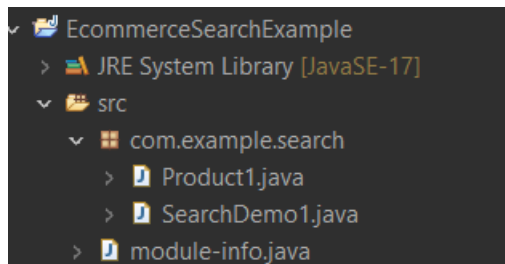


## E-commerce Platform Search Function

### Flow:



### Product1.java

```
1 package com.example.search;
2
3 public class Product1 {
4     int productId;
5     String productName;
6     String category;
7
8     public Product1(int productId, String productName, String category) {
9         this.productId = productId;
10        this.productName = productName;
11        this.category = category;
12    }
13
14    @Override
15    public String toString() {
16        return productId + " - " + productName + " (" + category + ")"
17    }
18 }
```

### SearchDemo1.java

```
package com.example.search;
```

```
import java.util.Arrays;
```

```
import java.util.Comparator;
```

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

```
public class SearchDemo1 {
```

```
public static Product1 linearSearch(Product1[] products, String name) {  
    for (Product1 product : products) {  
        if (product.productName.equalsIgnoreCase(name)) {  
            return product;  
        }  
    }  
    return null;  
}
```

```
public static Product1 binarySearch(Product1[] products, String name) {  
    int left = 0;  
    int right = products.length - 1;  
  
    while (left <= right) {  
        int mid = (left + right) / 2;  
        int cmp = products[mid].productName.compareToIgnoreCase(name);  
  
        if (cmp == 0) return products[mid];  
        else if (cmp < 0) left = mid + 1;  
        else right = mid - 1;  
    }  
    return null;  
}
```

```
}
```

```
public static void main(String[] args) {
```

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

```
    Product1[] products = {
```

```
        new Product1(101, "Shoes", "Footwear"),
```

```
        new Product1(102, "Watch", "Accessories"),
```

```
        new Product1(103, "Laptop", "Electronics"),
```

```
        new Product1(104, "Phone", "Electronics"),
```

```
        new Product1(105, "Shirt", "Clothing")
```

```
    };
```

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

```
    String inputName = sc.nextLine();
```

```
    Product1 result1 = linearSearch(products, inputName);
```

```
    System.out.println("\n Linear Search Result:");
```

```
    System.out.println(result1 != null ? result1 : "Product not found");
```

```
    Arrays.sort(products, Comparator.comparing(p -> p.productName));
```

```
    Product1 result2 = binarySearch(products, inputName);
```

```
    System.out.println("\n Binary Search Result:");
```

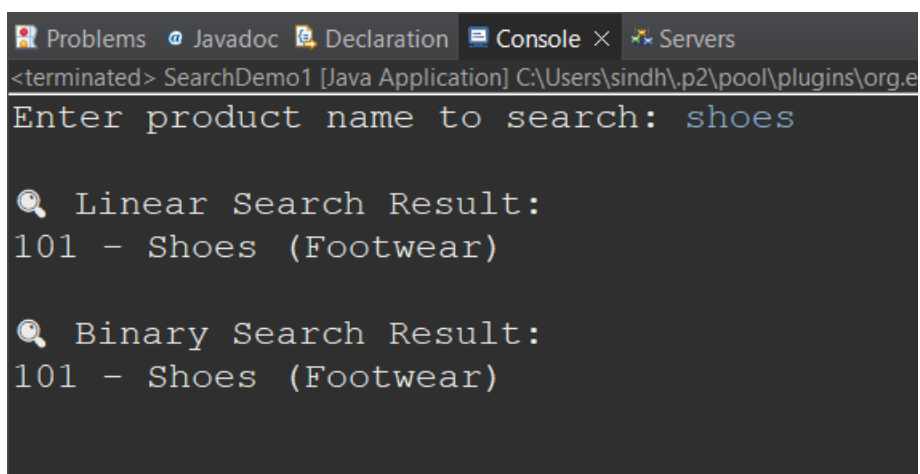
```
System.out.println(result2 != null ? result2 : "Product not found");
```

```
sc.close();
```

```
}
```

```
}
```

Output:



The screenshot shows an IDE console window with the following content:

```
<terminated> SearchDemo1 [Java Application] C:\Users\sindh\p2\pool\plugins\org.e
Enter product name to search: shoes

🔍 Linear Search Result:
101 - Shoes (Footwear)

🔍 Binary Search Result:
101 - Shoes (Footwear)
```