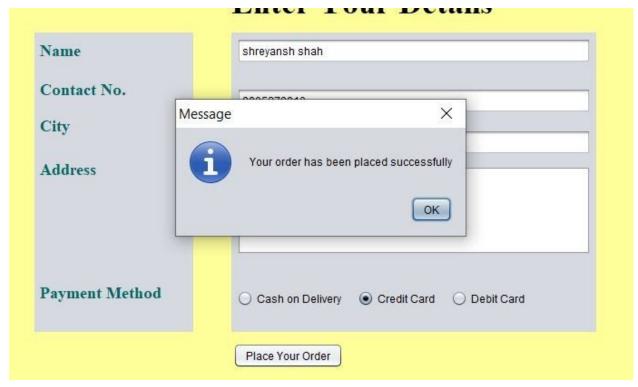
User adding product to his cart.

OUTPUT 8:



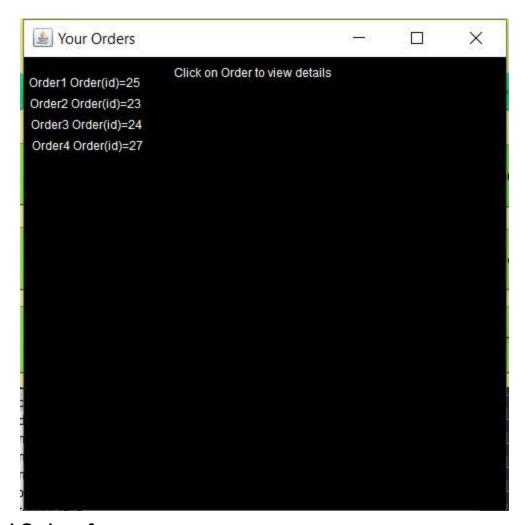
Validation of Input details of the New User Registering.

OUTPUT 9:



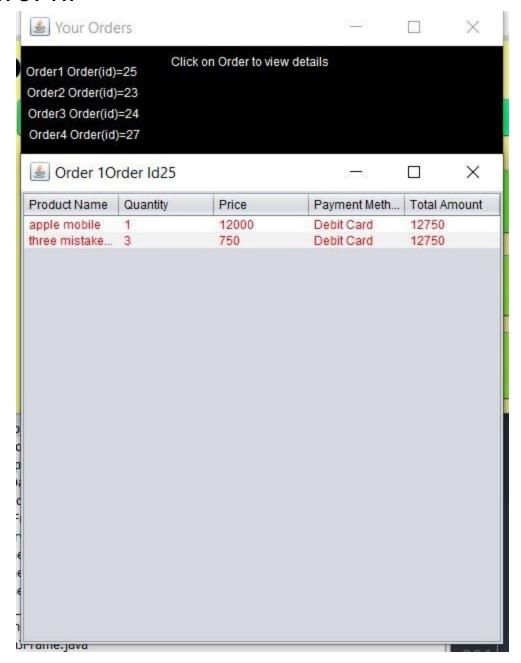
Output of Placing User Shreyansh's Order.

OUTPUT 10:



Total Order of a user.

OUTPUT 11:



Viewing history of our Order placed before.

OUTPUT 12:



Confirming Password inserted before.

OUTPUT 13:



Updating user's details

OUTPUT 14:



Resetting our cart

OUTPUT 15:



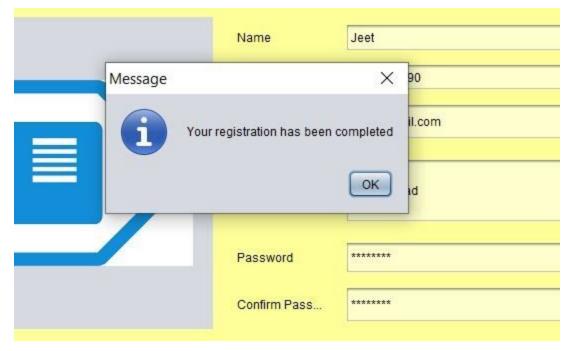
Cart of the User Reseted.

OUTPUT 16:



Validation for using the System you must have to login first.

OUTPUT 17:



Registration of the User Completed.

OUTPUT 18:

Name	shreyansh shah
Email Id	shrey@gmail.com
Password	shrey
Contact No.	8200126212
Address	ahmedabad

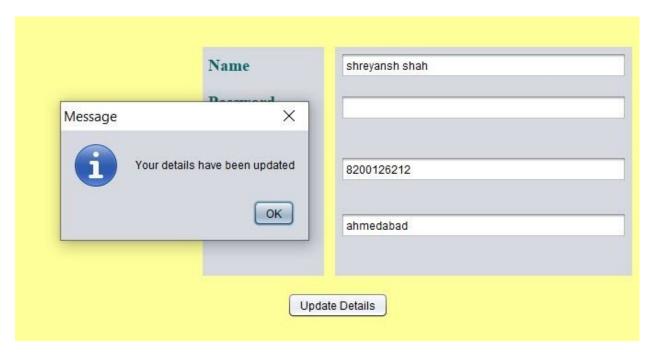
Updating the User's Details.

OUTPUT 19:



Checking Validations

OUTPUT 20:



Output when user have successfully updated the detail.

OUTPUT 21:



Validations when you have input the wrong password during login to the system.