

```
//includes standard I/O Header file
#include<stdio.h>
int main()
                                //starts main function
  int a[10][10];
                                //declare an array of integer type
                                //declare i,j for referencing rows and columns of an
  int i,j,sum=0,m,n;
                   array, m, n for defining no.of rows & columns, take sum=0
                   initially.
  puts("enter No of rows and columns");
  scanf("%d %d",&m,&n);
                               //input no. of rows and columns
  printf("Enter elements of Array [%d] \n",m,n);
                               //define a for loop for referencing rows of an array
  for(i=0;i<m;i++)
  for(j=0;j< n;j++)
                            //define a for loop for referencing columns of an array
  scanf("%d",&a[i][j]);
                            //input elements of an array
  printf("Array:\n");
                            //statement at the start of printing elements of an array
  for(i=0;i<m;i++)
                            //define a for loop for referencing rows of an array
  for(j=0;j< n;j++)
                           //define a for loop for referencing columns of an array
  printf("%d ",a[i][j]);
                           //prints elements of particular row and column
                           //this statement gives one line between each array
  printf("\n");
  for(i=0;i< m;i++)
                           //define a for loop for referencing rows of an array
                          //define a for loop for referencing columns of an array
  for(j=0;j< n;j++)
                          //in diagonal row and column index are equal.
    if(i==j)
                          //sum the elements having equal row and column index
    sum=sum+a[i][j];
printf("sum of diagonal elements=%d",sum); //prints the sum of diagonal elements
```