Lab 1

1 Matrix Addition

1.1 Two dimensional matrices

1.2 Three dimensional matrices

2 Matrix Multiplication

Matrix C is the result of multiplying matrix A and B. In two dimensions, both A and B are square matrices of equal size, N. In three dimensions, both A and B are cubic matrices of equl size, N. The matrices A and B are populated with random values that range 0 - 20. N is set to 10 and 20.

2.1 Two Dimensional Matrices

Each element in matric C is found using equation 1.

$$c_{i,j} = \sum_{k} a_{i,k} \times b_{k,j} \tag{1}$$

This is achieved using three seperate *for* loops. The first *for* loop traverses the rows of C, while the second *for* loop traverses the columns. The third *for* loop traverses the row and column of matrices A and B.

2.2 Three Dimensionl Matrices

To obtain each element in matrix C, matrix A and B are divided into two dimensional matrices, A' and B'. For each two dimensional matrix, a single row and column is multiplied to get the corresonding element in the C matrix. This leads to a single value which is the element in the C matrix. This is done for all elements in the c matrix.

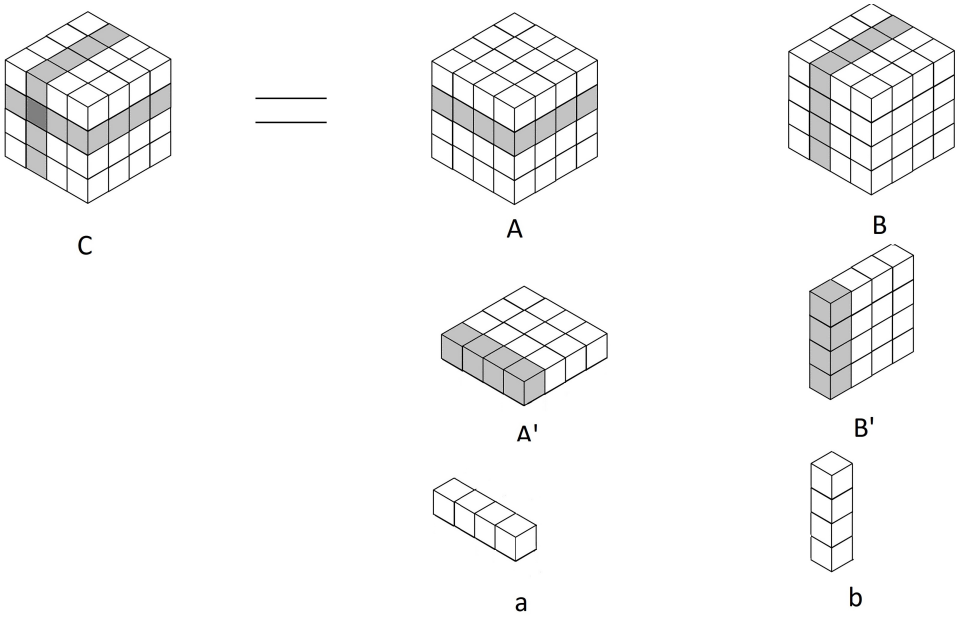

Figure 1: CAPTION

Data: this text
Result: how to write algorithm with LaTeX2e
initialization;
while *not at end of this document* **do**
    read current;
    if *understand* **then**
        go to next section;
        current section becomes this one;
    else
        go back to the beginning of current section;
    end
end

Algorithm 1: How to write algorithms