//12-a

import java.util.Arrays;

import java.util.List;

public class GenericPrograms {

public static <T extends Number> int countOddIntegers(List<T> numbers) {

int count = 0;

for (T num : numbers) {

if (num.intValue() % 2 != 0) {

count++;

}

}

return count;

}

public static <T> void exchangeElements(T[] array, int index1, int index2) {

if (index1 >= 0 && index1 < array.length && index2 >= 0 && index2 < array.length) {

T temp = array[index1];

array[index1] = array[index2];

array[index2] = temp;

}

}

public static <T extends Comparable<T>> T findMaxElementInRange(List<T> list, int begin, int end) {

if (begin >= 0 && end < list.size() && begin <= end) {

T maxElement = list.get(begin);

for (int i = begin + 1; i <= end; i++) {

T currentElement = list.get(i);

if (currentElement.compareTo(maxElement) > 0) {

maxElement = currentElement;

}

}

return maxElement;

} else {

throw new IllegalArgumentException("Invalid range");

}

}

public static void main(String[] args) {

// Example usage:

List<Integer> integerList = Arrays.asList(1, 2, 3, 4, 5);

System.out.println("Number of odd integers: " + countOddIntegers(integerList));

Integer[] intArray = {1, 2, 3, 4, 5};

exchangeElements(intArray, 1, 3);

System.out.println("Exchanged elements: " + Arrays.toString(intArray));

List<Double> doubleList = Arrays.asList(2.5, 1.8, 3.2, 4.7, 2.1);

Double maxInRange = findMaxElementInRange(doubleList, 1, 3);

System.out.println("Maximal element in the range: " + maxInRange);

}

}