package BT;

import java.io.File;

import java.io.FileNotFoundException;

import java.util.HashSet;

import java.util.Scanner;

class Node {

int data;

Node next;

public Node(int data) {

this.data = data;

this.next = null;

}

}

public class BaiTap {

Node head;

public void addNode(int data) {

Node newNode = new Node(data);

if (head == null) {

head = newNode;

return;

}

Node temp = head;

while (temp.next != null) {

temp = temp.next;

}

temp.next = newNode;

}

public int sumOddNodes() {

int sum = 0;

Node temp = head;

while (temp != null) {

if (temp.data % 2 != 0) {

sum += temp.data;

}

temp = temp.next;

}

return sum;

}

public double averageEvenNodes() {

double sum = 0;

int count = 0;

Node temp = head;

while (temp != null) {

if (temp.data % 2 == 0) {

sum += temp.data;

count++;

}

temp = temp.next;

}

return count == 0 ? 0 : sum / count;

}

public int countGreaterThanThree() {

int count = 0;

Node temp = head;

while (temp != null) {

if (temp.data > 3) {

count++;

}

temp = temp.next;

}

return count;

}

public int countDistinctNodes() {

HashSet<Integer> set = new HashSet<>();

Node temp = head;

while (temp != null) {

set.add(temp.data);

temp = temp.next;

}

return set.size();

}

public void swapFirstLastNodes() {

if (head == null || head.next == null) return;

Node prevLast = null, lastNode = head, firstNode = head;

while (lastNode.next != null) {

prevLast = lastNode;

lastNode = lastNode.next;

}

prevLast.next = firstNode;

Node nextFirstNode = firstNode.next;

firstNode.next = null;

lastNode.next = nextFirstNode;

head = lastNode;

}

public void printSecondLastNode() {

if(head == null || head.next == null) return;

Node secondLastNode=head, lastNode=head.next;

while(lastNode.next!=null){

secondLastNode=lastNode;

lastNode=lastNode.next;

}

System.***out***.println(secondLastNode.data);

}

public void reverseList() {

if(head==null || head.next==null) return;

Node prev=null, current=head, next=null;

while(current!=null){

next=current.next;

current.next=prev;

prev=current;

current=next;

}

head=prev;

}

public static void main(String[] args) throws FileNotFoundException {

BaiTap list=new BaiTap();

File file=new File("solieu.txt");

Scanner sc=new Scanner(file);

int n=sc.nextInt();

for(int i=0;i<n;i++){

list.addNode(sc.nextInt());

}

System.***out***.println("Tong cac not le: "+list.sumOddNodes());

System.***out***.println("Trung binh cong cac so chan: "+list.averageEvenNodes());

System.***out***.println("Dem so phan tu lon hon 3: "+list.countGreaterThanThree());

System.***out***.println("Dem so phan tu khac nhau: "+list.countDistinctNodes());

list.swapFirstLastNodes();

System.***out***.println("Hoa vi phan tu dau va phan tu cuoi: ");

list.printList();

System.***out***.println("Gia tri not ke cuoi: ");

list.printSecondLastNode();

list.reverseList();

System.***out***.println("Sau khi dao nguoc danh sach: ");

list.printList();

}

private void printList() {

Node temp=head;

while(temp!=null){

System.***out***.print(temp.data+" ");

temp=temp.next;

}

System.***out***.println();

}

}

