Marwadi University	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Sem : 5	**Name :Pushti Depani**	
Day : 9	**Date : 26/10/2022**	**Enrollment No: 92000133018**

Happy New Year

CP Club 365Days Challenge

Date – 26/10/2022

Programming language – C++

Problem Statement

Write the code not just for two inputs but for many more.(Dynamic code)

Given an array of integers and another number. Find all the **unique** quadruple from the given array that sums up to the given number.

Example 1:

Input:

N = 5, K = 3

A[] = {0,0,2,1,1}

Output: 0 0 1 2 $

Explanation: Sum of 0, 0, 1, 2 is equal to K.

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Example 2

Input:
N = 7, K = 23
A[] = {10,2,3,4,5,7,8}
Output: 2 3 8 10 $2 4 7 10 $3 5 7 8 $
Explanation: Sum of 2, 3, 8, 10 = 23,
sum of 2, 4, 7, 10 = 23 and sum of 3,
5, 7, 8 = 23.

Your Task:
You don't need to read input or print anything. Your task is to complete the function **fourSum()** which takes the array arr[] and the integer k as its input and returns an array containing all the quadruples in a lexicographical manner. Also note that all the quadruples should be internally sorted, ie for any quadruple [q1, q2, q3, q4] the following should follow: q1 <= q2 <= q3 <= q4. (In the output each quadruple is separate by $. The printing is done by the driver's code)

Your Code:

```
#include <bits/stdc++.h>
using namespace std;
int main() {
        int t;  //number of test cases
        cin>>t;
        while(t--)
        {
           int n,k;  // n= first input , k = second input
                cin>>n>>k;
           int a[n];
```

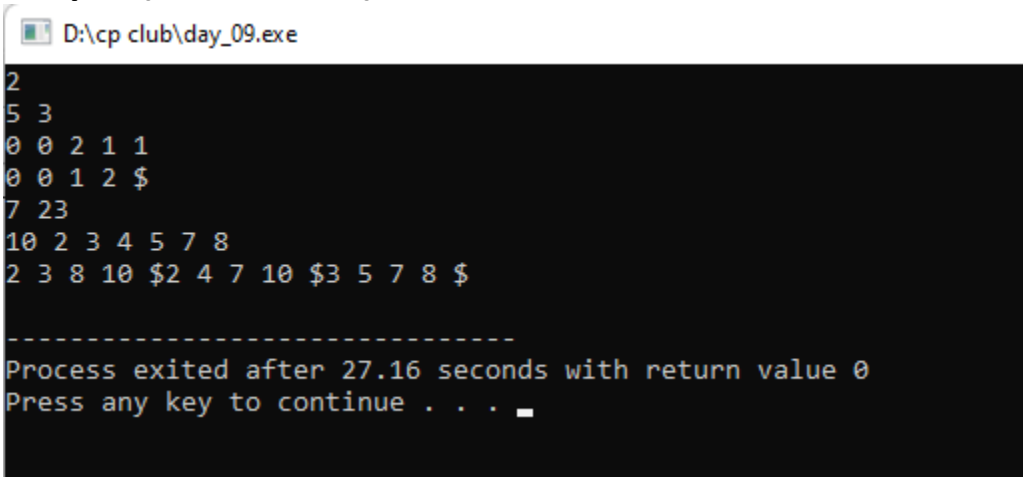
```
        for(int i=0; i<n; i++)
        cin>>a[i];
    sort(a,a+n);
    vector< vector<int> > ans; //sort the array and do traversing
    for(int i=0; i<n; i++ ){
       for(int j=i+1; j<n; j++){ //do internal sorting
          int l=j+1;
          int r=n-1;
          while(l<r){ //find all combination of four elements in
the array whose sum is equal to a given value k
            int sum=a[i]+a[j]+a[l]+a[r];
            if(sum==k){
               vector<int> v;
               v.push_back(a[i]);
               v.push_back(a[j]);
               v.push_back(a[l]);
               v.push_back(a[r]);
               ans.push_back(v);
            }
            if(sum>k){
               do{--r;}
                  while(a[r+1] == a[r]  && r>l);
               }
            else{
               do{++l;}
               while(a[l] == a[l-1] && r>l);
            }
          }
           while(j+1<n && a[j] == a[j+1]) ++j;
        }
           while(i+1<n && a[i]==a[i+1]) ++i;
```

```
        }

          if(ans.size()==0) //sort the array int the sum and then sort it by
seperating it using $
                cout<<-1<<endl;
            else{
          for(int i=0; i<ans.size(); i++){
             for(int j=0; j<ans[i].size(); j++ ){
                cout<<ans[i][j]<<" ";
               }
             cout<<"$";
          }
          cout<<endl;
         }
       }

       }
```

Output (Screen Shot):



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Understanding about problem:

Firstly we need to give the nimber of test cases we need to pass for the given program, after that we need to give the input numbers and sort the array after the sorting is done find all the combinations of the four elements in the array whose sum is equal to the value of k. after all the combinations are found separate them using $ sign and print them.

Note: If you can't understand the problem, feel free to contact us and we'll help you. Please don't copy and paste from anywhere.

ALL THE BEST

Team CP Club