**Product.java**  
  
package Platform;

public class Product {

int productId;

String productName;

String category;

public Product(int productId, String productName, String category) {

this.productId = productId;

this.productName = productName;

this.category = category;

}

public String toString() {

return productId + " - " + productName + " (" + category + ")";

}

}

**Binary.java**  
  
package Platform;

import java.util.Arrays;

import java.util.Comparator;

public class Binary {

public static Product binarySearch(Product[] products, String Name) {

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

int left = 0, right = products.length - 1;

while (left <= right) {

int mid = left + (right - left) / 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;

}

}

**Linear.java**package Platform;

public class Linear {

public static Product linearSearch(Product[] products, String Name) {

for (Product product : products) {

if (product.productName.equalsIgnoreCase(Name)) {

return product;

}

}

return null;

}

}

**Main.java**  
  
package Platform;

public class Main {

public static void main(String[] args) {

Product[] products = {

new Product(101, "Laptop", "Electronics"),

new Product(102, "Shirt", "Apparel"),

new Product(103, "Watch", "Accessories"),

new Product(104, "Headphones", "Electronics")

};

Product result1 = Linear.*linearSearch*(products, "Shirt");

System.***out***.println("Linear Search Result: " + (result1 != null ? result1 : "Product not found"));

Product result2 = Binary.*binarySearch*(products, "Shirt");

System.***out***.println("Binary Search Result: " + (result2 != null ? result2 : "Product not found"));

}

}

Output:   
Linear Search Result: 102 - Shirt (Apparel)

Binary Search Result: 102 - Shirt (Apparel)