Exercise 2: E-commerce Platform Search Function

```java
package com.example.ecommerce;

import java.util.ArrayList;

import java.util.List;

public class ProductRepository {

        private List<Product> products = new ArrayList<Product>();

    public ProductRepository() {

        products.add(new Product(1, "iPhone 14", "Electronics"));

        products.add(new Product(2, "Nike Shoes", "Footwear"));

        products.add(new Product(3, "Samsung TV", "Electronics"));

        products.add(new Product(4, "Levi's Jeans", "Clothing"));

        products.add(new Product(5, "Sony Headphones", "Electronics"));

    }

    public List<Product> getAllProducts() {

        return products;

    }

}

package com.example.ecommerce;


import java.util.ArrayList;

import java.util.List;


public class SearchService {


    public List<Product> searchByName(List<Product> products, String keyword) {

        List<Product> result = new ArrayList<Product>();

        for (Product p : products) {

            if (p.getName().toLowerCase().contains(keyword.toLowerCase())) {
```

```java
                result.add(p);

            }

        }

        return result;

    }


    public List<Product> searchByCategory(List<Product> products, String category) {

        List<Product> result = new ArrayList<Product>(); // No diamond operator

        for (Product p : products) {

            if (p.getCategory().equalsIgnoreCase(category)) {

                result.add(p);

            }

        }

        return result;

    }

}
package com.example.ecommerce;


import java.util.List;

import java.util.Scanner;


public class SearchTest {

    public static void main(String[] args) {

        ProductRepository repo = new ProductRepository();

        SearchService searchService = new SearchService();


        Scanner scanner = new Scanner(System.in);

        System.out.println("Welcome to the E-Commerce Search Engine!");
```

```java
while (true) {

    System.out.println("\nChoose Search Option:");

    System.out.println("1. Search by Product Name");

    System.out.println("2. Search by Category");

    System.out.println("3. Exit");


    int choice = scanner.nextInt();

    scanner.nextLine();


    if (choice == 1) {

        System.out.print("Enter product name to search: ");

        String name = scanner.nextLine();

        List<Product> results = searchService.searchByName(repo.getAllProducts(), name);

        displayResults(results);


    } else if (choice == 2) {

        System.out.print("Enter category to search: ");

        String category = scanner.nextLine();

        List<Product> results = searchService.searchByCategory(repo.getAllProducts(), category);

        displayResults(results);


    } else if (choice == 3) {

        System.out.println("Exiting search.");

        break;

    } else {

        System.out.println("Invalid option. Try again.");
```

```java
        }
    }

    scanner.close();
  }

  private static void displayResults(List<Product> results) {
    if (results.isEmpty()) {
      System.out.println("No products found.");
    } else {
      System.out.println("Search Results:");
      for (Product p : results) {
        System.out.println(p);
      }
    }
  }
}
package com.example.ecommerce;
public class Product {
  private int id;
  private String name;
  private String category;

  public Product(int id, String name, String category) {
    this.id = id;
    this.name = name;
    this.category = category;
  }
```

```java
    public int getId() {

        return id;

    }


    public String getName() {

        return name;

    }


    public String getCategory() {

        return category;

    }


    @Override

    public String toString() {

        return "Product ID: " + id + ", Name: " + name + ", Category: " + category;

    }

}
```
OUTPUT:

File   Edit   Source   Refactor   Source   Navigate   Search   Project   Run   Window   Help

*ProductRepository.java   *SearchService.java   *SearchTest.java   *Product.java

```java
 1  package com.example.ecommerce;
 2  public class Product {
 3      private int id;
 4      private String name;
 5      private String category;
 6
 7      public Product(int id, String name, String category) {
 8          this.id = id;
 9          this.name = name;
10          this.category = category;
11      }
12      public int getId() {
13          return id;
```

Problems   Servers   Terminal   Data Source Explorer   Properties   Console   Outline

SearchTest [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (19 Jun 2025, 8:38:13 pm) [pid: 8680]

```
Welcome to the E-Commerce Search Engine!

Choose Search Option:
1. Search by Product Name
2. Search by Category
3. Exit
```

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