LU decomposition is a process by which a matrix A can be turned into an upper and lower diagonal matrix to make it easier to deal with. But there are ways to make a program to complete this process in an efficient manner. To set it up, lets say A = LU with row elements i and column elements j. So, the ith row and jth column of matrix A would be denoted by Aij.

To start, there are a few tricks that we can use to easily get some values for U. In the first step, U1j=A1j. This will allow us to get the entire first row of the U matrix with little work, this just needs to be iterated over the dimensions of the matrix.

In the next step, we will derive some values for L. All diagonal elements of the L matrix is 1.