

The screenshot shows the Apache NetBeans IDE 19 interface. The title bar reads "E_commerceSystem - Apache NetBeans IDE 19". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and a search field "Search (Ctrl+F)". The toolbar has icons for file operations like New, Open, Save, and Run. The Projects tab shows a tree view of the project structure, including packages like com.mycompany.e_commerceSystem and com.mycompany.e_commerceSystem. The Source tab displays the code for BookProduct.java:

```
5 package com.mycompany.e_commerceSystem;
6
7 /**
8 * 
9 * @author Menna Taha
10 */
11 public class BookProduct extends Product {
12     private String author;
13     private String publisher;
14
15     public BookProduct() {
16
17     }
18
19     public BookProduct(String author, String publisher, int productId, String name, float price) {
20         super(productId, name, price);
21         this.author = author;
22         this.publisher = publisher;
23     }
24
25     public String getAuthor() {
26
27     }
28
29     public void setAuthor(String author) {
30         this.author = author;
31     }
32
33     public String getPublisher() {
34         return publisher;
35     }
36
37     public void setPublisher(String publisher) {
38         this.publisher = publisher;
39     }
40
41 }
42 }
```

The Output tab shows two runs: "Run (E_commerceSystem)" and "Run (E_commerceSystem)". The status bar at the bottom indicates "13:12", "INS Windows (CRLF)", "11:40 PM", "17°C", "ENG", and the date "4/22/2024".

This screenshot shows the same Apache NetBeans IDE 19 interface as the first one, but with more code added to the BookProduct.java file. The code now includes methods for setting and getting author and publisher information:

```
5 package com.mycompany.e_commerceSystem;
6
7 /**
8 * 
9 * @author Menna Taha
10 */
11 public class BookProduct extends Product {
12     private String author;
13     private String publisher;
14
15     public BookProduct() {
16
17     }
18
19     public BookProduct(String author, String publisher, int productId, String name, float price) {
20         super(productId, name, price);
21         this.author = author;
22         this.publisher = publisher;
23     }
24
25     public String getAuthor() {
26         return author;
27     }
28
29     public void setAuthor(String author) {
30         this.author = author;
31     }
32
33     public String getPublisher() {
34         return publisher;
35     }
36
37     public void setPublisher(String publisher) {
38         this.publisher = publisher;
39     }
40
41 }
42 }
```

The rest of the interface is identical to the first screenshot.

The screenshot shows the Apache NetBeans IDE 19 interface. The title bar reads "E_commerceSystem - Apache NetBeans IDE 19". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and Search (Ctrl+I). The toolbar has icons for file operations like New, Open, Save, and Run. The Projects tab shows a tree view of the project structure, including packages like com.mycompany.e_commerceSystem and com.mycomp, and files like BookProduct.java, Cart.java, ClothingProduct.java, Customer.java, ElectronicProduct.java, and Order.java. The Source tab displays the code for the Cart.java class:

```
5 package com.mycompany.e_commerceSystem;
6 import java.util.Scanner;
7 public class Cart {
8     protected int customerId;
9     protected int nProducts;
10    protected Product[] Products;
11    int x;
12    public Cart() {
13    }
14    public Cart(int customerId, int nProducts) {
15        this.customerId = Math.abs(customerId);
16        this.nProducts = Math.abs(nProducts);
17        this.Products = new Product[nProducts];
18    }
19    public int getCustomerId() {
20        return customerId;
21    }
22    public void setCustomerId(int customerId) {
23        this.customerId = customerId;
24    }
25    public int getnProducts() {
26    }
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47 }
```

The Output tab shows two entries: "Run (E_commerceSystem)" and "Run (E_commerceSystem)". The system tray at the bottom right shows the date and time as 4/22/2024, 11:41 PM, and the temperature as 17°C.

This screenshot continues the display of the Cart.java code from the previous screen. The code now includes methods for getting and setting product counts, adding products, and removing products:

```
26    public int getnProducts() {
27        return nProducts;
28    }
29
30    public void setnProducts(int nProducts) {
31        this.nProducts = nProducts;
32    }
33
34    public Product[] getProducts() {
35        return Products;
36    }
37
38    public void addproduct(Product p) {
39        for(int i=0;i<nProducts;i++){
40            if (Products[i]==null){
41                Products[i]=p;
42                break;
43            }
44        }
45    }
46    public void removeproduct(Product p){
47        for(int i=0;i<nProducts;i++){
48            if(Products[i]==p){
49                Products[i]=null;
50            }
51        }
52    }
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```

The screenshot shows the Apache NetBeans IDE 19 interface. The main window displays the source code for the `Cart.java` file. The code implements a `Product` interface, featuring methods to remove products, calculate total price, and place an order using a `Scanner` object.

```
public void removeproduct(Product p){  
    for(int i=0;i<nProducts;i++){  
        if(Products[i]==p){  
            Products[i]=null;  
        }  
    }  
}  
  
public float calculateprice(){  
    float totalprice=0.0f;  
    for(int i=0;i<nProducts;i++){  
        if( Products[i]!=null){  
            totalprice+=Products[i].price;  
        }  
    }  
    return totalprice;  
}  
  
public void placeorder(){  
    Scanner input=new Scanner(source: System.in);  
    System.out.println("Would you like to place the order?1-Yes 2-No");  
    x =input.nextInt();  
}
```

The screenshot shows the Apache NetBeans IDE 19 interface. The main window displays the source code for the `ClothingProduct.java` file. This class extends the `Product` class and includes fields for size and fabric, along with their respective getters and setters.

```
/*  
 * package com.mycompany.e_commerceSystem;  
 *  
 */  
  
public class ClothingProduct extends Product {  
    private String size;  
    private String fabric;  
  
    public ClothingProduct() {  
    }  
  
    public ClothingProduct(String size, String fabric, int productId, String name, float price) {  
        super(productId, name, price);  
        this.size = size;  
        this.fabric = fabric;  
    }  
}
```

The screenshot shows the Apache NetBeans IDE 19 interface. The left pane displays the project structure under the 'Projects' tab, showing packages like com.mycompany and E_commerce. The right pane shows the source code for ClothingProduct.java. The code defines a class ClothingProduct that extends another class. It includes methods for getSize, setSize, getFabric, and setFabric. The code editor has syntax highlighting and line numbers. The status bar at the bottom shows the file size as 1101/1203MB and the current time as 11:43 PM on 4/22/2024.

```
super(productId, name, price);
this.size = size;
this.fabric = 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;
}
```

The screenshot shows the Apache NetBeans IDE 19 interface. The left pane displays the project structure under the 'Projects' tab, showing packages like com.mycompany and E_commerce. The right pane shows the source code for Customer.java. The code defines a class Customer with protected fields customerId, name, and address. It includes a constructor that takes these parameters and sets them. The code editor has syntax highlighting and line numbers. The status bar at the bottom shows the file size as 381.0/1254MB and the current time as 11:43 PM on 4/22/2024.

```
package com.mycompany.e_commerce;

/**
 * @author Menna Taha
 */
public class Customer {protected int customerId;
protected String name;
protected String address;

public Customer() {
}

public Customer(int customerId, String name, String address) {
    this.customerId = Math.abs(customerId);
    this.name = name;
    this.address = address;
}

public int getCustomerId() {
    return customerId;
}
```

The screenshot shows the Apache NetBeans IDE 19 interface. The top menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and E_commerceSystem - Apache NetBeans IDE 19. The toolbar contains icons for file operations like New, Open, Save, Cut, Copy, Paste, Find, and Run. The left sidebar displays the Projects view with the E_commerceSystem project expanded, showing packages like com.mycomp and com.mycompany.e_commerceSystem, and files such as BookProduct.java, Cart.java, ClothingProduct.java, Customer.java, ElectronicProduct.java, Order.java, and Product.java. The main workspace shows the code editor with Java code for the Customer class. The code defines a constructor, methods for setting and getting customer ID, name, and address, and a method for setting the address. Below the code editor is a preview window showing the Customer class with an address field. The bottom navigation bar includes tabs for Output, Run (E_commerceSystem), and Run (E_commerceSystem) (more...). The status bar at the bottom right shows the time as 11:43 PM, date as 4/22/2024, and system information as INS Windows (CR LF).

```
26     }
27
28     public void setCustomerId(int customerId) {
29         this.customerId = customerId;
30     }
31
32     public String getName() {
33         return name;
34     }
35
36     public void setName(String name) {
37         this.name = name;
38     }
39
40     public String getAddress() {
41         return address;
42     }
43
44     public void setAddress(String address) {
45         this.address = address;
46     }

```

The screenshot shows the Apache NetBeans IDE 19 interface with the following details:

- File Bar:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help.
- Toolbar:** Includes icons for file operations like Open, Save, Find, and Run.
- Projects View:** Shows the project structure under "E_commerceSystem".
 - Source Packages: com.mycomp (BookProd, CartJava, ClothingPr, Customer, E_commer, ElectronicF, OrderJava, ProductJ).
 - Test Packages, Dependencies, Java Dependencies, Project Files.
- Source Editor:** Displays the main method of the `E_commerceSystem` class.

```
4
5 package com.mycompany.e_commerceSystem;
6
7 import java.util.Scanner;
8
9 /**
10  * 
11  * @author Menna Taha
12  */
13 public class E_commerceSystem {
14
15     public static void main(String[] args) {
16
17
18         Scanner input=new Scanner(source: System.in);
19
20         ElectronicProduct smartphone=new ElectronicProduct(brand: "samsung",warrantyPeriod: 1,productId: 1,name: "smartphone",price: 1000);
21         ClothingProduct T_shirt=new ClothingProduct(size: "Medium",fabric: "Cotton",productId: 2,name: "T_shirt",price: 19.99f);
22         BookProduct OOp=new BookProduct(author: "O'Reilly",publisher: "X publicatins",productId: 3,name: "OOP",price: 39.99f);
23
24         System.out.println(x: "Welcome to E-commerce system !");
25         System.out.println(x: " Please Enter your id");
26         int customerId=input.nextInt();
27     }
28 }
```
- Output View:** Shows the run configuration for the `E_commerceSystem` project.
- Bottom Status Bar:** Run (E_commerceSystem), (2 more...), 63:1, INS Unix (LF), 11:44 PM, 4/22/2024, 17°C, battery icon, ENG, search bar.

The screenshot shows the Apache NetBeans IDE 19 interface. The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and E_commerceSystem - Apache NetBeans IDE 19. The toolbar has icons for file operations like New, Open, Save, and Run. The Projects tab shows a hierarchy of files and packages. The Source tab displays the following Java code:

```
int customerId=input.nextInt();
System.out.println(" Please Enter your name");
String name=input.next();
System.out.println(" Please Enter your address");
String address=input.next();

Customer customer =new Customer(customerId,name,address);
System.out.println("How many products do you want to add to your cart ? ");
int nproducts=input.nextInt();

Cart c=new Cart (customerId,nProducts);
int count=0;
while( count <nproducts){
    System.out.println("Which product would you like to add? 1-Smartphone 2-T-shirt 3-OOp");
    int productType=input.nextInt();

    switch(productType) {
        case 1:
            c.addproduct(p: smartphone);
            count++;

        break;
    }
}
```

The screenshot shows the Apache NetBeans IDE 19 interface. The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, E_commerceSystem - Apache NetBeans IDE 19. The toolbar has icons for file operations like New, Open, Save, and Run. The Projects tab shows a hierarchy of files and packages. The Source tab displays the continuation of the Java code from the previous screenshot:

```
        case 2:
            c.addproduct(p: T_shirt);
            count++;
        break;
        case 3:
            c.addproduct(p: Oop);
            count++;
        break;
        default:
            System.out.println("Invalid product Type");
    }

    float totalprice=c.calculateprice();
    System.out.println("Your total is"+$+totalprice);

    Order o=new Order(customerId,orderId: 1,nproducts,Products:c.Products);

    c.placeorder();
    if(c.x==1){


```

The screenshot shows the Apache NetBeans IDE 19 interface. The main window displays the Java code for `E_commerceSystem.java`. The code is part of the `com.mycompany.e_commerceSystem` package and contains logic for calculating total price and placing orders. The code includes imports for `java.util.ArrayList`, `java.util.List`, and `java.util.Scanner`. It defines a class `Customer` with methods `placeOrder()` and `printOrderInfo()`. A loop iterates through products, setting their `totalPrice` and printing order details. The code ends with a closing brace for the class definition.

```
60     System.out.println("Your total is"+$+totalprice);
61
62     Order o=new Order(customerId,orderId: 1 ,nproducts,Products:c.Products);
63
64     c.placeorder();
65     if(c.x==1){
66         o.setTotalprice(totalprice);
67         o.printOrderInfo();
68     }
69
70     for(int i=0;i<c.nProducts;i++){
71         c.Products[i]=null;
72     }
73
74 }
```

The screenshot shows the Apache NetBeans IDE 19 interface. The main window displays the Java code for `ElectronicProduct.java`. The code is part of the `com.mycompany.e_commerceSystem` package and defines a class `ElectronicProduct` that extends `Product`. The class has private fields `brand` and `warrantyPeriod`. The constructor takes `productId`, `name`, and `price` as parameters, initializes `brand` and `warrantyPeriod`, and calls the super constructor. The code ends with a closing brace for the class definition.

```
5 package com.mycompany.e_commerceSystem;
6
7 /**
8 * @author Menna Taha
9 */
10 public class ElectronicProduct extends Product{
11     private String brand;
12     private int warrantyPeriod;
13
14     public ElectronicProduct() {
15
16     }
17
18
19     public ElectronicProduct(String brand, int warrantyPeriod, int productId, String name, float price) {
20         super(productId, name, price);
21         this.brand = brand;
22         this.warrantyPeriod =Math.abs( a: warrantyPeriod);
23     }
24 }
```

The screenshot shows the Apache NetBeans IDE 19 interface. The title bar reads "E_commerceSystem - Apache NetBeans IDE 19". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like Open, Save, and Build. The Projects tab shows a tree view of packages: course.java, jjava, Test Packages, Libraries, Test Libraries, assignment 4, constructor, E_commerceSystem, and E_commerceSystem. The Source tab displays the code for ElectronicProduct.java:

```
23     this.warrantyPeriod = Math.abs( abs.warrantyPeriod);
24 }
25
26     public String getBrand() {
27         return brand;
28     }
29
30     public void setBrand(String brand) {
31         this.brand = brand;
32     }
33
34     public int getWarrantyPeriod() {
35         return warrantyPeriod;
36     }
37
38     public void setWarrantyPeriod(int warrantyPeriod) {
39         this.warrantyPeriod = warrantyPeriod;
40     }
41
42 }
43 }
```

The Output tab shows "Run (E_commerceSystem) X Run (E_commerceSystem) X". The system tray at the bottom right shows the date and time as 4/22/2024, 11:46 PM, and a battery level of 17%.

The screenshot shows the Apache NetBeans IDE 19 interface. The title bar reads "E_commerceSystem - Apache NetBeans IDE 19". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like Open, Save, and Build. The Projects tab shows a tree view of packages: course.java, jjava, Test Packages, Libraries, Test Libraries, assignment 4, constructor, E_commerceSystem, and E_commerceSystem. The Source tab displays the code for Order.java:

```
5 package com.mycompany.e_commerceSystem;
6
7 /**
8 * 
9 * @author Menna Taha
10 */
11 public class Order {
12
13     protected int customerId;
14     protected int orderId;
15     protected Product[] Products;
16     protected float totalprice;
17
18     public Order() {
19     }
20
21     public Order(int customerId, int orderId,int nproducts,Product []Products) {
22         this.customerId =Math.abs( abs.customerId );
23         this.orderId = Math.abs( abs.orderId );
24         this.Products=Products;
25     }
26 }
```

The Output tab shows "Run (E_commerceSystem) X Run (E_commerceSystem) X". The system tray at the bottom right shows the date and time as 4/22/2024, 11:46 PM, and a battery level of 17%.

The screenshot shows the Apache NetBeans IDE 19 interface. The title bar reads "E_commerceSystem - Apache NetBeans IDE 19". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like Open, Save, and Build. The Projects tab shows a tree view of Java files under "Source Packages" for two projects: "E_commerceSystem" and "com.mycompany.e_commerceSystem". The main editor window displays the "Order.java" code:

```
27     public int getCustomerId() {
28         return customerId;
29     }
30
31     public void setCustomerId(int customerId) {
32         this.customerId = customerId;
33     }
34
35     public int getOrderID() {
36         return orderId;
37     }
38
39     public void setOrderId(int orderId) {
40         this.orderId = orderId;
41     }
42
43     public Product[] getProducts() {
44         return Products;
45     }
46
47     public void setProducts(Product[] Products) {
48         this.Products = Products;
49     }
50
51     public float getTotalprice() {
52         return totalprice;
53     }
54
55     public void setTotalprice(float totalprice) {
56         this.totalprice = totalprice;
57     }
58
59     public void printOrderInfo() {
60         System.out.println("Here is your order 's summary:");
61         System.out.println("Order ID :" + orderId);
62         System.out.println("Customer ID :" + customerId);
63         System.out.println("Products: ");
64         for(int i=0;i<Products.length;i++) {
65             System.out.println(Products[i].name+ " - $" +Products[i].price);
66         }
67         System.out.println("Total price : $" +getTotalprice());
68     }
69
```

The Output tab shows two runs: "Run (E_commerceSystem)" and "Run (E_commerceSystem)". The system tray at the bottom right shows the date and time as 4/22/2024, 11:46 PM, and the temperature as 17°C.

This screenshot is identical to the one above, showing the Apache NetBeans IDE 19 interface with the "Order.java" code in the editor. The code is identical to the one shown in the first screenshot, detailing methods for customer ID, order ID, products, total price, and printing order information. The interface, toolbars, and system tray are also identical.

The screenshot shows the Apache NetBeans IDE 19 interface. The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and E_commerceSystem - Apache NetBeans IDE 19. The toolbar has icons for file operations like New, Open, Save, and Run. The Projects tab shows a tree view of packages: course.java, jjava, Test Packages, Libraries, Test Libraries, assignment 4, constructor, E_commerceSystem, and E_commerceSystem. Under E_commerceSystem, there are Source Packages: com.mycomp (BookProd, CartJava, ClothingPr, Customer, E_commer, Electronicf, Order.java, Product.java). The Source tab displays the Product.java code:

```
5 package com.mycompany.e_commerceSystem;
6
7 /**
8 * @author Menna Taha
9 */
10
11 public class Product {
12     protected int productId;
13     protected String name;
14     protected float price;
15
16     public Product() {
17     }
18
19     public Product(int productId, String name, float price) {
20         this.productId = Math.abs(productId);
21         this.name = name;
22         this.price = Math.abs(price);
23     }
24
25     public int getProductId() {
26         return productId;
27     }
28
29     public void setProductId(int productId) {
30         this.productId = productId;
31     }
32
33     public String getName() {
34         return name;
35     }
36
37     public void setName(String name) {
38         this.name = name;
39     }
40
41     public float getPrice() {
42         return price;
43     }
44
45     public void setPrice(float price) {
46         this.price = price;
47     }
48 }
```

The Output tab shows two entries: "Run (E_commerceSystem)" and "Run (E_commerceSystem)". The status bar at the bottom indicates "Run (E_commerceSystem)" (2 more...), 12:4, INS Windows (CRLF), 11:47 PM, 4/22/2024, and a system tray with icons for battery, signal, and notifications.

This screenshot shows the same Apache NetBeans IDE 19 interface as the first one, but with more methods added to the Product.java code. The code now includes methods for setting and getting product ID, name, and price. The status bar at the bottom indicates "Run (E_commerceSystem)" (2 more...), 12:4, INS Windows (CRLF), 11:48 PM, 4/22/2024, and a system tray with icons for battery, signal, and notifications.

```
25     public int getProductId() {
26         return productId;
27     }
28
29     public void setProductId(int productId) {
30         this.productId = productId;
31     }
32
33     public String getName() {
34         return name;
35     }
36
37     public void setName(String name) {
38         this.name = name;
39     }
40
41     public float getPrice() {
42         return price;
43     }
44
45     public void setPrice(float price) {
46         this.price = price;
47     }
48 }
```

The screenshot shows the Apache NetBeans IDE 19 interface. The title bar reads "E_commerceSystem - Apache NetBeans IDE 19". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like New, Open, Save, and Run. The Projects tab shows a tree view of packages and source files. The Source tab displays the Java code for the `Product` class:

```
33     public String getName() {
34         return name;
35     }
36
37     public void setName(String name) {
38         this.name = name;
39     }
40
41     public float getPrice() {
42         return price;
43     }
44
45     public void setPrice(float price) {
46         this.price = price;
47     }
48
49 }
50 }
```

The Output tab shows two runs: "Run (E_commerceSystem)" and "Run (E_commerceSystem)". The system tray at the bottom right shows the date as 4/22/2024.

The screenshot shows the Apache NetBeans IDE 19 interface with the same layout as the first one. The title bar is "E_commerceSystem - Apache NetBeans IDE 19". The menu bar and toolbar are identical. The Projects tab shows the project structure. The Output tab displays a terminal session with user input and system responses:

```
Welcome to E-commerce system !
Please Enter your id
23011163
Please Enter your name
mennatallahataha
Please Enter your address
Alex
How many products do you want to add to your cart ?
4
Which product would you like to add? 1-Smartphone 2-T-shirt 3-oop
2
Which product would you like to add? 1-Smartphone 2-T-shirt 3-oop
3
Which product would you like to add? 1-Smartphone 2-T-shirt 3-oop
2
Which product would you like to add? 1-Smartphone 2-T-shirt 3-oop
1
Your total is $679.87
Would you like to place the order?!-Yes 2-No
1
Here is your order 's summary:
Order ID :1
Customer ID:23011163
Products:
T_shirt = $19.99
oop = $39.99
T_shirt = $19.99
smartphone = $599.99
```

The system tray at the bottom right shows the date as 4/22/2024.

