JAVA PROGRAM – (1/08/24)

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Q1) WRITE A JAVA PROGRAM TO CREATE A GENERIC METHOD THAT TAKES A LIST OF ANY TYPE AND A TARGET ELEMENT IT RETURNS THE INDEX OF FIRST OCCURANCEOF THE TARGET ELEMENT IN THE LIST RETURN -1 IF THE TARGET ELEMENT CANNOT BE FOUND.

import java.util.List;

public class GenericSearch {

public static <T> int findIndexOfFirstOccurrence(List<T> list, T target) {

if (list == null || target == null) {

return -1;

}

for (int i = 0; i < list.size(); i++) {

if (list.get(i).equals(target)) {

return i;

}

}

return -1;

}

public static void main(String[] args) {

List<String> strings = List.of("apple", "banana", "cherry", "banana");

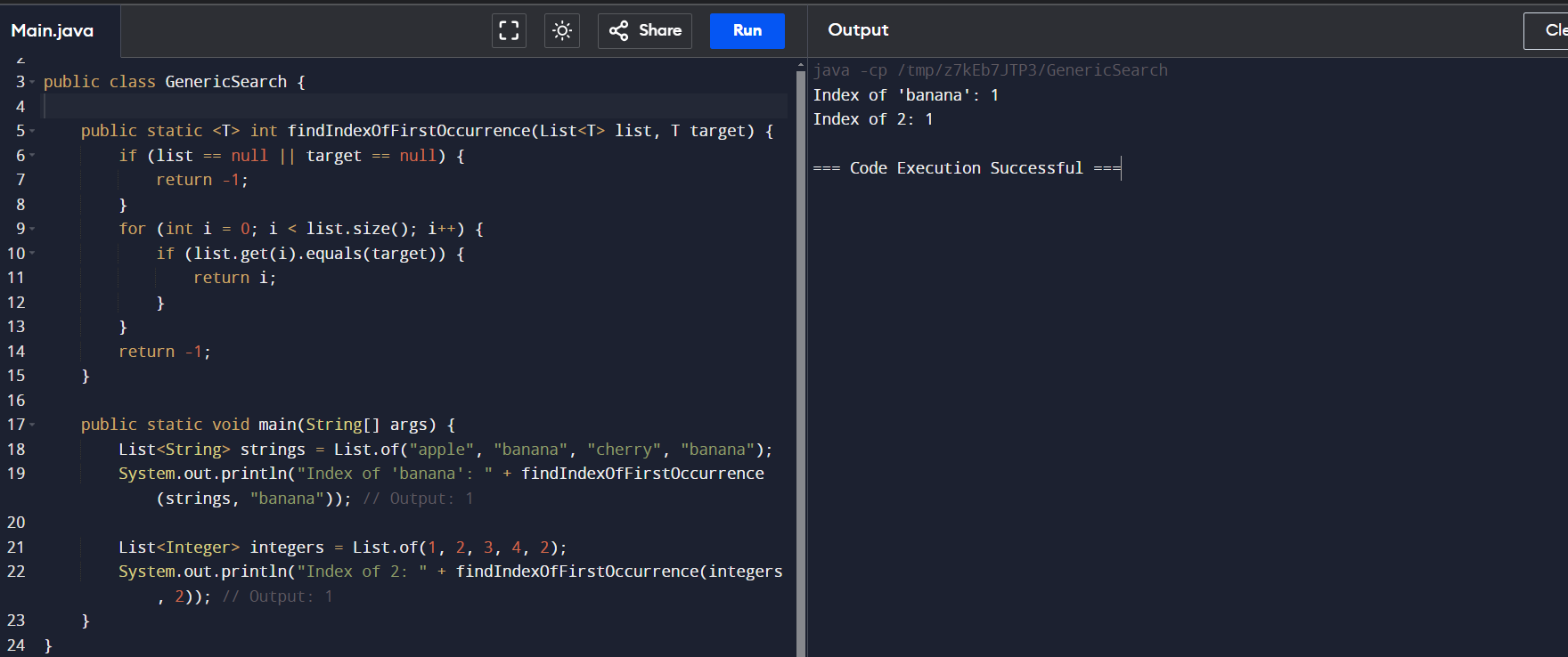
System.out.println("Index of 'banana': " + findIndexOfFirstOccurrence(strings, "banana"));

List<Integer> integers = List.of(1, 2, 3, 4, 2);

System.out.println("Index of 2: " + findIndexOfFirstOccurrence(integers, 2));

}

}



Q2) WRITE A JAVA PROGRAM TO CREATE GENERIC METHOD THAT TAKES LIST OF NUMBERS AND RETURNS THE SUM OF ALL THE EVEN AND ODD NUMBER

import java.util.List;

public class NumberSum {

public static <T extends Number> void sumEvenAndOdd(List<T> numbers) {

if (numbers == null) {

System.out.println("List is null");

return;

}

double evenSum = 0;

double oddSum = 0;

for (T number : numbers) {

double value = number.doubleValue();

if (value % 2 == 0) {

evenSum += value;

} else {

oddSum += value;

}

}

System.out.println("Sum of even numbers: " + evenSum);

System.out.println("Sum of odd numbers: " + oddSum);

}

public static void main(String[] args) {

List<Integer> integers = List.of(1, 2, 3, 4, 5, 6);

sumEvenAndOdd(integers);

List<Double> doubles = List.of(1.5, 2.0, 3.5, 4.0);

sumEvenAndOdd(doubles);

}

}

