***Q1.*** ***Write a C++ program that performs multiplication of 2 Matrices of sizes 3x4 & 4x3 and store the result in a 3x3 Matrix.***

#include <iostream>

// Function to perform matrix multiplication

void multiplyMatrices(int mat1[][4], int mat2[][3], int result[][3]) {

// Perform matrix multiplication

for (int i = 0; i < 3; ++i) {

for (int j = 0; j < 3; ++j) {

result[i][j] = 0;

for (int k = 0; k < 4; ++k) {

result[i][j] += mat1[i][k] \* mat2[k][j];

}

}

}

}

// Function to display a matrix

void displayMatrix(int mat[][3], int rows, int cols) {

for (int i = 0; i < rows; ++i) {

for (int j = 0; j < cols; ++j) {

std::cout << mat[i][j] << " ";

}

std::cout << std::endl;

}

}

int main() {

// Define matrices of sizes 3x4 and 4x3

int matrix1[3][4] = {{1, 2, 3, 4},

{5, 6, 7, 8},

{9, 10, 11, 12}};

int matrix2[4][3] = {{2, 0, 1},

{3, 1, 0},

{4, 2, 1},

{5, 3, 2}};

// Declare a matrix to store the result of multiplication

int resultMatrix[3][3];

// Perform matrix multiplication

multiplyMatrices(matrix1, matrix2, resultMatrix);

// Display the matrices

std::cout << "Matrix 1:" << std::endl;

displayMatrix(matrix1, 3, 4);

std::cout << "Matrix 2:" << std::endl;

displayMatrix(matrix2, 4, 3);

std::cout << "Result Matrix:" << std::endl;

displayMatrix(resultMatrix, 3, 3);

return 0;

}