

# FOC LAB ASSIGNMENTS DAY 2

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## 11.transpose of a matrix

```
#include <stdio.h>
#define ROWS 3
#define COLS 3

void transposeMatrix(int mat[ROWS][COLS], int result[COLS][ROWS]) {
    for (int i = 0; i < ROWS; i++) {
        for (int j = 0; j < COLS; j++) {
            result[j][i] = mat[i][j];
        }
    }
}

int main() {
    int matrix[ROWS][COLS] = {
        {1, 2, 3},
        {4, 5, 6},
        {7, 8, 9}
    };
    int transposed[COLS][ROWS];
    transposeMatrix(matrix, transposed);
}
```

Compilation results...

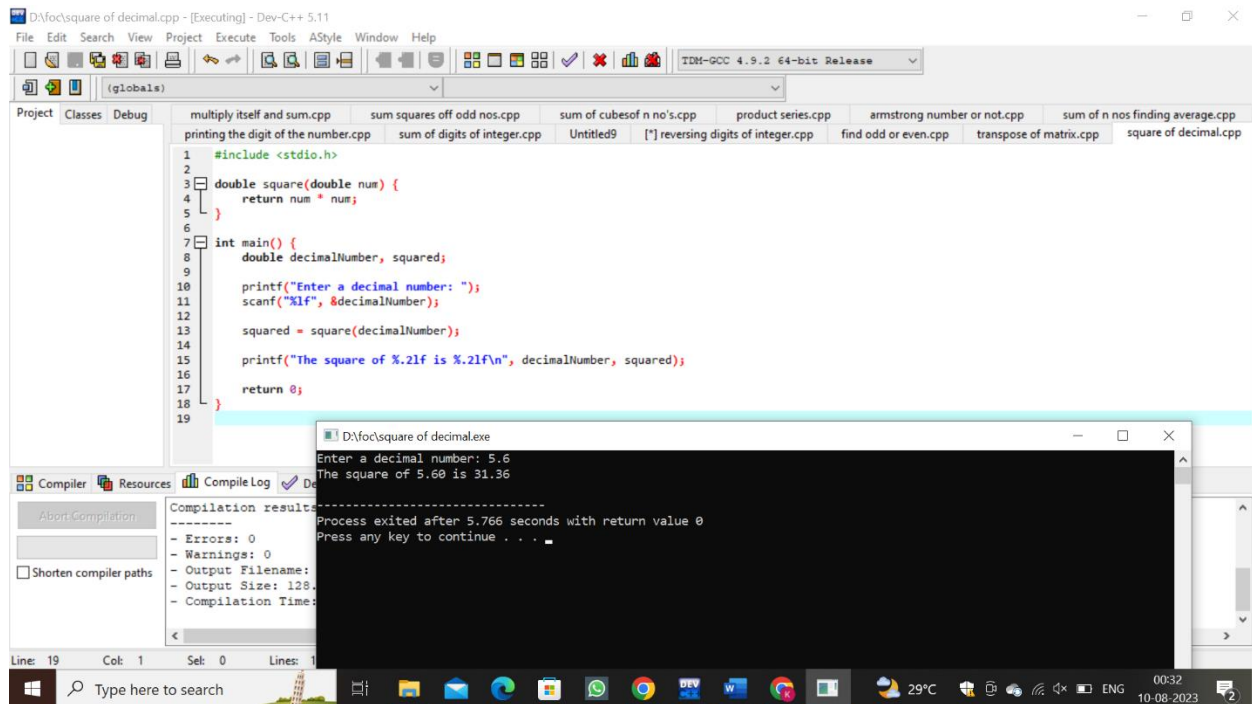
- Errors: 0
- Warnings: 0
- Output Filename: D:\foc\tran
- Output Size: 129.3408203125
- Compilation Time: 0.52s

Process exited after 0.08293 seconds with return value 0  
Press any key to continue . . .

Original Matrix:  
1 2 3  
4 5 6  
7 8 9

Transposed Matrix:  
1 4 7  
2 5 8  
3 6 9

## 12.square of decimal



The screenshot shows the Dev-C++ IDE with a project named "multiply itself and sum.cpp". The code in the editor is as follows:

```
1 #include <stdio.h>
2
3 double square(double num) {
4     return num * num;
5 }
6
7 int main() {
8     double decimalNumber, squared;
9
10    printf("Enter a decimal number: ");
11    scanf("%lf", &decimalNumber);
12
13    squared = square(decimalNumber);
14
15    printf("The square of %.2lf is %.2lf\n", decimalNumber, squared);
16
17    return 0;
18 }
19
```

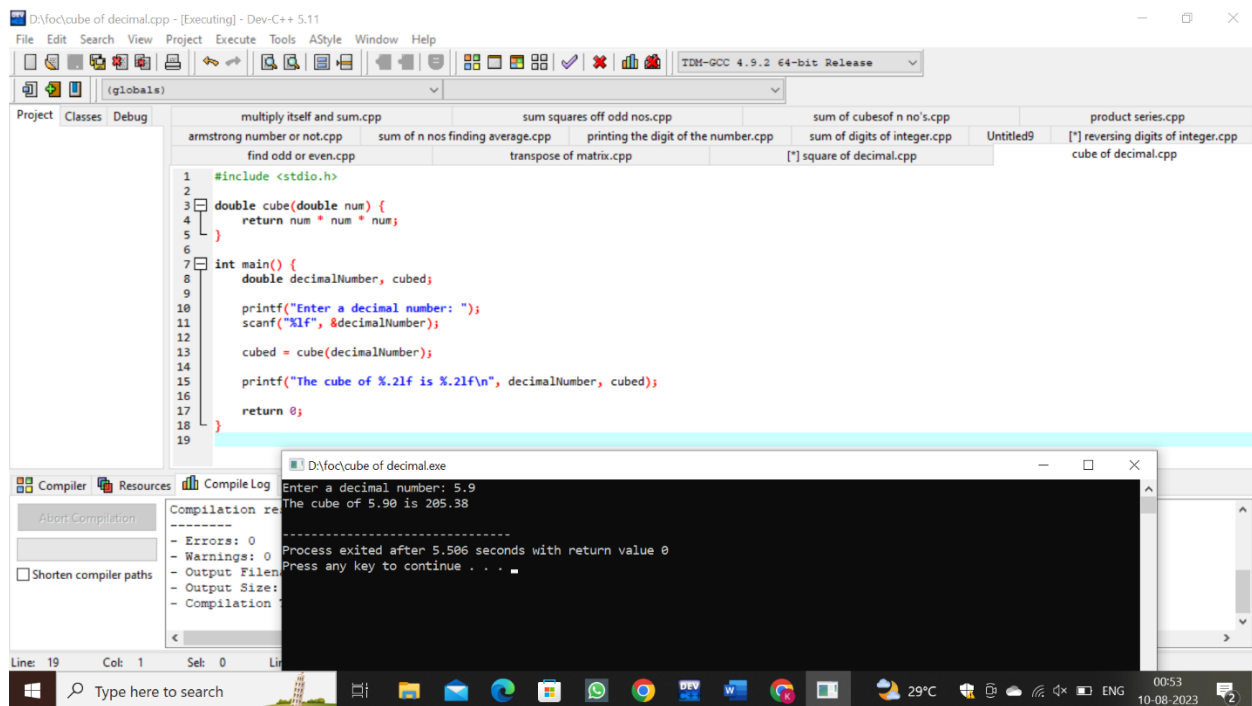
The output window shows the following text:

```
Enter a decimal number: 5.6
The square of 5.60 is 31.36
Process exited after 5.766 seconds with return value 0
Press any key to continue . . .
```

The compilation results window shows the following information:

```
Compilation results
-----
- Errors: 0
- Warnings: 0
- Output Filename:
- Output Size: 128
- Compilation Time:
```

## 13.cube of decimal



The screenshot shows the Dev-C++ IDE with a project named "multiply itself and sum.cpp". The code in the editor is as follows:

```
1 #include <stdio.h>
2
3 double cube(double num) {
4     return num * num * num;
5 }
6
7 int main() {
8     double decimalNumber, cubed;
9
10    printf("Enter a decimal number: ");
11    scanf("%lf", &decimalNumber);
12
13    cubed = cube(decimalNumber);
14
15    printf("The cube of %.2lf is %.2lf\n", decimalNumber, cubed);
16
17    return 0;
18 }
19
```

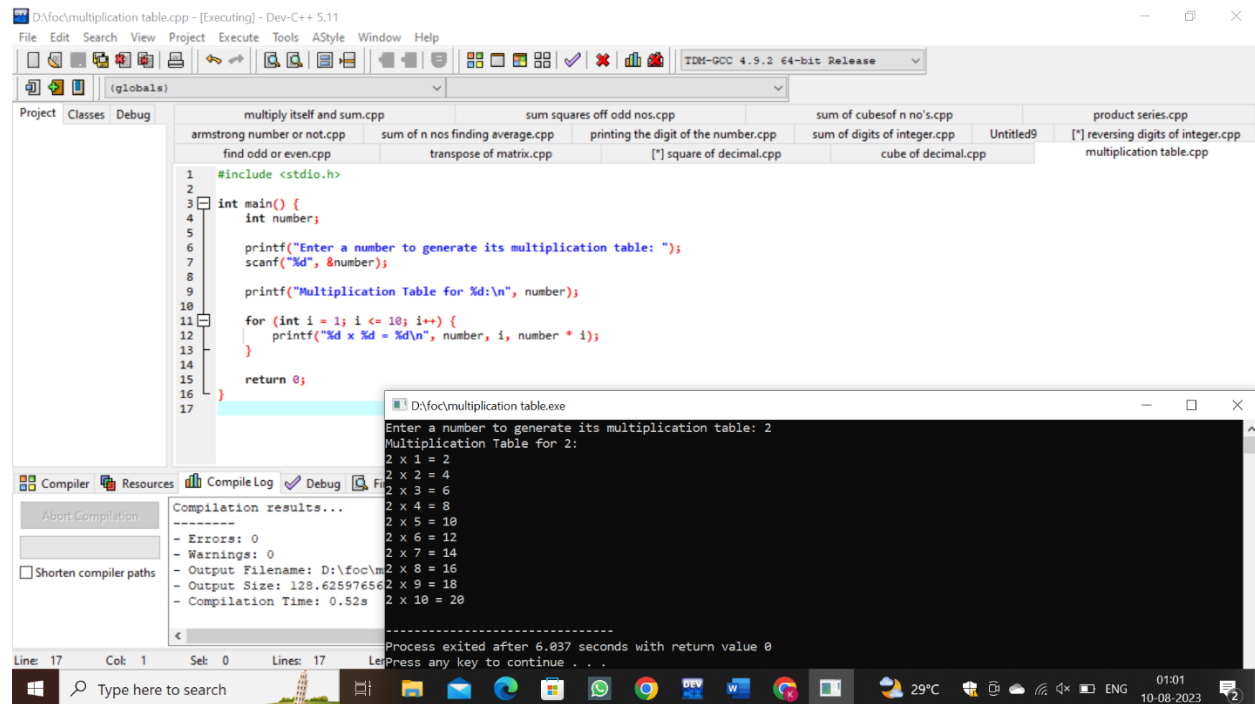
The output window shows the following text:

```
Enter a decimal number: 5.9
The cube of 5.90 is 205.38
Process exited after 5.506 seconds with return value 0
Press any key to continue . . .
```

The compilation results window shows the following information:

```
Compilation results
-----
- Errors: 0
- Warnings: 0
- Output Filename:
- Output Size:
- Compilation Time:
```

## 14. multiplication table



```
#include <stdio.h>

int main() {
    int number;

    printf("Enter a number to generate its multiplication table: ");
    scanf("%d", &number);

    printf("Multiplication Table for %d:\n", number);

    for (int i = 1; i <= 10; i++) {
        printf("%d x %d = %d\n", number, i, number * i);
    }

    return 0;
}
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: D:\foc\m
- Output Size: 128.62597656
- Compilation Time: 0.52s

Process exited after 6.037 seconds with return value 0  
Press any key to continue . . .

Enter a number to generate its multiplication table: 2  
Multiplication Table for 2:  
2 x 1 = 2  
2 x 2 = 4  
2 x 3 = 6  
2 x 4 = 8  
2 x 5 = 10  
2 x 6 = 12  
2 x 7 = 14  
2 x 8 = 16  
2 x 9 = 18  
2 x 10 = 20