SAISANJAY SS 2024-CSE S2

Week-09-Two-Dimensional and Multi-dimensional Arrays

Week-09-01-Practice Session Coding

Question **1**

Correct

Marked out of 1.00

Flag question

You are given a two-dimensional 3*3 array starting from A [0][0]. You should add the alternate elements of the array and print its sum. It should print two different numbers the first being sum of A 0 0, A 0 2, A 1 1, A 2 0, A 2 2 and A 0 1, A 1 0, A 1 2, A 2 1.

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>
int main()
{
    int arr[3][3];
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            scanf("%d",&arr[i][j]);
        }
    }
    int odd=0,even=0;
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            if((i+j)%2!=0)
            {
                odd+=arr[i][j];
            }
            else
            {
               even+=arr[i][j];
            }

        }
    }
    printf("%d\n%d",even,odd);
    return 0;
}
```

	Input	Expected	Got	
✓	1 2 3 4 5 6 7 8 9	25 20	25 20	✓
✓	21 422 423 443 586 645 657 846 904	2591 2356	2591 2356	✓

Passed all tests! ✓

Question **2**

Correct

Marked out of 5.00

Flag question

Microsoft has come to hire interns from your college. N students got shortlisted out of which few were males and a few females. All the students have been assigned talent levels. Smaller the talent level, lesser is your chance to be selected. Microsoft wants to create the result list where it wants the candidates sorted according to their talent levels, but there is a catch. This time Microsoft wants to hire female candidates first and then male candidates.

The task is to create a list where first all-female candidates are sorted in a descending order and then male candidates are sorted in a descending order.

```c
#include <stdio.h>
struct data
{
    int gen;int tal;
};
int main()
{
    int n;
    scanf("%d",&n);
    struct data a[n];
    for(int i=0;i<n;i++)
    scanf("%d %d",&a[i].gen,&a[i].tal);
    for(int i=0;i<n;i++)
    {
        for(int j=0;j<n-1;j++)
        {
            if(a[j].tal<a[j+1].tal)
            {
                struct data temp=a[j];
                a[j]=a[j+1];
                a[j+1]=temp;
            }
        }
    }
    for(int i=0;i<n;i++)
    {
        if(a[i].gen==0)
        printf("%d ",a[i].tal);
    }
    for(int i=0;i<n;i++)
    {
        if(a[i].gen==1)
        printf("%d ",a[i].tal);
    }
```

	Input	Expected	Got	
✓	5 0 3 1 6 0 2 0 7 1 15	7 3 2 15 6	7 3 2 15 6	✓
✓	6 0 1 0 26 0 39 0 37 0 7 0 13	39 37 26 13 7 1	39 37 26 13 7 1	✓
✓	12 1 12 1 14 1 18 1 1 1 2 1 3 1 5 1 8 1 9 1 10 0 29 0 31	31 29 18 14 12 10 9 8 5 3 2 1	31 29 18 14 12 10 9 8 5 3 2 1	✓

Question **3**

Correct

Marked out of 1.00

Flag question

Shyam Lal, a wealthy landlord from the state of Rajasthan, being an old fellow and tired of doing hard work, decided to sell all his farmland and to live rest of his life with that money. No other farmer is rich enough to buy all his land so he decided to partition the land into rectangular plots of different sizes with different cost per unit area. So, he sold these plots to the farmers but made a mistake. Being illiterate, he made partitions that could be overlapping. When the farmers came to know about it, they ran to him for compensation of extra money they paid to him. So, he decided to return all the money to the farmers of that land which was overlapping with other farmer's land to settle down the conflict. All the portion of conflicted land will be taken back by the landlord.

To decide the total compensation, he has to calculate the total amount of money to return back to farmers with the same cost they had purchased from him. Suppose, Shyam Lal has a total land area of ***1000 x 1000*** equal square blocks where each block is equivalent to a unit square area which can be represented on the co-ordinate axis. Now find the total amount of money, he has to return to the farmers. Help Shyam Lal to accomplish this task.

```c
#include<stdio.h>
int main()
{
    int j,n,x1,x2,y1,y2,t=0;
    long long total=0;
    int arr[1001][1001]={0};
    scanf("%d",&n);
    while(n--)
    {
        scanf("%d %d %d %d %d",&x1,&y1,&x2,&y2,&t);
        for(int i=x1;i<=x2;i++)
        {
            for(int j=y1;j<=y2;j++)
            {
                if(arr[i][j]==0)
                arr[i][j]+=t;
                else if(arr[i][j]>0)
                arr[i][j]=(-1)*(arr[i][j]+t);
                else if(arr[i][j]<0)
                arr[i][j]-=t;
            }
        }
    }
    for(int i=1;i<1001;i++)
    {
        for(j=1;j<1001;j++)
        {
            if(arr[i][j]<0)
            total+=arr[i][j];
        }
    }
    printf("%lld\n",(-1)*total);
    return 0;
```

	Input	Expected	Got	
✓	3 1 4 4 6 1 4 3 6 6 2 2 2 5 4 3	35	35	✓
✓	1 48 12 49 27 8	0	0	✓
✓	3 88 34 99 76 44 82 65 94 100 81 58 16 65 66 7	10500	10500	✓

Passed all tests! ✓