

17/6/21

## 1) Addition of 2 Matrices

# include &lt;stdio.h&gt;

void main()

{

int a[50][50], b[50][50], sum[50][50], rows1, rows2, cols1, cols2, i, j;

printf("Enter the number of rows and columns of array 1: \n");

scanf("%d %d", &amp;rows1, &amp;cols1);

for (i = 0; i &lt; rows1; i++)

{ printf("Enter the elements of row %d: \n", (i+1));

for (j = 0; j &lt; cols1; j++)

{ scanf("%d", &amp;a[i][j]); }

- }

printf("Enter the number of rows and columns of array 2: \n");

scanf("%d %d", &amp;rows2, &amp;cols2);

for (i = 0; i &lt; rows2; i++)

{ printf("Enter the elements of row %d: \n", (i+1));

for (j = 0; j &lt; cols2; j++)

{ scanf("%d", &amp;b[i][j]); }

- }

if (rows1 != rows2 &amp; &amp; cols1 != cols2)

{ printf("The two matrices need to have equal number of rows and columns to add! \n");

- exit(0); }

```

else
{
    for (i = 0; i < rows1; i++)
    {
        sum[i][j] = 0;
        for (j = 0; j < cols1; j++)
        {
            sum[i][j] = a[i][j] + b[i][j];
        }
        printf("The sum of the two arrays is as follows: \n");
        for (i = 0; i < rows1; i++)
        {
            for (j = 0; j < cols1; j++)
            {
                printf("%d\t", sum[i][j]);
            }
            printf("\n");
        }
    }
}

```



2) 2-d array with 4 students marks in 3 subs and show highest.

```
#include <stdio.h>
void main ()
{
    int marks [4][3], highest [4], i, j;
    for (i = 0; i < 4; i++)
    {
        printf("Enter marks in subjects %d: \n", i);
        for (j = 0; j < 3; j++)
        {
            scanf("%d", &marks[i][j]);
        }
        for (i = 0; i < 4; i++)
        {
            highest[i] = marks[i][0];
            for (j = 1; j < 3; j++)
            {
                if (marks[i][j] > highest[i])
                {
                    highest[i] = marks[i][j];
                }
            }
        }
        for (i = 0; i < 4; i++)
        {
            printf("Highest marks in subject %d = %d \n", i, highest[i]);
        }
    }
}
```

### 3) Transpose of a Matrix

```
#include <stdio.h>
void main()
{
    int a[50][50], rows, columns, transpose[50][50], i, j;
    printf("Enter the number of rows and columns of the matrix: \n");
    scanf("%d%d", &rows, &columns);
    for(i=0; i<rows; i++)
    {
        printf("Enter the elements of row %d: \n", (i+1));
        for(j=0; j<columns; j++)
            scanf("%d", &a[i][j]);
    }
    for(i=0; i<rows; i++)
    {
        for(j=0; j<columns; j++)
            transpose[j][i] = a[i][j];
    }
    printf("The transpose of the matrix: \n");
    for(i=0; i<columns; i++)
    {
        for(j=0; j<rows; j++)
            printf("%d\t", transpose[i][j]);
        printf("\n");
    }
}
```