Java\E-Commerce\Product.java

```java
public class Product {
    protected int productId;
    protected String name;
    protected float price;

    public int getProductId() {
        return productId;
    }

    public void setProductId(int productId) {
        this.productId = Math.abs(productId);
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public float getPrice() {
        return price;
    }

    public void setPrice(float price) {
        this.price = Math.abs(price);
    }
}
```

Java\E-Commerce\ElectronicProduct.java

```java
1   public class ElectronicProduct extends
    Product{
2       private String brand;
3       private int warrantyPeriod;
4
5       public String getBrand() {
6           return brand;
7       }
8
9       public void setBrand(String brand) {
10          this.brand = brand;
11      }
12
13      public int getWarrantyPeriod() {
14          return warrantyPeriod;
15      }
16
17      public void setWarrantyPeriod(int
    warrantyPeriod) {
18          this.warrantyPeriod =
    Math.abs(warrantyPeriod);
19      }
20  }
```

Java\E-Commerce\ClothingProduct.java

```java
public class ClothingProduct extends
Product{
    private String size, fabric;

    public String getSize() {
        return size;
    }

    public void setSize(String size) {
        this.size = size;
    }

    public String getFabric() {
        return fabric;
    }

    public void setFabric(String fabric) {
        this.fabric = fabric;
    }
}
```

```java
public class BookProduct extends Product{
    private String author, publisher;
    public String getAuthor() {
        return author;
    }
    public void setAuthor(String author) {
        this.author = author;
    }
    public String getPublisher() {
        return publisher;
    }
    public void setPublisher(String publisher) {
        this.publisher = publisher;
    }
}
```

```java
public class Customer {
    private int customerId;
    private String name, address;

    public int getCustomerId() {
        return customerId;
    }

    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getAddress() {
        return address;
    }

    public void setAddress(String address) {
        this.address = address;
    }
}
```

```java
 1  import java.util.Scanner;
 2
 3  public class Cart {
 4      static Scanner input = new Scanner(System.in);
 5      private int customerId, nProducts;
 6      Product[] products;
 7
 8      public int getCustomerId() {
 9          return customerId;
10      }
11
12      public void setCustomerId(int customerId) {
13          this.customerId = Math.abs(customerId);
14      }
15
16      public int getnProducts() {
17          return nProducts;
18      }
19
20      public void setnProducts(int nProducts) {
21          this.nProducts = Math.abs(nProducts);
22      }
23
24      public Product[] getProducts() {
25          return products;
26      }
27
28      public void setProducts() {
29          this.products = new Product[nProducts];
30      }
31
32      public void addProduct(Product product) {
33          this.products[--nProducts] = product;
34      }
35
36      public void removeProduct(int index) {
37          this.products[index] = null;
38      }
39
40      public float calculatePrice() {
41          float totalPrice = 0;
42          for (int i = 0; i < products.length; i++) {
43              totalPrice += products[i].getPrice();
44          }
45          return totalPrice;
46      }
47
48      public boolean placeOrder() {
49          System.out.print("Your total price is: $" + calculatePrice() + "\t");
50          System.out.print("Would you like to placeyour order for the products in the cart?
    (Y/N): ");
51          if (input.nextLine().toUpperCase().equals("Y")) {
52              return true;
53          } else {
54              return false;
55          }
56      }
57  }
```

```java
public class Order {
    private int customerId, orderId = 1;
    private Product[] products;
    private float totalPrice;

    public int getCustomerId() {
        return customerId;
    }

    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);
    }

    public int getOrderId() {
        return (++orderId);
    }

    public void setOrderId() {
        this.orderId = Math.abs(orderId);
    }

    public Product[] getProducts() {
        return products;
    }

    public void setProducts(Product[] products) {
        this.products = products;
    }

    public float getTotalPrice() {
        return totalPrice;
    }

    public void setTotalPrice(float totalPrice) {
        this.totalPrice = Math.abs(totalPrice);
    }

    public void printOrderInfo() {
        System.out.println("Here's your order's summary:");
        System.out.println("Order id: " + orderId + "\tCustomer
id: " + customerId);
        System.out.println("Products:");
        for (int i = 0; i < products.length; i++) {
            System.out.println(products[i].getName() + " - $" +
products[i].getPrice());
            totalPrice += products[i].getPrice();
        }
        System.out.println("Total price: $" + totalPrice);
    }
}
```

```java
1   import javax.swing.*;
2   import java.awt.*;
3   import java.awt.event.*;
4
5   public class EcommerceSystemGUI extends JFrame {
6       private JTextField nameField, addressField, customerIdField, numProductsField;
7       private JButton submitButton, addProductButton;
8       private JLabel nameLabel, addressLabel, customerIdLabel, numProductsLabel;
9       private JList<String> productList;
10      private DefaultListModel<String> productListModel;
11      private int numSelectedProducts, numProducts;
12      private Cart cart;
13
14      public EcommerceSystemGUI() {
15          setTitle("E-commerce System");
16          setSize(500, 300);
17          setDefaultCloseOperation(EXIT_ON_CLOSE);
18          setLayout(new BorderLayout());
19          JPanel inputPanel = new JPanel(new GridLayout(5, 2));
20          nameLabel = new JLabel("Enter your name");
21          nameField = new JTextField();
22          addressLabel = new JLabel("Enter your address");
23          addressField = new JTextField();
24          customerIdLabel = new JLabel("Enter your id");
25          customerIdField = new JTextField();
26          numProductsLabel = new JLabel("Enter number of products");
27          numProductsField = new JTextField();
28          numProductsField.addFocusListener(new FocusAdapter() {
29              public void focusLost(FocusEvent e) {
30                  if (!numProductsField.getText().isEmpty()) {
31                      numProducts = Integer.parseInt(numProductsField.getText());
32                      addProductButton.setEnabled(true);
33                  }
34              }
35          });
36          inputPanel.add(nameLabel);
37          inputPanel.add(nameField);
38          inputPanel.add(addressLabel);
39          inputPanel.add(addressField);
40          inputPanel.add(customerIdLabel);
41          inputPanel.add(customerIdField);
42          inputPanel.add(numProductsLabel);
43          inputPanel.add(numProductsField);
44
45          JPanel productListPanel = new JPanel(new BorderLayout());
46          productListModel = new DefaultListModel<>();
47          productList = new JList<>(productListModel);
48          productListPanel.add(new JScrollPane(productList), BorderLayout.CENTER);
49
50          JPanel productButtonPanel = new JPanel(new FlowLayout());
51          addProductButton = new JButton("Add Product");
52          addProductButton.setEnabled(false);
53          addProductButton.addActionListener(e -> {
54              String selectedProduct = (String) JOptionPane.showInputDialog(null, "Select a product", "Product Selection", JOptionPane.QUESTION_MESSAGE, null, new String[]{"Smartphone", "T-shirt",
        "Book"}, "Smartphone");
55              if (selectedProduct != null && numSelectedProducts < numProducts) {
56                  productListModel.addElement(selectedProduct);
57                  numSelectedProducts++;
58                  if (numSelectedProducts == numProducts) {
59                      addProductButton.setEnabled(false);
60                  }
61              }
62          });
63          productButtonPanel.add(addProductButton);
64          productListPanel.add(productButtonPanel, BorderLayout.SOUTH);
65
66          JPanel mainPanel = new JPanel(new BorderLayout());
67          mainPanel.add(inputPanel, BorderLayout.NORTH);
68          mainPanel.add(productListPanel, BorderLayout.CENTER);
69
70          JPanel buttonPanel = new JPanel(new FlowLayout());
71          submitButton = new JButton("Submit");
72          submitButton.addActionListener(e -> {
73              createCart();
74              displayOrderSummary();
75          });
76          buttonPanel.add(submitButton);
77
78          add(mainPanel, BorderLayout.CENTER);
79          add(buttonPanel, BorderLayout.SOUTH);
80
81          numSelectedProducts = 0;
82          setVisible(true);
83      }
84
85      private void createCart() {
86          cart = new Cart();
87          cart.setCustomerId(Integer.parseInt(customerIdField.getText()));
88          cart.setnProducts(numProducts);
89          cart.setProducts();
90          for (int i = 0; i < productListModel.getSize(); i++) {
91              String product = productListModel.getElementAt(i);
92              switch (product) {
93                  case "Smartphone":
94                      ElectronicProduct smartphone = new ElectronicProduct();
95                      smartphone.setName("Smartphone");
96                      smartphone.setPrice(599.9f);
97                      cart.addProduct(smartphone);
98                      break;
99                  case "T-shirt":
100                     ClothingProduct tShirt = new ClothingProduct();
101                     tShirt.setName("T-shirt");
102                     tShirt.setPrice(19.99f);
103                     cart.addProduct(tShirt);
104                     break;
105                 case "Book":
106                     BookProduct book = new BookProduct();
107                     book.setName("Book");
108                     book.setPrice(39.99f);
109                     cart.addProduct(book);
110                     break;
111             }
112         }
113     }
114
115     private void displayOrderSummary() {
116         StringBuilder message = new StringBuilder();
117         message.append("<html><body>");
118         message.append("<h2 style='text-align:center;'>Order Summary</h2>");
119         message.append("<p><b>Name:</b> ").append(nameField.getText()).append("</p>");
120         message.append("<p><b>Address:</b> ").append(addressField.getText()).append("</p>");
121         message.append("<p><b>Customer ID:</b> ").append(customerIdField.getText()).append("</p>");
122         message.append("<p><b>Total Products:</b> ").append(numSelectedProducts).append("</p>");
123         message.append("<p><b>Selected Products:</b></p>");
124         message.append("<ul>");
125         float totalPrice = 0.0f;
126         for (Product product : cart.getProducts()) {
127             message.append("<li>").append(product.getName()).append(" - $").append(product.getPrice()).append("</li>");
128             totalPrice += product.getPrice();
129         }
130         message.append("</ul>");
131         message.append("<p><b>Total Price:</b> $").append(totalPrice).append("</p>");
132         message.append("</body></html>");
133
134         JOptionPane.showMessageDialog(null, message.toString());
135     }
136
137     public static void main(String[] args) {
138         new EcommerceSystemGUI();
139     }
140 }
```

E-commerce System

Enter your name | Moaz Maher
Enter your address | address
Enter your id | 23011552
Enter number of products | 3

Smartphone
T-shirt
Book

Add Product

Submit

Product Selection

? Select a product

Smartphone ▼

OK   Cancel

Message

Order Summary

Name: Moaz Maher
Address: address
Customer ID: 23011552
Total Products: 3
Selected Products:

- Book - $39.99
- T-shirt - $19.99
- Smartphone - $599.9

Total Price: $659.88

OK