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'''Write a Java/C/C++/Python program to perform encryption and decryption using the method of

Transposition technique'''

#include <stdio.h>

#define SIZE 3 // Size of the matrix

void transpose(int mat[SIZE][SIZE]) {

    int temp;

    for (int i = 0; i < SIZE; i++) {

        for (int j = i + 1; j < SIZE; j++) {

            // Swap the elements mat[i][j] and mat[j][i]

            temp = mat[i][j];

            mat[i][j] = mat[j][i];

            mat[j][i] = temp;

        }

    }

}

void displayMatrix(int mat[SIZE][SIZE]) {

    for (int i = 0; i < SIZE; i++) {

        for (int j = 0; j < SIZE; j++) {

            printf("%d ", mat[i][j]);

        }

        printf("\n");

    }

}

int main() {

    int matrix[SIZE][SIZE];

    // Input the matrix

    printf("Enter the elements of the %dx%d matrix:\n", SIZE, SIZE);

    for (int i = 0; i < SIZE; i++) {

        for (int j = 0; j < SIZE; j++) {

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

        }

    }

    // Display the original matrix

    printf("Original matrix:\n");

    displayMatrix(matrix);

    // Transpose the matrix

    transpose(matrix);

    // Display the transposed matrix

    printf("\nTransposed matrix:\n");

    displayMatrix(matrix);

    printf("Press Enter to exit...");

    getchar(); // Wait for user input before exiting

    return 0;

}

**OUTPUT:**

Enter the elements of the 3x3 matrix:

1

2

3

4

5

6

7

8

9

Original matrix:

1 2 3

4 5 6

7 8 9

Transposed matrix:

1 4 7

2 5 8

3 6 9