Warm Up 1)

a)

#include<stdio.h>

#define row 3

#define col 2

int main()

{

int i,j;

int MyArray[row][col] ={{4,6},{7,9},{5,8}};

//Outer Loop: steps through the Rows

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

{

//Inner Loop: steps through the Columns

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

printf("%d\t",MyArray[i][j]);

printf("\n");

}

return 0;

}

b)

#include<stdio.h>

#define row 3

#define col 2

int main()

{

int i,j;

int MyArray[row][col];

MyArray[0][0]=4;

MyArray[0][1]=6;

MyArray[1][0]=7;

MyArray[1][1]=9;

MyArray[2][0]=5;

MyArray[2][1]=8;

//Outer Loop: steps through the Rows

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

{

//Inner Loop: steps through the Columns

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

printf("%d\t",MyArray[i][j]);

printf("\n");

}

return 0;

}

c)

#include<stdio.h>

#define row 3

#define col 2

int main()

{

int i,j, num;

int MyArray[row][col];

//Filling The Array

//Outer Loop: steps through the Rows

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

{

//Inner Loop: steps through the Columns

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

{

printf("(%d,%d):\n",i,j);

scanf("%d",&num);

MyArray[i][j]=num;

}

printf("\n");

}

//Printing the array

//Outer Loop: steps through the Rows

printf("The array values are:\n");

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

{

//Inner Loop: steps through the Columns

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

printf("%d\t",MyArray[i][j]);

printf("\n");

}

return 0;

}

Warm Up2

#include<stdio.h>

#define row 6

#define col 6

//Function prototypes

void printMatrix(int [][6]);

void matrixAddition(int result[][6], int a[][6], int b[][6]);

void matrixSubtraction(int result[][6], int a[][6], int b[][6]);

void matrixMultiplcation(int result[][6], int a[][6], int b[][6]);

void matrixTranspose(int result[][6], int a[][6]);

int main()

{

int i,j, num;

int a[row][col];

int b[row][col];

int result[row][col];

//Filling The Array A

printf("Please fill out array (a)\n");

//Outer Loop: steps through the Rows

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

{

printf("Please Enter Row %d:\n",i+1);

//Inner Loop: steps through the Columns

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

{

scanf("%d",&num);

a[i][j]=num;

}

printf("\n");

}

//Filling The Array B

printf("\nPlease fill out array (b)\n");

//Outer Loop: steps through the Rows

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

{

printf("Please Enter Row %d:\n",i+1);

//Inner Loop: steps through the Columns

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

{

scanf("%d",&num);

b[i][j]=num;

}

printf("\n");

}

//Printing both arrays

printf("Array (a):\n");

printMatrix(a);

printf("Array (b):\n");

printMatrix(b);

//Addition of two matrices

printf("Result of addition (A+B):\n");

matrixAddition(result,a,b);

printMatrix(result);

//Substruction of two matrices

printf("Result of subtruction (A-B):\n");

matrixSubtraction(result,a,b);

printMatrix(result);

//Substruction of two matrices

printf("Result of subtruction (B-A):\n");

matrixSubtraction(result,b,a);

printMatrix(result);

//Multiplcation of two matrices

printf("Result of multiplcation (A\*B):\n");

matrixMultiplcation(result,a,b);

printMatrix(result);

//Multiplcation of two matrices

printf("Result of multiplcation (B\*A):\n");

matrixMultiplcation(result,b,a);

printMatrix(result);

//Transpose of A

printf("Transpose of A (A'):\n");

matrixTranspose(result,a);

printMatrix(result);

//Transpose of B

printf("Transpose of B (B'):\n");

matrixTranspose(result,b);

printMatrix(result);

return 0;

}

void printMatrix(int arr[][6])

{

int i,j;

//Printing the array

//Outer Loop: steps through the Rows

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

{

//Inner Loop: steps through the Columns

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

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

printf("\n");

}

}

void matrixAddition(int result[][6], int a[][6], int b[][6])

{

int i,j;

//Outer Loop: steps through the Rows

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

{

//Inner Loop: steps through the Columns

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

result[i][j]=a[i][j] + b[i][j];

}

}

void matrixSubtraction(int result[][6], int a[][6], int b[][6])

{

int i,j;

//Outer Loop: steps through the Rows

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

{

//Inner Loop: steps through the Columns

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

result[i][j]=a[i][j] - b[i][j];

}

}

void matrixMultiplcation(int result[][6], int a[][6], int b[][6])

{

int i,j,k;

//Outer Loop: steps through the Rows

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

{

//Inner Loop: steps through the Columns

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

{

result[i][j]=0;

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

result[i][j]+=a[i][k]\*b[k][j];

}

}

}

void matrixTranspose(int result[][6], int a[][6])

{

int i,j;

//Outer Loop: steps through the Rows

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

{

//Inner Loop: steps through the Columns

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

result[i][j]=a[j][i];

}

}