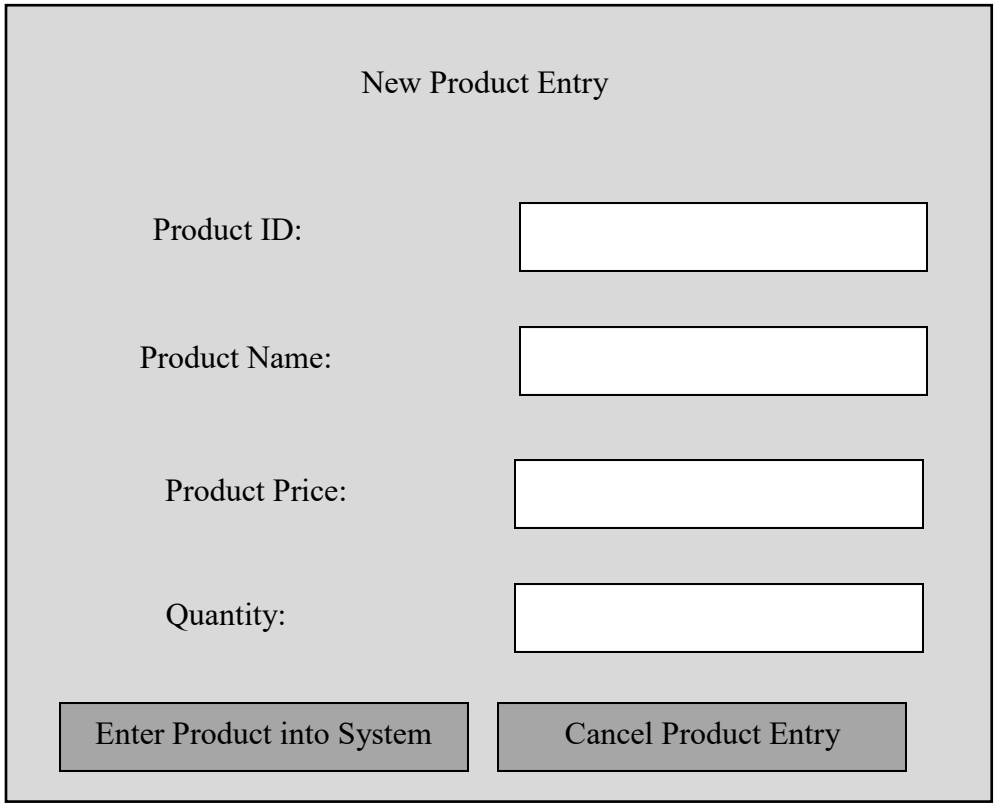
1. Use Cases
    a. New Product
        i. Use Case Name: Add new product
        ii. Actors: Any employee of the store (cashier, manager, owner)
        iii. Goals: Have new product added to system so it can later be used in transactions between the store and customer as well as having its inventory tracked
        iv. Preconditions: No entry for the new product exists in the store database
        v. Summary: Once the product is added all of its attributes will exist in the store database and it can later be used in transactions as well as stock checks
        vi. Related Use Cases: Add product to cart, check price of product, check stock of product
        vii. Steps:

Step	Description of System Response
Choose add new product command	Dialog opens for new product add
Fill in attributes for the new product	Systems asks for product id, product name, price, quantity in stock
Confirm information	Dialog closes if information confirmed as correct

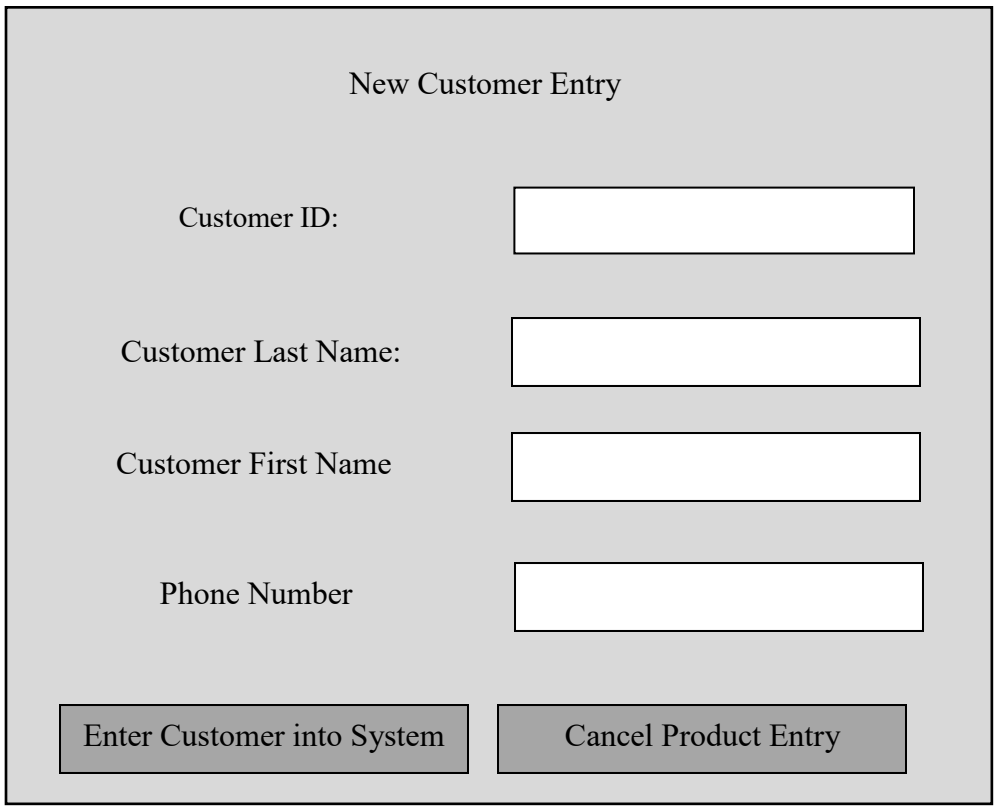
        viii. Postcondition: Entry for product now exists for product in database. Can later be added to other store functions such as transactions and inventory checks



b. New Customer
   i. Use Case Name: Add new customer
   ii. Actors: Any employee of the store (cashier, manager, owner), and customer
   iii. Goals: Have new customer added to system so it can later be used in transactions
   iv. Preconditions: No entry for the customer exists in the store database
   v. Summary: Once the customer is added all of its attributes will exist in the store database and it can later be used in transactions
   vi. Related Use Cases: Check customer entry
   vii. Steps:

Step	Description of System Response
Choose add new customer command	Dialog opens for new customer add
Fill in attributes for the new customer	Systems asks for ID, last and first name, phone number
Confirm information	Dialog closes if information confirmed as correct

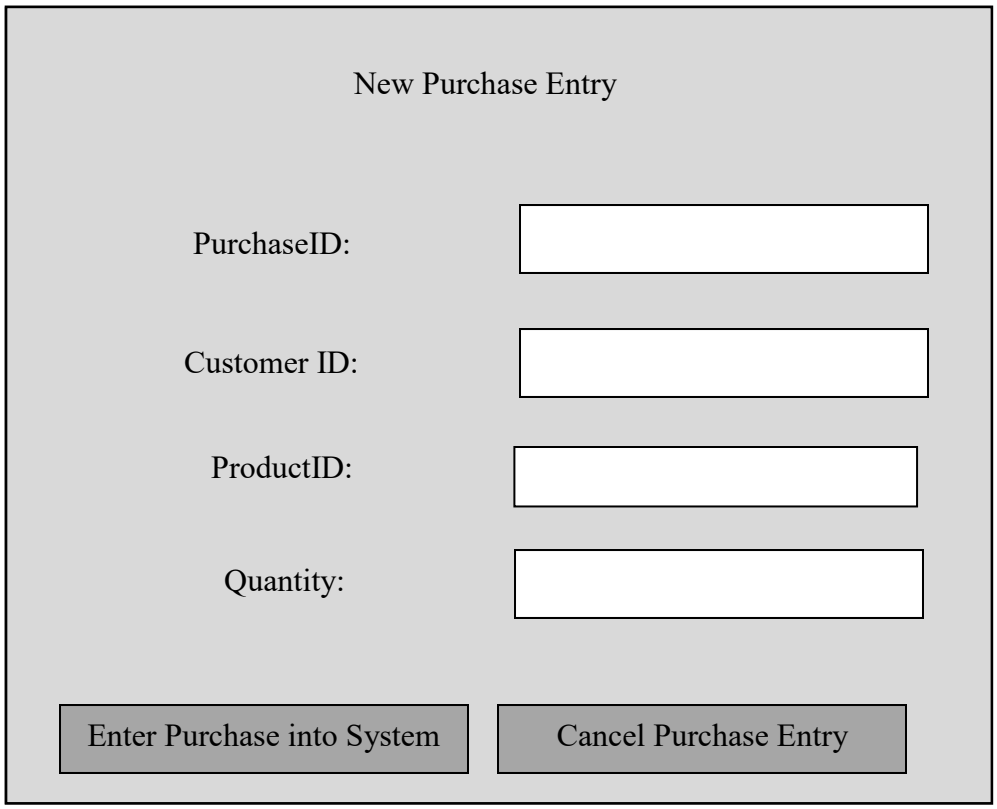
   viii. Postcondition: Entry for product now exists for customer in store database



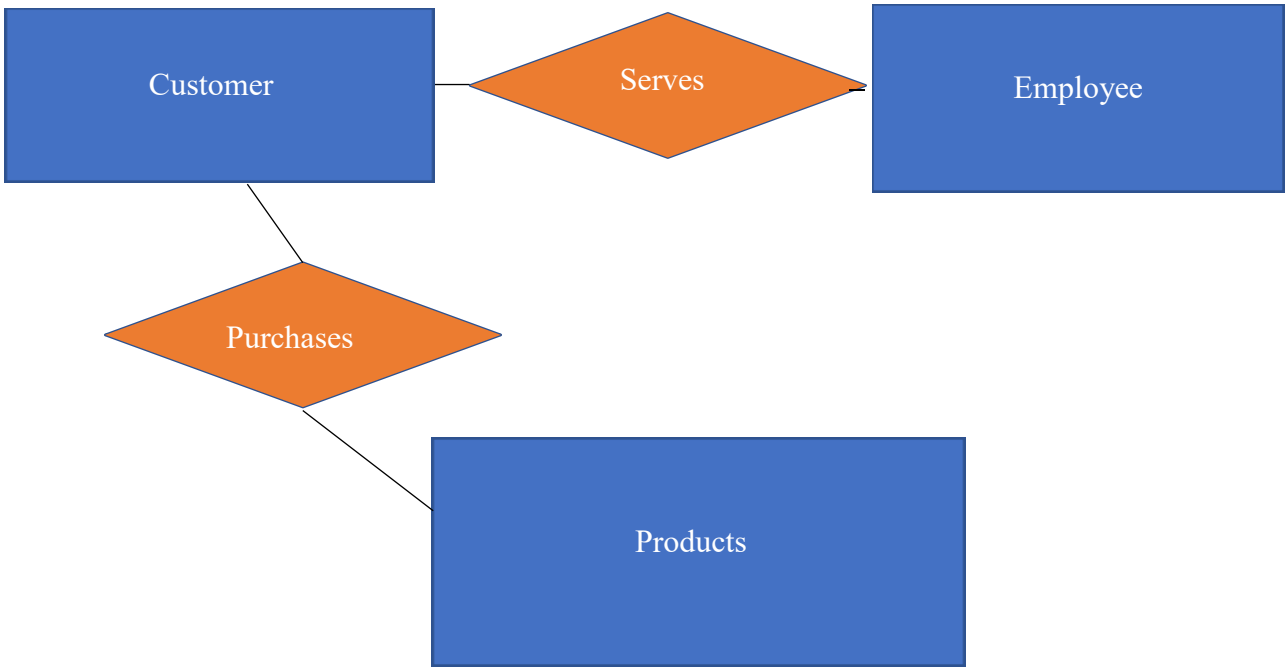
c. Record Purchase from customer
   i. Use Case Name: Record purchase
   ii. Actors: Any employee of the store (cashier, manager, owner), and customer
   iii. Goals: Have transaction added to system with total cost, customer name and phone number
   iv. Preconditions: No transaction exists in database
   v. Summary: Once the purchased is added it can be found in the history of transactions for the store
   vi. Related Use Cases: Check purchase history
   vii. Steps:

Step	Description of System Response
Choose new transaction command	Dialog opens for new purchase
Fill in attributes for the purchase	Systems asks for purchase ID, customerID, productID and quantity
Confirm information	Dialog closes if information confirmed as correct

   viii. Postcondition: Entry for purchase now exists for customer in store database



2. Entity-Relationship Diagram



3. Database Design
    a. Relations and attributes
        i. Customer(CustomerID, LastName, FirstName, phone)
        ii. Product(ProductID, Name, Quantity, Price)
        iii. Purchase(PurchaseID, customerID, ProductID, Quantity, Total)
    b. Keys
        i. Customer key: customerID
        ii. Product key: ProductID
        iii. Purchase key: PurchaseID

4. SQL Code for tables

```
CREATE TABLE "Customers" (
	"CustomerID"	INTEGER NOT NULL UNIQUE,
	"LastName"	TEXT,
	"FirstName"	TEXT,
	"Phone"	INTEGER,
	PRIMARY KEY("CustomerID")
)

CREATE TABLE "Products" (
	"ProductID"	INTEGER NOT NULL UNIQUE,
	"Name"TEXT,
	"Quantity"	INTEGER,
	"Price"	NUMERIC,
	PRIMARY KEY("ProductID")
)
```

```
CREATE TABLE "Purchases" (
        "PurchaseID"    INTEGER NOT NULL UNIQUE,
        "CustomerID"    INTEGER,
        "ProductID"     INTEGER,
        "Quantity"      INTEGER,
        "Total" NUMERIC,
        PRIMARY KEY("PurchaseID")
)
```

5. SQL code for inserts: see database file for actual records

```
INSERT INTO "main"."Customers" ("CustomerID", "LastName", "FirstName", "Phone") VALUES ('1', 'Doe', 'John', '1234567890');
INSERT INTO "main"."Customers" ("CustomerID", "LastName", "FirstName", "Phone") VALUES ('2', 'Smith', 'Sara', '1234567891');
INSERT INTO "main"."Customers" ("CustomerID", "LastName", "FirstName", "Phone") VALUES ('3', 'Murray', 'Bill', '5555555555');
INSERT INTO "main"."Customers" ("CustomerID", "LastName", "FirstName", "Phone") VALUES ('4', 'Doe', 'Jack', '1234567892');
INSERT INTO "main"."Customers" ("CustomerID", "LastName", "FirstName", "Phone") VALUES ('5', 'Doe', 'Jill', '1234567895');


INSERT INTO "main"."Products" ("ProductID", "Name", "Quantity", "Price") VALUES ('1', 'Bananas', '6', '1.5');
INSERT INTO "main"."Products" ("ProductID", "Name", "Quantity", "Price") VALUES ('2', 'Water', '6', '2.5');
INSERT INTO "main"."Products" ("ProductID", "Name", "Quantity", "Price") VALUES ('3', 'Ground Beef', '18', '4.5');
INSERT INTO "main"."Products" ("ProductID", "Name", "Quantity", "Price") VALUES ('4', 'Potato', '48', '0.5');
INSERT INTO "main"."Products" ("ProductID", "Name", "Quantity", "Price") VALUES ('5', 'Chips', '9', '3.5');


INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('1', '1', '1', '2', '3.21');
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('2', '1', '2', '2', '5.35');
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('3', '2', '3', '1', '4.815');
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('4', '2', '4', '1', '0.535');
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('5', '3', '3', '1', '4.815');
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('6', '3', '5', '1', '3.745');
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('7', '4', '2', '2', '5.35');
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('8', '4', '4', '1', '0.535');
```

```
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('9', '5', '5', '5', '18.725');
INSERT INTO "main"."Purchases" ("PurchaseID", "CustomerID", "ProductID", "Quantity", "Total")
VALUES ('10', '5', '1', '2', '3.21');
```