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Input

```
2 2
1 3
2 4
1 2
4 3
```

Output

```
Enter the number of rows and columns of matrices
2   2
Enter the elements of first matrix
1   3
2   4

Enter the elemnts of second matrix
```

Input

```
2 2
1 3
2 4
1 2
4 3
```

Output

```
Enter the elemnts of second matrix
1   2
4   3

The sum of matrices is
2   5
6   7
```

Input

```
2 2
1 3
2 4
1 2
4 3
```

Output

```
2   5
6   7

The difference of matrices is
0   1
-2  1
```

Input

```
3 3
9 8 7
6 5 4
3 2 1
1 2 3
4 5 6
7 8 9
```

Output

```
Enter the number of rows and columns of matrices
3   3
Enter the elements of first matrix
9   8   7
6   5   4
3   2   1
```

Input

```
3 3
9 8 7
6 5 4
3 2 1
1 2 3
4 5 6
7 8 9
```

Output

```
Enter the elemnts of second matrix
1   2   3
4   5   6
7   8   9

The sum of matrices is
```

Input

```
3 3
9 8 7
6 5 4
3 2 1
1 2 3
4 5 6
7 8 9
```

Output

```
The sum of matrices is
10  10  10
10  10  10
10  10  10

The difference of matrices is
```

Input

```
3 3
9 8 7
6 5 4
3 2 1
1 2 3
4 5 6
7 8 9
```

Output

```
10  10  10

The difference of matrices is
8   6   4
2   0   -2
-4  -6  -8
```

Addition and Subtraction of Matrix

Program

```
#include <stdio.h>
int main()
{
    int a[20][20], b[20][20], i, j, m, n, sum[20][20],
                                        diff[20][20];

    printf("Enter the number of rows and columns
                                    of matrices\n");

    scanf("%d %d", &m, &n);
    printf("Enter the elements of first matrix\n");
    for(i=0; i<m; i++)
    {
        for(j=0; j<n; j++)
        {
            scanf("%d", &a[i][j]);
        }
        printf("\n");
    }
    printf("\n Enter the elements of second matrix\n");
    for(i=0; i<m; i++)
    {
        for(j=0; j<n; j++)
        {
            scanf("%d", &b[i][j]);
        }
        printf("\n");
    }
    printf("\n The sum of matrices is\n");
    for(i=0; i<m; i++)
    {
        for(j=0; j<n; j++)
```

```
{
    sum[i][j] = a[i][j] + b[i][j];
    printf("%d\t", sum[i][j]);
  }
  printf("\n");
}
  printf("\n The difference of matrices is\n");
  for(i=0; i<m; i++)
  {
    for(j=0; j<n; j++)
    {
      diff[i][j] = a[i][j] - b[i][j];
      printf("%d\t", diff[i][j]);
    }
    printf("\n");
  }
  return(0);
}
```

Algorithm

step1 - start

step2 - Input m,n

step3 - Repeat for(i=0; i<m; i++)
Repeat for(j=0; j<n; j++)
Input a[i][j]
[End for]
[End for]

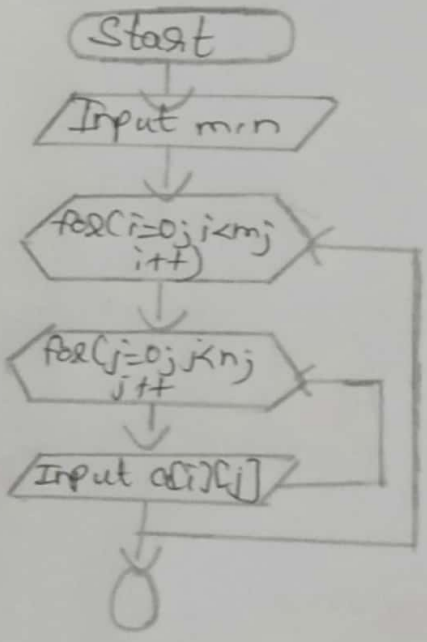
step4 - Repeat for(i=0; i<m; i++)
Repeat for(j=0; j<m; j++)
Input a[i][j]
[End for]
[End for]

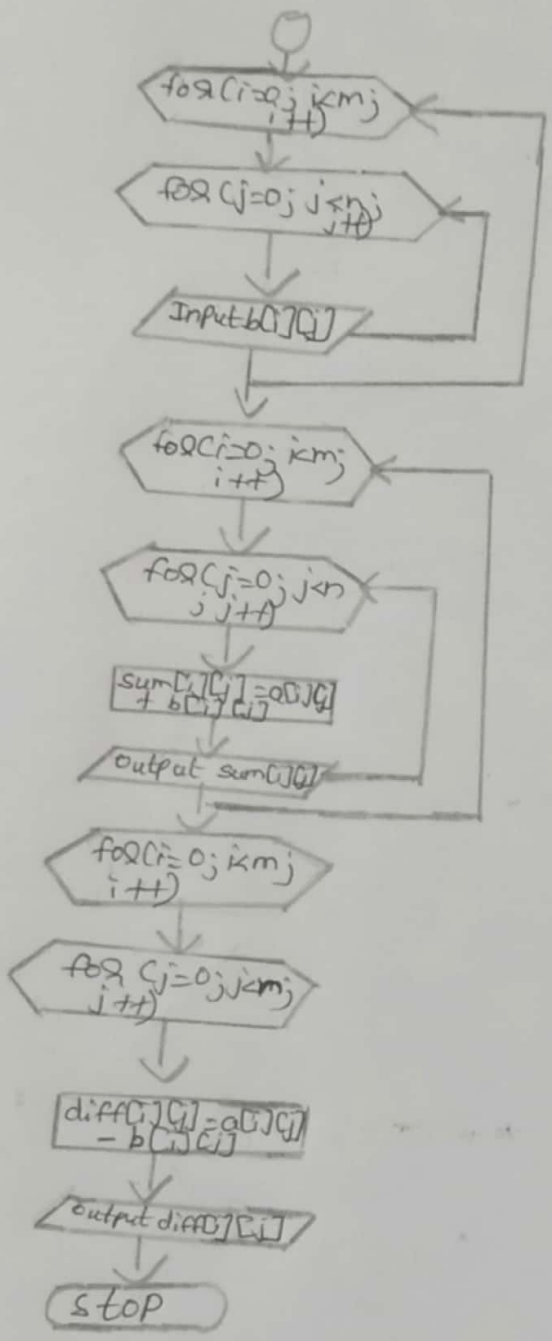
step5 - Repeat for(i=0; i<m; i++)
Repeat for(j=0; j<n; j++)
{
sum[i][j] = a[i][j] + b[i][j]
Output sum[i][j]
}
[End for]
[End for]

step6 - Repeat for(i=0; i<m; i++)
Repeat for(j=0; j<n; j++)
{
diff[i][j] = a[i][j] - b[i][j]
Output diff[i][j]
}
[End for]
[End for]

step7 - stop.

Flowchart





Output

Enter numbers of rows and columns of matrices

2 2

Enter the elements of first matrix

1 3

2 4

Enter the elements of second matrix

1 2

4 3

The sum of matrices is

2 5

6 7

The difference of matrices is

0 1
-2 1

Output 2

Enter the number of rows and columns of matrices

3 3

Enter the elements of first matrix

9 8 7
6 5 4
3 2 1

Enter the elements of second matrix

1 2 3
4 5 6
7 8 9

The sum of matrices is

10 10 10
10 10 10
10 10 10

The difference of matrices is

8 6 4
2 0 -2
-4 -6 -8