# JAVA FUNDAMENTALS PROJECT

# ORACLE ACADEMY

### 1. Product List and Table

First, decide on the specific products you want to store in your inventory system. For example:

| Attribute | Product 1 | Product 2 | Product 3 | Product 4 | Product 5 | Product 6 |
|---|---|---|---|---|---|---|
| Name of the product | Music CD | DVD Movie | Office Chair | Software | Printer | USB Drive |
| Price | 15.99 | 19.99 | 89.99 | 49.99 | 120.00 | 12.99 |
| Number of units in stock | 50 | 30 | 20 | 40 | 10 | 100 |
| Item number | 001 | 002 | 003 | 004 | 005 | 006 |

### 2. Data Types

Determine the data types for each attribute:

| Attribute | Data Type |
|---|---|
| Name of the product | `String` |
| Price | `double` |
| Number of units in stock | `int` |
| Item number | `int` |

### 3. Create Project and Class

Create a new Java project named inventory. Then, create a class named Product in this project.

### 4. Product Class Definition

Define the Product class with the specified fields, constructors, and methods:

package inventory;

```
/**
 * This class represents a product in the inventory.
 */
public class Product {

    // Instance field declarations
    private int itemNumber;
    private String name;
    private int quantityInStock;
    private double price;

    /**
     * Default constructor that initializes fields to default values.
     */
    public Product() {
        this.itemNumber = 0;
        this.name = "";
        this.quantityInStock = 0;
        this.price = 0.0;
    }

    /**
     * Overloaded constructor that initializes fields with specified values.
     * @param number the item number
     * @param name the name of the product
     * @param qty the quantity in stock
```

```
     * @param price the price of each unit
     */
    public Product(int number, String name, int qty, double price) {
        this.itemNumber = number;
        this.name = name;
        this.quantityInStock = qty;
        this.price = price;
    }

    // Getter and setter for itemNumber
    public int getItemNumber() {
        return itemNumber;
    }

    public void setItemNumber(int itemNumber) {
        this.itemNumber = itemNumber;
    }

    // Getter and setter for name
    public String getName() {
        return name;
    }

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

```
// Getter and setter for quantityInStock
public int getQuantityInStock() {
    return quantityInStock;
}

public void setQuantityInStock(int quantityInStock) {
    this.quantityInStock = quantityInStock;
}

// Getter and setter for price
public double getPrice() {
    return price;
}

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

@Override
public String toString() {
    return "Item Number: " + itemNumber + "\n" +
           "Name: " + name + "\n" +
           "Quantity in stock: " + quantityInStock + "\n" +
           "Price: " + price;
}
```

```
}
```

**5. ProductTester Class**

Create a class named ProductTester to test the Product class:

```
package inventory;

/**
 * This class tests the functionality of the Product class.
 */
public class ProductTester {

    public static void main(String[] args) {
        // Creating Product objects using default constructor
        Product product1 = new Product();
        Product product2 = new Product();

        // Creating Product objects using parameterized constructor
        Product product3 = new Product(1, "Music CD", 50, 15.99);
        Product product4 = new Product(2, "DVD Movie", 30, 19.99);
        Product product5 = new Product(3, "Office Chair", 20, 89.99);
        Product product6 = new Product(4, "Software", 40, 49.99);
        Product product7 = new Product(5, "Printer", 10, 120.00);
        Product product8 = new Product(6, "USB Drive", 100, 12.99);

        // Displaying product details
        System.out.println(product1.toString());
```

```
        System.out.println();
        System.out.println(product2.toString());
        System.out.println();
        System.out.println(product3.toString());
        System.out.println();
        System.out.println(product4.toString());
        System.out.println();
        System.out.println(product5.toString());
        System.out.println();
        System.out.println(product6.toString());
        System.out.println();
        System.out.println(product7.toString());
        System.out.println();
        System.out.println(product8.toString());
    }
}
```