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Assignment 5

Computer Algorithms

LUP Decomposition.

A decomposition of the matrix into lower and upper triangular matrices is performed.

Once the lower and upper triangular matrices have been obtained,

1. At first, AX = B was the equation. To simplify our equation, we have broken it down into LUX = B, with A = LU.
2. Consider the case where UX = Y. Therefore, LY = B. In order to find L, we first need to solve this equation.
3. We now have the array y, so we can calculate the amount to spend on a particular advertisement. UX = Y

Making LUP Decomposition Parallel:

A LUP decomposition parallelization is very useful when working on large matrices, but not when working on smaller matrices.

When we want parallel processing, each processor will compute operations on each row of matrices in parallel. This allows us to achieve parallel computing for LUP