**E-commerce Platform Search Function:**import java.util.Arrays;

class Product implements Comparable<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 "ID: " + productId + ", Name: " + productName + ", Category: " + category;

}

public int compareTo(Product p) {

return Integer.compare(this.productId, p.productId);

}

}

public class EcommerceSearch {

public static int linearSearch(Product[] products, int targetId) {

for (int i = 0; i < products.length; i++) {

if (products[i].productId == targetId) {

return i;

}

}

return -1;

}

public static int binarySearch(Product[] products, int targetId) {

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

while (left <= right) {

int mid = left + (right - left) / 2;

if (products[mid].productId == targetId)

return mid;

else if (products[mid].productId < targetId)

left = mid + 1;

else

right = mid - 1;

}

return -1;

}

public static void main(String[] args) {

Product[] products = {

new Product(105, "Mouse", "Electronics"),

new Product(102, "Shoes", "Fashion"),

new Product(110, "Keyboard", "Electronics"),

new Product(101, "Book", "Stationery"),

new Product(108, "T-shirt", "Fashion")

};

System.out.println("Original Product List:");

for (Product p : products) {

System.out.println(p);

}

int targetId = 110;

int indexLinear = linearSearch(products, targetId);

System.out.println("\nLinear Search Result:");

if (indexLinear != -1) {

System.out.println("Product Found: " + products[indexLinear]);

} else {

System.out.println("Product not found");

}

Arrays.sort(products);

int indexBinary = binarySearch(products, targetId);

System.out.println("\nBinary Search Result:");

if (indexBinary != -1) {

System.out.println("Product Found: " + products[indexBinary]);

} else {

System.out.println("Product not found");

}

}

}  
  
**Output:**Original Product List:

ID: 105, Name: Mouse, Category: Electronics

ID: 102, Name: Shoes, Category: Fashion

ID: 110, Name: Keyboard, Category: Electronics

ID: 101, Name: Book, Category: Stationery

ID: 108, Name: T-shirt, Category: Fashion

Linear Search Result:

Product Found: ID: 110, Name: Keyboard, Category: Electronics

Binary Search Result:

Product Found: ID: 110, Name: Keyboard, Category: Electronics