

1.MATRIX MULTIPLICATION

SAMPLE

```
#include <stdio.h>

int main() {
    int a[2][2], b[2][2], result[2][2];

    printf("Enter elements of first 2x2 matrix:\n");
    for (int i = 0; i < 2; i++)
        for (int j = 0; j < 2; j++)
            scanf("%d", &a[i][j]);

    printf("Enter elements of second 2x2 matrix:\n");
    for (int i = 0; i < 2; i++)
        for (int j = 0; j < 2; j++)
            scanf("%d", &b[i][j]);

    for (int i = 0; i < 2; i++)
        for (int j = 0; j < 2; j++) {
            result[i][j] = 0;
            for (int k = 0; k < 2; k++)
                result[i][j] += a[i][k] * b[k][j];
        }

    printf("Resultant matrix:\n");
    for (int i = 0; i < 2; i++) {
        for (int j = 0; j < 2; j++)
            printf("%d ", result[i][j]);
        printf("\n");
    }

    return 0;
}
```

OUTPUT

The image shows a C++ IDE with a source code editor, a compiler window, and a terminal window.

Source Code (Untitled1.cpp):

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int a[2][2], b[2][2], result[2][2];
6
7     printf("Enter elements of first 2x2 matrix:\n");
8     for (int i = 0; i < 2; i++)
9         for (int j = 0; j < 2; j++)
10             scanf("%d", &a[i][j]);
11
12     printf("Enter elements of second 2x2 matrix:\n");
13     for (int i = 0; i < 2; i++)
14         for (int j = 0; j < 2; j++)
15             scanf("%d", &b[i][j]);
16
17     for (int i = 0; i < 2; i++)
18         for (int j = 0; j < 2; j++) {
19             result[i][j] = 0;
20             for (int k = 0; k < 2; k++)
21                 result[i][j] += a[i][k] * b[k][j];
22         }
23
24     printf("Resultant matrix:\n");
25 }
```

Compiler Window:

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Haritha\OneDrive\Documents\Untitled1.exe
- Output Size: 129.9423828125 KiB
- Compilation Time: 0.58s

Terminal Window:

```
C:\Users\Haritha\OneDrive\Documents> .\Untitled1.exe
Enter elements of first 2x2 matrix:
2 6
4 7
Enter elements of second 2x2 matrix:
3 8
1 9
Resultant matrix:
12 70
19 95

Process exited after 34.27 seconds with return value 0
Press any key to continue . . .
```