

Practical No.06

Aim: Programs based on Two-Dimensional Array

1. C Program to Calculate Sum of all Elements in Array

Program:

```
#include<stdio.h>
#include<conio.h>

void main()

{
    int i, j, mat[10][10], row, col;
    int sum = 0;

    clrscr();

    printf("\nEnter the number of Rows : ");
    scanf("%d", &row);

    printf("\nEnter the number of Columns : ");
    scanf("%d", &col);

    //Accept the Elements in Matrix

    for (i = 0; i < row; i++)
    {
        for (j = 0; j < col; j++)
        {
            printf("\nEnter the Element mat[%d][%d] : ", i, j);
            scanf("%d", &mat[i][j]);
        }
    }

    //Addition of all Elements

    for (i = 0; i < row; i++)
    {
        for (j = 0; j < col; j++)
        {
            sum = sum + mat[i][j];
        }
    }

    //Print out the Result

    printf("\nSum of All Elements in Matrix : %d", sum);

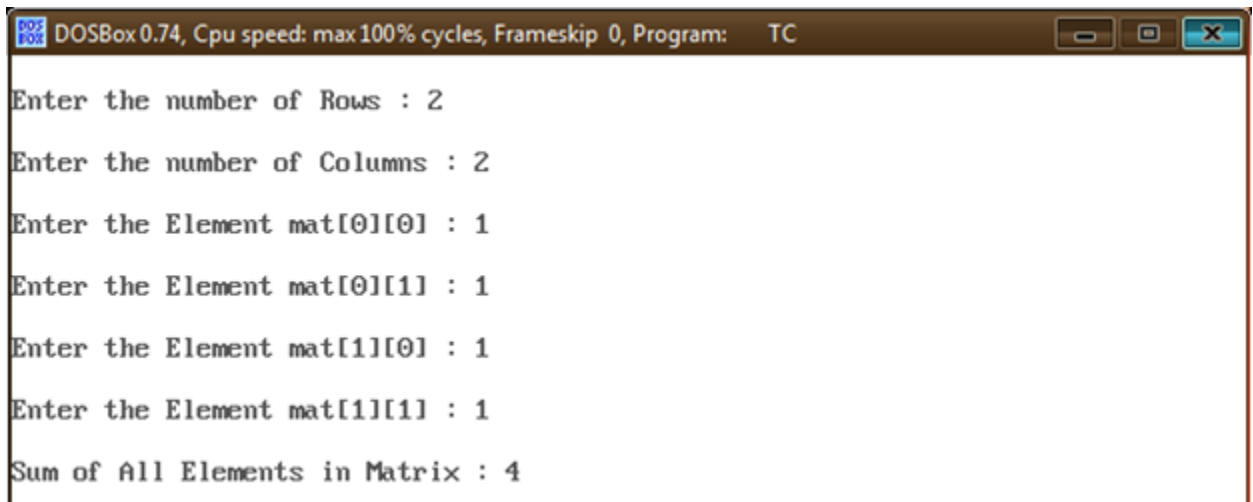
    getch();
}
```

Output:

```
Enter the number of Rows : 2
Enter the number of Columns : 2
```

```
Enter the Element mat[0][0] : 1
Enter the Element mat[0][1] : 1
Enter the Element mat[1][0] : 1
Enter the Element mat[1][1] : 1

Sum of All Elements in Matrix : 4
```



```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

Enter the number of Rows : 2
Enter the number of Columns : 2
Enter the Element mat[0][0] : 1
Enter the Element mat[0][1] : 1
Enter the Element mat[1][0] : 1
Enter the Element mat[1][1] : 1
Sum of All Elements in Matrix : 4
```

2. C Program to Subtract Two Elements of Matrices

Program:

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int m, n, c, d, first[10][10], second[10][10], difference[10][10];

    clrscr();

    printf("Enter the number of rows and columns of matrix\n");
    scanf("%d%d", &m, &n);
    printf("Enter the elements of first matrix\n");

    for (c = 0; c < m; c++)
        for (d = 0; d < n; d++)
            scanf("%d", &first[c][d]);

    printf("Enter the elements of second matrix\n");

    for (c = 0; c < m; c++)
        for (d = 0; d < n; d++)
            scanf("%d", &second[c][d]);

    for (c = 0; c < m; c++)
        for (d = 0; d < n; d++)
            difference[c][d] = first[c][d] - second[c][d];

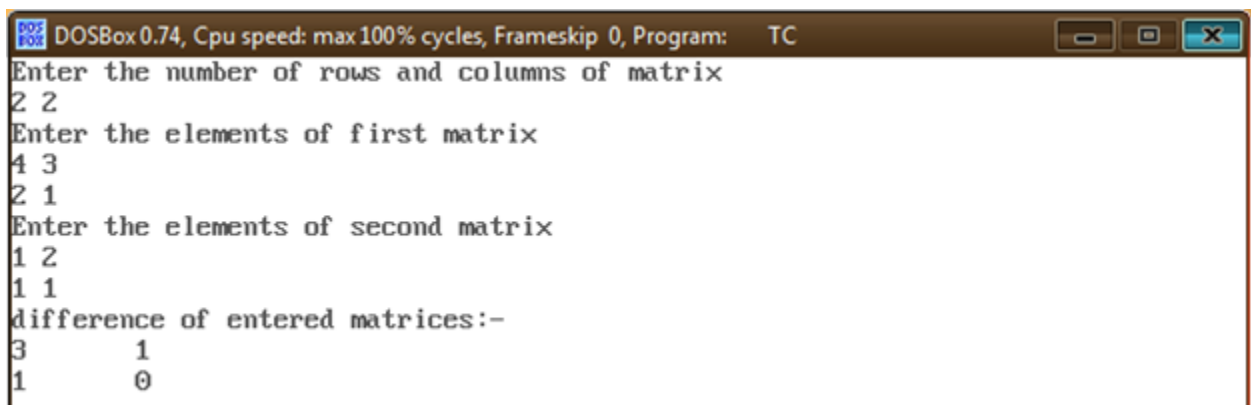
    printf("difference of entered matrices:-\n");

    for (c = 0; c < m; c++)
    {
        for (d = 0; d < n; d++)
            printf("%d\t", difference[c][d]);
    }
```

```
        printf("\n");  
    }  
  
    getch() ;  
}
```

Output:

```
Enter the number of rows and columns of matrix  
2 2  
Enter the elements of first matrix  
4 3  
2 1  
Enter the elements of second matrix  
1 2  
1 1  
difference of entered matrices:-  
3      1  
1      0
```

A screenshot of a DOSBox window titled "DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC". The window displays the same output as the text block above, showing the user input for matrix dimensions and elements, and the resulting difference of the two matrices.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC  
Enter the number of rows and columns of matrix  
2 2  
Enter the elements of first matrix  
4 3  
2 1  
Enter the elements of second matrix  
1 2  
1 1  
difference of entered matrices:-  
3      1  
1      0
```