#include <stdio.h>

#include <stdlib.h>

#include <stdbool.h>

void displayMatrix(int matrix[4][4])

{

for (int i = 0; i < 4; i++)

{

for (int j = 0; j < 4; j++)

{

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

}

printf("\n");

}

}

bool isSymmetric(int matrix[4][4])

{ int B[4][4];

for (int i = 0; i < 4; i++)

{

for (int j = 0; j < 4; j++)

{

B[i][j] = matrix[j][i];

}

}

if (B==matrix)

return true;

else

return false;

}

int main()

{

srand(time(0));

int matrix1[4][4];

int matrix2[4][4];

int matrix3[4][4];

// Fill matrix1 with random values

for (int i = 0; i < 4; i++)

for (int j = 0; j < 4; j++)

matrix1[i][j] = rand() % 9 + 1;

// Fill matrix2 with random values

for (int i = 0; i < 4; i++)

for (int j = 0; j < 4; j++)

matrix2[i][j] = rand() % 9 + 1;

// Replacing the main diagonal elements of the second matrix

for (int i = 0; i < 4; i++)

matrix2[i][i] = matrix1[i][i];

printf("Matrix 1\n");

displayMatrix(matrix1);

printf("\nMatrix 2\n");

displayMatrix(matrix2);

printf("\n Matrix 3 \n");

displayMatrix(matrix3);

if (isSymmetric(matrix3)==true)

printf("\nThe matrix 3 is symmetric");

else

printf("\nThe matrix 3 is not symmetric");

return 0;

}