

transposeMatrix.c

```
1 #include <stdio.h>
2
3 int main(){
4
5     int rows, cols;
6     // Get dimensions from the user
7     printf("Enter the number of rows: ");
8     scanf("%d", &rows);
9     printf("Enter the number of columns: ");
10    scanf("%d", &cols);
11
12    // Declare matrix
13    int matrix[rows][cols];
14    int transposedMatrix[cols][rows];
15
16    // Get matrix elements from the user
17    printf("Enter the elements of the matrix:\n");
18    for (int i = 0; i < rows; i++) {
19        for (int j = 0; j < cols; j++) {
20            printf("Element [%d][%d]: ", i, j);
21            scanf("%d", &matrix[i][j]);
22        }
23    }
24    // print original matrix
25    printf("Original matrix:\n");
26    for (int i = 0; i < rows; i++) {
27        for (int j = 0; j < cols; j++) {
28            printf("%d ", matrix[i][j]);
29        }
30        printf("\n");
31    }
32
33    // Transpose the matrix
34    for (int i = 0; i < cols; i++) {
35        for (int j = 0; j < rows; j++) {
36            transposedMatrix[i][j] = matrix[j][i];
37        }
38    }
39
40    // Display the transposed matrix
41    printf("Transposed matrix:\n");
42    for (int i = 0; i < cols; i++) {
43        for (int j = 0; j < rows; j++) {
44            printf("%d ", transposedMatrix[i][j]);
45        }
46        printf("\n");
47    }
48
49    return 0;
50 }
```