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| **/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***  **Online C++ Compiler.**  **Code, Compile, Run and Debug C++ program online.**  **Write your code in this editor and press "Run" button to compile and execute it.**  **\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**  **#include <iostream>**  **using namespace std;**  **const int r=2;**  **const int c=3;**  **void printR(int x[][c])**  **{**  **int sum,min,max;**  **for(int i=0;i<r;i++)**  **{**  **sum=0;**  **min=max=x[i][0];**  **for(int j=0;j<c;j++)**  **{**  **if(x[i][j]<min)**  **min=x[i][j];**  **if(x[i][j]>max)**  **max=x[i][j];**  **sum+=x[i][j];**  **cout<<x[i][j]<<" ";**  **}**  **cout<<"Sum= "<<sum<<" Max="<<max<<" Min= "<<min<<endl;**  **}**  **}**  **void printC(int x[][c])**  **{**  **int sum,min,max;**  **for(int i=0;i<c;i++)**  **{**  **sum=0;**  **min=max=x[0][i];**  **for(int j=0;j<r;j++)**  **{**  **if(x[j][i]<min)**  **min=x[j][i];**  **if(x[j][i]>max)**  **max=x[j][i];**  **sum+=x[j][i];**  **cout<<x[j][i]<<" ";**  **}**  **cout<<"Sum= "<<sum<<" Max="<<max<<" Min= "<<min<<endl;**  **}**  **}**  **int main()**  **{**  **int a[r][c]={1,2,5,6,3};**  **printR(a);**  **cout<<endl;**  **printC(a);**    **return 0;**  **}** |

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| **/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***  **Online C++ Compiler.**  **Code, Compile, Run and Debug C++ program online.**  **Write your code in this editor and press "Run" button to compile and execute it.**  **\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**  **#include <iostream>**  **using namespace std;**  **const int r=2;**  **const int c=3;**  **void Calculate(int x[],int &sum,int &min, int &max)**  **{**  **sum=0;**  **min=max=x[0];**  **for(int i=0;i<c;i++)**  **{**  **if(x[i]<min)**  **min=x[i];**  **if(x[i]>max)**  **max=x[i];**  **sum+=x[i];**  **}**  **}**  **void print(int x[][c])**  **{**  **for(int i=0;i<r;i++)**  **{**  **for(int j=0;j<c;j++)**  **cout<<x[i][j]<<" ";**  **cout<<endl;**  **}**  **}**  **int main()**  **{**  **int a[r][c]={1,2,5,6,3};**  **print(a);**  **cout<<endl;**  **int sumR,minR,maxR;**  **for(int i=0;i<r;i++)**  **{**  **Calculate(a[i],sumR,minR,maxR);**  **cout<<"row "<<i<<" : Sum="<<sumR<<" Min= "<<minR<<" Max= "<<maxR<<endl;**  **}**    **return 0;**  **}** |

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| **/\***  **\* This program does the following operations on a matrix**  **\* 1) Calculate the sum of left and right diagonal matrix**  **\* 2) Print the lower and upper diagonal elements**  **\* For the matrix :**  **2 3 8 4**  **5 1 7 3**  **9 2 6 8**  **1 4 5 7**  **\* Sum of left diagonal elements = 2 + 1 + 6 + 7 = 16**  **\* Sum of right diagonal elements = 4 + 7 + 2 + 1 = 14**  **\* Lower diagonal matrix ( all elements below left diagonal ) :**  **5**  **9 2**  **1 4 5**  **\* Upper diagonal matrix ( all elements above left diagonal ) :**  **3 8 4**  **7 3**  **8**  **\*/**  **#include<iostream>**  **using namespace std;**  **/\* computes the sum of left diagonal elements \*/**  **int sumLeftDiagElements(int mat[][4], int rows, int cols) {**  **int i, j, sum = 0;**  **for ( i = 0; i < rows; i++ ) {**  **for ( j = 0; j < cols; j++ ) {**  **if ( i == j ) { // we found a left diagonal element**  **sum += mat[i][j];**  **}**  **}**  **}**  **return sum;**  **}**  **/\* computes the sum of right diagonal elements \*/**  **int sumRightDiagElements(int mat[][4], int rows, int cols) {**  **int i, j, sum = 0;**  **for ( i = 0; i < rows; i++ ) {**  **for ( j = 0; j < cols; j++ ) {**  **if ( (i + j) == (rows - 1) ) { // we found a right diagonal element**  **sum += mat[i][j];**  **}**  **}**  **}**  **return sum;**  **}**  **/\* Print the left diagonal elements \*/**  **void printLeftDiagMatrix(int mat[][4], int rows, int cols) {**  **int i, j;**  **for ( i = 0; i < rows; i++ ) {**  **for ( j = 0; j < cols; j++ ) {**  **if ( i == j ) { // we found a left diagonal element**  **cout << mat[i][j] << " ";**  **}**  **else**  **cout << " ";**  **}**  **cout << endl;**  **}**  **}**  **/\* Print the Right diagonal elements \*/**  **void printRightDiagMatrix(int mat[][4], int rows, int cols) {**  **int i, j;**  **for ( i = 0; i < rows; i++ ) {**  **for ( j = 0; j < cols; j++ ) {**  **if ( i + j==3 ) { // we found a right diagonal element**  **cout << mat[i][j] << " ";**  **}**  **else**  **cout << " ";**  **}**  **cout << endl;**  **}**  **}**  **/\* Print the lower diagonal elements \*/**  **void lowerDiagMatrix(int mat[][4], int rows, int cols) {**  **int i, j;**  **for ( i = 0; i < rows; i++ ) {**  **for ( j = 0; j < cols; j++ ) {**  **if ( i > j ) { // we found a lower diagonal element**  **cout << mat[i][j] << " ";**  **}**  **}**  **cout << endl;**  **}**  **}**  **/\* Print the upper diagonal elements \*/**  **void upperDiagMatrix(int mat[][4], int rows, int cols) {**  **int i, j;**  **for ( i = 0; i < rows; i++ ) {**  **for ( j = 0; j < cols; j++ ) {**  **if ( i < j ) { // we found a upper diagonal element**  **cout << mat[i][j] << " ";**  **}**  **else {**  **cout << " ";**  **}**  **}**  **cout << endl;**  **}**  **}**  **int main() {**  **int mat[4][4] = { { 2, 3, 8, 4 },**  **{ 5, 1, 7, 3 },**  **{ 9, 2, 6, 8 },**  **{ 1, 4, 5, 7 } };**  **cout << "Left Diagonal elements : " << endl;**  **printLeftDiagMatrix(mat,4,4);**  **int left\_diag\_sum = sumLeftDiagElements(mat, 4, 4);**  **cout << "Sum of Left Diagonal elements : " << left\_diag\_sum << endl;**  **cout << "\nRight Diagonal elements"<<endl;**  **printRightDiagMatrix(mat,4,4);**  **int right\_diag\_sum = sumRightDiagElements(mat, 4, 4);**  **cout << "Sum of Right Diagonal elements : " << right\_diag\_sum << endl;**  **cout << "Lower Diagonal Elements :- ";**  **lowerDiagMatrix(mat, 4, 4);**  **cout << "Upper Diagonal Elements :- " << endl;**  **upperDiagMatrix(mat, 4, 4);**  **return 0;**  **}** |

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| **/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***  **Online C++ Compiler.**  **Code, Compile, Run and Debug C++ program online.**  **Write your code in this editor and press "Run" button to compile and execute it.**  **\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**  **#include <iostream>**  **using namespace std;**  **const int r=2;**  **const int c=3;**  **const int s=4;**  **void transpose(int a[][s],int b[][s])**  **{**  **for(int i=0;i<s;i++)**  **for(int j=0;j<s;j++)**  **b[j][i]=a[i][j];**  **}**  **void transpose\_diff\_size(int a[][c],int b[][r])**  **{**  **for(int i=0;i<r;i++)**  **for(int j=0;j<c;j++)**  **b[j][i]=a[i][j];**  **}**  **void transpose\_in\_place(int a[][s])**  **{**  **for(int i=0;i<s;i++)**  **for(int j=i+1;j<s;j++)**  **{**  **int temp=a[i][j];**  **a[i][j]=a[j][i];**  **a[j][i]=temp;**  **}**  **}**  **void print(int a[][s])**  **{**  **for(int i=0;i<s;i++)**  **{**  **for(int j=0;j<s;j++)**  **cout<<a[i][j];**  **cout<<endl;**  **}**  **}**  **void print2(int a[][r])**  **{**  **for(int i=0;i<c;i++)**  **{**  **for(int j=0;j<r;j++)**  **cout<<a[i][j];**  **cout<<endl;**    **}**  **}**  **void print3(int a[][c])**  **{**  **for(int i=0;i<r;i++)**  **{**  **for(int j=0;j<c;j++)**  **cout<<a[i][j];**  **cout<<endl;**  **}**  **}**  **int main()**  **{**  **int a[s][s]={1,2,3,4,1,2,3,4**  **,1,2,3,4,1,2,3,4};**  **int b[s][s];**    **print(a);**  **cout<<endl;**  **transpose(a,b);**  **print(b);**  **cout<<"\nworking on arrays with different sizes\n";**  **int x[r][c]={2,4,6,2,4,6};**  **int y[c][r];**  **print3(x);**  **cout<<endl;**  **transpose\_diff\_size(x,y);**  **print2(y);**  **cout<<"\ntranspose array a in place:\n";**  **transpose\_in\_place(a);**  **print(a);**  **return 0;**  **}** |

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| **#include <iostream>**  **using namespace std;**  **int main()**  **{**  **char myStr[10] = "Mutah";**  **cout << myStr << endl;**    **cout << "use for loop" << endl;**  **for (int i=0;i<10;i++)**  **cout<<"i="<<i<<" ---> "<<myStr[i]<<endl;**  **for (int i=0;i<10;i++)**  **cout<<myStr[i];**  **cout<<endl;**  **for (int i=0;myStr[i]!='\0';i++)**  **cout<<myStr[i];**  **cout<<endl;**    **//char myword[] = { 'H', 'e', 'l', 'l', 'o', '\0' };**  **// char myword[3] ;**  **//myword = "Bye"; error**  **//myword[] = "Bye"; error**    **cout<<"myStr in reverse order: ";**  **for(int i=9;i>=0;i--)**  **cout<<myStr[i];**  **cout<<endl;**  **cout<<"Enter a string of maximum length 20";**  **char input[20];**  **cin>>input;**  **cout<<"Your input: "<<input<<endl;**  **cout<<"\nyour string in reverse order:\n";**  **int j;**  **for (j=0;j<10;j++)**  **if (input[j]=='\0') break;**  **for (int x=j-1;x>=0;x--)**  **cout<<input[x];**  **return 0;**  **}** |