ACM40660 Practical 6

ICHEC

July 25, 2019

1 Overview

This week we shall use make to compile our code, which will be in multiple files.

2 Exercises

- Write a program to multiply two matrices, $C_{n\times q} = A_{n\times p}B_{p\times q}$. See Fig. 1 for an illustration of the problem.

  1. Define $n = 5$, $p = 3$, and $q = 4$.
  2. Declare three arrays A, B, and C of type double or real.
  3. Initialise the C to zero and
     (a) $A_{ij} = i + j$,
     (b) and $B_{ij} = i - j$.
  4. Use the schematic below to determine the elements of C.
  5. Print out the three arrays (with one row of the matrix per line) to the screen and ensure that you are generating the correct result.
  6. If you have time create two files a *main* and *matmult* function. Have *matmult* return *C* to *main*.
  7. Construct a Makefile that will compile the two files to generate the executable.

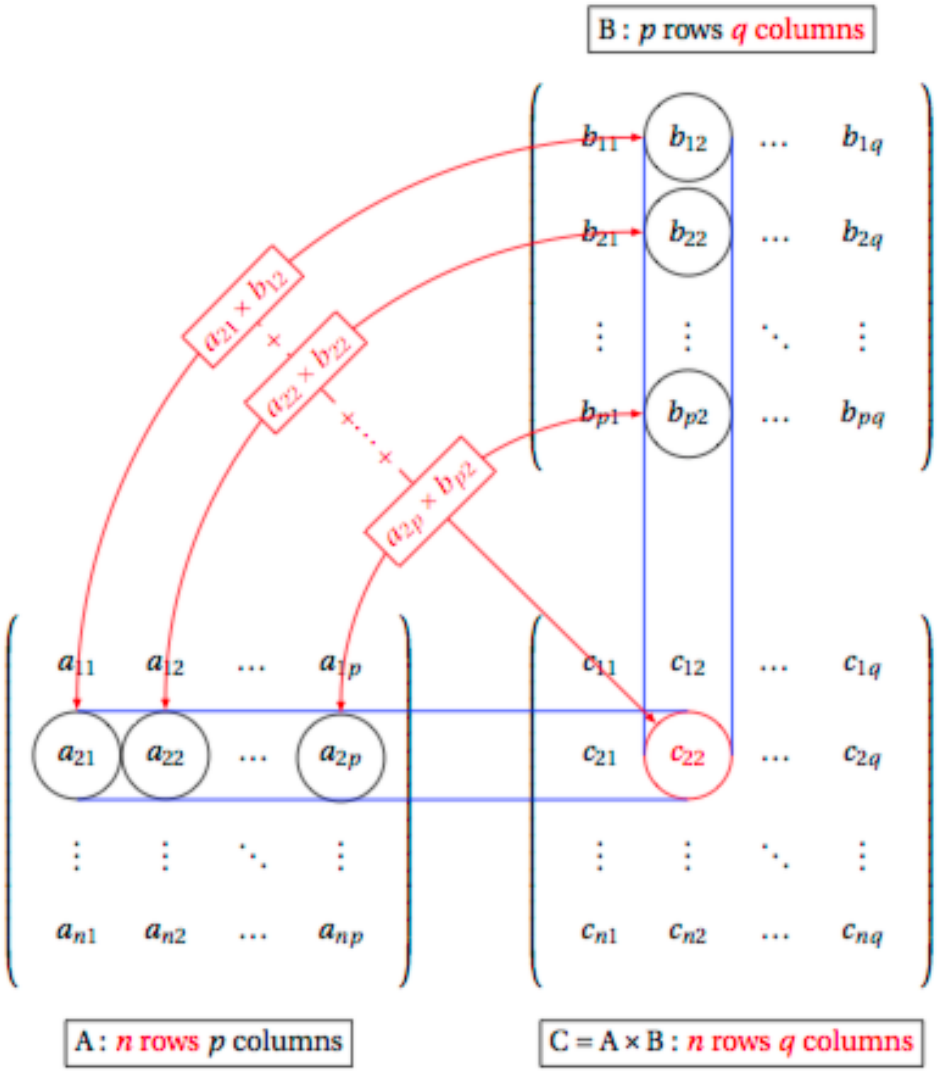

Figure 1. Matrix-Matrix Multiplication Schematic (Taken from: `http://www.texample.net/tikz/examples/matrix-multiplication/`).