



## **INF 212 Algorithms and Programming II**

**2020-2021 Spring  
Electronic Engineering**

**Project 1#**

**Sale Program**

**“S.O.L.D”  
Sales Automation Software**

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## PROJECT OBJECTIVE

That project's main objective is create sales automation software. This software will allow sellers to easily manage and store product, customer and sales records and also they can analyze that records, according to that analyze results can detect which product most or less preferred by customers. If a product don't preferred by customers, seller can don't purchase that and save it's store from loss. This program simplifies the sales process and provides the seller to optimize his shop for the customer profile.

## PROBLEM

Product and customer information should be able to be defined in the program. Sales transaction must be able made according to defined customer and product information and the record of this transaction must be kept in the program. Variables such as amount, quantity and ID of customer, product and sales transaction information should not be mixed with each other. All these information and transactions should be analyzed and the statistics should be shown to the seller. The seller should be able to easily access the information they want.

## ANALYSIS

We defined problem at the previous section, now let's look at it in more detail.

1. Product and Customer Information: That infos should able to define in the program with it's parameters like ID, Name, Price, Location etc...
2. Sales Action and Records: Program should able to sale a defined product to a defined customer and calculate shipping cost relative to customer location, also need to log and store that sale records...
3. Analyze of Records: Program should able to analyze product, customer and sale infos, for calculate statistics like most or less purchased product, most seen customer profile etc...

## DATA REQUIREMENTS

### Structured Data Type

Product information, Customer information and Purchase information is structured data types.

Product Info Structure consist of: ID, name, price, type.

Customer Info Structure consist of: ID, name, type, coordinates.

Purchase Info Structure consist of: ID, invoice\_ID, product\_ID , cost, customer\_ID

### Problem Constants

Problem don't have any constant value.

### Problem Inputs

1. Product Info Inputs -> ID, Name, Price, Type
2. Customer Info Inputs -> ID, Name, Type, X Coordinate, Y Coordinate

### 3. Sale Process Inputs:

**Quantify:** Quantify parameter entering by user during sale process and also can calculate that from Purchase Info/Product Info with Amount/Price function.

**product\_ID:** ID of the product to be sold.

**customer\_ID:** ID of the customer to whom the sale is made.

### Problem Output

**1. Sale Process Outputs** ->ID, invoice\_ID,cost

**ID:** The value assigned to each product sold.

**invoice\_ID:** The value assigned to the invoice record where sales transactions made to the customer are kept.

**Cost:** Calculation for new sales based on (Quantify\*Price) function.

**Shipping Cost:** Calculating according to customer's distance to store.

Shipping Function:  $(X^2+Y^2)^{0.5}*(C)$  ; C= Shipping price for a unit length.

### Customer and Product Categorization:

As a output, user wants to list that infos based on selected specification like Type, ID etc...

#### Product Analyze Results:

Total purchase quantity and amount of a product

Total purchase amount of a product type

Total purchase amount for all products

Most or less preferred product

#### Customer Analyze Results:

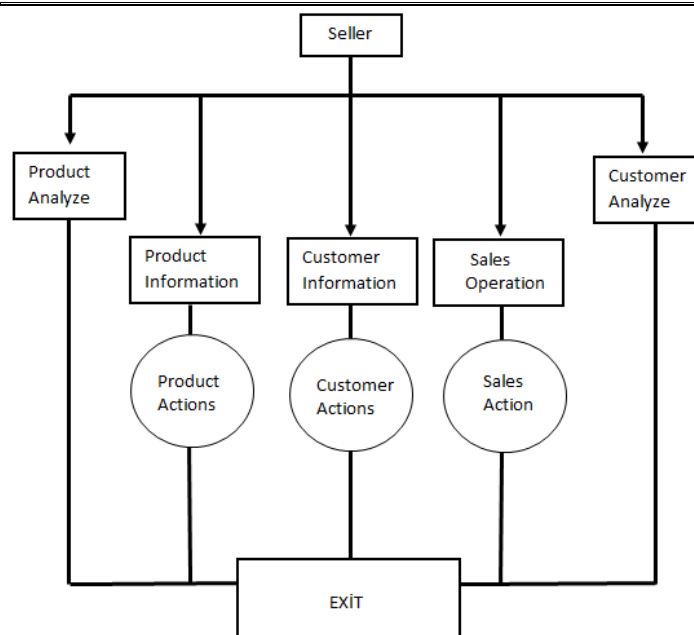
Products purchased by a customer

Total amount of purchased by a customer

Total amount of products purchased by all customer

Customers shipping fee

### DESIGN ALGORITHM



## HEADER FILE(S)

“product.h”  
“purchase.h”  
“customer.h”

## IMPLEMENTATION

I used structure data type with linked list feature to solve problem and provide required specification to my program. Problem input parameters and output variables defined in that structures. Structure and parameter/variable names and interface/menu names are meaningful so anyone can easily understand this. Linked list feature provides ease of access to structure for edit/view/insert/delete actions for user. Key point at that structure type is each node contains memory address of next node. I created a main menu and sub menus so that the user can easily switch between sections. In menu creating were used Switch-Case statements method.

My project steps here:

1. Creating data structures and its elements
2. Creating Functions for add/delete/set actions to structured data
3. Creating functions for print/list actions
4. Creating main function and menus
5. Importing Test Data
6. Testing and Corrections
7. Finalization

## TESTING

I imported product, customer and purchase (sale action) data to my program in main function for testing. In the analysis/print sections, I did the calculations first in the MS Excel program and then in my own program. Then I made sure that I got the right results by comparing. When I got wrong results, I made corrections in the program code and I added if/else statements for unexpected cases.

## USER'S GUIDE

User can add custom product, customer and purchase (sale action) data.

**Input Parameters:** Product(ID, Name, Price, Type)

Customer(ID, Name, Type, X Coordinate, Y Coordinate)

Purchase(~~ID~~, ~~invoice ID~~, customer ID, product\_ID, ~~Cost~~)

**Quantify:** Quantify parameter entering by user during sale process.

**product\_ID:** ID of the product to be sold.

**customer\_ID:** ID of the customer to whom the sale is made.

**Outputs:**

Purchase(~~ID~~, ~~invoice ID~~, ~~customer ID~~, ~~product\_ID~~, Cost)

**ID:** The value assigned to each product sold.

**invoice\_ID:** The value assigned to the invoice record where sales transactions made to the customer are kept.

**Cost:** Calculation for new sales based on (Quantify\*Price) function.

User can get any customer, product, purchase and invoice data at the program memory. And can analyze that data with statistical calculations like that:

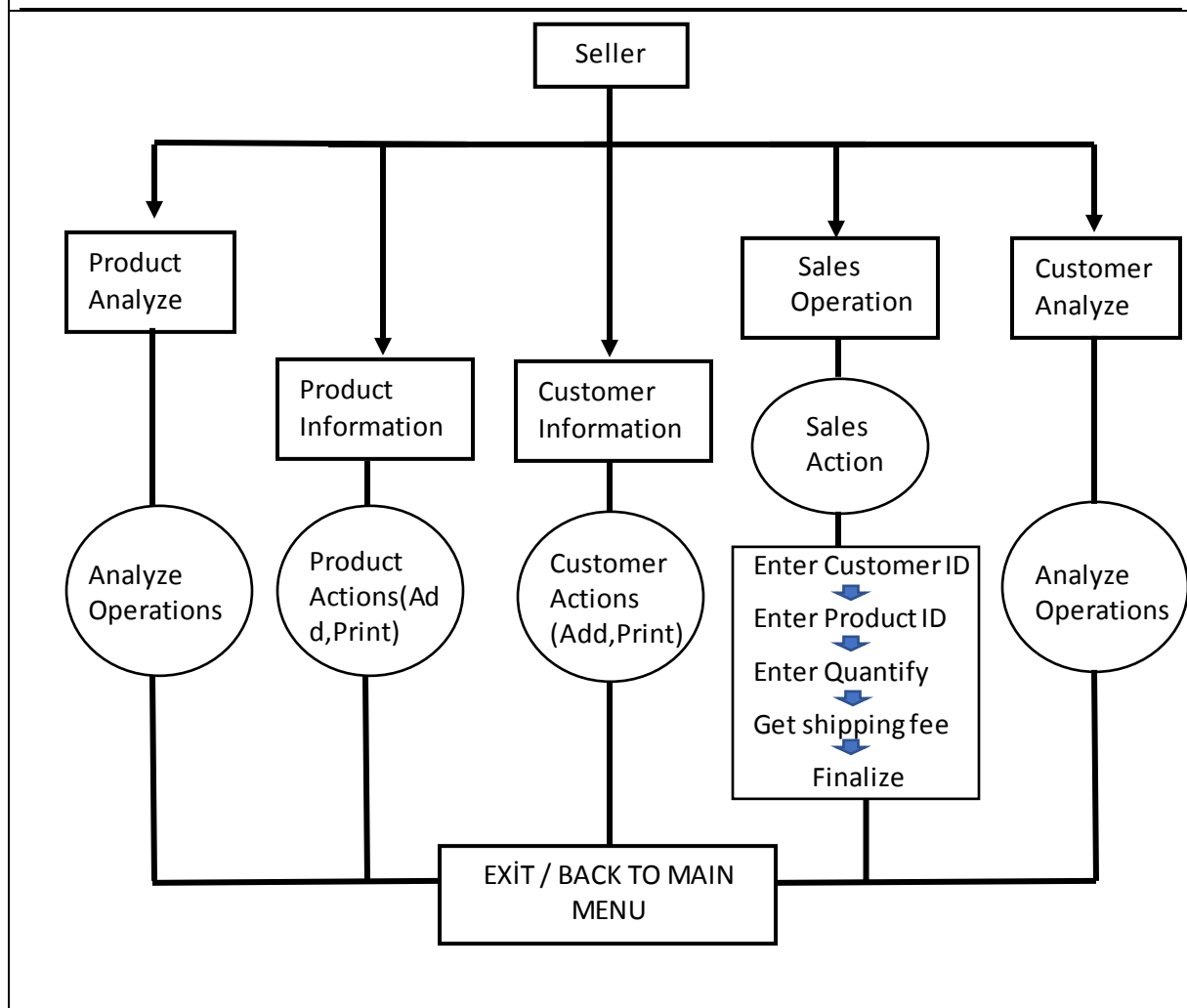
Shipping Cost of Customer, Total Amount of Product and its Quantify, Total Purchase Amount of Customer, Most Sold Product, Less Sold Product etc...

The user selects the desired section in the menus and performs the action he wants to do. It can list all products or a single product on the product menu. It can list all customers or a single customer from the customer menu. It can also list according to the product and customer type.

User can see the statistics I mentioned above in analysis sections.

While performing the sales process, it selects the sale from the menu and performs the sales transaction by entering the customer ID to be sold and the quantify and ID of the products to be sold. Finally, the shipping fee is calculated and the sales process is finalized.

#### GENERAL FLOWCHART OF THE PROJECT



**Design Note:** Purchase ID, invoice\_ID, product ID, customer\_ID assignments done automatically by the program.  
For example if last invoice\_ID is 3 program will be assign last\_ID+1 as a new invoice\_ID which is equals to 4.

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## CONCLUSION AND REMARKS

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My program's all functions working properly, I tested with imported test data. I used switch-case statement for create menu and that's provides user friendly design to program. To do some analysis/print operations, it was necessary to get data from two or three different structures and match it's elements with each other, for this reason I used "for" loop and "if else" statement at many times. I can optimize and simplify my code and improve its performance by writing alternative functions into the header files instead of using loop and statement expressions at so many times.  
I learned switch-case statement and linked list feature during development process of project.

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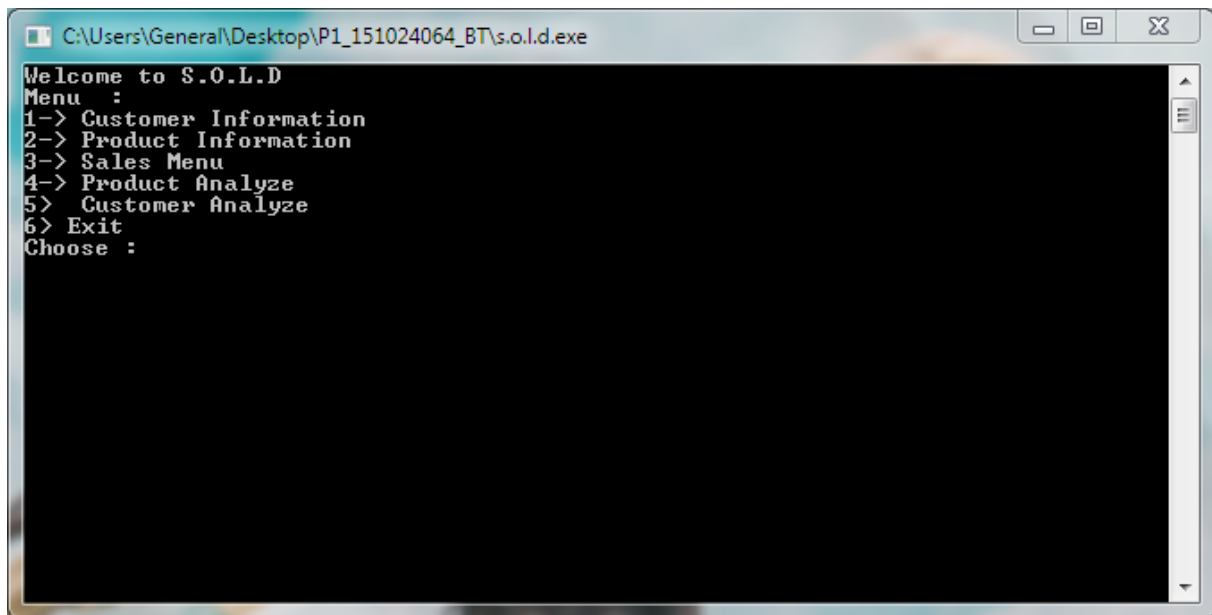
## REFERENCES

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I did research before start the project for how create menu and how use linked list data structure.  
[https://www.tutorialspoint.com/data\\_structures\\_algorithms/linked\\_list\\_program\\_in\\_c.htm](https://www.tutorialspoint.com/data_structures_algorithms/linked_list_program_in_c.htm)  
<https://www.geeksforgeeks.org/menu-driven-program-using-switch-case-c/>  
And I examined some sales management projects on GitHub for determine main concept of this softwares...  
<https://github.com/DadiAnas/SalesManagement>  
[https://github.com/rc-bandit4461/shop\\_management\\_c](https://github.com/rc-bandit4461/shop_management_c)  
<https://github.com/maheshwarkuchana/Car-Sales-Management-System>  
<https://github.com/Vivek2k20/Car-Sales-Management-System>  
<https://github.com/iamAlbano/TAD-Estoque>

## Screenshots

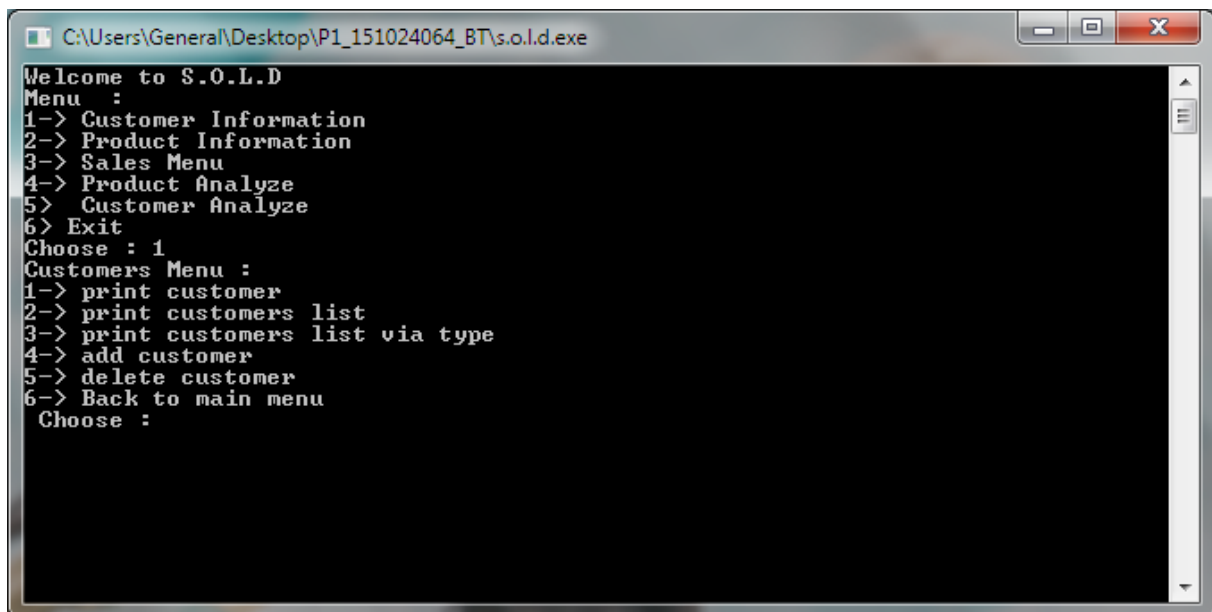
### Main Menu

A screenshot of a Windows application window titled "C:\Users\General\Desktop\P1\_151024064\_BT\s.o.l.d.exe". The window has a black background with white text. The text displays a welcome message and a menu with six options. The prompt "Choose :" is at the bottom.

```

Welcome to S.O.L.D
Menu :
1-> Customer Information
2-> Product Information
3-> Sales Menu
4-> Product Analyze
5-> Customer Analyze
6> Exit
Choose :
```

### Customer Menu

A screenshot of the same Windows application window, now showing the "Customers Menu". The text displays the same main menu as before, followed by the selection of option 1, which leads to a sub-menu with six options. The prompt "Choose :" is at the bottom.

```

Welcome to S.O.L.D
Menu :
1-> Customer Information
2-> Product Information
3-> Sales Menu
4-> Product Analyze
5> Customer Analyze
6> Exit
Choose : 1
Customers Menu :
1-> print customer
2-> print customers list
3-> print customers list via type
4-> add customer
5-> delete customer
6-> Back to main menu
Choose :
```

## Customer Print Example

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
3-> Sales Menu
4-> Product Analyze
5-> Customer Analyze
6-> Exit
Choose : 1
Customers Menu :
1-> print customer
2-> print customers list
3-> print customers list via type
4-> add customer
5-> delete customer
6-> Back to main menu
Choose : 1
Enter the ID of customer you want to print: 1
-----> Printing customer info <-----
ID: 1 | Name: Ali Karaman | Type: 1 | X_Coord: 16.8 | Y_Coord: 10.0
-----
Customers Menu :
1-> print customer
2-> print customers list
3-> print customers list via type
4-> add customer
5-> delete customer
6-> Back to main menu
Choose :
```

## Customer List Print Example

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
4-> add customer
5-> delete customer
6-> Back to main menu
Choose : 2
-----> Printing Customers List <-----
ID: 1 | Name: Ali Karaman | Type: 1 | X_Coord: 16.8 | Y_Coord: 10.0
ID: 2 | Name: Zehra Cilek | Type: 0 | X_Coord: 12.4 | Y_Coord: 6.9
ID: 3 | Name: Mehmet Derin | Type: 0 | X_Coord: 10.6 | Y_Coord: 15.4
ID: 4 | Name: Ueli Ortanca | Type: 1 | X_Coord: 5.1 | Y_Coord: 1.2
ID: 5 | Name: Menekse Serin | Type: 1 | X_Coord: 2.0 | Y_Coord: 7.9
-----> printing ends <-----
Customers Menu :
1-> print customer
2-> print customers list
3-> print customers list via type
4-> add customer
5-> delete customer
6-> Back to main menu
Choose :
```



### Customer Add/Delete Example (ID 2 deleted ID 6 added)

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
4-> add customer
5-> delete customer
6-> Back to main menu
Choose : 2

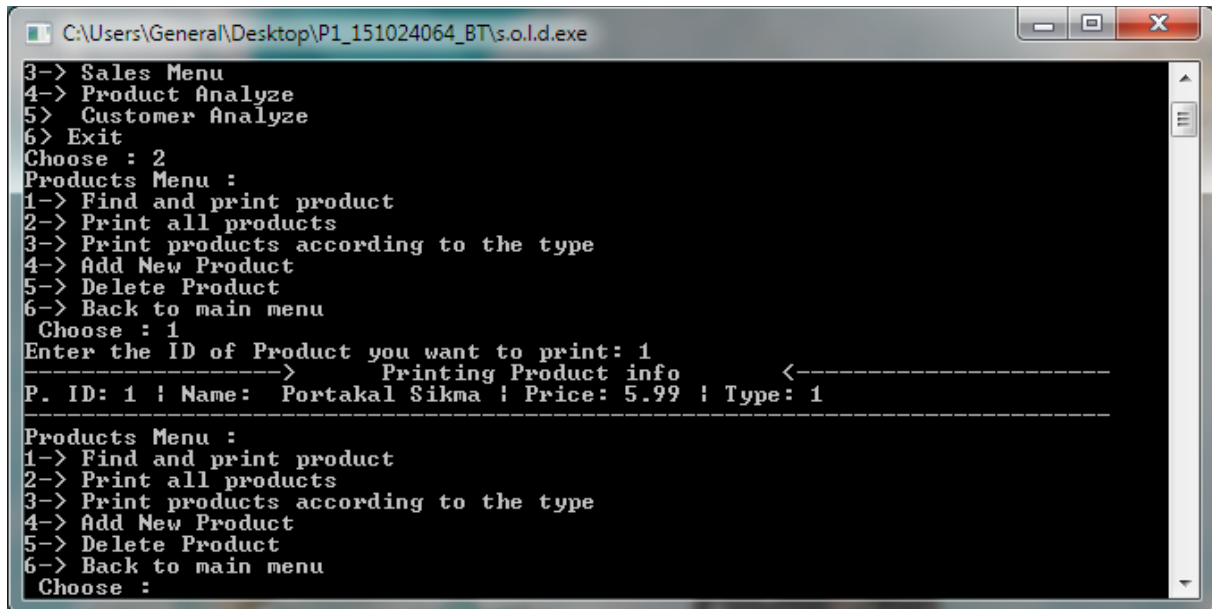
-----> Printing Customers List <-----
ID: 1  ! Name: Ali Karaman  ! Type: 1  ! X_Coord: 16.8  ! Y_Coord: 10.0
ID: 3  ! Name: Mehmet Derin  ! Type: 0  ! X_Coord: 10.6  ! Y_Coord: 15.4
ID: 4  ! Name: Ueli Ortanca  ! Type: 1  ! X_Coord: 5.1  ! Y_Coord: 1.2
ID: 5  ! Name: Menekse Serin  ! Type: 1  ! X_Coord: 2.0  ! Y_Coord: 7.9
ID: 6  ! Name: Burak Bey  ! Type: 0  ! X_Coord: 12.0  ! Y_Coord: 15.0
-----> printing ends <-----

Customers Menu :
1-> print customer
2-> print customers list
3-> print customers list via type
4-> add customer
5-> delete customer
6-> Back to main menu
Choose :
```

### Products Menu

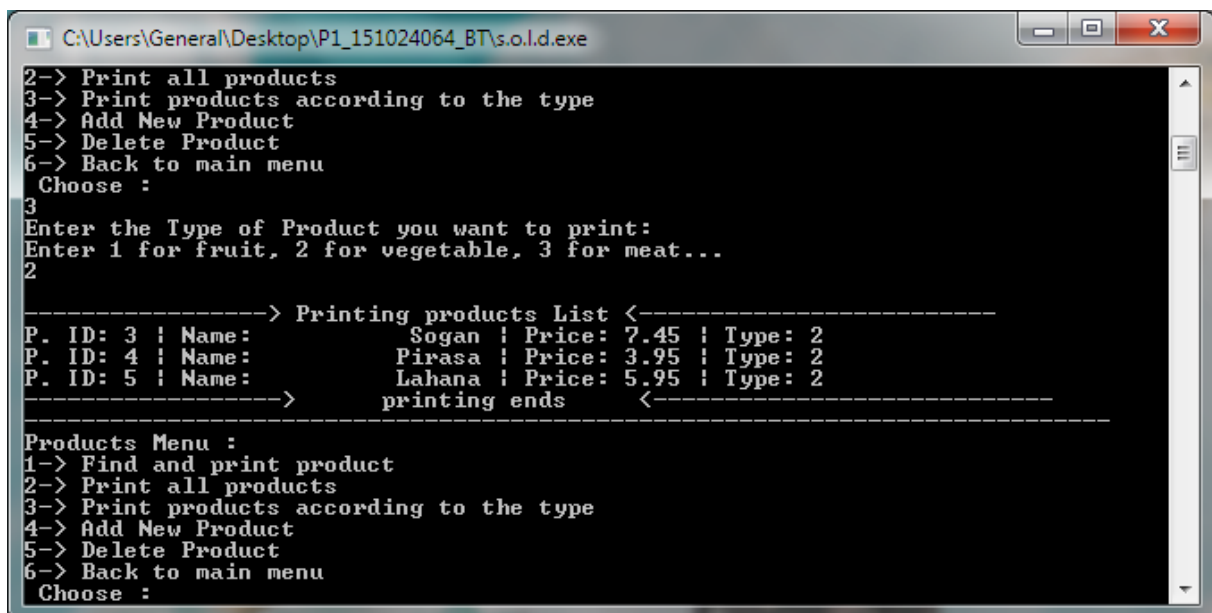
```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
Welcome to S.O.L.D
Menu :
1-> Customer Information
2-> Product Information
3-> Sales Menu
4-> Product Analyze
5-> Customer Analyze
6-> Exit
Choose : 2
Products Menu :
1-> Find and print product
2-> Print all products
3-> Print products according to the type
4-> Add New Product
5-> Delete Product
6-> Back to main menu
Choose :
```

## Example Product Print



```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
3-> Sales Menu
4-> Product Analyze
5> Customer Analyze
6> Exit
Choose : 2
Products Menu :
1-> Find and print product
2-> Print all products
3-> Print products according to the type
4-> Add New Product
5-> Delete Product
6-> Back to main menu
Choose : 1
Enter the ID of Product you want to print: 1
-----> Printing Product info <-----
P. ID: 1 ! Name: Portakal Sikma ! Price: 5.99 ! Type: 1
-----
Products Menu :
1-> Find and print product
2-> Print all products
3-> Print products according to the type
4-> Add New Product
5-> Delete Product
6-> Back to main menu
Choose :
```

## Example Product Print via Type



```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
2-> Print all products
3-> Print products according to the type
4-> Add New Product
5-> Delete Product
6-> Back to main menu
Choose : 3
Enter the Type of Product you want to print:
Enter 1 for fruit, 2 for vegetable, 3 for meat...
2
-----> Printing products List <-----
P. ID: 3 ! Name: Sogan ! Price: 7.45 ! Type: 2
P. ID: 4 ! Name: Pirasa ! Price: 3.95 ! Type: 2
P. ID: 5 ! Name: Lahana ! Price: 5.95 ! Type: 2
-----> printing ends <-----
-----
Products Menu :
1-> Find and print product
2-> Print all products
3-> Print products according to the type
4-> Add New Product
5-> Delete Product
6-> Back to main menu
Choose :
```

### Example Product List Print

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
3
List of total purchased amount and quantify of products:
-----
P. ID:1 : P.Name:Portakal Sikma : Total P. Amount:612.50 : Total P. Quantity:102.25
P. ID:2 : P.Name:Muz Yerli : Total P. Amount:139.80 : Total P. Quantity:10.80
P. ID:3 : P.Name:Sogan : Total P. Amount:130.58 : Total P. Quantity:17.53
P. ID:4 : P.Name:Pirasa : Total P. Amount:56.75 : Total P. Quantity:14.37
P. ID:5 : P.Name:Lahana : Total P. Amount:90.00 : Total P. Quantity:15.13
P. ID:6 : P.Name:Limon : Total P. Amount:112.15 : Total P. Quantity:15.05
P. ID:7 : P.Name:Hamsi : Total P. Amount:184.90 : Total P. Quantity:12.33
-----
Most preferred product and total amount sum of all products:
Most sold product (in quantify) is: Portakal Sikma with quantify: 102.25
Sum of Total amount of all Products is 1326.68
-----
1-> Print Total Amount of Product
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
```

### Example Product Add/Delete (ID 2 removed ID 8 added)

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
1-> Find and print product
2-> Print all products
3-> Print products according to the type
4-> Add New Product
5-> Delete Product
6-> Back to main menu
Choose : 2
-----> Printing products List <-----
P. ID: 1 : Name: Portakal Sikma : Price: 5.99 : Type: 1
P. ID: 3 : Name: Sogan : Price: 7.45 : Type: 2
P. ID: 4 : Name: Pirasa : Price: 3.95 : Type: 2
P. ID: 5 : Name: Lahana : Price: 5.95 : Type: 2
P. ID: 6 : Name: Limon : Price: 7.45 : Type: 1
P. ID: 7 : Name: Hamsi : Price: 15.00 : Type: 3
P. ID: 8 : Name: Elma : Price: 10.00 : Type: 1
-----> printing ends <-----
Products Menu :
1-> Find and print product
2-> Print all products
3-> Print products according to the type
4-> Add New Product
5-> Delete Product
6-> Back to main menu
Choose :
```

### Product Analyze Menu

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe

Welcome to S.O.L.D
Menu :
1-> Customer Information
2-> Product Information
3-> Sales Menu
4-> Product Analyze
5-> Customer Analyze
6-> Exit
Choose : 4
1-> Print Total Amount of Product
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
```

### Example Total Amount of Product

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe

Welcome to S.O.L.D
Menu :
1-> Customer Information
2-> Product Information
3-> Sales Menu
4-> Product Analyze
5-> Customer Analyze
6-> Exit
Choose : 4
1-> Print Total Amount of Product
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
1
Enter Product ID:
1
Total Amount of Product is: 612.50
Total purchased quantify is: 102.25
1-> Print Total Amount of Product
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
```

### Example Total Amount of Product Type

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
5> Customer Analyze
6> Exit
Choose : 4
1-> Print Total Amount of Product
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
1
Enter Product ID:
1
Total Amount of Product is: 612.50
Total purchased quantify is: 102.25
1-> Print Total Amount of Product
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
2
Enter Product Type:
1
Total Amount of Product Type is: 864.45
1-> Print Total Amount of Product
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
```

### Example Total Amount of All Products

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
3
List of total purchased amount and quantify of products:
-----
P. ID:1 : P.Name:Portakal Sikma : Total P. Amount:612.50 : Total P. Quantity:102.25
P. ID:2 : P.Name:Muz Yerli : Total P. Amount:139.80 : Total P. Quantity:10.80
P. ID:3 : P.Name:Sogan : Total P. Amount:130.58 : Total P. Quantity:17.53
P. ID:4 : P.Name:Pirasa : Total P. Amount:56.75 : Total P. Quantity:14.37
P. ID:5 : P.Name:Lahana : Total P. Amount:90.00 : Total P. Quantity:15.13
P. ID:6 : P.Name:Limon : Total P. Amount:112.15 : Total P. Quantity:15.05
P. ID:7 : P.Name:Hamsi : Total P. Amount:184.90 : Total P. Quantity:12.33
-----
Most preferred product and total amount sum of all products:
Most sold product (in quantify) is: Portakal Sikma with quantify: 102.25
Sum of Total amount of all Products is 1326.68
-----
1-> Print Total Amount of Product
2-> Print Total Amount of Product Type
3-> Print Total Amount of All Products
4-> Back to Main Menu
```

## Customer Analyze Menu

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe

Welcome to S.O.L.D
Menu :
1-> Customer Information
2-> Product Information
3-> Sales Menu
4-> Product Analyze
5-> Customer Analyze
6-> Exit
Choose : 5
1-> Products purchased by a customer
2-> Total amount of purchase by a customer
3-> Total amount of products
4-> Total shipping cost of all customers
5-> Back to Main Menu
```

## Customer Purchase Listing and Analyze

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe

5-> Back to Main Menu
1
Enter Customer ID:
1

-----> Printing Purchases List of Customer <-----
ID: 5 | Invoice ID: 2 | Customer ID: 1 | Product ID: 1 | Cost: 45.50
ID: 6 | Invoice ID: 2 | Customer ID: 1 | Product ID: 2 | Cost: 30.60
ID: 7 | Invoice ID: 2 | Customer ID: 1 | Product ID: 5 | Cost: 25.50
ID: 8 | Invoice ID: 2 | Customer ID: 1 | Product ID: 5 | Cost: 30.00
ID: 9 | Invoice ID: 2 | Customer ID: 1 | Product ID: 3 | Cost: 23.78
-----> printing ends <-----

Customer bought that products:
P. ID: 1 | Name: Portakal Sikma | Price: 5.99 | P. Quantify: 7.60
P. ID: 2 | Name: Muz Yerli | Price: 12.95 | P. Quantify: 2.36
P. ID: 5 | Name: Lahana | Price: 5.95 | P. Quantify: 9.33
P. ID: 3 | Name: Sogan | Price: 7.45 | P. Quantify: 3.19
Most preferred product (in quantify) is: Lahana with quantify: 9.33
Less preferred product (in quantify) is: Muz Yerli with quantify: 2.36
1-> Products purchased by a customer
2-> Total amount of purchase by a customer
3-> Total amount of products
4-> Total shipping cost of all customers
5-> Back to Main Menu
```

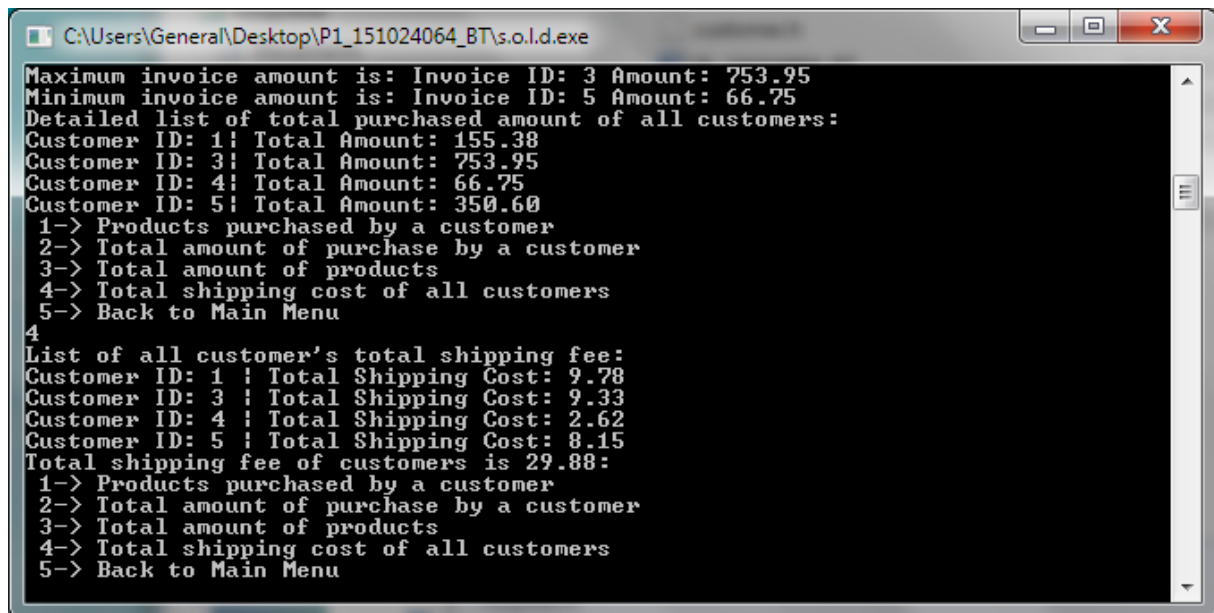
## Total Amount of Customer Calculation

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
ID: 8 | Invoice ID: 2 | Customer ID: 1 | Product ID: 5 | Cost: 30.00
ID: 9 | Invoice ID: 2 | Customer ID: 1 | Product ID: 3 | Cost: 23.78
-----> printing ends <-----
Customer bought that products:
P. ID: 1 | Name: Portakal Sikma | Price: 5.99 | P. Quantify: 7.60
P. ID: 2 | Name: Muz Yerli | Price: 12.95 | P. Quantify: 2.36
P. ID: 5 | Name: Lahana | Price: 5.95 | P. Quantify: 9.33
P. ID: 3 | Name: Sogan | Price: 7.45 | P. Quantify: 3.19
Most preferred product (in quantify) is: Lahana with quantify: 9.33
Less preferred product (in quantify) is: Muz Yerli with quantify: 2.36
1-> Products purchased by a customer
2-> Total amount of purchase by a customer
3-> Total amount of products
4-> Total shipping cost of all customers
5-> Back to Main Menu
2
Enter Customer ID:
1
Total amount of purchased by a customer: 155.38
1-> Products purchased by a customer
2-> Total amount of purchase by a customer
3-> Total amount of products
4-> Total shipping cost of all customers
5-> Back to Main Menu
```

## Total Amount All of Customers

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
5-> Back to Main Menu
2
Enter Customer ID:
1
Total amount of purchased by a customer: 155.38
1-> Products purchased by a customer
2-> Total amount of purchase by a customer
3-> Total amount of products
4-> Total shipping cost of all customers
5-> Back to Main Menu
3
Sum of Total amount of all Products is 1326.68
Maximum invoice amount is: Invoice ID: 3 Amount: 753.95
Minimum invoice amount is: Invoice ID: 5 Amount: 66.75
Detailed list of total purchased amount of all customers:
Customer ID: 1! Total Amount: 155.38
Customer ID: 3! Total Amount: 753.95
Customer ID: 4! Total Amount: 66.75
Customer ID: 5! Total Amount: 350.60
1-> Products purchased by a customer
2-> Total amount of purchase by a customer
3-> Total amount of products
4-> Total shipping cost of all customers
5-> Back to Main Menu
```

## Shipping Free Calculation



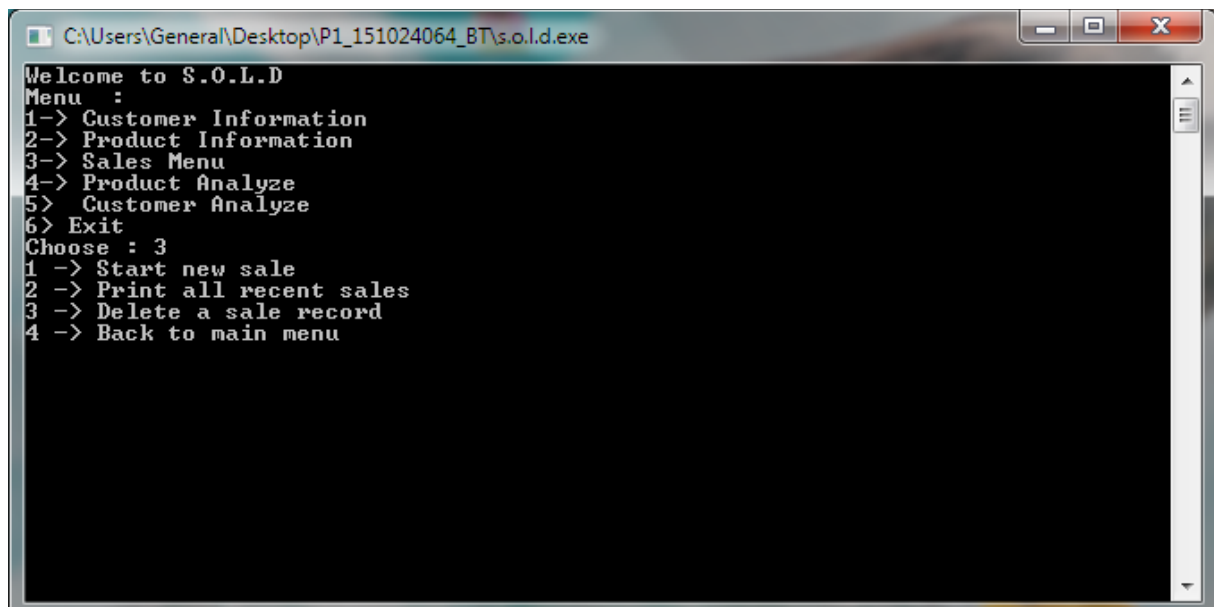
A screenshot of a Windows command prompt window titled "C:\Users\General\Desktop\P1\_151024064\_BT\s.o.l.d.exe". The window displays a menu for "Shipping Free Calculation". The menu options are:

- Maximum invoice amount is: Invoice ID: 3 Amount: 753.95
- Minimum invoice amount is: Invoice ID: 5 Amount: 66.75
- Detailed list of total purchased amount of all customers:
- Customer ID: 1! Total Amount: 155.38
- Customer ID: 3! Total Amount: 753.95
- Customer ID: 4! Total Amount: 66.75
- Customer ID: 5! Total Amount: 350.60
- 1-> Products purchased by a customer
- 2-> Total amount of purchase by a customer
- 3-> Total amount of products
- 4-> Total shipping cost of all customers
- 5-> Back to Main Menu

The user has entered '4', and the program displays the following information:

- List of all customer's total shipping fee:
- Customer ID: 1 ! Total Shipping Cost: 9.78
- Customer ID: 3 ! Total Shipping Cost: 9.33
- Customer ID: 4 ! Total Shipping Cost: 2.62
- Customer ID: 5 ! Total Shipping Cost: 8.15
- Total shipping fee of customers is 29.88:
- 1-> Products purchased by a customer
- 2-> Total amount of purchase by a customer
- 3-> Total amount of products
- 4-> Total shipping cost of all customers
- 5-> Back to Main Menu

## Sale Menu



A screenshot of a Windows command prompt window titled "C:\Users\General\Desktop\P1\_151024064\_BT\s.o.l.d.exe". The window displays a menu for "Sale Menu". The menu options are:

- Welcome to S.O.L.D
- Menu :
- 1-> Customer Information
- 2-> Product Information
- 3-> Sales Menu
- 4-> Product Analyze
- 5> Customer Analyze
- 6> Exit

The user has entered '3', and the program displays the following information:

- Choose : 3
- 1 -> Start new sale
- 2 -> Print all recent sales
- 3 -> Delete a sale record
- 4 -> Back to main menu



## Printing of Purchase Logs

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
4 -> Back to main menu
2

-----> Printing Purchases List <-----
ID: 1 | Invoice ID: 1 | Customer ID: 5 | Product ID: 7 | Cost: 123.50
ID: 2 | Invoice ID: 1 | Customer ID: 5 | Product ID: 2 | Cost: 12.40
ID: 3 | Invoice ID: 1 | Customer ID: 5 | Product ID: 3 | Cost: 23.45
ID: 4 | Invoice ID: 1 | Customer ID: 5 | Product ID: 4 | Cost: 56.75
ID: 5 | Invoice ID: 2 | Customer ID: 1 | Product ID: 1 | Cost: 45.50
ID: 6 | Invoice ID: 2 | Customer ID: 1 | Product ID: 2 | Cost: 30.60
ID: 7 | Invoice ID: 2 | Customer ID: 1 | Product ID: 5 | Cost: 25.50
ID: 8 | Invoice ID: 2 | Customer ID: 1 | Product ID: 5 | Cost: 30.00
ID: 9 | Invoice ID: 2 | Customer ID: 1 | Product ID: 3 | Cost: 23.78
ID: 10 | Invoice ID: 3 | Customer ID: 3 | Product ID: 5 | Cost: 34.50
ID: 11 | Invoice ID: 3 | Customer ID: 3 | Product ID: 1 | Cost: 567.00
```

## New Sale (Product and Customer Selection)

Quantify entered by user and finalized sale action shipping free and total cost calculated.

```
C:\Users\General\Desktop\P1_151024064_BT\s.o.l.d.exe
4 -> Back to main menu
1
Last Invoice ID: 5
Invoice ID for current sale: 6
Do you know ID of customer?
Press Y if you know or N for list all customers.
y
Enter Customer ID:
2
Do you know the ID of the product you are selling?
Press Y if you know or N for list all products.
y
Enter Product ID:
3
Enter Quantify:
5
Selected product added Invoice.
Do you want to add more product (to same Invoice) ? (y/n)
n

-----
Your invoice total is: 37.25
Shipping cost calculating.....
Your shipping cost is 7.10
Sum of invoice total and shipping cost is: 44.35
-----
```