

matrixSubtraction.c

```
1 #include <stdio.h>
2
3 int main() {
4     int rows, cols;
5
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 matrices
13    int matrixA[rows][cols];
14    int matrixB[rows][cols];
15    int resultMatrix[rows][cols];
16
17    // Input elements for matrix A
18    printf("\nEnter elements for Matrix A:\n");
19    for (int i = 0; i < rows; i++) {
20        for (int j = 0; j < cols; j++) {
21            printf("Enter element A[%d][%d]: ", i, j);
22            scanf("%d", &matrixA[i][j]);
23        }
24    }
25
26    // Input elements for matrix B
27    printf("\nEnter elements for Matrix B:\n");
28    for (int i = 0; i < rows; i++) {
29        for (int j = 0; j < cols; j++) {
30            printf("Enter element B[%d][%d]: ", i, j);
31            scanf("%d", &matrixB[i][j]);
32        }
33    }
34
35    // display matrix A
36    printf("\nMatrix A:\n");
37    for (int i = 0; i < rows; i++) {
38        for (int j = 0; j < cols; j++) {
39            printf("%d\t", matrixA[i][j]);
40        }
41        printf("\n");
42    }
43
44    // display matrix B
45    printf("\nMatrix B:\n");
46    for (int i = 0; i < rows; i++) {
47        for (int j = 0; j < cols; j++) {
48            printf("%d\t", matrixB[i][j]);
49        }
50        printf("\n");
51    }
```

```
52
53     // Perform matrix subtraction (A - B)
54     for (int i = 0; i < rows; i++) {
55         for (int j = 0; j < cols; j++) {
56             resultMatrix[i][j] = matrixA[i][j] - matrixB[i][j];
57         }
58     }
59
60     // Print the result matrix
61     printf("\nResult of Matrix A - Matrix B:\n");
62     for (int i = 0; i < rows; i++) {
63         for (int j = 0; j < cols; j++) {
64             printf("%d\t", resultMatrix[i][j]);
65         }
66         printf("\n");
67     }
68
69     return 0;
70 }
71
72 /**
73 * Example Input/Output:
74 * Enter the number of rows: 2
75 Enter the number of columns: 2
76
77 Enter elements for Matrix A:
78 Enter element A[0][0]: 1
79 Enter element A[0][1]: 4
80 Enter element A[1][0]: 5
81 Enter element A[1][1]: 6
82
83 Enter elements for Matrix B:
84 Enter element B[0][0]: 2
85 Enter element B[0][1]: 3
86 Enter element B[1][0]: 1
87 Enter element B[1][1]: 6
88
89 Matrix A:
90 1      4
91 5      6
92
93 Matrix B:
94 2      3
95 1      6
96
97 Result of Matrix A - Matrix B:
98 -1      1
99 4      0
100 */
```