

L3.1 – Derivation Tree (Left & Right Derivation Trees)

Derivation Tree

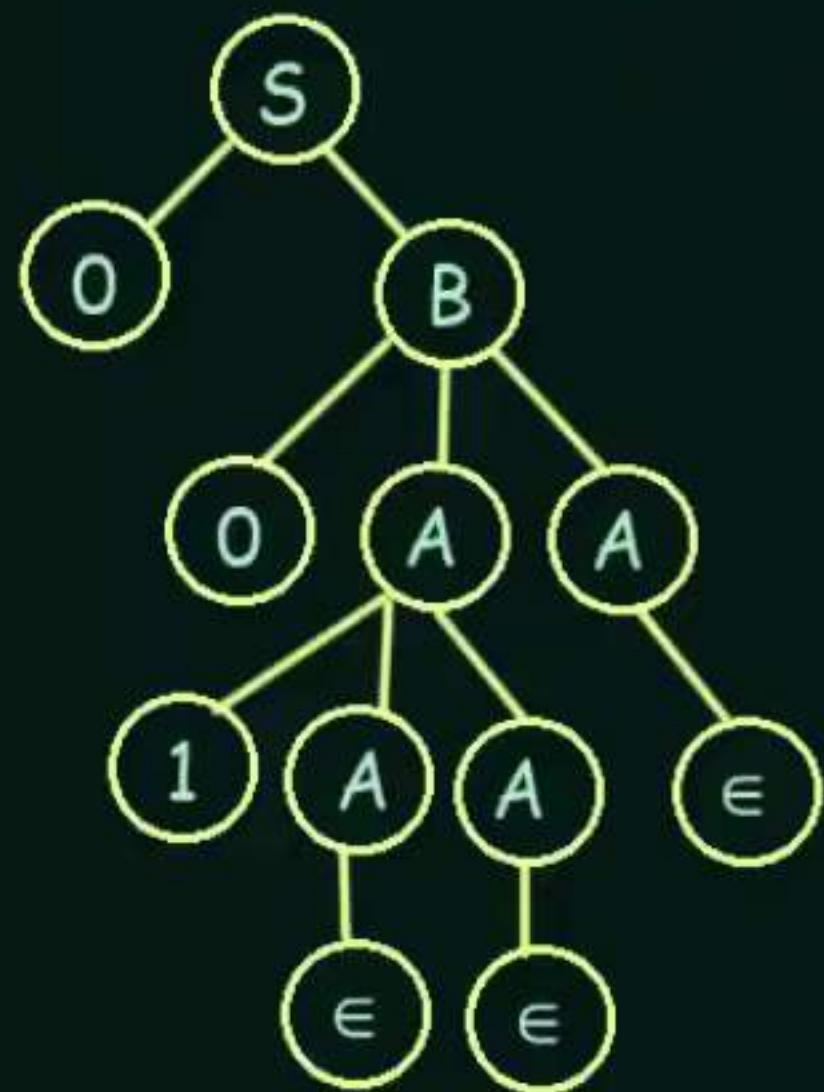
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Example: For the Grammar $G = \{V, T, P, S\}$ where $S \rightarrow 0B$, $A \rightarrow 1AA | \epsilon$, $B \rightarrow 0AA$



Root Vertex: Must be labelled by the Start Symbol

Vertex: Labelled by Non-Terminal Symbols

Leaves: Labelled by Terminal Symbols or ϵ

Left Derivation Tree

A Left Derivation Tree is obtained by applying production to the leftmost variable in each step.

Right Derivation Tree

A Right Derivation Tree is obtained by applying production to the rightmost variable in each step.

Eg. For generating the string aabaa from the Grammar $S \rightarrow aAS | aSS | \epsilon$, $A \rightarrow SbA | ba$

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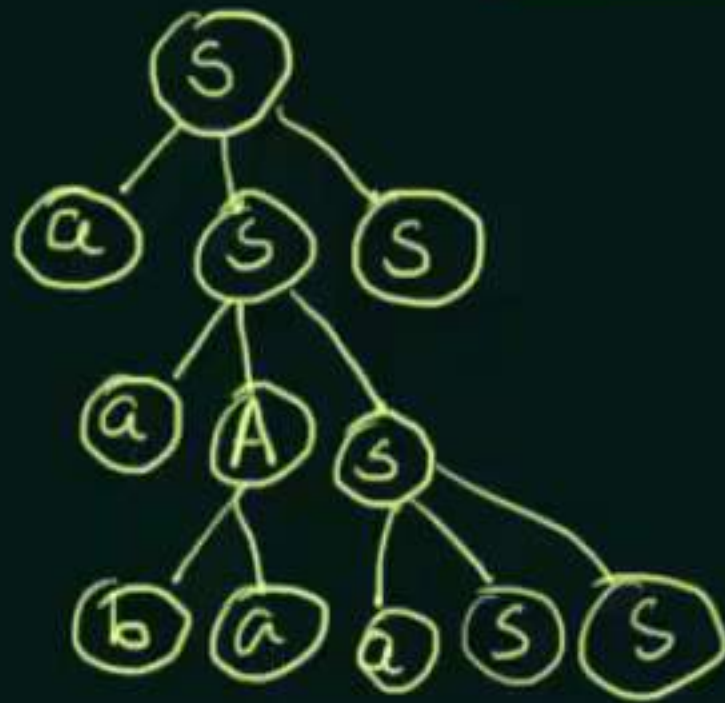
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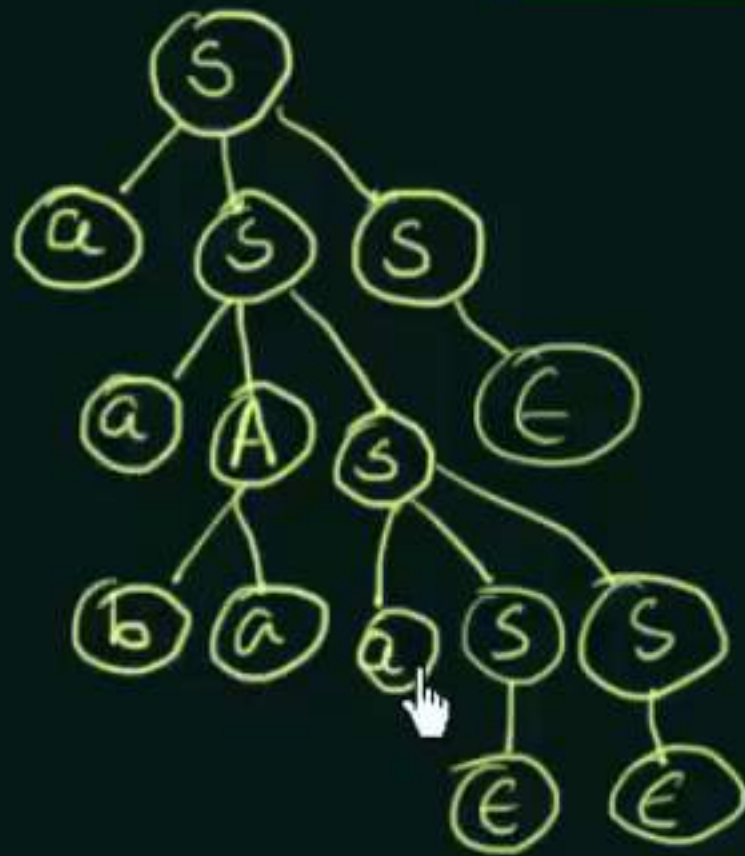
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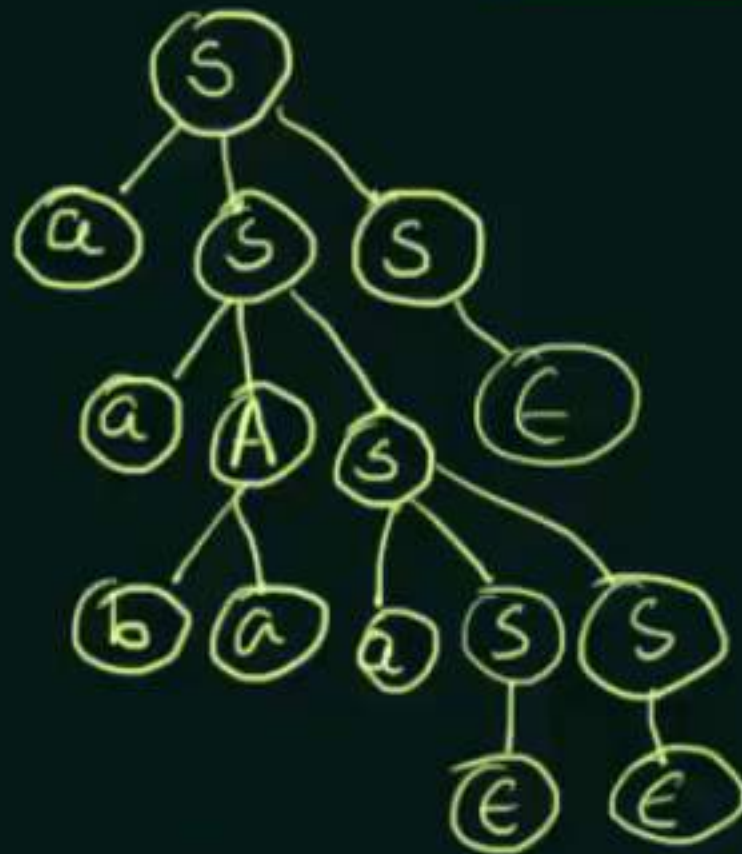
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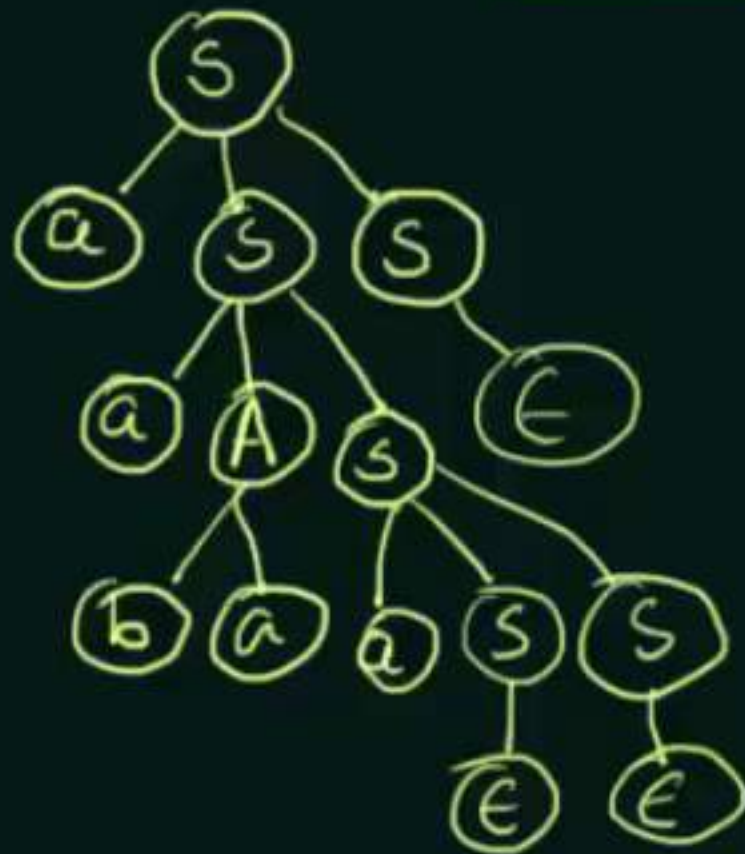
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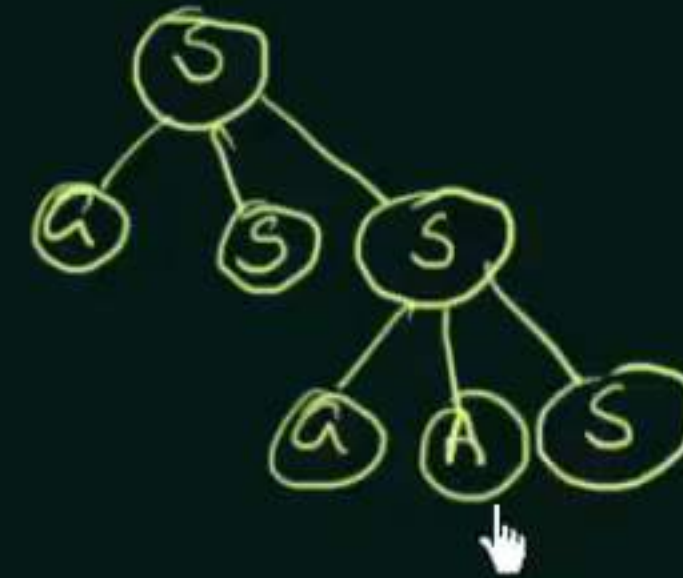
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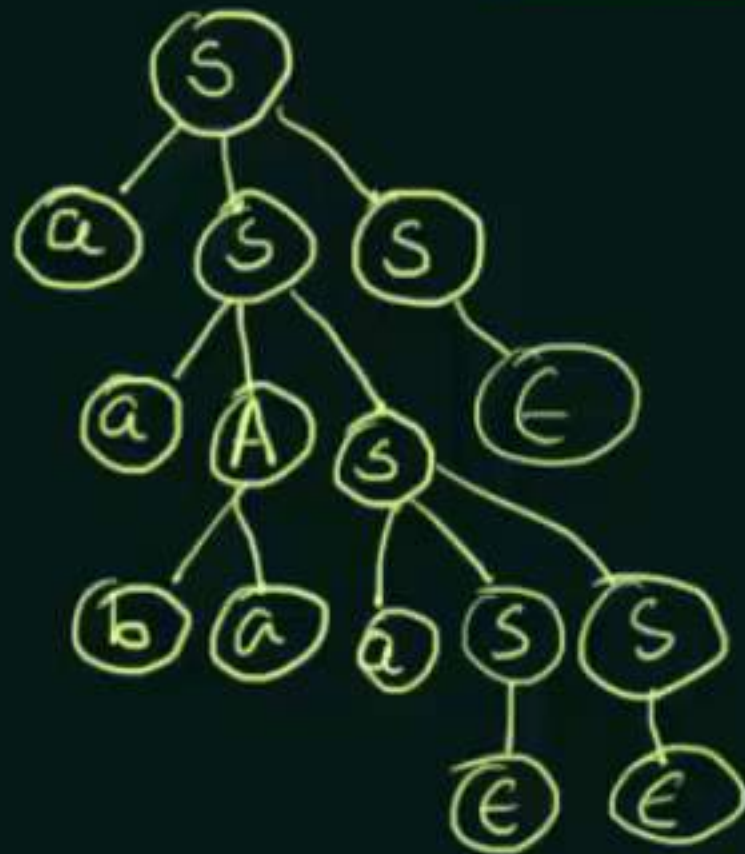
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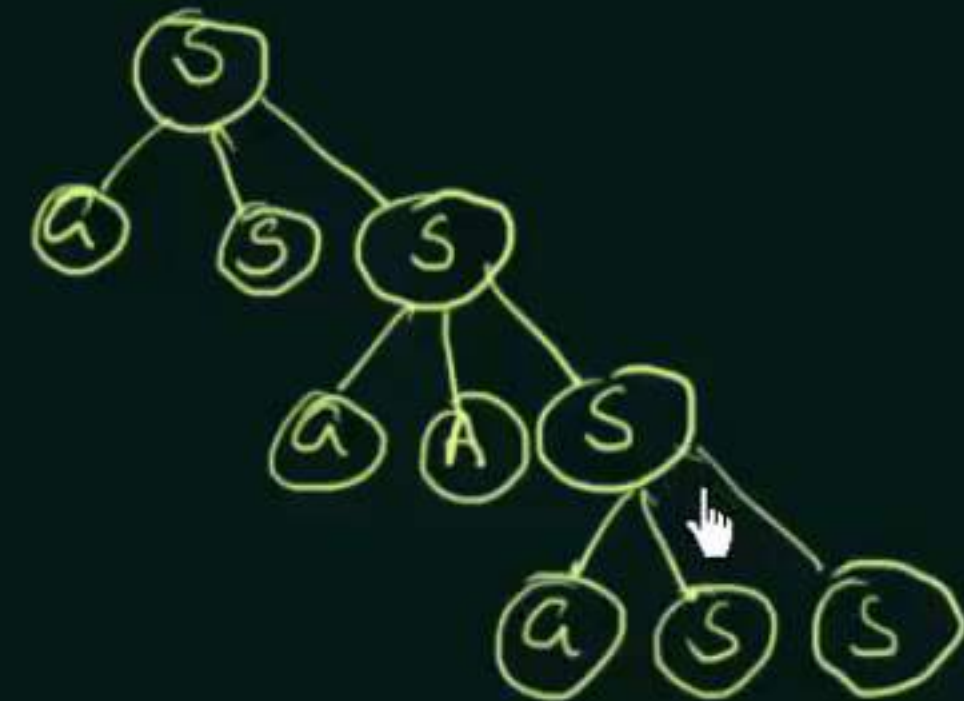
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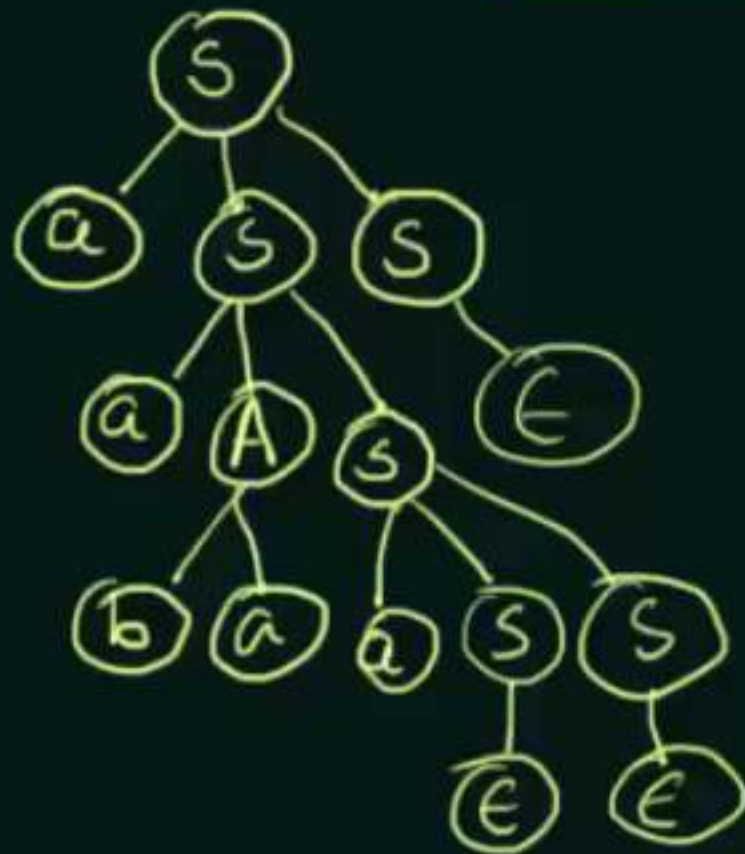
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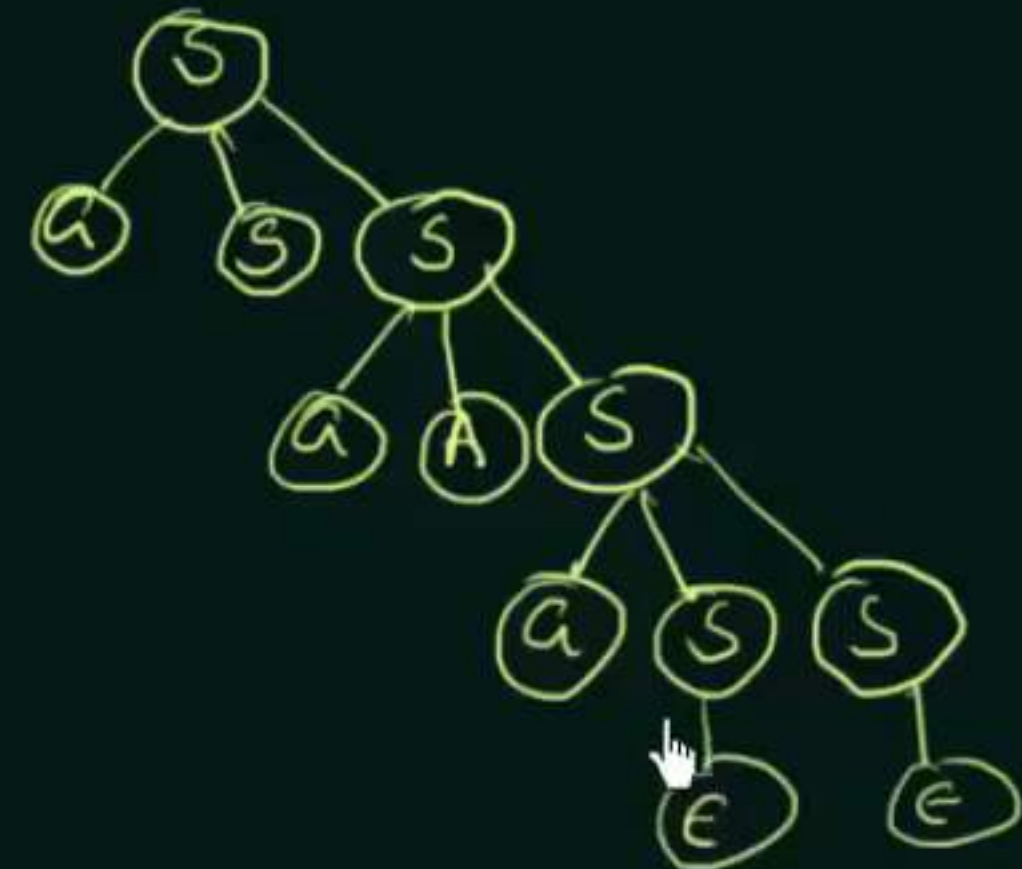
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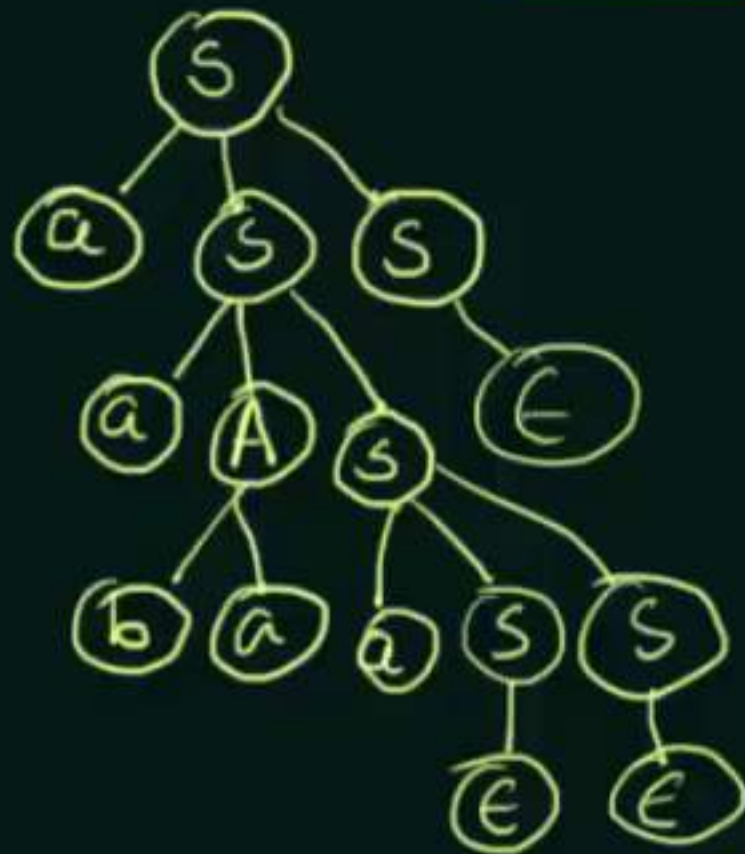
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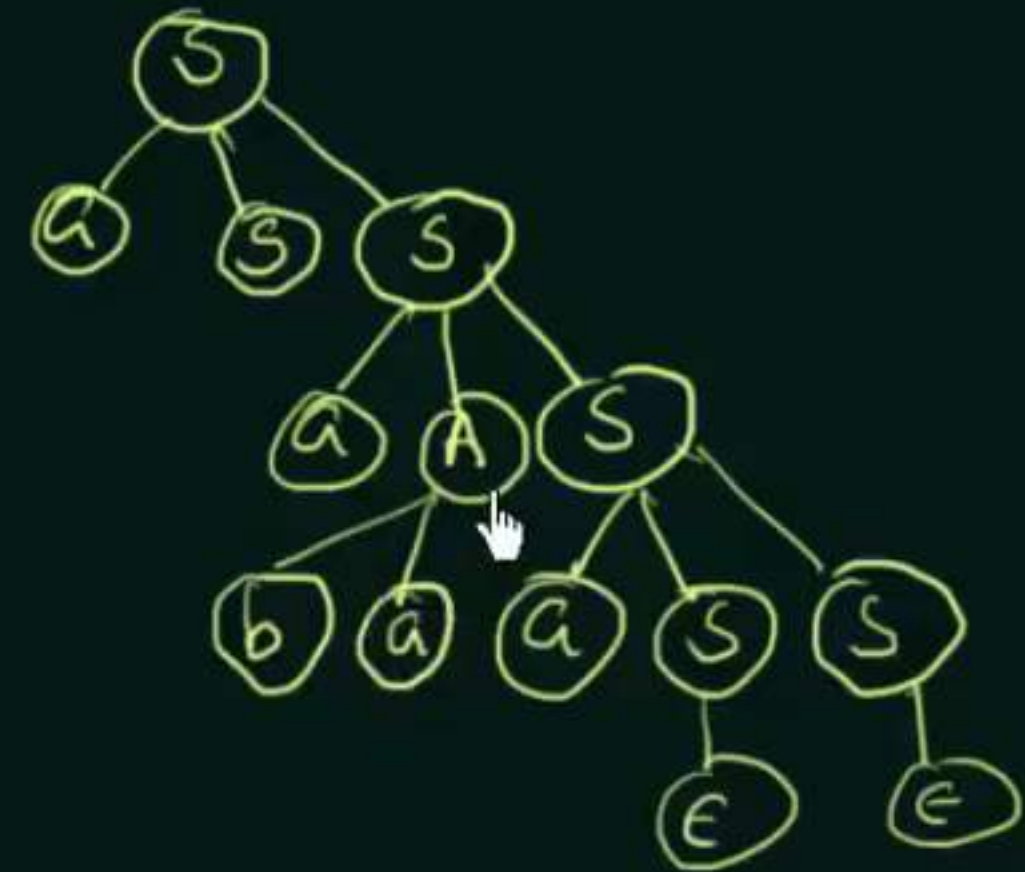
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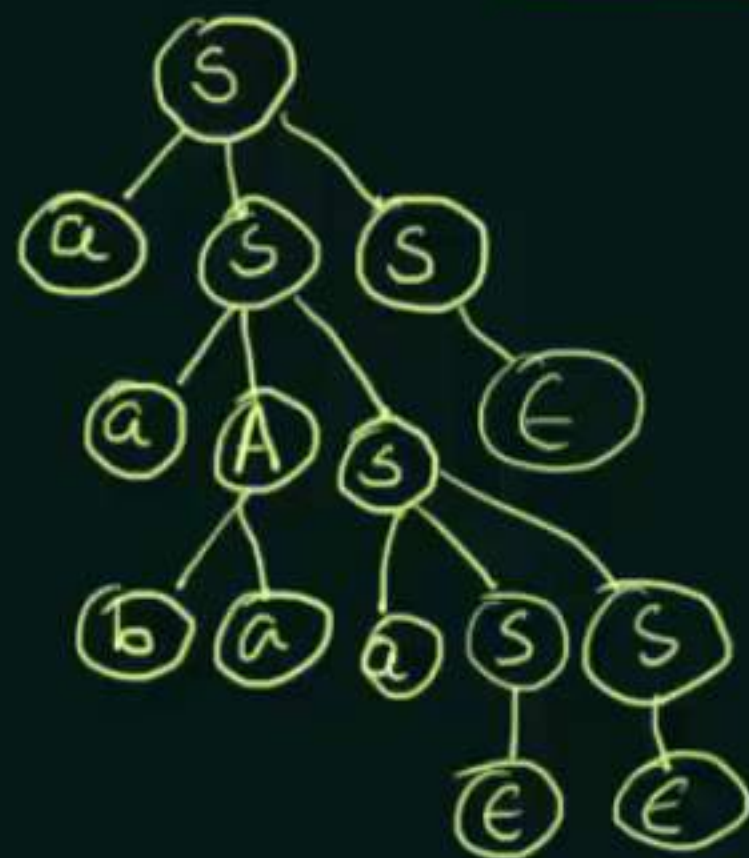
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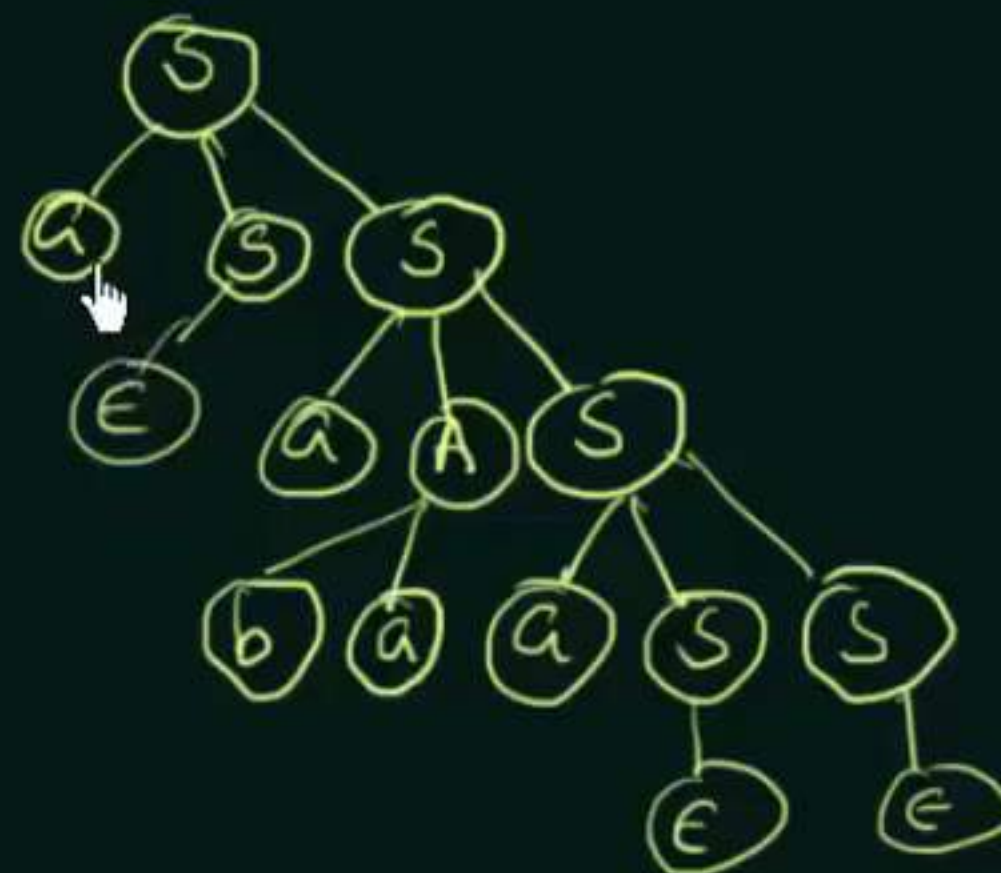
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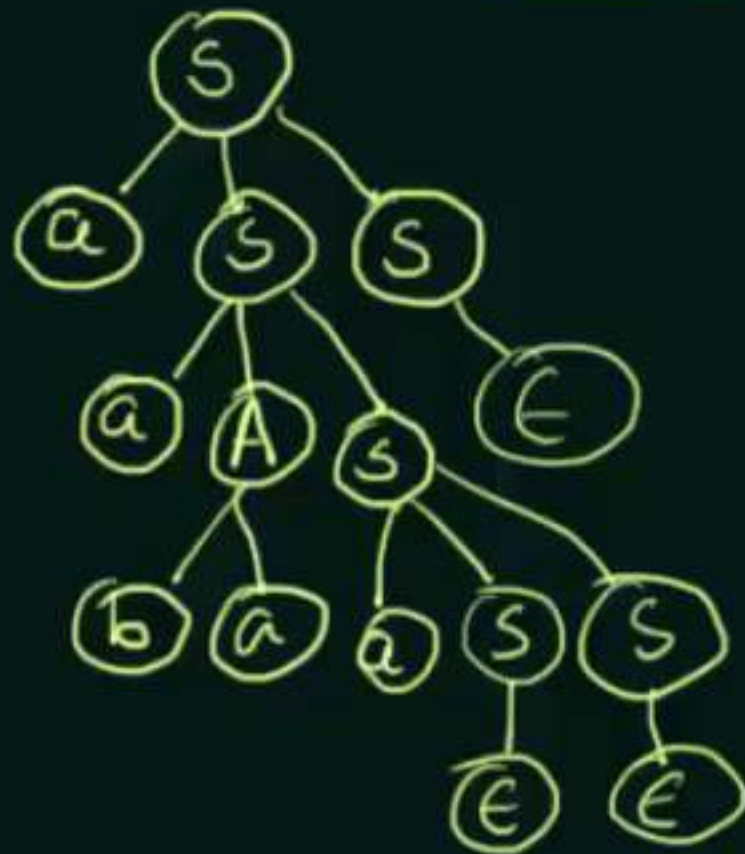
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