

GHANA COMMUNICATION

TECHNOLOGY UNIVERSITY

INSTITUTE OF CONTINUING

AND DISTANCE EDUCATION (ICDE)

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| 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;

}



