```
Input: matrix A, matrix b
Output: array x, matrix L, matrix U

begin Crout
    int n <- A.size()
    matrix L <- identity_matrix(n)
    matrix U <- identity_matrix(n)

    for (int i from 0 until n)
        for (int k from i until n)
                float sum <- 0
                for (int j from 0 until i)
                        sum <- sum + (L[k][j] * U[j][i])
                end for

                L[k][i] <- A[k][i] - sum
        end for

        for (int k from i until n)
                if (i = k)
                        U[i][i] <- 1
                else
                        float sum <- 0
                        for (int j from 0 until i)
                                sum <- sum + (L[i][j] * U[j][k])
                        end for

                        U[i][k] <- ((A[i][k] - sum)/L[i][i])
                end if
        end for
    end for

    array z <- solution(L, b) // solution is a function that solve
    systems of equations
    array x <- solution(U, z)

    return x, L, U
end Crout
```