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Project 2

As a user, I want to add a new product into the system.

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| **Actor** | **System** |
| 1. Choose command “Manage Product”   Main Screen:  A screenshot of a cell phone  Description automatically generated | 1. Display “Manage Product” screen   “Manage Product” screen:  A screenshot of a cell phone  Description automatically generated |
| 1. Insert product info then click “Add” button   “Manage Product” screen  A screenshot of a cell phone  Description automatically generated | 1. Hide “Add Product” screen and display “Add Product Successfully” screen   “Add Product Successfully” screen: |
| 1. Click on “Ok” button | 1. Display “Main menu” Screen   “Main menu” screen:  A screenshot of a cell phone  Description automatically generated |

As a user, I want to edit a product in the system.

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| **Actor** | **System** |
| 1. Choose command “Manage Product”   Main Screen:  A screenshot of a cell phone  Description automatically generated | 1. Display “Manage Product” screen   “Manage Product” screen:  A screenshot of a cell phone  Description automatically generated |
| 1. Insert ProductID   “Manage Product” screen  A screenshot of a cell phone  Description automatically generated | 1. Load product info and make changes   A screenshot of a cell phone  Description automatically generated |
| 1. Click on “Ok” button and display “Manage Product Successfully” screen   “Manage Product Successfully” screen: | 1. Click Ok and Display “Main menu” Screen   “Main menu” screen:  A screenshot of a cell phone  Description automatically generated |

As a user, I want to add a new customer into the system.

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| **Actor** | **System** |
| 1. Choose command “Manage Customer”   Main Screen: | 1. Display “Manage Customer” screen   “Manage Customer” screen: |
| 1. Insert customer info then click “Add” button   “Manage Customer” screen | 1. Hide “Manage Customer” screen and display “Add Customer Successfully” screen   “Add Customer Successfully” screen: |
| 1. Click on “Ok” button | 1. Display “Main menu” Screen   “Main menu” screen: |

As a user, I want to edit a customer in the system.

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| **Actor** | **System** |
| 1. Choose command “Manage Product”   Main Screen:  A screenshot of a cell phone  Description automatically generated | 1. Display “Manage Customer” screen   “Manage Customer” screen: |
| 1. Insert CustomerID   “Manage Customer” screen | 1. Load customer info and make changes |
| 1. Click on “Ok” button and display “Manage Customer Successfully” screen   “Manage Customer Successfully” screen: | 1. Click Ok and Display “Main menu” Screen   “Main menu” screen:  A screenshot of a cell phone  Description automatically generated |

As a user, I want to record a purchase from a customer into the system.

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| **Actor** | **System** |
| 1. Choose command “Add Order”   Main Screen: | 1. Display “Add Order” screen   “Add Order” screen: |
| 1. Insert customer info then click “Add” button   “Add Order” screen: | 1. Hide “Add Order” screen and display “Add Order Successfully” screen   “Add Order Successfully” screen: |
| 1. Click on “Ok” button | 1. Display “Main menu” Screen   “Main menu” screen: |

As a user, I want to edit a purchase in the system.

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| **Actor** | **System** |
| 1. Choose command “Manage Product”   Main Screen:  A screenshot of a cell phone  Description automatically generated | 1. Display “Manage Purchase” screen   “Manage Purchase” screen: |
| 1. Insert PurchaseID   “Manage Purchase” screen | 1. Load purchase info and make changes |
| 1. Click on “Ok” button and display “Manage Purchase Successfully” screen   “Manage Purchase Successfully” screen: | 1. Click Ok and Display “Main menu” Screen   “Main menu” screen:  A screenshot of a cell phone  Description automatically generated |

Draw the entity-relationship diagram for this system. We assume the minimal requirement with two entities: products and customers, and one relationship "a customer purchases a product".

Products

buy

Customers

Design the server component to perform load/save requests from the Data Access layer at the client side. Describe the protocol for two sides: client and server.

The server component is what directly access the data found in the database. And all the data formatting must be done on the client side.

Design the database logically, i.e., write the relations, attributes, and define keys.

Item-

* Unique Item number
* Item price
* Supplier
* Number in inventory

Customer-

* Name (first and last name
* Unique customer id
* Address
* Email
* Order History
* Payment info

Order-

* Unique order number
* Price of order
* Items in order
* Payment info

Design the database physically using SQL, i.e., write SQL code to create the tables for those relations.

CREATE TABLE "Customers" (

"CustomerID" INTEGER NOT NULL,

"Name" TEXT,

"Address" TEXT,

"Phone" INTEGER,

"PaymentInfo" INTEGER,

PRIMARY KEY("CustomerID")

);

﻿CREATE TABLE "Products" (

"ProductID" INTEGER NOT NULL,

"Name" TEXT,

"Price" INTEGER,

"Supplier" TEXT,

"Cost" INTEGER,

PRIMARY KEY("ProductID")

);

﻿CREATE TABLE "Purchase" (

"Order Number" INTEGER NOT NULL,

“Customer Name” TEXT

"Item" INTEGER,

"Quantity" INTEGER,

"Price" INTEGER,

"TotalCost" INTEGER,

PRIMARY KEY("DateTime")

);

Insert data into the tables, with at least 5 products, 5 customers, and 10 purchases.

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| --- | --- | --- | --- | --- |
| Customer ID | Name | Address | Phone | Payment Info |
| 1 | Avery Hyman | 840 W Magnolia | 7709777321 | 491375984098139342 |
| 2 | Bob Smith | 850 W Magnolia | 8974590238 | 981759087405800923 |
| 3 | John Lewis | 290 W Magnolia | 9349209850 | 897109357329827009 |
| 4 | Tanner Potts | 480 W Magnolia | 8935989238 | 539860982340984350 |
| 5 | Brady Cahpin | 80 St NW | 880935y899 | 698234008932987898 |

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| --- | --- | --- | --- | --- |
| Item ID | Name | Price | Supplier | Cost |
| 1 | iPhone 11 | 699.99 | Apple | 500.00 |
| 2 | iPhone 11 Pro | 999.99 | Apple | 550.00 |
| 3 | iPad | 399.99 | Apple | 250.00 |
| 4 | MacBook Pro 15in | 3,000.00 | Apple | 2,200.00 |
| 5 | MacBook | 1,000.00 | Apple | 600.00 |

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| --- | --- | --- | --- | --- | --- |
| Order Number | Customer Name | Item | Quantity | Price | Total Cost |
| 1 | Avery Hyman | iPhone 11 Pro | 1 | 999.99 | 1010.00 |
| 2 | Avery Hyman | MacBook Pro 15in | 1 | 3,000.00 | 3,100.00 |
| 3 | Avery Hyman | iPad | 2 | 799.98 | 815.89 |
| 4 | John Lewis | iPhone 11 | 1 | 699.99 | 712.58 |
| 5 | John Lewis | MacBook | 1 | 1,000.00 | 1,060.20 |
| 6 | Bob Smith | iPad | 1 | 399.99 | 408.60 |
| 7 | Bob Smith | MacBook | 2 | 2,000.00 | 2,120.00 |
| 8 | Tanner Potts | iPhone 11 Pro | 2 | 1,999.98 | 2,119.79 |
| 9 | Brady Cahpin | iPhone 11 Pro | 1 | 999.99 | 1059.99 |
| 10 | Brady Cahpin | MacBook Pro 15in | 1 | 3,000.00 | 3,180.00 |