

LAB 1 program2

Q 2. Write a C program that will read an array arr of elements in sorted manner and display the elements at i,j,k index such that $arr[i] + arr[j] + arr[k] = key$, where key element is given as input.

```
#include<stdio.h>
#include<stdlib.h>
#include<stdbool.h>
void keysum(int arr[], int n, int key)
{
    int max=0;
    for(int i =0;i<n;i++)
    {
        if(arr[i] > max)
            max = arr[i];
    }
    int hash[max+1];
    for(int i =0;i<max+1;i++)
        hash[i]=-1;
    for(int i=0;i<n;i++)
        hash[arr[i]]=i;
    int i=0,j=1;
    bool ith=false, jth=false;
    while(i<j && j<n)
    {
        int sum=arr[i]+arr[j];
        int temp=key-sum;

        if(sum > key)
        {
            printf("\n Sorry no coordinates found\n");
            break;
        }
        if (temp < max+1 && hash[temp] > -1 && i<j && j<hash[temp])
        {
            printf("\n the coordinates are:\n");
            printf("%d\t%d\t%d\t",i,j,hash[temp]);
            break;
        }
        else if (hash[temp] == -1 || temp >= max +1)
        {
            if(!ith && !jth)
            {
                j++;
                jth=true;
            }
            else if(!ith && jth)
            {
                i++;
                ith=true;
            }
            if(ith && jth)
            {
                ith=false;
                jth=false;
            }
        }
    }
}
```

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