Name: Jeel Tikiwala

Subject: COSC2007 – Assignment 2

Student ID: 239659420

CODE:

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Lab 2

Any and all work in this file is my own.\*/

import java.util.\*;

public class JeelTikiwala\_Assignment2 {

//main class

public static void main(String[] args) {

Scanner sc = new Scanner(System.***in***);

//A: get the size of an array

System.***out***.println("Enter the size of an array :");

int n = sc.nextInt();

//array of integrs with size n to store elements entered by the user

int arr[] = new int[n];

//B: get the element from the user

System.***out***.println("Enter the element of the array :");

//loop go read n elements and store that in the array arr[i]

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

arr[i] = sc.nextInt();

}

//C: check the numbers

System.***out***.println("Check the numbers of the array :");

int target = sc.nextInt();

//D: find all quadruplets with sum <= given number

Arrays.*sort*(arr);

*findQuadruplets*(arr, target, 0, new int[4], 0);

}

public static void findQuadruplets(int arr[], int target, int startidx, int selected[], int count) {

//base case: if 4 is selected, check if sum <= target

if(count == 4) {

int sum = 0;

for(int num : selected) {

sum += num;

}

//if true, print the quadruplets

if(sum <= target) {

System.***out***.println(Arrays.*toString*(selected));

}

//if false, return

return;

}

//otherwise, continue the recursion

for (int i = startidx; i< arr.length; i++) {

selected[count] = arr[i]; //select the current element and add it to the array

*findQuadruplets*(arr, target, i + 1, selected, count + 1); //find next element

}

}

}

OUTPUT:

A computer screen shot of a program

Description automatically generated

A screen shot of a computer

Description automatically generated