Question no : 8.7

Date : 18-10 -2024

Question : Find the determinant of given matrix

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Author : Amal Biju

Roll no : 5

Semester : 1

Programme : BSC(DA)

#include <stdio.h>

int determinant2x2(int matrix[2][2])

{

return (matrix[0][0] \* matrix[1][1] - matrix[0][1] \* matrix[1][0]);

}

int determinant3x3(int matrix[3][3])

{

return (matrix[0][0] \* (matrix[1][1] \* matrix[2][2] - matrix[1][2] \* matrix[2][1]) -

matrix[0][1] \* (matrix[1][0] \* matrix[2][2] - matrix[1][2] \* matrix[2][0]) +

matrix[0][2] \* (matrix[1][0] \* matrix[2][1] - matrix[1][1] \* matrix[2][0]));

}

int main()

{

int n;

printf("Enter the size of the matrix (2 or 3): ");

scanf("%d", &n);

if (n == 2)

{

int matrix[2][2];

printf("Enter the elements of the 2x2 matrix:\n");

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

{

for (int j = 0; j < 2; j++)

{

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

}

}

printf("The determinant of the 2x2 matrix is: %d\n", determinant2x2(matrix));

}

else if (n == 3)

{

int matrix[3][3];

printf("Enter the elements of the 3x3 matrix:\n");

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

{

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

{

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

}

}

printf("The determinant of the 3x3 matrix is: %d\n", determinant3x3(matrix));

}

else

{

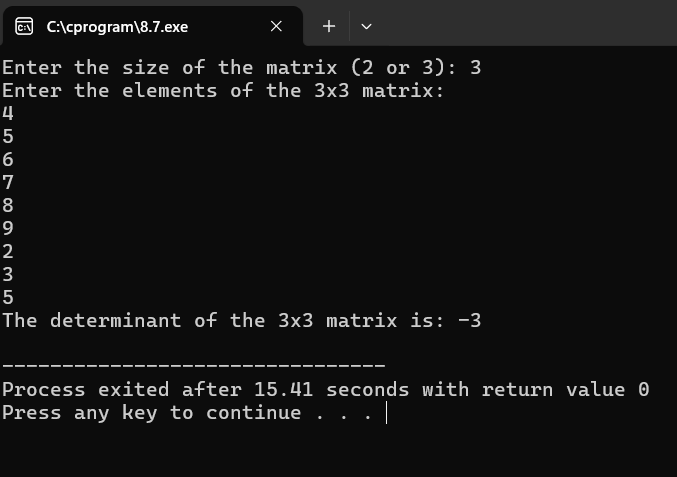
printf("This program only supports 2x2 and 3x3 matrices.\n");

}

return 0;

}

**OUTPUT**

****