

1. Use cases:

Common

| Actor actions | System responses |
|---|---|
| 1. Click "Add New Product" button | 2. Display Product Entry screen |
| 3. Type in product information then press "Add" | 4. Add product to database and display acknowledgement screen |

| Actor actions | System responses |
|--|--|
| 1. Click "Add New Customer" button | 2. Display Customer Entry screen |
| 3. Type in customer information then press "Add" | 4. Add customer to database and display acknowledgement screen |

| Actor actions | System responses |
|--|--|
| 1. Click "Add New Purchase" button | 2. Display Purchase Entry screen |
| 3. Type in purchase information then press "Add" | 4. Add purchase to database and display acknowledgement screen |

Exception

| Actor actions | System responses |
|---|---------------------------------|
| 1. Click "Add New Product" button | 2. Display Product Entry screen |
| 3. Type in product information without the product name | 4. Display error screen |

| Actor actions | System responses |
|---|----------------------------------|
| 1. Click "Add New Customer" button | 2. Display Customer Entry screen |
| 3. Type in customer information without the customer name | 4. Display error screen |

| Actor actions | System responses |
|--|----------------------------------|
| 1. Click "Add New Purchase" button | 2. Display Purchase Entry screen |
| 3. Type in purchase information with an already taken PurchaseID | 4. Display error screen |

2. Screens are shown in pictures.

3. SQL:

```
CREATE TABLE "Customers" (  
    "CustomerId"  INTEGER NOT NULL UNIQUE,  
    "Name" TEXT,  
    "Address"     TEXT,  
    "Phone"       TEXT,  
    PRIMARY KEY("CustomerId")  
)
```

```
CREATE TABLE "Products" (  
    "ProductId"  INTEGER NOT NULL UNIQUE,  
    "Name" TEXT,  
    "Price" REAL,  
    "Quantity" REAL,  
    "Vendor" TEXT,  
    "Description" TEXT,  
    PRIMARY KEY("ProductId")  
)
```

```
CREATE TABLE "Purchases" (  
    "PurchaseID"  INTEGER NOT NULL UNIQUE,  
    "ProductID"   INTEGER,  
    "CustomerID"  INTEGER,  
    "Price" REAL,  
    "Quantity" REAL,  
    "Cost" REAL,  
    "Tax" REAL,  
    "Total" REAL,  
    "Date" TEXT,
```

PRIMARY KEY("PurchaseID")
)

INSERT INTO Products(ProductId, Name, Price, Quantity) VALUES (1,"Apple",1.24,50.0)

INSERT INTO Products(ProductId, Name, Price, Quantity) VALUES (2,"Pear",1.36,50.0)

INSERT INTO Products(ProductId, Name, Price, Quantity) VALUES (3,"Banana",2.04,25.0)

INSERT INTO Products(ProductId, Name, Price, Quantity) VALUES (4,"Brocoli",1.98,75.0)

INSERT INTO Products(ProductId, Name, Price, Quantity) VALUES (5,"Potato",1.78,75.0)

INSERT INTO Products(ProductId, Name, Price, Quantity) VALUES (6,"Tomato",2.89,35.0)

INSERT INTO Customers(CustomerId, Name, Address, Phone) VALUES (1,"Steve", "456 Tarnished Road", "456-787-1234")

INSERT INTO Customers(CustomerId, Name, Address, Phone) VALUES (2,"Bob", "764 Road Rd.", "789-359-1579")

INSERT INTO Customers(CustomerId, Name, Address, Phone) VALUES (3,"Rose", "3821 Titanic Trail", "164-784-3698")

INSERT INTO Customers(CustomerId, Name, Address, Phone) VALUES (4,"Jack", "3821 Titanic Trail", "164-784-3669")

INSERT INTO Customers(CustomerId, Name, Address, Phone) VALUES (5,"Rodger", "1689 Real Place", "290-698-4502")

INSERT INTO Purchases VALUES (1,1,1,1.24,2.0,2.48,0.22319999999999998,2.7032,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES (2,1,2,1.36,2.0,2.72,0.24480000000000002,2.9648000000000003,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES (3,4,3,2.04,1.0,2.04,0.18359999999999999,2.2236000000000002,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES (4,4,5,1.78,7.0,12.46,1.1214,13.5814,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES (5,3,1,1.24,2.0,2.48,0.22319999999999998,2.7032,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES (6,4,4,1.98,4.0,7.92,0.7128,8.6328,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES (7,3,3,2.04,3.0,6.12,0.5508,6.6708,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES (8,1,1,1.24,6.0,7.439999999999995,0.6696,8.1096,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES (9,1,2,1.36,6.0,8.16,0.734399999999999,8.894400000000001,"Wed Oct 16 22:26:29 CDT 2019")

INSERT INTO Purchases VALUES
(10,1,4,1.98,3.0,4.08,0.367199999999999,4.447200000000005,"Wed Oct 16 22:26:29 CDT 2019")

4 and 5. Pictures attached in the test folder