JAVA FUNDAMENTALS **SECTION-06**

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Step 1: Open the Inventory Program

Open your existing Inventory program in your preferred IDE or text editor.

Step 2: Modify the ProductTester Class

a. Add a Scanner and Variables

1. Add a Scanner object to read user input.
2. Declare local variables for product attributes (tempNumber, tempName, tempQty, tempPrice).

```
Scanner in = new Scanner(System.in);

int tempNumber;

String tempName;

int tempQty;

double tempPrice;
```

b. Prompt for Number of Products

1. Declare a variable maxSize to store the number of products.
2. Prompt the user to enter the number of products they wish to add.

```
int maxSize = -1;

do {

   try {
```

```
        System.out.println("Enter the number of products you would like to add");
        System.out.println("Enter 0 (zero) if you do not wish to add products");
        maxSize = in.nextInt();
        if (maxSize < 0) {
            System.out.println("Incorrect Value entered");
        }
    } catch (InputMismatchException e) {
        System.out.println("Incorrect data type entered! Please enter a valid integer.");
        in.next(); // Clear the buffer
    }
} while (maxSize < 0);
```

Step 3: Handle Zero Products

1. Check if maxSize is zero.
2. Display "No products required!" if true, else proceed to create products.

```
if (maxSize == 0) {
    System.out.println("No products required!");
} else {
    // Proceed to create and populate the products array
}
```

Step 4: Create and Populate Products Array

1. Inside the else block, create an array of Product objects.
2. Use a for loop to iterate and gather user input for each product.

```
Product[] products = new Product[maxSize];
for (int i = 0; i < maxSize; i++) {
    in.nextLine(); // Clear the buffer

    System.out.println("Enter the item number for product " + (i + 1) + ": ");
    tempNumber = in.nextInt();
    in.nextLine(); // Clear buffer

    System.out.println("Enter the name for product " + (i + 1) + ": ");
    tempName = in.nextLine();

    System.out.println("Enter the quantity for product " + (i + 1) + ": ");
    tempQty = in.nextInt();

    System.out.println("Enter the price for product " + (i + 1) + ": ");
    tempPrice = in.nextDouble();

    products[i] = new Product(tempNumber, tempName, tempQty, tempPrice);
}
```

Step 5: Display Product Information

1. Use a for-each loop to display the information for each product in the array.

```
for (Product product : products) {
```

```
    System.out.println(product);
    System.out.println();
}
```

Step 6: Close the Scanner

1. Close the Scanner object to avoid resource leaks.

```
in.close();
```

Full Java Code

Combining all the steps above, your complete ProductTester class in Inventory.java should look like this:

JAVA

```
import java.util.InputMismatchException;
import java.util.Scanner;


public class Inventory {


    // Product class
    public static class Product {
        // Instance field declarations
        private int itemNumber;
        private String name;
        private int unitsInStock;
        private double price;
        private boolean active;
```

```
// Default constructor
public Product() {
    // Initializing fields to default values
    this.itemNumber = 0;
    this.name = "";
    this.unitsInStock = 0;
    this.price = 0.0;
    this.active = true;
}

// Parameterized constructor
public Product(int number, String name, int qty, double price) {
    this.itemNumber = number;
    this.name = name;
    this.unitsInStock = qty;
    this.price = price;
    this.active = true;
}

// Getter and Setter methods
public int getItemNumber() {
    return itemNumber;
}

public void setItemNumber(int itemNumber) {
```

```
    this.itemNumber = itemNumber;
}

public String getName() {
    return name;
}

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

public int getUnitsInStock() {
    return unitsInStock;
}

public void setUnitsInStock(int unitsInStock) {
    this.unitsInStock = unitsInStock;
}

public double getPrice() {
    return price;
}

public void setPrice(double price) {
    this.price = price;
```

```
    }

    public boolean isActive() {
        return active;
    }

    public void setActive(boolean active) {
        this.active = active;
    }

    // Method to calculate inventory value
    public double getInventoryValue() {
        return price * unitsInStock;
    }

    // Override toString method
    @Override
    public String toString() {
        return "Item Number: " + itemNumber +
               "\nName: " + name +
               "\nQuantity in stock: " + unitsInStock +
               "\nPrice: " + price +
               "\nStock Value: " + getInventoryValue() +
               "\nProduct Status: " + (active ? "Active" :
"Discontinued");
```

```
        }
    }

    // ProductTester class
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        int tempNumber;
        String tempName;
        int tempQty;
        double tempPrice;

        int maxSize = -1;
        do {
            try {
                System.out.println("Enter the number of products you would like to add");
                System.out.println("Enter 0 (zero) if you do not wish to add products");
                maxSize = in.nextInt();
                if (maxSize < 0) {
                    System.out.println("Incorrect Value entered");
                }
            } catch (InputMismatchException e) {
                System.out.println("Incorrect data type entered! Please enter a valid integer.");
                in.next(); // Clear the buffer
```

```
            }
        } while (maxSize < 0);

        if (maxSize == 0) {
            System.out.println("No products required!");
        } else {
            Product[] products = new Product[maxSize];
            for (int i = 0; i < maxSize; i++) {
                in.nextLine(); // Clear the buffer

                System.out.println("Enter the item number for product " + (i
+ 1) + ": ");
                tempNumber = in.nextInt();
                in.nextLine(); // Clear buffer

                System.out.println("Enter the name for product " + (i + 1) +
": ");
                tempName = in.nextLine();

                System.out.println("Enter the quantity for product " + (i +
1) + ": ");
                tempQty = in.nextInt();

                System.out.println("Enter the price for product " + (i + 1) +
": ");
                tempPrice = in.nextDouble();
```

```
            products[i] = new Product(tempNumber, tempName,
tempQty, tempPrice);
        }

        for (Product product : products) {
            System.out.println(product);
            System.out.println();
        }
    }

    in.close();
  }
}
```

Running the Code

Save the code in a file named Inventory.java and run it. Follow the prompts to enter the number of products and their details. The program will display the entered products along with their calculated stock value and status.