# E-COMMERCE PLATFROM SEARCH FUNCTION

CODE :

public class EcommerceSearch {

// Product class

static class Product {

int productId;

String productName;

String category;

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

this.productId = productId;

this.productName = productName;

this.category = category;

}

void display() {

System.out.println("ID: " + productId + ", Name: " + productName + ", Category: " + category);

}

}

// Linear Search

static int linearSearch(Product[] products, String name) {

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

if (products[i].productName.equalsIgnoreCase(name)) {

return i;

}

}

return -1;

}

// Binary Search

static int binarySearch(Product[] products, String name) {

int low = 0, high = products.length - 1;

while (low <= high) {

int mid = (low + high) / 2;

int compare = products[mid].productName.compareToIgnoreCase(name);

if (compare == 0) {

return mid;

} else if (compare < 0) {

low = mid + 1;

} else {

high = mid - 1;

}

}

return -1;

}

// Main method

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

Product[] products = {

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

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

new Product(103, "Mobile", "Electronics"),

new Product(104, "Shoes", "Footwear"),

new Product(105, "Book", "Education")

};

//from the user

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

String searchName = sc.nextLine();

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

int linearIndex = linearSearch(products, searchName);

if (linearIndex != -1) {

System.out.print("Product found: ");

products[linearIndex].display();

} else {

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

}

Arrays.sort(products, (a, b) -> a.productName.compareToIgnoreCase(b.productName));

System.out.println("\nBinary Search (on sorted array):");

int binaryIndex = binarySearch(products, searchName);

if (binaryIndex != -1) {

System.out.print("Product found: ");

products[binaryIndex].display();

} else {

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

}

}

}

OUTPUT :

