

Factor Oracle for Machine Improvisation

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Preliminaries

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Word

A **word** s is a finite sequence $s = s_1 s_2 \dots s_m$ of length $|s| = m$ on a finite alphabet Σ .

$s =$

a	b	b	c	a	b	c	d	a	b	c
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Factor

A word $x \in \Sigma^*$ is a **factor** of s if and only if s can be written $s = uxv$ with $u, v \in \Sigma^*$. Given integers i, j where $1 \leq i \leq j \leq m$, we denote a *factor* of s as $s[i \dots j] = s_i s_{i+1} \dots s_j$.

$s =$

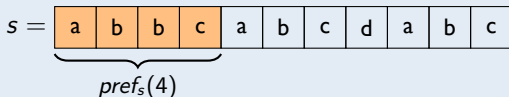
a	b	b	c	a	b	c	d	a	b	c
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$\underbrace{\hspace{10em}}$
 $s[3, 5]$

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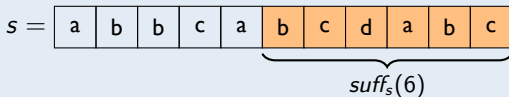
Prefix

A factor x of s is a **prefix** of s if $s = xu$ with $u \in \Sigma^*$. The i th *prefix* of s , denoted $\text{pref}_s(i)$, is the prefix $s[1 \dots i]$.



Suffix

A factor x of s is a **suffix** of s if $s = ux$ with $u \in \Sigma^*$. The i th *suffix* of s , denoted $\text{suff}_s(i)$, is the suffix $s[i \dots m]$.



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Thank you for your attention! 😊

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