practical 07

01

#include <stdio.h>

int main() {

int arraySize;

int p = 0, n = 0, z = 0;

printf("Enter Size of the Array: ");

scanf("%d",&arraySize);

int arr[arraySize];

for(int i = 0; i<arraySize; ++i) {

printf("Enter Number %d: ", i + 1);

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

if(arr[i] > 0) {

++p;

}else if(arr[i] < 0) {

++n;

}else {

++z;

}

}

printf("-------------------------\n");

printf("No. of Positive: %d\n",p);

printf("No. of Negative: %d\n",n);

printf("No. of Zero: %d",z);

printf("\n-------------------------\n");

}

02

#include <stdio.h>

int main() {

int column, row;

printf("Enter Row: ");

scanf("%d", &row);

printf("Enter Column: ");

scanf("%d", &column);

int multiArr[row][column], i, j;

int p = 0, n = 0, z = 0;

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

for(j = 0; j <column; ++j) {

printf("Enter Number %dx%d: ", i + 1, j + 1);

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

if(multiArr[i][j] > 0) {

++p;

}else if(multiArr[i][j] < 0) {

++n;

}else {

++z;

}

}

}

printf("-------------------------\n");

printf("No. of Positive: %d\n",p);

printf("No. of Negative: %d\n",n);

printf("No. of Zero: %d",z);

printf("\n-------------------------\n")

}

03

#include <stdio.h>

int main() {

int row, column, i, j;

printf("Enter Row: ");

scanf("%d", &row);

printf("Enter Column: ");

scanf("%d", &column);

int arr[row][column];

int sum[row];

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

sum[i] = 0;

for(j = 0; j < column; ++j) {

printf("Enter Number %dx%d: ", i + 1, j + 1);

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

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

}

}

printf("-------------------------\n");

printf("Sum = {");

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

printf("%d", sum[i]);

if(i < row-1) {

printf(", ");

}

else {

printf("}");

}

}

printf("\n-------------------------\n");

}

04

#include <stdio.h>

int main() {

int row, column, i, j;

printf("Enter Row: ");

scanf("%d", &row);

printf("Enter Column: ");

scanf("%d", &column);

int arr[row][column];

int sum[column];

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

for(j = 0; j < column; ++j) {

if(!i){

sum[j] = 0;

}

printf("Enter Number %dx%d: ", i + 1, j + 1);

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

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

}

}

printf("-------------------------\n");

printf("Sum = {");

for(i = 0; i < column; ++i) {

printf("%d", sum[i]);

if(i < column-1) {

printf(", ");

}

else {

printf("}");

}

}

printf("\n-------------------------\n");

}

05

#include <stdio.h>

int main() {

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

for(i = 0; i < 3; ++i ) {

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

printf("Enter Number %dx%d: ", i + 1, j + 1);

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

}

}

printf("-------------------------\n");

printf("3x3 Array = {");

for(i = 0; i < 3; ++i ) {

printf("{");

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

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

if(j < 2) {

printf(", ");

}

else {

printf("}");

}

}

if(i < 2) {

printf(", ");

}

else {

printf("}\n");

}

}

printf("-------------------------\n");

int diagonal1[3], diagonal2[3];

for(i = 0, j = 2; i < 3 && j >= 0; ++i, --j) {

diagonal1[i] = arr[i][i];

diagonal2[i] = arr[i][j];

}

printf("Diagonal 1 = {");

for(i = 0; i < 3; ++i) {

printf("%d",diagonal1[i]);

if(i < 2) {

printf(", ");

}

else {

printf("}\n");

}

}

printf("Diagonal 2 = {");

for(i = 0; i < 3; ++i) {

printf("%d",diagonal2[i]);

if(i < 2) {

printf(", ");

}

else {

printf("}\n");

}

}

printf("-------------------------\n");

}

06

#include <stdio.h>

int main() {

int arrSize;

printf("Enter Size of Square Matrix: ");

scanf("%d", &arrSize);

int i, j;

int arr[arrSize][arrSize];

for(i = 0; i < arrSize; ++i ) {

for(j = 0; j < arrSize; ++j) {

printf("Enter Number %dx%d: ", i + 1, j + 1);

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

}

}

int tru = 1;

for(i = 0; i < arrSize; ++i) {

for(j = 0; j < arrSize; ++j) {

if(i==j) {

if(arr[i][j] != 1){

tru = 0;

break;

}

}else {

if(arr[i][j] != 0) {

tru = 0;

break;

}

}

}

}

printf("-------------------------\n");

if(tru) {

printf("It is an Identity Matrix.\n");

}else {

printf("It is not an Identity Matrix.\n");

}

printf("-------------------------\n");

}

07

#include <stdio.h>

int main() {

int i, j;

int arr1[3][3];

printf("Array 1:\n");

for(i = 0; i < 3; ++i) {

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

printf("Enter Number %dx%d: ", i + 1, j + 1);

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

}

}

int arr2[3][3];

printf("Array 2:\n");

for(i = 0; i < 3; ++i) {

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

printf("Enter Number %dx%d: ", i + 1, j + 1);

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

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

}

}

printf("-------------------------\n");

printf("Sum = {");

for(i = 0; i < 3; ++i ) {

printf("{");

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

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

if(j < 2) {

printf(", ");

}

else {

printf("}");

}

}

if(i < 2) {

printf(", ");

}

else {

printf("}\n");

}

}

printf("-------------------------\n");

}