Lab 6 Computer Architecture

Multiplying Matrices

We want to multiply two matrices: A x B.

The dimensions of matrix A are m x n and the dimensions of matrix B are n x k, this means that the two matrices share the length n for one of their dimensions. This will permit us to multiply the matrices.

The program should let the user enter the dimensions for the two matrices. If the n is not the same in the two matrices, i.e. the number of columns in A is not equal to the number of rows in B , the program should request the user to enter valid dimensions, until he succeeds in entering valid dimensions.

Once the dimensions have successfully been accepted, the program needs to ask for the correct number of numbers and store them in an array.

For matrix A enter m rows of numbers where each row has n numbers. And so for matrix B.

Display matrix A, matrix B and the result of the multiplication, matrix C.

You need to display the matrices in rows and columns.

No need to check for overflow on the multiplication operation.

Example of Multiplying Matrices

Given {1,2,3 {7,8

4,5,6} X 9,10

11,12}

(1, 2, 3) • (7, 9, 11) = 1×7 + 2×9 + 3×11 = 58

(1, 2, 3) • (8, 10, 12) = 1×8 + 2×10 + 3×12 = 64

(4, 5, 6) • (7, 9, 11) = 4×7 + 5×9 + 6×11 = 139

(4, 5, 6) • (8, 10, 12) = 4×8 + 5×10 + 6×12 = 154

Result: {58,64

139,154}