**1.Write a C program C Program to Find the Sum of each Row & each Column of a MxN Matrix**

Program:-

#include <stdio.h>

int main()

{

int row,col;

printf("Enter the number of rows and columns: ");

scanf("%d%d",&row,&col);

int arr[row][col],rowsum[row],colsum[col],i,j;

printf("Enter the values of the matrix:\n");

for(i=0;i<row;i++)

{

rowsum[i]=0;

for(j=0;j<col;j++)

{

scanf("%d",&arr[i][j]);

rowsum[i]+=arr[i][j];

}

}

for(i=0;i<row;i++)

{

colsum[i]=0;

for(j=0;j<col;j++)

{

colsum[i]+=arr[j][i];

}

}

for(i=0;i<row;i++)

printf("\nThe sum of elements at row number %d is: %d",i,rowsum[i]);

for(i=0;i<col;i++)

printf("\nThe sum of elements at col number %d is: %d",i,colsum[i]);

return 0;

}

**OUTPUT:-**

**A close up of a screen

Description automatically generated**

**A screen shot of a computer

Description automatically generated**

**2. C Program to do the Sum of the Main & Opposite Diagonal Elements of a MxM SquareMatrix**

Program:-

#include <stdio.h>

int main()

{

int m;

printf("Enter the number of rows in the square matrix: ");

scanf("%d",&m);

int arr[m][m],d1=0,d2=0,i,j;

printf("Enter the values of the matrix:\n");

for(i=0;i<m;i++)

{

for(j=0;j<m;j++)

{

scanf("%d",&arr[i][j]);

if(i==j)

d1+=arr[i][j];

if((i+j)==(m-1))

d2+=arr[i][j];

}

}

printf("\nThe sum of the main diagonal is: %d",d1);

printf("\nThe sum of the opposite diagonal is: %d",d2);

return 0;

}

**OUTPUT:-**

A screen shot of a computer

Description automatically generated

**Text

Description automatically generated**

**3.Write a C program to read two 4x 4 matrix from user and perform addition and subtraction of Matrices.**

Program:-

#include <stdio.h>

int main()

{

int arr1[4][4],arr2[4][4],add[4][4],sub[4][4],i,j;

printf("Enter the elements for the first matrix(4X4):\n");

for(i=0;i<4;i++)

{

for(j=0;j<4;j++)

{

scanf("%d",&arr1[i][j]);

}

}

printf("Enter the elements for the second matrix(4X4):\n");

for(i=0;i<4;i++)

{

for(j=0;j<4;j++)

{

scanf("%d",&arr2[i][j]);

add[i][j]=arr1[i][j]+arr2[i][j];

sub[i][j]=arr1[i][j]-arr2[i][j];

}

}

printf("\nAddition of the two matrix:\n");

for(i=0;i<4;i++)

{

for(j=0;j<4;j++)

{

printf("%d ",add[i][j]);

}

printf("\n");

}

printf("\nSubtraction of the two matrix:\n");

for(i=0;i<4;i++)

{

for(j=0;j<4;j++)

{

printf("%d ",sub[i][j]);

}

printf("\n");

}

return 0;

}

**OUTPUT:-**

Text

Description automatically generated

**4.Write C Program to store and print 18 values entered by the user by using [2][3][3] array.**

Program:-

#include <stdio.h>

void main()

{

int arr[2][3][3],i,j,k;

printf("Enter the inputs(total 18): \n");

for(i=0;i<2;i++)

{

for(j=0;j<3;j++)

{

for(k=0;k<3;k++)

scanf("%d",&arr[i][j][k]);

}

}

printf("\nStored values are: \n");

for(i=0;i<2;i++)

{

for(j=0;j<3;j++)

{

for(k=0;k<3;k++)

printf("%d ",arr[i][j][k]);

printf("\t");

}

printf("\n");

}

}

**OUTPUT:-**

**Text

Description automatically generated**