FACULTY OF COMPUTING & INFORMATION TECHNOLOGY
KING ABDULAZIZ UNIVERSITY

FCIT
KAU

كلية الحاسبات وتقنية المعلومات
جامعة الملك عبدالعزيز

Electronic Supermarket

Instructed by Prof: Mohammed Jafar Alhaddad.

CPIT-251 project
September 2022

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Abstraction:

As students in subject 251 we had to create a project that can be used in real life to facilitate things, so among all the ideas I thought that what we needed most is to facilitate the way to acquire materials necessary for our daily life such as food, water and other materials, so we decided to design a program that facilitates all the previous operations.

Introduction:

There exist many supermarkets in each city which provide a lot of products but there is a situations when customer has no time to waste in crowded supermarkets or has no transportation to pick their needs so, our system allows users to take their daily needs such as detergents, foods and many other things from our stores, What makes our store different is that we make it easy for customers to purchase their needs which boils down to two simple ways, the first method is to order from our store using our app and when we receive the order we will deliver it to the requested address, The second way is to use the app to book the desired order and pick it up when you arrive at our sales station.

Problem Description:

Every human being in the world needs groceries and sometimes going out and heading to a supermarket or any market can be a hassle, not everyone lives close to one and not everyone has transportation but almost everyone in 2022 has an internet connection. So electronic supermarket would be the perfect solution to these problems, also not all customers have the time to go every week to shop for the same stuff that they always want to buy, so the customer can make a package which contains all his favorite and usual items that he orders occasionally.

Proposed Solution:

An online supermarket that the customers can order their items.

1. Our system is delivery based, but a customer can also order from his laptop or phone and just come to the warehouses and pick up the order
2. We will have many promotions and discounts for our loyal customers.
3. We will have a variety of products that no other supermarkets will have.
4. Customer can set his usual orders in a package and reorder it every time.
5. Payment can be via online credit card or cash.

The used methodology

In our Project Electronic Supermarket, we used waterfall methodology for the following reasons

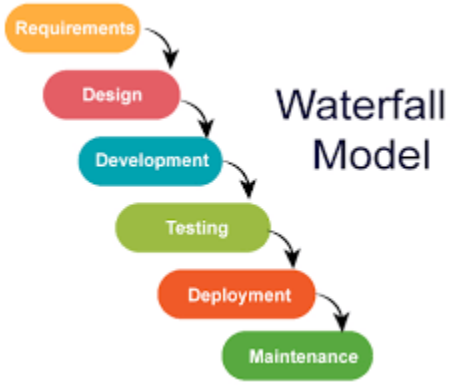
Requirements are clear and fixed that may not change.

There are no ambiguous requirements

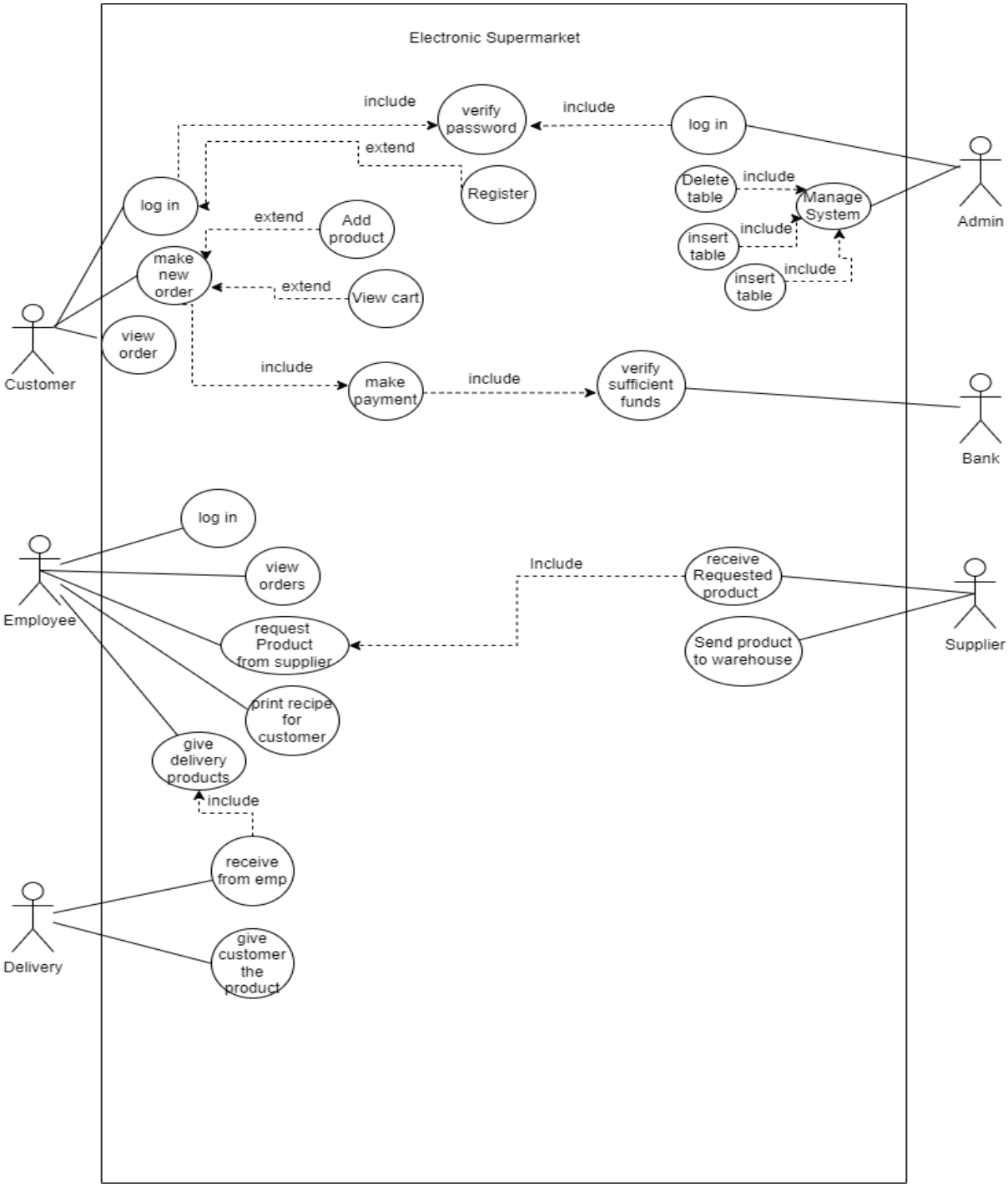
(no confusion).

It is good to use this model when the technology is well understood.

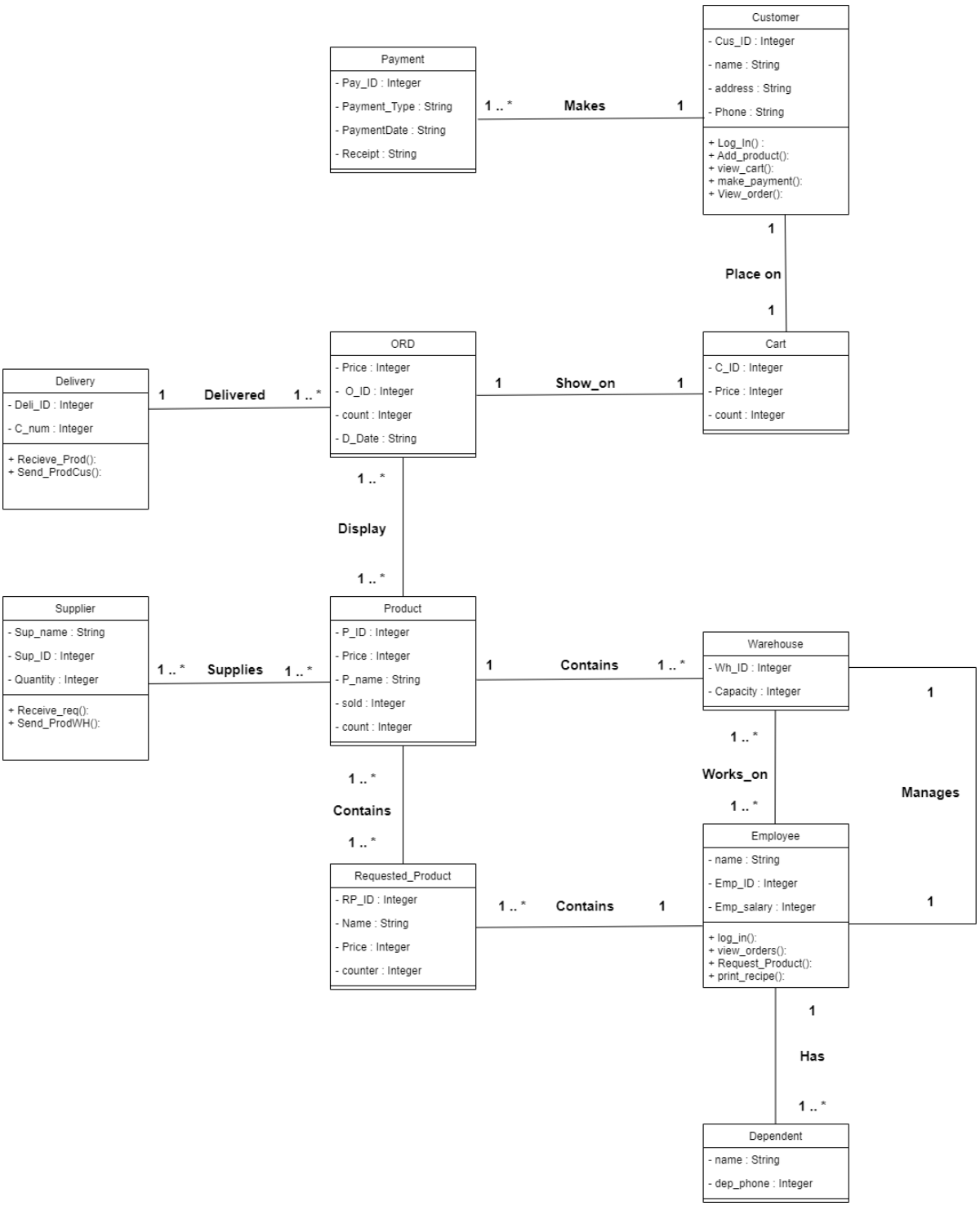
The project is short and cast is low. Risk is zero or minimum.



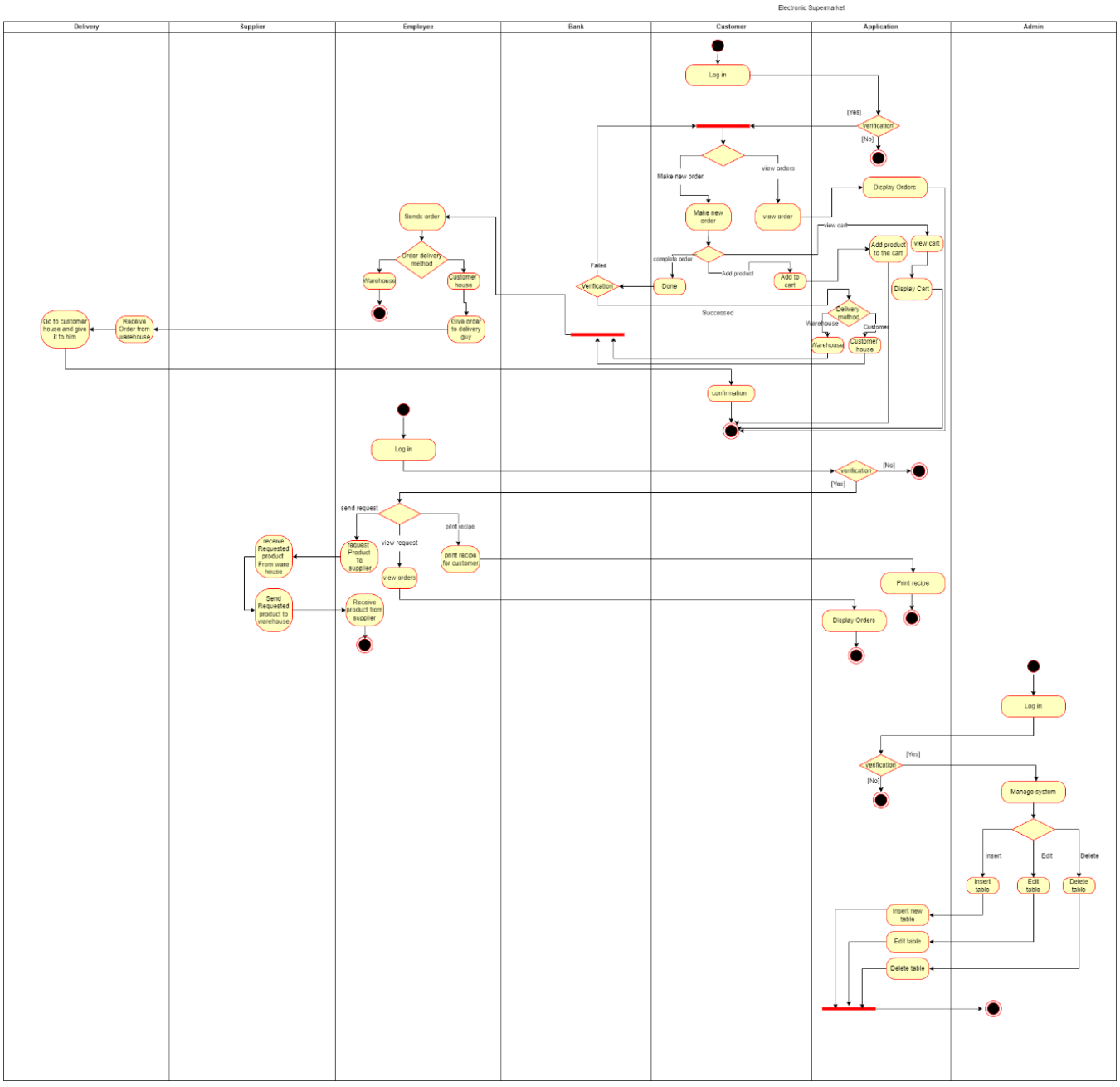
Use Case:


Electronic Supermarket
include
verify password
include
log in
extend
Register
log in
extend
Add product
make new order
extend
View cart
view order
Customer
Delete table
include
Manage System
insert table
include
insert table
include
Admin
include
make payment
include
verify sufficient funds
Bank
log in
view orders
request Product from supplier
print recipe for customer
give delivery products
Employee
Include
receive Requested product
Send product to warehouse
Supplier
include
receive from emp
give customer the product
Delivery

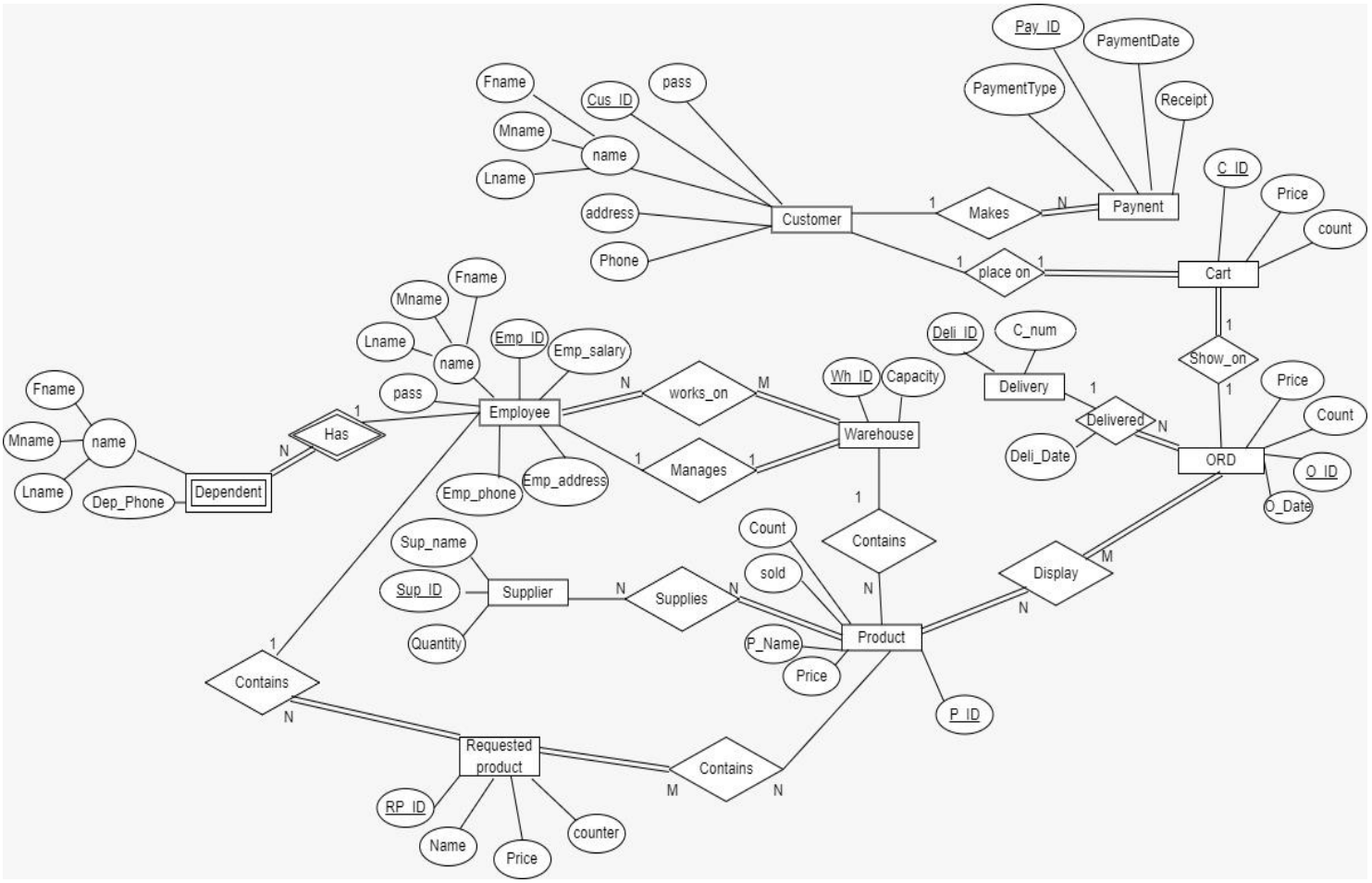
Class Diagram:



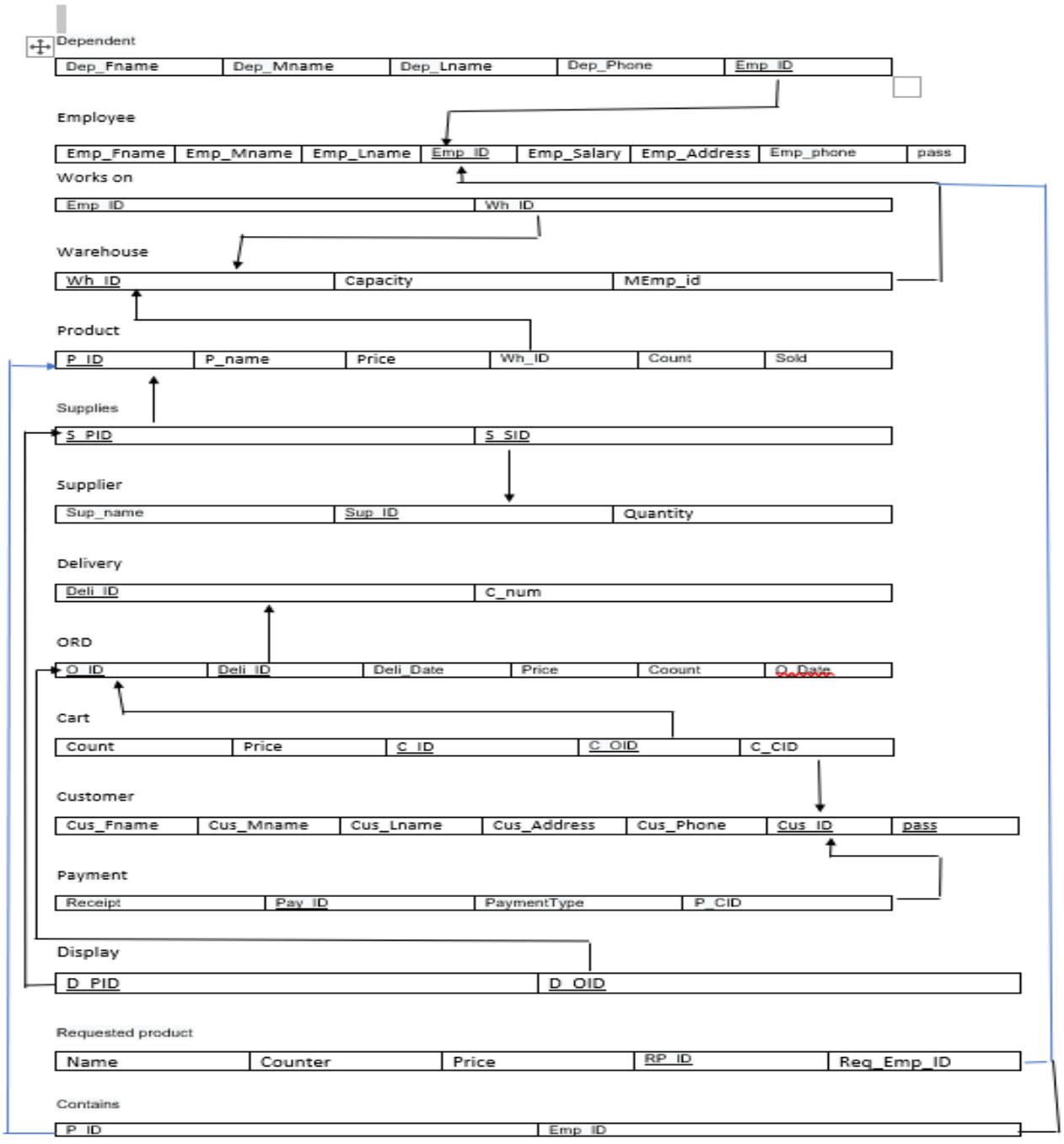
Activity Diagram:



ER Diagram:


Pay_ID
PaymentDate
PaymentType
Receipt
Fname
Cus_ID
pass
Mname
name
Lname
address
Phone
Customer
1
Makes
N
Paynent
C_ID
Price
count
1
place on
1
Cart
1
Show_on
1
Price
Count
O_ID
O_Date
ORD
Deli_ID
C_num
Delivery
1
Delivered
N
Deli_Date
Fname
Mname
Lname
name
pass
Emp_ID
Emp_salary
Employee
N
works_on
M
Wh_ID
Capacity
Warehouse
1
Manages
1
Emp_phone
Emp_address
Fname
Mname
Lname
name
Dep_Phone
Dependent
1
Has
N
Sup_name
Sup_ID
Quantity
Supplier
N
Supplies
N
Count
sold
P_Name
Price
Product
1
Contains
N
M
Display
N
P_ID
1
Contains
N
Requested product
RP_ID
Name
Price
counter
Contains
M
N

Database Schema



DataBase Table Creation Commands:

```
CREATE TABLE WAREHOUSE
(
Wh_ID integer,
MEmpID integer,
capacity integer,
CONSTRAINT warehouse_pk PRIMARY KEY (Wh_ID)
);

CREATE TABLE CUSTOMER
(
Cus_ID integer NOT NULL,
Cus_Fname varchar2(38) NOT NULL,
Cus_Mname varchar2(38),
Cus_Lname varchar2(38) NOT NULL,
Cus_Phone varchar2(38) NOT NULL,
Cus_Address varchar2(38),
Pass varchar2(38),
CONSTRAINT customer_pk PRIMARY KEY (Cus_ID)
);

CREATE TABLE DELIVERY
(
Deli_ID integer,
Car_num integer,
CONSTRAINT Delivery_pk PRIMARY KEY (Deli_ID)
```

```
);

CREATE TABLE SUPPLIER
(
Sup_ID integer,
Sup_Name varchar2(38),
Quantity integer,
CONSTRAINT Supplier_pk PRIMARY KEY (Sup_ID)
);


CREATE TABLE EMPLOYEE
(
Emp_ID integer,
Emp_Fname varchar2(38) NOT NULL,
Emp_Mname varchar2(38),
Emp_Lname varchar2(38) NOT NULL,
Emp_Phone varchar2(38),
Emp_Address varchar2(38),
Emp_Salary integer,
Emp_Warehouse integer,
Pass varchar2(38),
CONSTRAINT employee_pk PRIMARY KEY(Emp_ID),
CONSTRAINT emp_warehouse FOREIGN KEY (Emp_Warehouse) REFERENCES
Warehouse(Wh_ID)
);
```

```
CREATE TABLE Dependent
(
Emp_ID integer,
Dep_Fname varchar2(38),
Dep_Mname varchar2(38),
Dep_Lname varchar2(38),
Dep_Phone varchar2(38),
CONSTRAINT dependenEmp FOREIGN KEY (Emp_ID) REFERENCES
Employee(Emp_id)
);


CREATE TABLE ORD
(
O_ID integer,
Deli_ID integer,
Price integer,
Count integer,
O_Date varchar2(38),
Deli_Date varchar2(38),
CONSTRAINT order_pk PRIMARY KEY (O_ID),
CONSTRAINT Deli_Order FOREIGN KEY (Deli_ID) REFERENCES DELIVERY(Deli_ID)
);

CREATE TABLE PRODUCT
(
P_ID integer,
```

```
P_Name varchar2(38),
Price integer,
Wh_ID integer,
Count integer,
Sold integer,
CONSTRAINT product_pk PRIMARY KEY (P_ID),
CONSTRAINT product_Warehouse FOREIGN KEY (Wh_ID) REFERENCES
Warehouse(Wh_ID)
);

CREATE TABLE R_PRODUCT
(
Emp_ID integer,
RP_ID integer,
RP_Name varchar2(38),
RPrice integer,
Count integer,
CONSTRAINT Rproduct_pk PRIMARY KEY (RP_ID),
CONSTRAINT Rproduct_fk FOREIGN KEY (Emp_ID) REFERENCES
Employee(Emp_id)
);

CREATE TABLE RPP
(
RP_ID integer,
P_ID integer,
CONSTRAINT RPP FOREIGN KEY (RP_ID) REFERENCES R_PRODUCT(RP_ID),
```

```
CONSTRAINT PP FOREIGN KEY (P_ID) REFERENCES PRODUCT(P_ID)
);


CREATE TABLE CART
(
C_ID integer,
C_OID integer,
C_CID integer,
Count integer,
Price integer,
CONSTRAINT Cart_pk PRIMARY KEY (C_ID),
CONSTRAINT Cart_Order FOREIGN KEY (C_OID) REFERENCES ORD(O_ID),
CONSTRAINT Cart_Customer FOREIGN KEY (C_CID) REFERENCES
Customer(Cus_ID)
);


CREATE TABLE Payment
(
Pay_ID integer,
Pay_CID integer,
Recipt varchar2(40),
Pay_Type varchar2(20),
Pay_Date varchar2(38),
CONSTRAINT payment_pk PRIMARY KEY (Pay_ID),
CONSTRAINT Payment_Customer FOREIGN KEY (Pay_CID) REFERENCES
CUSTOMER(Cus_ID)
```

```
);


CREATE TABLE WORKS_ON

(

Emp_ID integer,

Wh_ID integer,

CONSTRAINT Works_On_Emp_ID FOREIGN KEY (Emp_ID) REFERENCES
EMPLOYEE(Emp_ID),

CONSTRAINT Works_On_Wh_ID FOREIGN KEY (Wh_ID) REFERENCES
WAREHOUSE(Wh_ID)

);


CREATE TABLE DISPLAY

(

D_PID integer,

D_OID integer,

CONSTRAINT Display_Product_ID FOREIGN KEY (D_PID) REFERENCES
PRODUCT(P_ID),

CONSTRAINT Display_Order_ID FOREIGN KEY (D_OID) REFERENCES ORD(O_ID)

);

CREATE TABLE SUPPLIES

(

S_PID integer,

S_SID integer,

CONSTRAINT Supplies_Product_ID FOREIGN KEY (S_PID) REFERENCES
PRODUCT(P_ID),

CONSTRAINT Supplies_Supplier_ID FOREIGN KEY (S_SID) REFERENCES
SUPPLIER(Sup_ID));
```

DataBase Table Insertion Commands:

/* WAREHOUSE 1 */

insert into Warehouse values(700,1,8845678);

insert into Employee values(8845678,'Omar','Saeed','Alzahrani', 0566115702 , 'Jeddah' , 10000 ,1, saqr);

insert into Dependent values(8845678,0549947469, 'Saeed' , 'Omar' , 'Alzahrani');

insert into Employee values(9951472,'Moath','Mesleh','Alsolami', 0561235484 , 'Jeddah' , 5000 ,1, saqr);

insert into Employee values(9940579,'Fahad','Hammad','Alsifri', 0562357895 , 'Jeddah' , 2500 ,1, saqr);

insert into Employee values(9943998,'Reem','Mohammed','Alqahtani', 0554517895 , 'Jeddah' , 2500 ,1, saqr);

/* WAREHOUSE 2 */

insert into Warehouse values(700,2,8836023);

insert into Employee values(8836023,'Abdulaziz','Adnan','Alsharief', 0503368999 , 'Jeddah' , 26000 ,2, saqr);

insert into Dependent values(8836023,Saqr, 'Abdulaziz' , 'Alsharief' , 0555599999);

insert into Employee values(9958698,'Mohammed','Ali','Alghamdi', 0535489657 , 'Jeddah' , 5000 ,2, saqr);

insert into Employee values(9932145,'rakan','Ahmed','salamah', 0561478596 , 'Jeddah' , 20000 ,2, saqr);

/* SUPPLIER */

insert into Supplier values(1, 'almaraie', 0549342342, '3337 Prince Majid Rd,8799 ، Jeddah 22245 3337');

insert into Supplier values(2, 'nadik', 0549343256,'Andalus Mall, Al Fayhaa, Jeddah 22245');

insert into Supplier values(3, 'nda', 05495837432,'7458 Al-Madinah Al-Munawarah Rd, Al Baghdadiyah Al Gharbiyah District, Jeddah');

insert into Supplier values(4, 'safi',05483748134 ,'Mönckebergstraße 11, 20095 Hamburg, Germany');

insert into Supplier values(5, 'Godi',05483748134 ,'Mönckebergstraße 11, 20095 Hamburg, Saudi Arabia');

/* Adding products */

insert into Product values(1001, 'cheese', 15, 1, 10, 3);

insert into Product values(1002, 'Milk', 10, 1, 20, 4);

insert into Product values(1003, 'Laban', 10, 1, 30, 5);

insert into Product values(1004, 'Mayoneis', 150, 1, 24, 7);

insert into Product values(1005, 'Tomato', 5, 1, 40, 30);

insert into Product values(1006, 'Lettuce ', 5, 1, 30, 40);

insert into Product values(1007, 'Orange', 15, 2, 40, 25);

/* CUSTOMER */

insert into Customer values(2040568, 'reem', 'ahamd', 'AlQahtani',0564554698,'alkobr', saqr);

insert into Customer values(2056845.'nasser', 'mohamd', 'subhi',0512345678,'almedina', saqr);

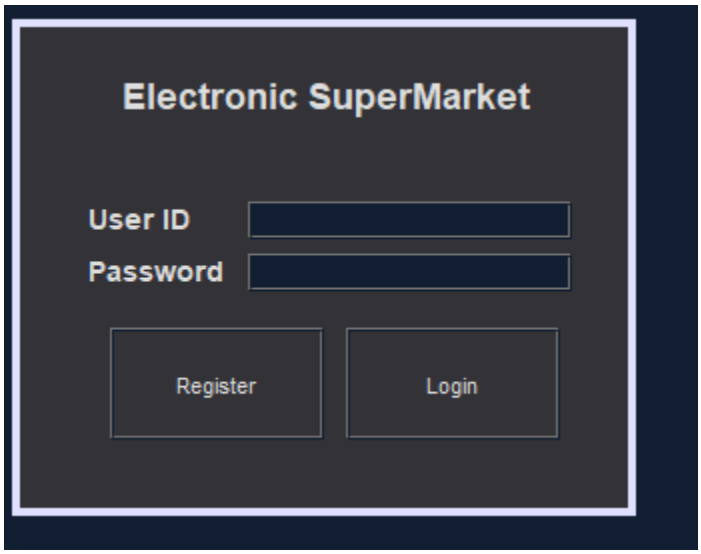
insert into Customer values(2036951, 'saud', 'abdullah', 'aldossry',0592737523,'Riyadh', saqr);

insert into Customer values(2045815, 'saeed', 'naif', 'selimanie',0592737523,'Makkah', saqr);

```
/* Delivery  */

insert into Delivery values(100,1);

insert into Delivery values(101,2);

/* ORD  */

insert into Delivery values(1,100,500,10,17-9-2022, 18-9-2022);

insert into Delivery values(2,101,450,10,17-9-2022, 18-9-2022);


/* Cart  */

insert into Delivery values(1,1,2040568,10,150);

insert into Delivery values(2,2,2036951,10,200);


/* Payment  */

insert into Payment values(1,1,'**THANK YOU FOR PURCHASING**', 'CARD', '11-3-
2022');

insert into Payment values(2,2,'**THANK YOU FOR PURCHASING**', 'CASH ON
Delivery', '11-3-2022');

/* Works_ON  */

insert into WORKS_ON values(0251472,1);

insert into WORKS_ON values(0243998,2);

/* Display  */

insert into Display values(1001,1);

insert into Display values(1002,2);



/* Supplies  */

insert into Display values(1001,1);

insert into Display values(1002,2);
```

Testing:

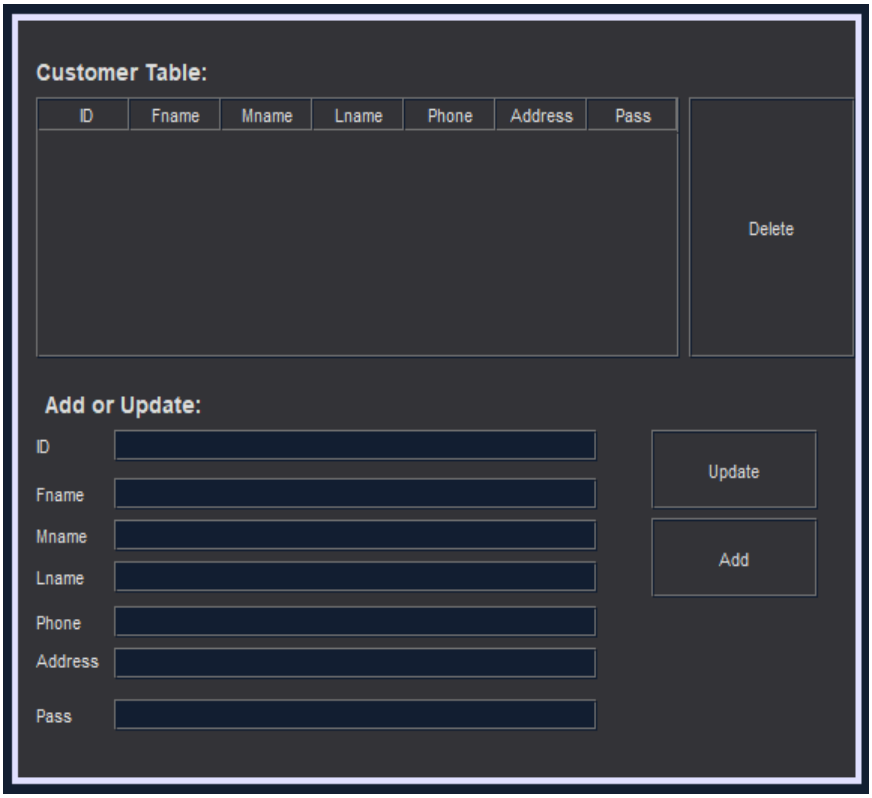
Login UI:

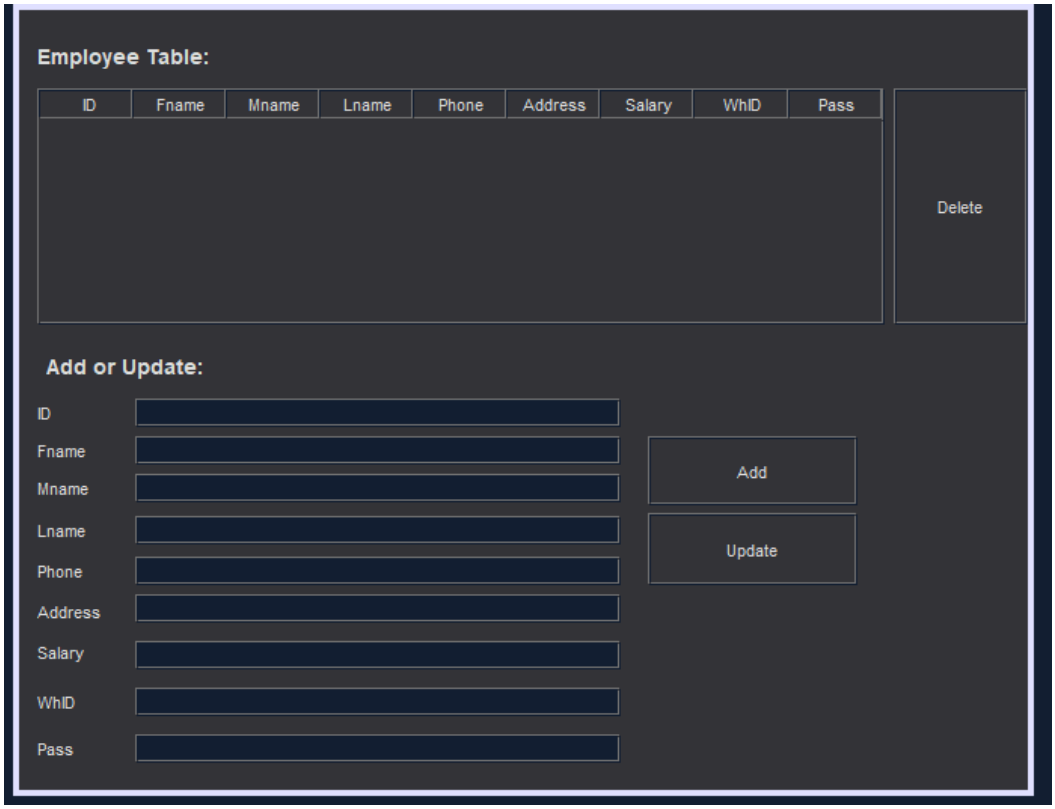


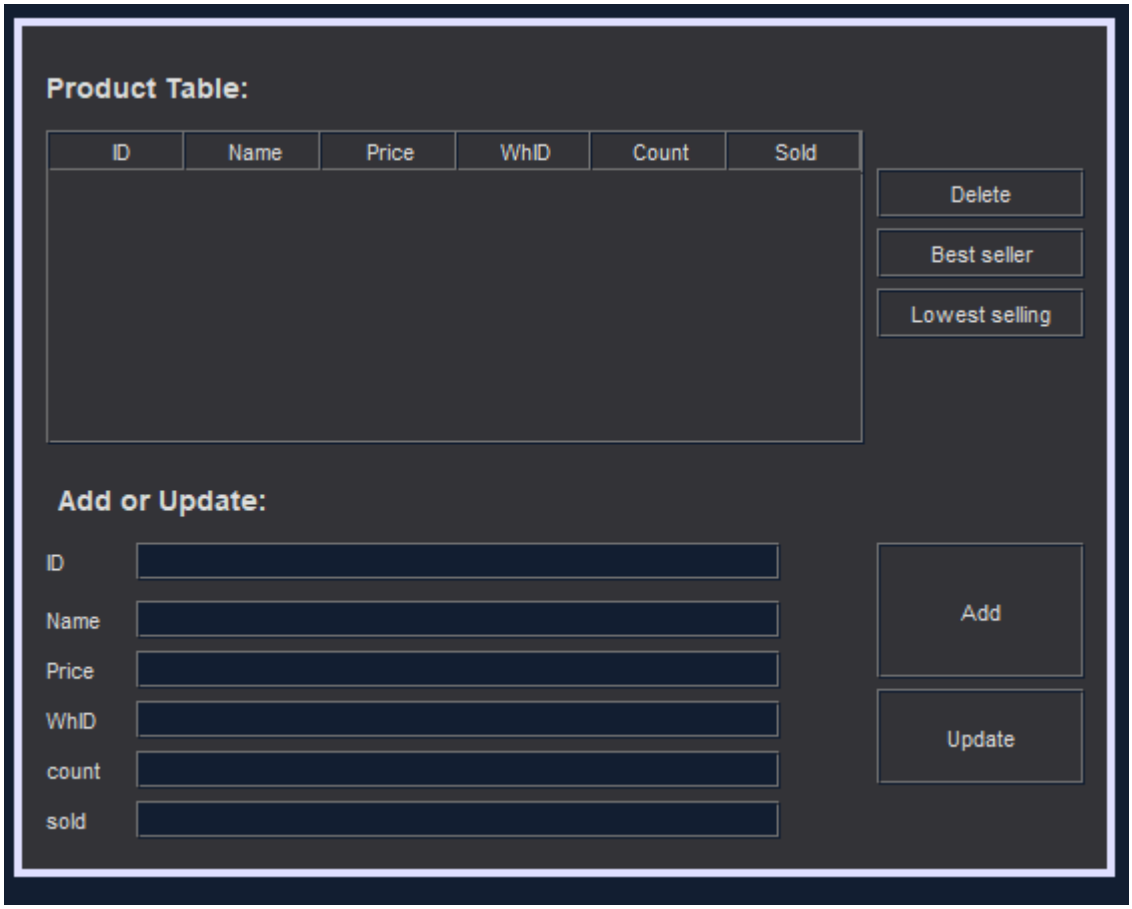
Customer Registration:

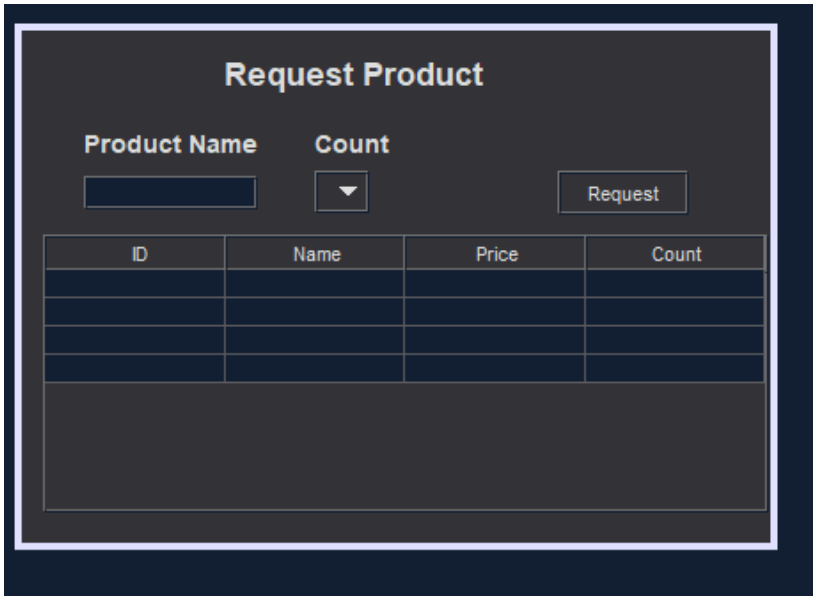
Admin UI's:


Electronic Supermarket
Choose:
Customer Table
Employee Table
Product Table
Requested Product

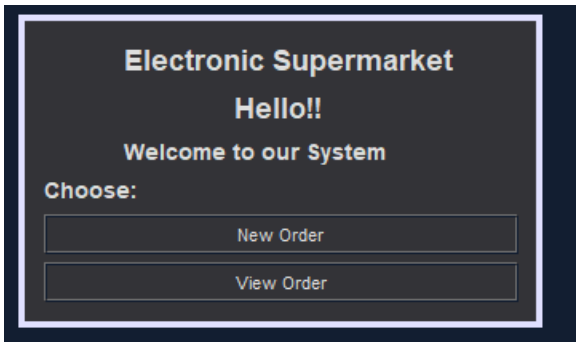

Customer Table:
ID
Fname
Mname
Lname
Phone
Address
Pass
Delete
Add or Update:
ID
Fname
Mname
Lname
Phone
Address
Pass
Update
Add

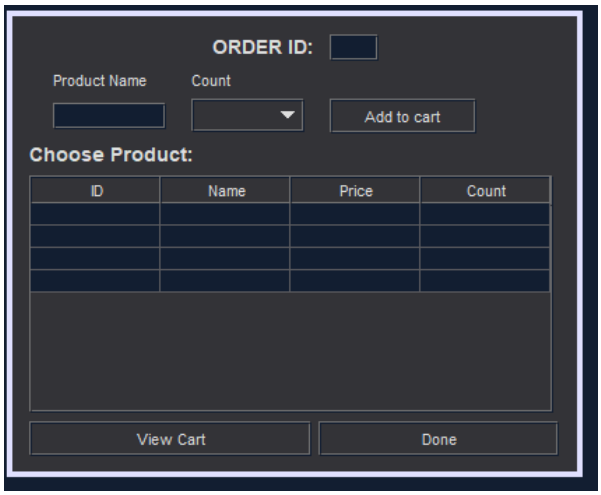

Employee Table:
ID
Fname
Mname
Lname
Phone
Address
Salary
WhID
Pass
Delete
Add or Update:
ID
Fname
Mname
Lname
Phone
Address
Salary
WhID
Pass
Add
Update

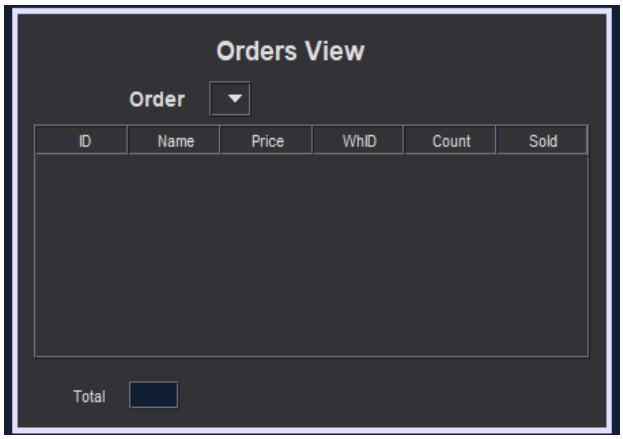

Product Table:
ID
Name
Price
WhID
Count
Sold
Delete
Best seller
Lowest selling
Add or Update:
ID
Name
Price
WhID
count
sold
Add
Update


Request Product
Product Name
Count
Request
ID
Name
Price
Count

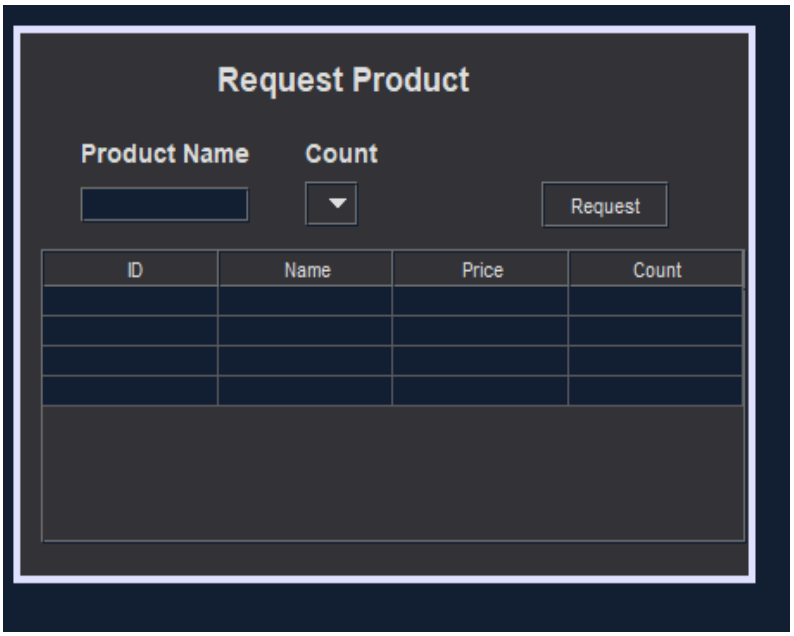
Customer UI's:







Employee UI's:



Connection Code:

```java
import java.sql.*;
import javax.swing.JOptionPane;

public class connect {

    public static Connection connect() {
        try {
            Connection con = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl", "scott", "scott");
            return con;
        } catch (SQLException e) {
            JOptionPane.showMessageDialog(null, e);
        }
        return null;
    }

}
```

UI's: