
Algorithm 1 STEPLEFT(r)

1: **return** $C[r] + \text{Occ}(BWT[r], r)$

Algorithm 2 UNPERMUTE

1: $r \leftarrow 1$
2: $T \leftarrow \text{“ ”}$
3: **while** $BWT[r] \neq \$$ **do**
4: $T \leftarrow \text{prepend } BWT[r] \text{ to } T$
5: $r \leftarrow \text{STEPLEFT}(r)$
6: **end while**
7: **return** T

Algorithm 3 EXACTMATCH($P[1, p]$)

1: $c \leftarrow P[p]$
2: $i \leftarrow p$
3: $sp \leftarrow C[c] + 1$
4: $ep \leftarrow C[c + 1]$
5: **while** $sp \leq ep$ and $i \geq 2$ **do**
6: $c \leftarrow P[i - 1]$
7: $sp \leftarrow C[c] + \text{Occ}(c, sp - 1) + 1$
8: $ep \leftarrow C[c] + \text{Occ}(c, ep)$
9: $i \leftarrow i - 1$
10: **end while**
11: **return** sp, ep
