GHANA COMMUNICATION
TECHNOLOGY UNIVERSITY

INSTITUTE OF CONTINUING
AND DISTANCE EDUCATION (ICDE)

COURSE CODE	CICS 112
COURSE TITLE	Programming with C++
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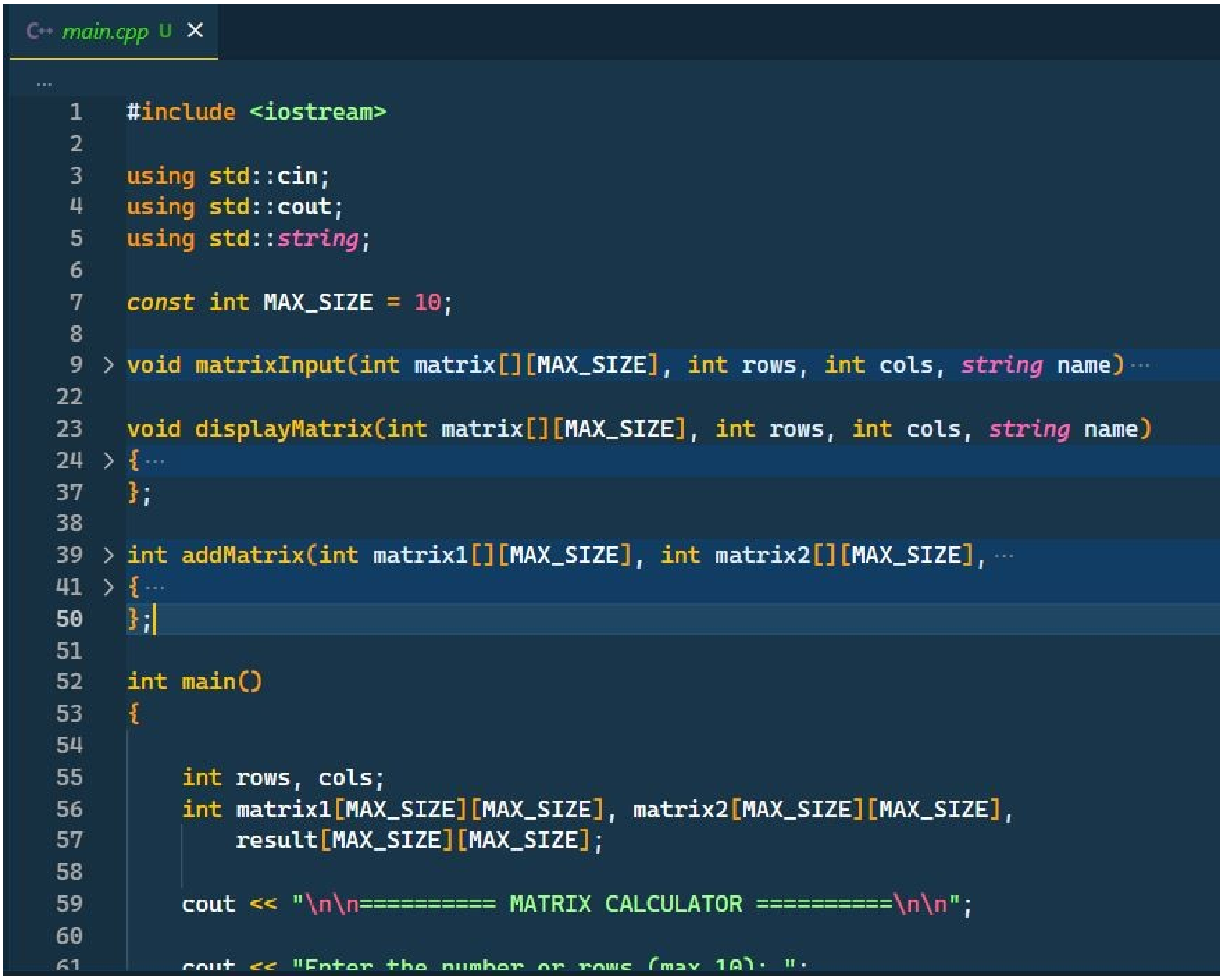
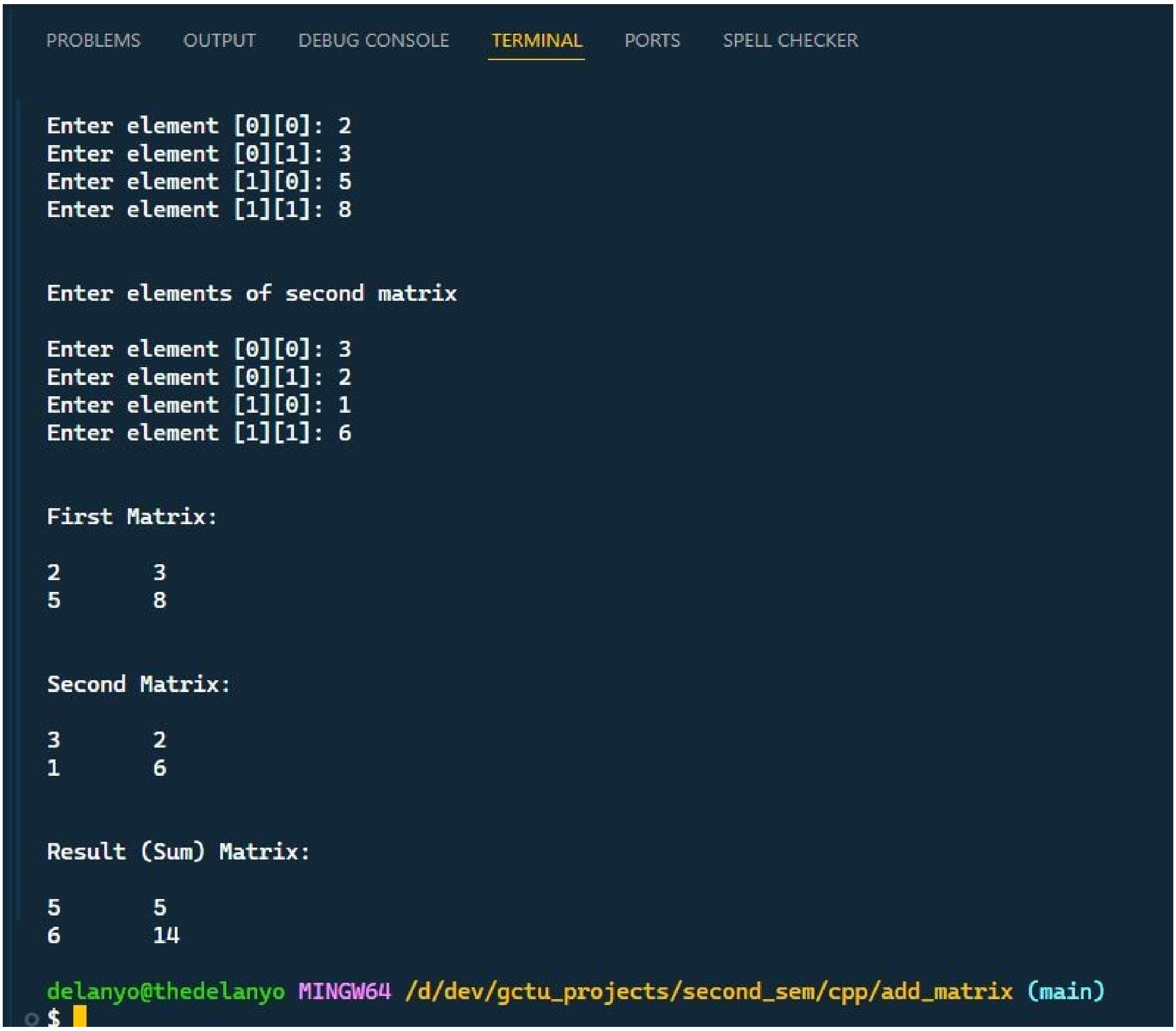
Write a C++ program to Add Two Matrix Using Multi-Dimensional Arrays.

```
#include <iostream>

using std::cin;
using std::cout;
using std::string;

const int MAX_SIZE = 10;

void matrixInput(int matrix[][MAX_SIZE], int rows, int cols, string name)
{
    cout << "\n\nEnter elements of " << name << " matrix\n\n";

    for (int i = 0; i < rows; i++)
    {
        for (int j = 0; j < cols; j++)
        {
            cout << "Enter element [" << i << "][" << j << "]: ";
            cin >> matrix[i][j];
        }
    }
};

void displayMatrix(int matrix[][MAX_SIZE], int rows, int cols, string name)
{
    cout << "\n\n"
         << name << " Matrix:\n\n";

    for (int i = 0; i < rows; i++)
    {
        for (int j = 0; j < cols; j++)
        {
            cout << matrix[i][j] << "\t";
        }

        cout << "\n";
    }
};
```

```
int addMatrix(int matrix1[][MAX_SIZE], int matrix2[][MAX_SIZE],
              int result[][MAX_SIZE], int rows, int cols)
{

    for (int i = 0; i < rows; i++)
    {
        for (int j = 0; j < cols; j++)
        {
            result[i][j] = matrix1[i][j] + matrix2[i][j];
        }
    }
};

int main()
{

    int rows, cols;
    int matrix1[MAX_SIZE][MAX_SIZE], matrix2[MAX_SIZE][MAX_SIZE],
        result[MAX_SIZE][MAX_SIZE];

    cout << "\n\n========== MATRIX CALCULATOR ==========\n\n";

    cout << "Enter the number or rows (max 10): ";
    cin >> rows;

    cout << "Enter the number or columns (max 10): ";
    cin >> cols;

    if (rows > MAX_SIZE || cols > MAX_SIZE || rows < 1 || cols < 1)
    {

        cout << "\n\nInvalid dimensions! Matrix max size is 10x10\n\n";

        return 1;
    };

    matrixInput(matrix1, rows, cols, "first");
    matrixInput(matrix2, rows, cols, "second");
    addMatrix(matrix1, matrix2, result, rows, cols);

    displayMatrix(matrix1, rows, cols, "First");
    displayMatrix(matrix2, rows, cols, "Second");
    displayMatrix(result, rows, cols, "Result (Sum)");

    return 0;
}
```



```cpp
#include <iostream>

using std::cin;
using std::cout;
using std::string;

const int MAX_SIZE = 10;

void matrixInput(int matrix[][MAX_SIZE], int rows, int cols, string name)⋯

void displayMatrix(int matrix[][MAX_SIZE], int rows, int cols, string name)
{⋯
};

int addMatrix(int matrix1[][MAX_SIZE], int matrix2[][MAX_SIZE],⋯
{⋯
};

int main()
{

    int rows, cols;
    int matrix1[MAX_SIZE][MAX_SIZE], matrix2[MAX_SIZE][MAX_SIZE],
        result[MAX_SIZE][MAX_SIZE];

    cout << "\n\n========== MATRIX CALCULATOR ==========\n\n";

    cout << "Enter the number or rows (max 10): ";
```



```
Enter element [0][0]: 2
Enter element [0][1]: 3
Enter element [1][0]: 5
Enter element [1][1]: 8


Enter elements of second matrix

Enter element [0][0]: 3
Enter element [0][1]: 2
Enter element [1][0]: 1
Enter element [1][1]: 6


First Matrix:

2       3
5       8


Second Matrix:

3       2
1       6


Result (Sum) Matrix:

5       5
6       14

delanyo@thedelanyo MINGW64 /d/dev/gctu_projects/second_sem/cpp/add_matrix (main)
$ 
```