

Duval's factorization

LYNDEX reference: LYNDEX0001

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DUVALFACTORIZATION( $w, n$ )
  ▷ input:  $w$  a word of length  $n$ 
  ▷ output: starting positions of the factors in the
  ▷           Chen-Fox-Lyndon factorization of  $w$ 
  1  $k \leftarrow -1$ 
  2 while  $k < n - 1$  do
  3    $i \leftarrow k + 1$ 
  4    $j \leftarrow k + 2$ 
  5   while  $j < n$  and  $w_i \leq w_j$  do
  6     if  $w_i < w_j$  then
  7        $i \leftarrow k + 1$ 
  8     else
  9        $i \leftarrow i + 1$ 
 10      $j \leftarrow j + 1$ 
 11   while  $k < i$  do
 12     OUTPUT( $k + 1$ )
 13    $k \leftarrow k + j - i$ 
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Reference

J.-P. Duval. Génération d'une section des classes de conjugaison et arbre des mots de lyndon de longueur bornée. *Theoretical Computer Science*, 60(3):255–283, 1988.