Aim:

The below sample code finds the **subtraction** of two matrices.

In the **main()** function read a two two-dimensional array of elements and then find the **subtraction** of two matrices.

The **logic** is

First checks the **row sizes** and **column sizes** of two two-dimensional arrays are equal or not.

If the sizes are not equal then print "subtraction is not possible" and stop the process.

If the sizes are equal then use **two for loops** to subtract each corresponding elements of two matrices and finally print the result.

Fill in the missing code so that it produces the desired output.

Source Code:

submatrix.c

```c
#include<stdio.h>
int main()
{
    int a[20][20],b[20][20];
    int i,j,k,l,m,n;
    printf("Enter the row & column sizes of matrix-1 : ");
    scanf("%d%d",&m,&n);
    printf("Enter matrix-1 %d elements : ",m*n);
    for(i=0;i<m;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }
    printf("Enter the row & column sizes of matrix-2 : ");
    scanf("%d%d",&k,&l);
    printf("Enter matrix-2 %d elements : ",k*l);
    for(i=0;i<k;i++)
    {
        for(j=0;j<l;j++)
        {
            scanf("%d",&b[i][j]);
        }
    }
    printf("The given matrix-1 is\n");
    for(i=0;i<m;i++)
    {
        for(j=0;j<n;j++)
        {
            printf("%d ",a[i][j]);
        }
        printf("\n");
    }
    printf("The given matrix-2 is\n");
    for(i=0;i<k;i++)
```

```
    {
        for(j=0;j<l;j++)
        {
            printf("%d ",b[i][j]);
        }
        printf("\n");
    }
    printf("Subtraction of two matrices is\n");
    for(i=0;i<m;i++)
    {
        for(j=0;j<n;j++)
        {
            printf("%d ",a[i][j]-b[i][j]);
        }
        printf("\n");
    }
    printf("\n");
    return 0;
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter the row & column sizes of matrix-1 : 2 2
Enter matrix-1 4 elements : 6 4 8 1
Enter the row & column sizes of matrix-2 : 2 2
Enter matrix-2 4 elements : 1 2 3 4
The given matrix-1 is
6 4
8 1
The given matrix-2 is
1 2
3 4
Subtraction of two matrices is
5 2
5 -3