



Object Oriented Programming

(Assignment 3)

Sales Order System

Programmed by:

- Sherif Muhammad Muhammad Abdulsalam.
- Set Number: 1315
- Student Number: 20912021100785
- Group: A2
- Section: 13

Under Supervisor:

- Dr. Mahmoud A. Mahdi

Application Description

Sales Order System is a C++Program that helps control the process between a customer placing an order and the product. The sales order confirms the terms of a transaction between a buyer and seller. The seller generates the order, often in response to a purchase order. The seller may send this document to the customer or rely on it solely for internal use. The sales order details the quantity, price, delivery time frame, and more.

Data Structure Used

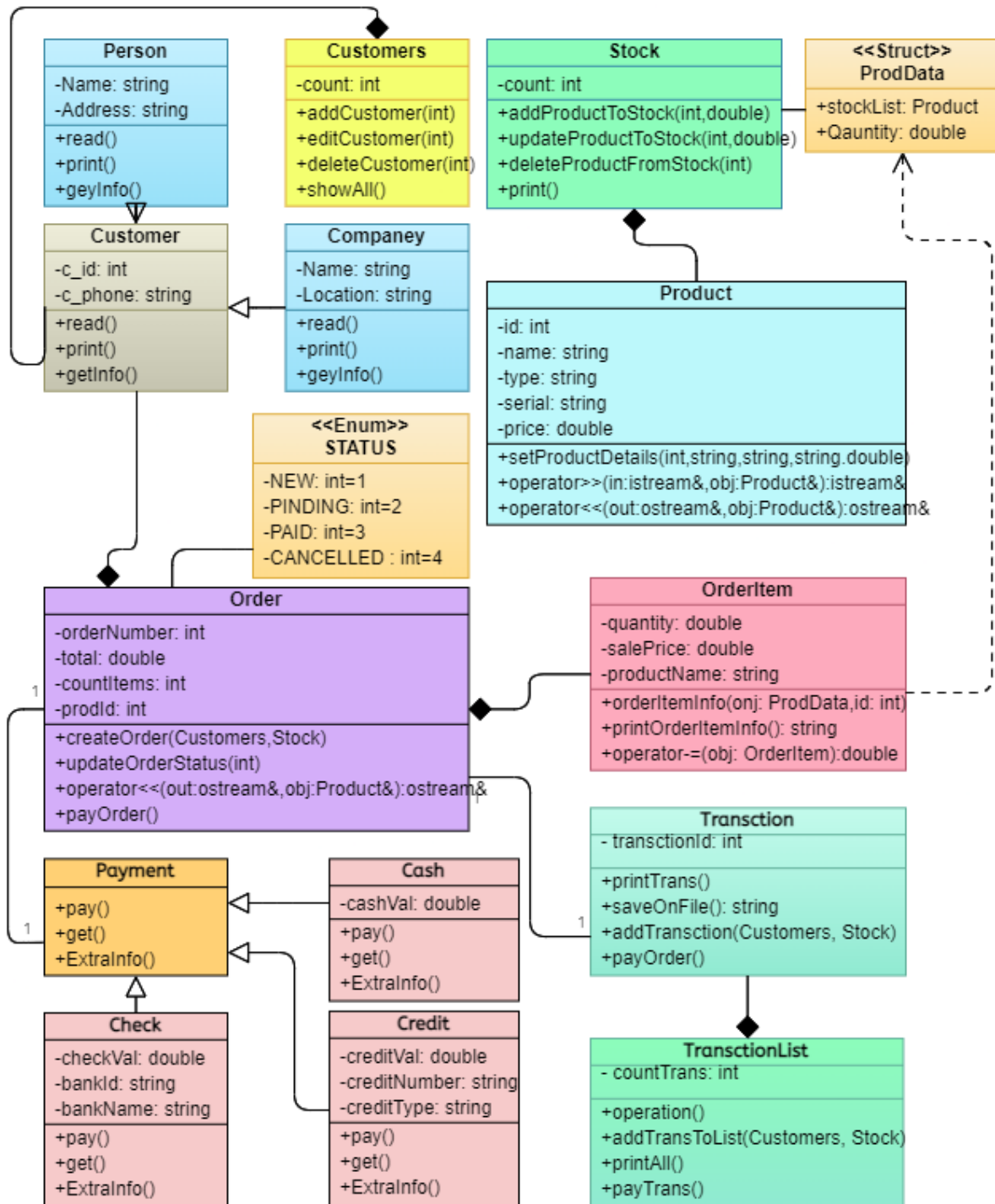
Arrays has a variety of datatypes like built in datatypes (char, int, string.... etc.) and other are user defined data types (Customer, Product, and other). These data were collected to provide the best solution for collecting data together to be easily reached and used. To give the best performance, more speed and save the memory we choose dynamic array to be used due to its performance and because it can fit automatically after insert or deleting objects or data from the array.

Enumeration << Enum >> was used to set some constants for order Status like (NEW, PENDING, PAID, CANCELLED) to know how to deal with orders.

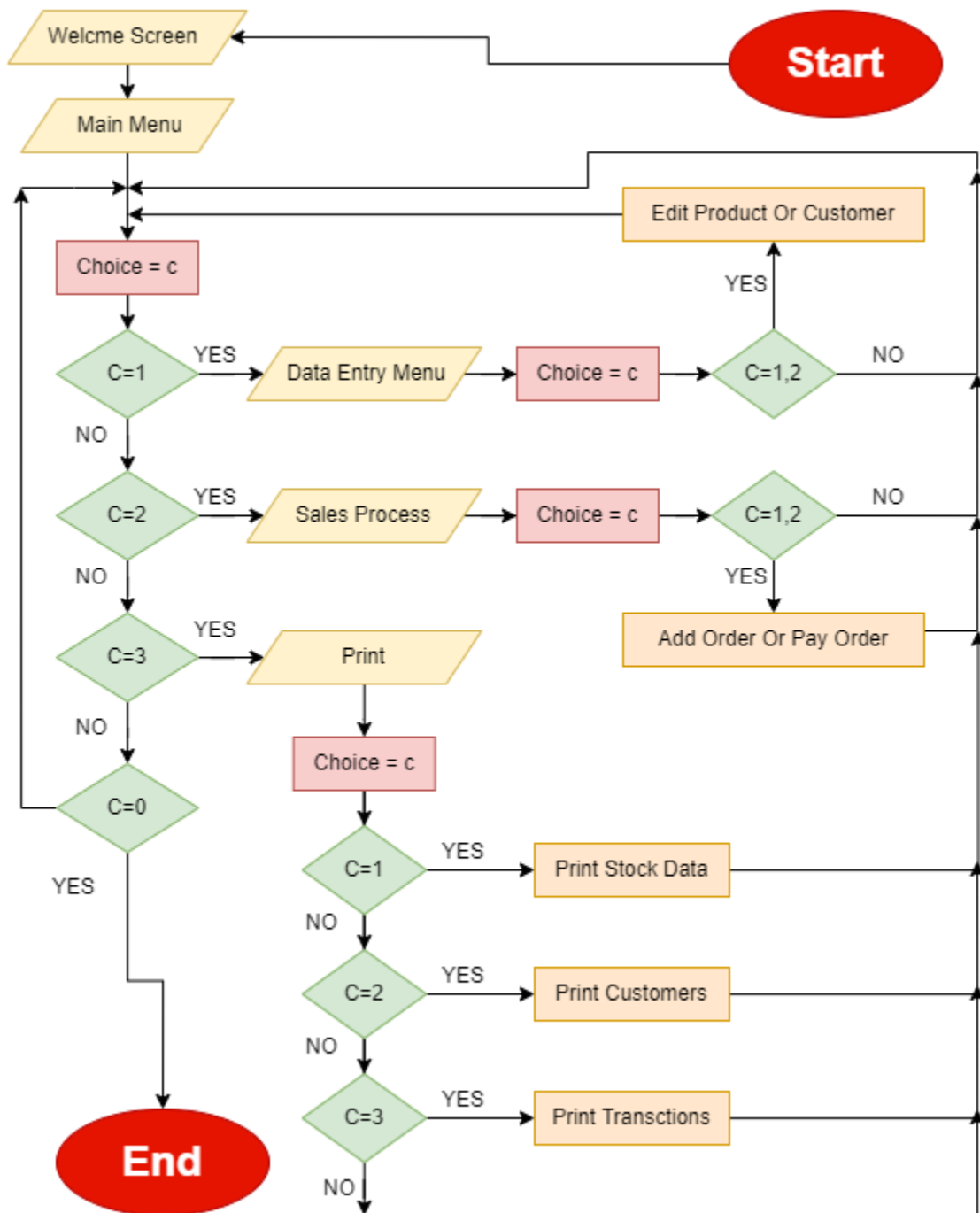
Structure << Struct >> Was Used to Collect the full data for each product in addition to adding quantity in the stock for each one of them.

Diagrams

1. UML Diagram



2. Flow Diagram



Classes & Functions

1. Struct Class

The Job of This Structure class Is to Hold the product and Its Quantity

2. Stock Class

Function Name	Description	Input
Add Product to Stock	It takes products from product factory and added it to stock	Product ID And Quantity
Update Product to Stock	It can edit an existing product in the stock	Product ID And New Quantity
Delete Product to Stock	It can delete an existing product in the stock	Product ID
print	It Prints All Existed Products in the stock	NO
Get Product Data	It gets each product in the stock with its quantity	NO

3. Product Class

Function Name	Description	Input
Set Product Details	It set All Attributes of each product from id, name, serial number, type and price	Product Id, Name, Serial, type, price
Operators <<, >>	Handling C++ Operators to Work with Objects from Class Product	Overloaded In C++

4. Order Item Class

Function Name	Description	Input
Update Stock Product Quantity	It updates the quantity of its product in the stock	NO
Order Item Info	This Method is responsible for setting the information for each order item from stock class	Point to the structure to the stock and the product id
Print Order Item Info	This Function Print the sale price, name and the quantity	NO
Operators ==	Handling C++ Operators to Work with Objects from Class Order Item	Overloaded In C++

5. Customer Class

Function Name	Description
Read	It takes the customer DATA and store them in private attributes
Print	Print the customer Data in C++ Console Screen
Get Info	Print the customer Data in C++ File Stream

6. Person, Company inherited Classes Form Customer Class

Function Name	Description
Read	It overrides on the on the function read Which Was Inherited from Class Customer and Added To it Person or company Private Data Like Phone or Address or location.
Print	Print the Person/company Data in C++ Console Screen
Get Info	Print the Person/company Data in C++ File Stream

7. Customers Class

Function Name	Description	Input
Add New Customer	adds new Customer to customer list	Customer Id
Delete Customer	It can delete an existing Customer in the customer list	Customer Id
Edit Customer	It can edit an existing Customer in the customer list	Customer Id
Show All Customers	Print customer list	NO
Get customer list	Get customer list to use It in other classes in the program	NO

8. Enum Class

It contains some contestants represent order status (NEW, PENDING, PAID, CANCELLED)

9. Order Class

Function Name	Description	Input
Create Order	This Function display all customers and choose one of them then display all products int the stock to create order for this customer	Pointer to class customer and pointer to class Stock
Update Order Status	It responsible for changing the order status if paid or pending or new even cancelled	Integer number to represent status
Edit Customer	It can edit an existing Customer in the customer list	Customer Id
pay	This Function can calculate the total amount of order and choose one way to pay from cash or credit or check.	NO
Operators <<	Handling C++ Operators to Work with Objects from Class Order Item	Overloaded In C++

10. Payment Class

This class contain three virtual pure function to set the total amount paid and one to get it and the another one to set Extra Information.

11. Cash, Credit, Check inherited Classes Form Payment Class

Function Name	Description
pay	This Function This Function Asks customer to pay for chosen order and choose one way to pay
get	Return to total amount paid from customer
Extra Info	It prints Extra Information like card Number, Type in credit Way or bank name, id in check way

12. Transaction

Function Name	Description
Add Transaction	This function used to create order and its date and status
Print transaction	display all Transaction Which was created successfully.
Pay Transaction	You can choose one transaction to pay.

Demo (Scenario Case & Screen Shots)

After the welcome screen appears, the system starts with The Main Menu of Program.

```
-----  
  @@ SALES ORDER APPLICATION @@  
    $Loading.....:)$  
=====
```

Press any key to continue . . . _

If You Select choice <<1>>, then the Data Entry Menu Will Appears to detect Which would you want to add...?
if you choose << 1>>, the all fetchers of product you can use it from adding new product or update an exited product or delete product from the stock.

```
SALES ORDER APPLICATION  
=====
```

MAIN MENU

```
=====
```

[1] Data Entey
[2] Sales Process
[3] Print
[0] Quit

```
=====
```

Enter your choice: _

```
SALES ORDER APPLICATION  
=====
```

MAIN MENU -> Data Entry

```
=====
```

[1] Product
[2] Customer
[0] Return Back

```
=====
```

Enter your choice:

```
SALES ORDER APPLICATION  
=====
```

MAIN MENU -> Data Entry -> Handle Product

```
=====
```

[1] Add Product To Product List
[2] Add Product To Stock
[3] Ubdate Product In Stock
[4] Delete Product From Stock
[0] Return Back

```
=====
```

Enter your choice: _

if you select << 0 >> from Handle Product Menu, you will return back to Data Entry Menu.

But if you choose << 2 >> you can use the same fetchers of product but this Time on customers.

```
SALES ORDER APPLICATION
=====
MAIN MENU -> Data Entry -> Handle Customer
=====
[1] Add Customer
[2] Update Customer
[3] Delete Customer
[0] Return Back
=====
Enter your choice:
```

If you choose << 0 >> that mean you want to return back to the main menu.

If you input choice << 2>>,
The sales process Menu which
Contains 3 Fetchers Will Appears
And you should select one of them.

```
SALES ORDER APPLICATION
=====
MAIN MENU
=====
[1] Data Entry
[2] Sales Process
[3] Print
[0] Quit
=====
Enter your choice: _
```

If you select << 1 >>
The program will lead
You to the right steps
To create a successful
Transaction.

If << 2 >>

You will choose only one transaction from transaction list to pay with
any way of pays (cash, check, credit).

If << 0 >> return back to the main menu.

If you select << 3 >> from start
That mean you want Know
What do you have???

```
SALES ORDER APPLICATION
=====
MAIN MENU -> Sale Process
=====
[1] Add Transction
[2] pay Order
[0] Return Back
=====
Enter your choice:
```

```
SALES ORDER APPLICATION
=====
MAIN MENU
=====
[1] Data Entey
[2] Sales Process
[3] Print
[0] Quit
=====
Enter your choice: _
```

```
SALES ORDER APPLICATION
=====
MAIN MENU -> Print
=====
[1] Stock Data
[2] Customers
[3] Transctions
[0] Return Back
=====
Enter your choice:
```

Show Stock Product List

Id	Name	Serial	Type	price	Quantity
1	sting	3842	Drink	6	488
2	dddd	1452	9ddd	17	473

Press AnyKey To Return Back: _

Show Customer List

Id	Phone	Name	Address/Location	Type
1	01012345678	Sherif	Sharqia	Person
2	01033333333	Mahmoud	AwladSaqr	Person
3	01237859634	Rako	Cairo	Company
4	01236547895	Ahmed	Cairo	Person

Press AnyKey To Return Back:

Show Transaction List

```
List Of All Transactions:
Transaction Id: 1      Order Number: 5390      Order Total Price: 46.2 Order Status: PAID
Transaction Id: 2      Order Number: 4515      Order Total Price: 163.9      Order Status: PAID

=====

List Of Orders Of Transactions Defined By Orders Number:
-----

Order Number: 5390      Order Time: 12:00:50      Jun 12 2022
Id: 1  Product Name: sting      Price: 6.600000 Qauntity: 7.000000
Customer Info:
  1      01012345678      Sherif      Sharqia      Person
=====
Order Number: 4515      Order Time: 09:52:31      Jun 15 2022
Id: 1  Product Name: sting      Price: 6.600000 Qauntity: 5.000000
Id: 2  Product Name: dddd      Price: 18.700000      Qauntity: 7.000000
Customer Info:
  4      01236547895      Ahmed      Cairo      Person
=====

Press AnyKey To Return Back: _
```