FLOYD-WARSHALL-NEW(W)

    n = W.rows

    let $\Pi_{(0)} = (\pi_{ij}^{(0)})$ be a new n x n matrix

    for i = 1 to n

        for j = 1 to n

            if i = j or w_{ij} = infinity

                $\pi_{ij}^{(0)}$ = null

            else

                $\pi_{ij}^{(0)}$ = i

    $D^{(0)}$ = W

    for k = 1 to n

        let $D^{(k)} = (d_{ij}^{(k)})$ be a new n x n matrix

        for i = 1 to n

            for j = 1 to n

                if $d_{ij}^{(k-1)} \leq d_{ik}^{(k-1)} + d_{kj}^{(k-1)}$

                    $\pi_{ij}^{(k)} = \pi_{ij}^{(k-1)}$

                else

                    $\pi_{ij}^{(k)} = \pi_{kj}^{(k-1)}$

                  $d_{ij}^{(k)} = \min(d_{ij}^{(k-1)}, d_{ik}^{(k-1)} + d_{kj}^{(k-1)})$

    return $D^{(n)}, \Pi^{(n)}$

//I've never fully appreciated LaTeX until now