

# Matrix Calculator

## Summary:

This program is for performing calculations on **Matrices**, by taking the matrix dimensions and the matrix itself as an input, then lets you choose from the following operations (**Subtraction, Addition, Multiplication, Transpose**).

**Matrix** class is in the form of a **class template** that accepts any type parameter. This way, when the class **Matrix** is instantiated, you decide if it should accept **float, int** or **double**, etc.

**Matrix** class holds a matrix of any size and allocates the required memory as needed, also it has a destructor that frees used memory at the end of lifetime of each **Matrix** objects. It also overloads the standard operators and I/O operators to enable **Matrix** class with addition, subtraction and multiplication and suitable input and output capabilities.

The project is built using **C++**, **Code::Blocks**.

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Welcome to (Joe) Matrix Calculator
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1- Perform Matrix Addition
2- Perform Matrix Subtraction
3- Perform Matrix Multiplication
4- Matrix Transpose
5- To End
Please Enter your Operation Number
1
Please Enter your Dimensions of the first Matrix Separated by a space
2 3
Fill the Matrix
2 3 4
5 6 7
Please Enter your Dimensions of the Second Matrix Separated by a space
2 3
Fill the Matrix
2 3 4
5 6 7
The Resulted Matrix after Addition
4 6
8 10
12 14

Welcome to (Joe) Matrix Calculator
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1- Perform Matrix Addition
2- Perform Matrix Subtraction
3- Perform Matrix Multiplication
4- Matrix Transpose
5- To End
Please Enter your Operation Number
```