Wheeler graphs, part 2

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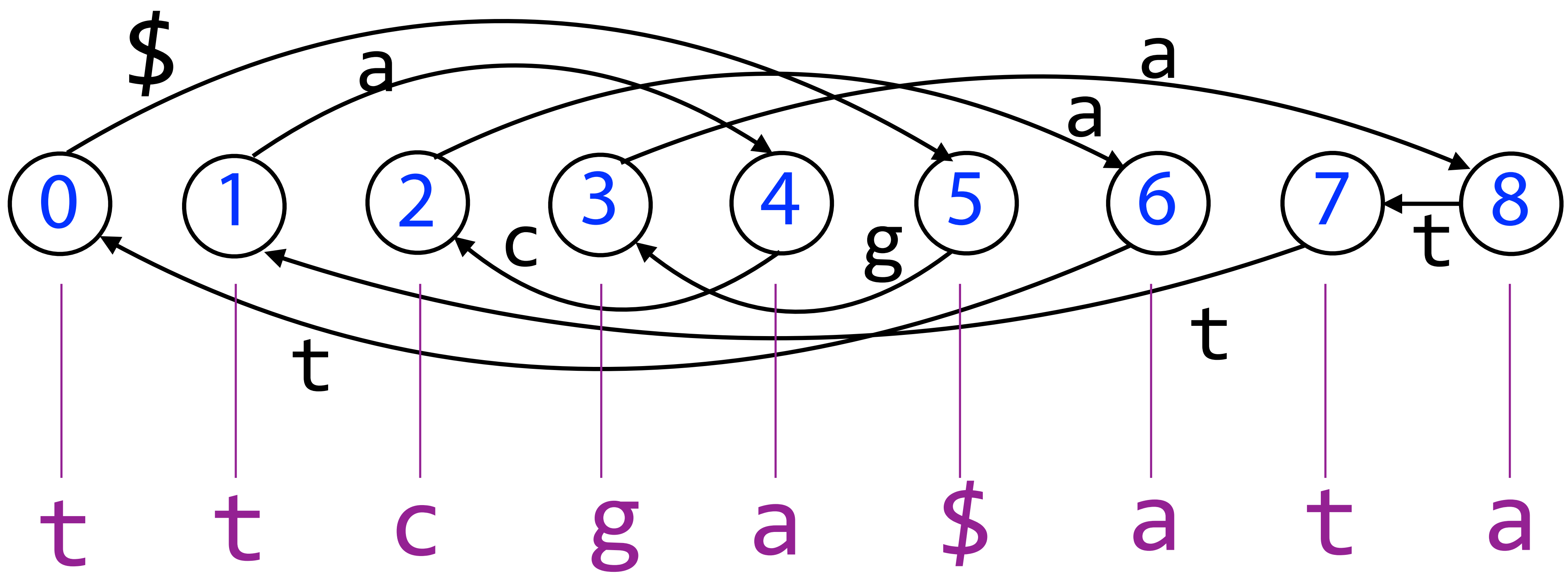
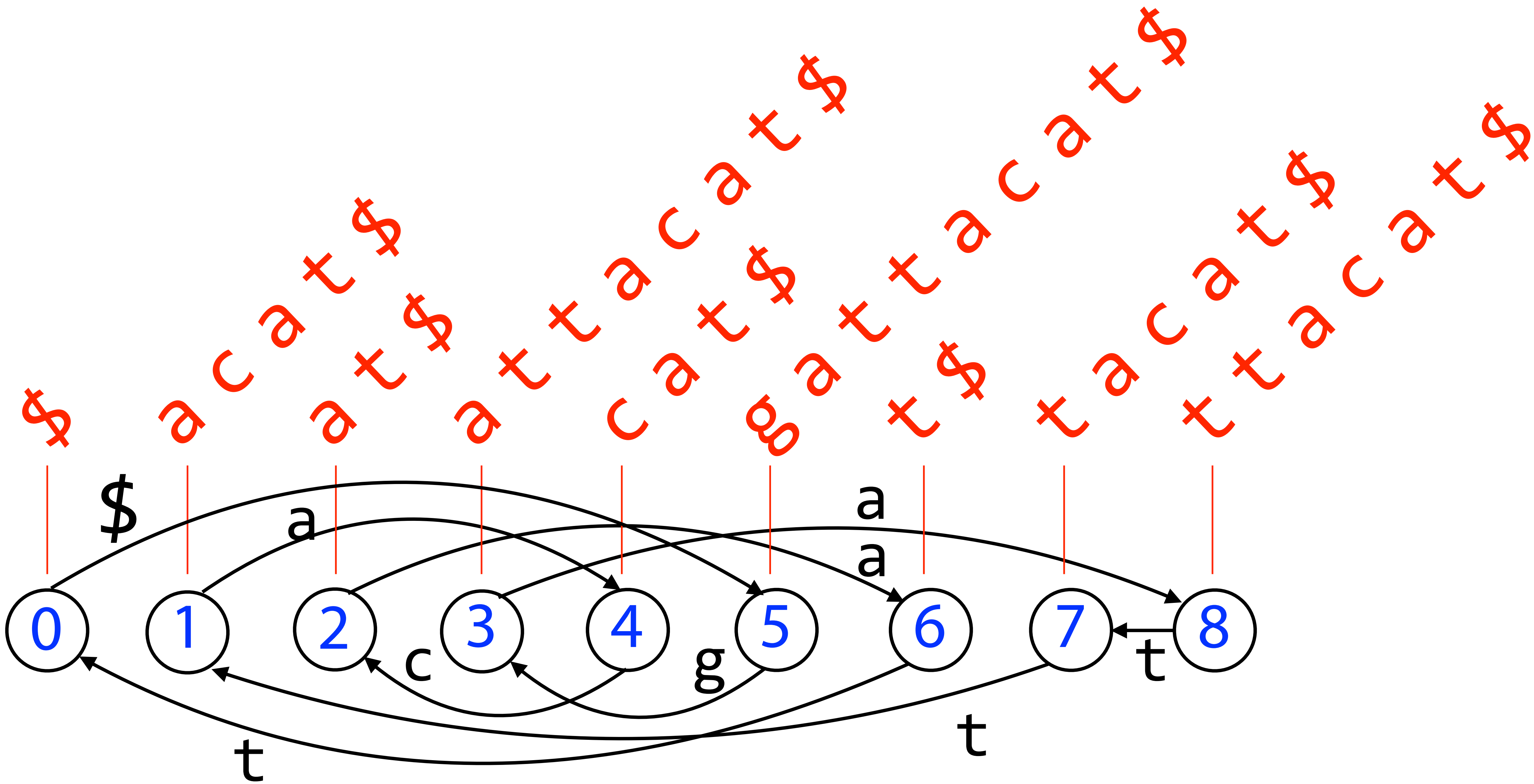
BW order

Nodes can be thought of according to what comes after (outgoing edges) and or just before (incoming)



Incoming edges spell out BWT

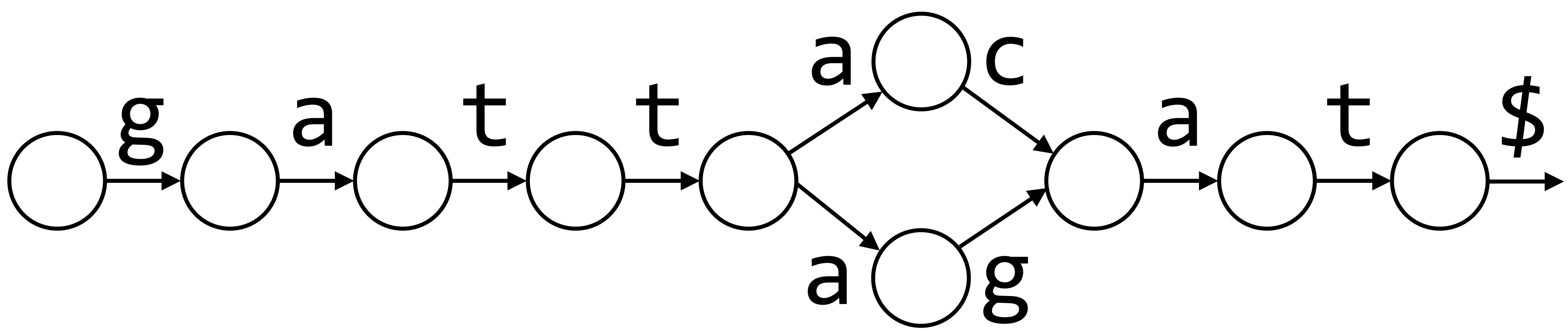
BW order



Outgoing paths spell out suffixes/rotations

BW order

Does our way of thinking about nodes still hold?



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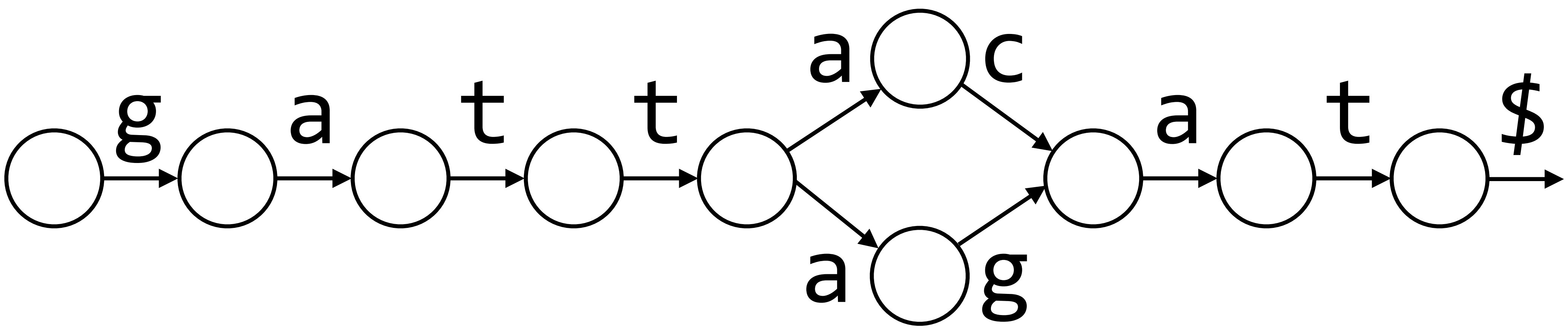

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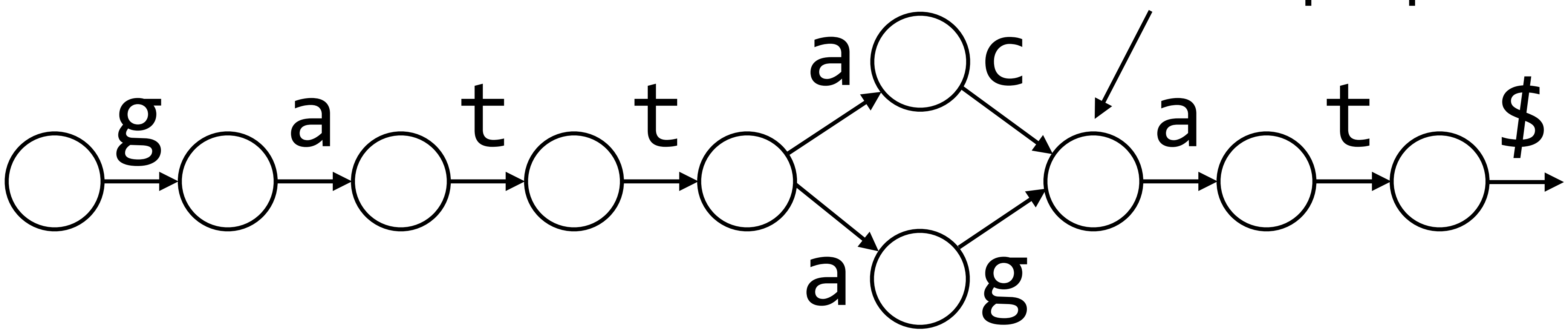
Nodes can have multiple predecessors



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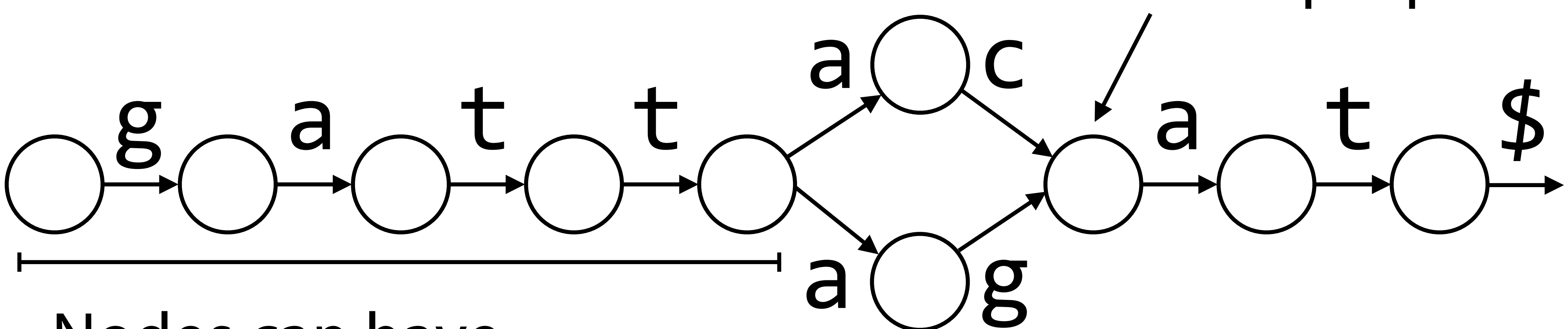

Nodes can have multiple suffixes leading out from them

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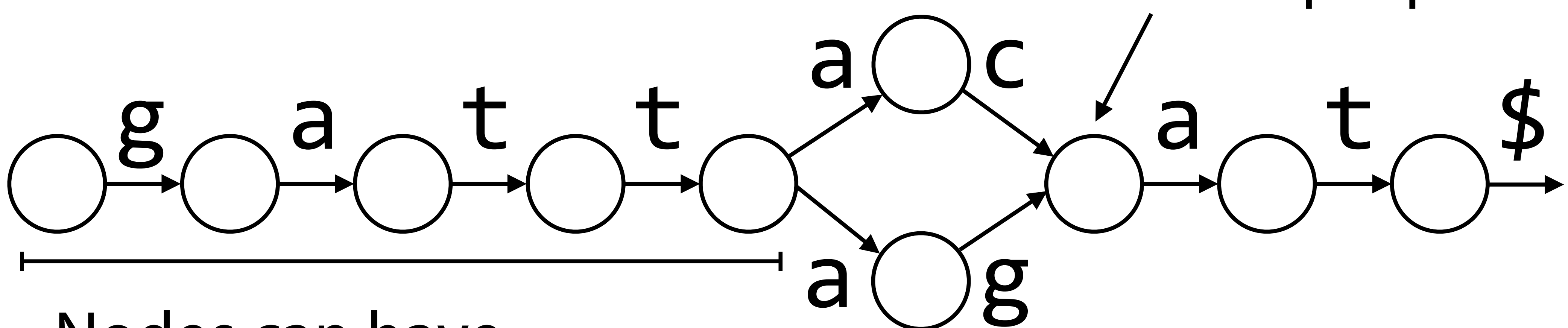
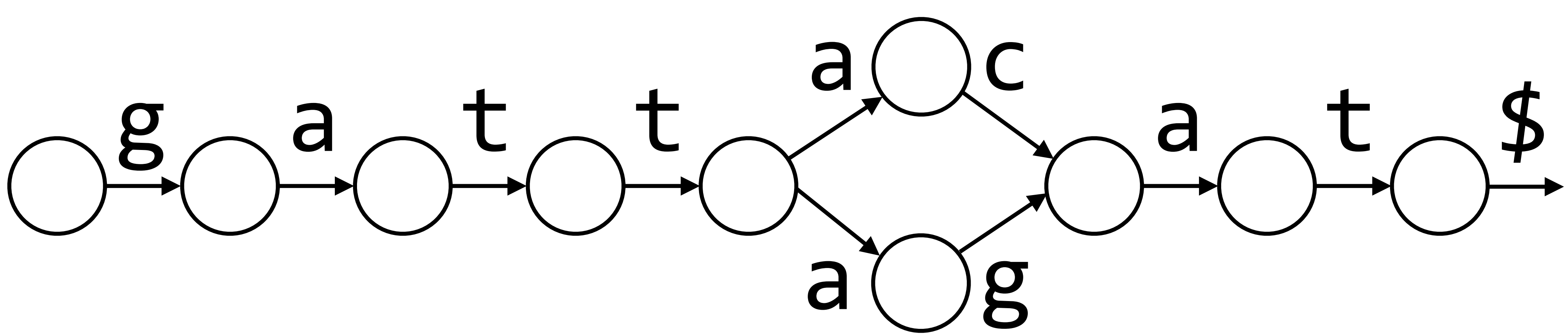


Nodes can have multiple suffixes leading out from them

Can we salvage **BW order**?

BW order

Might there still be a total order over outgoing suffixes, even when there's >1 per node?



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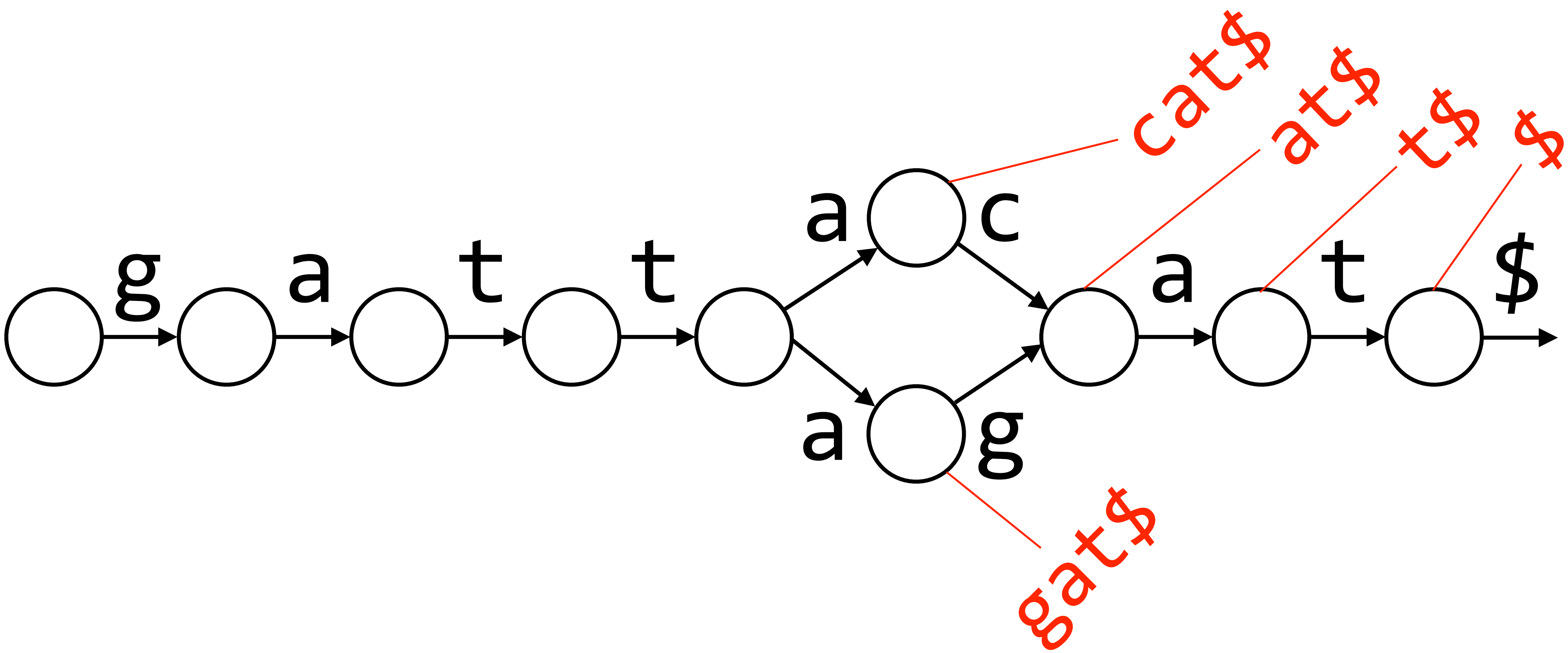

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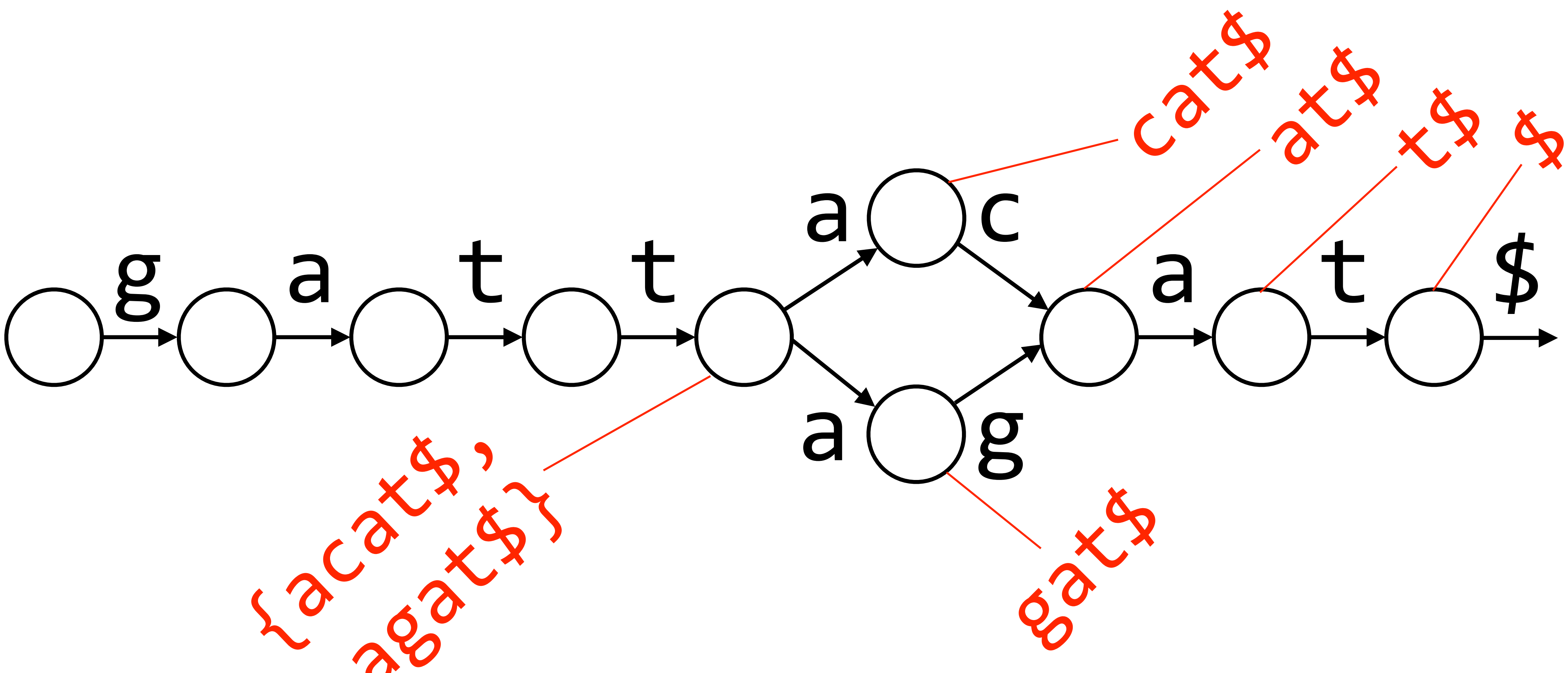

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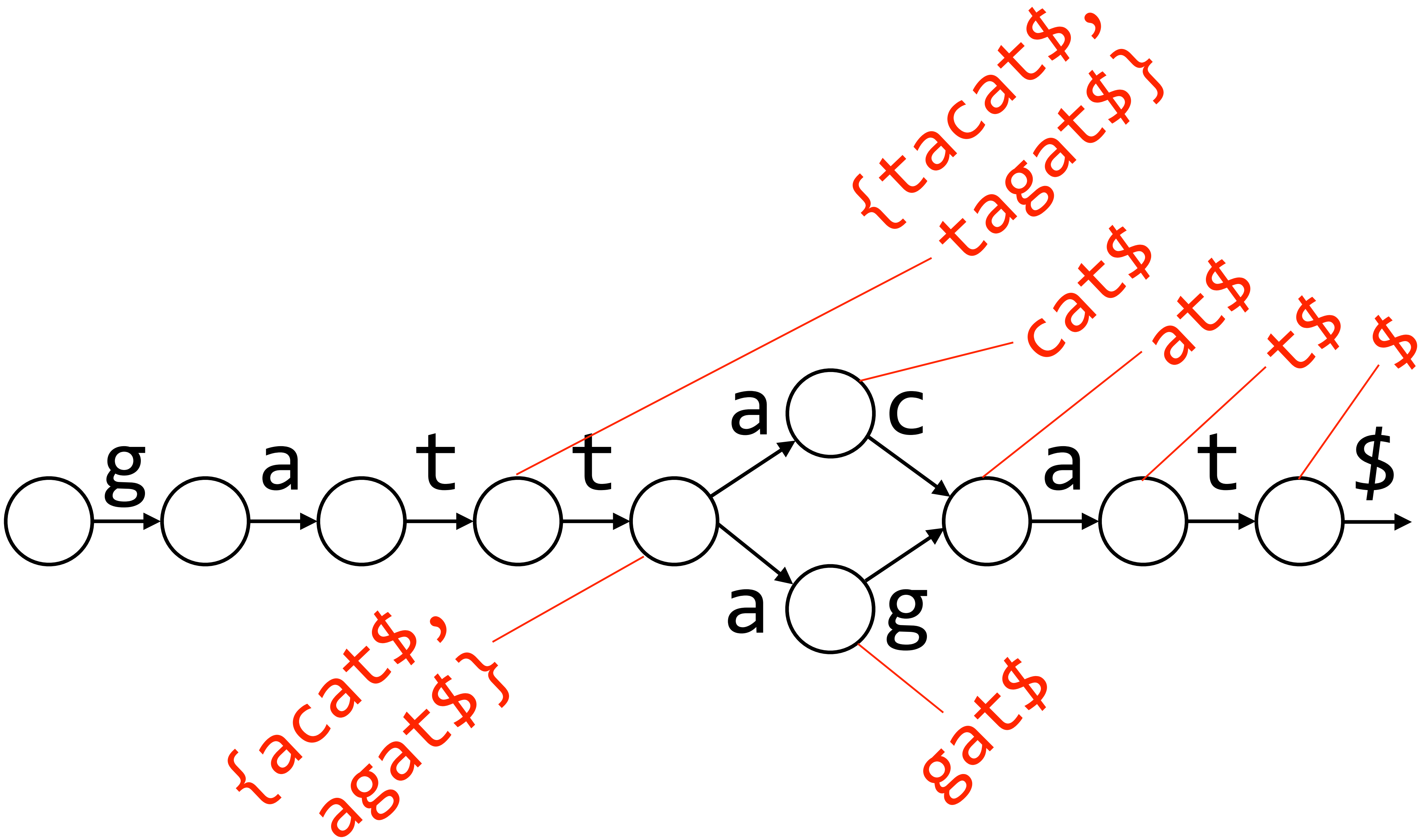

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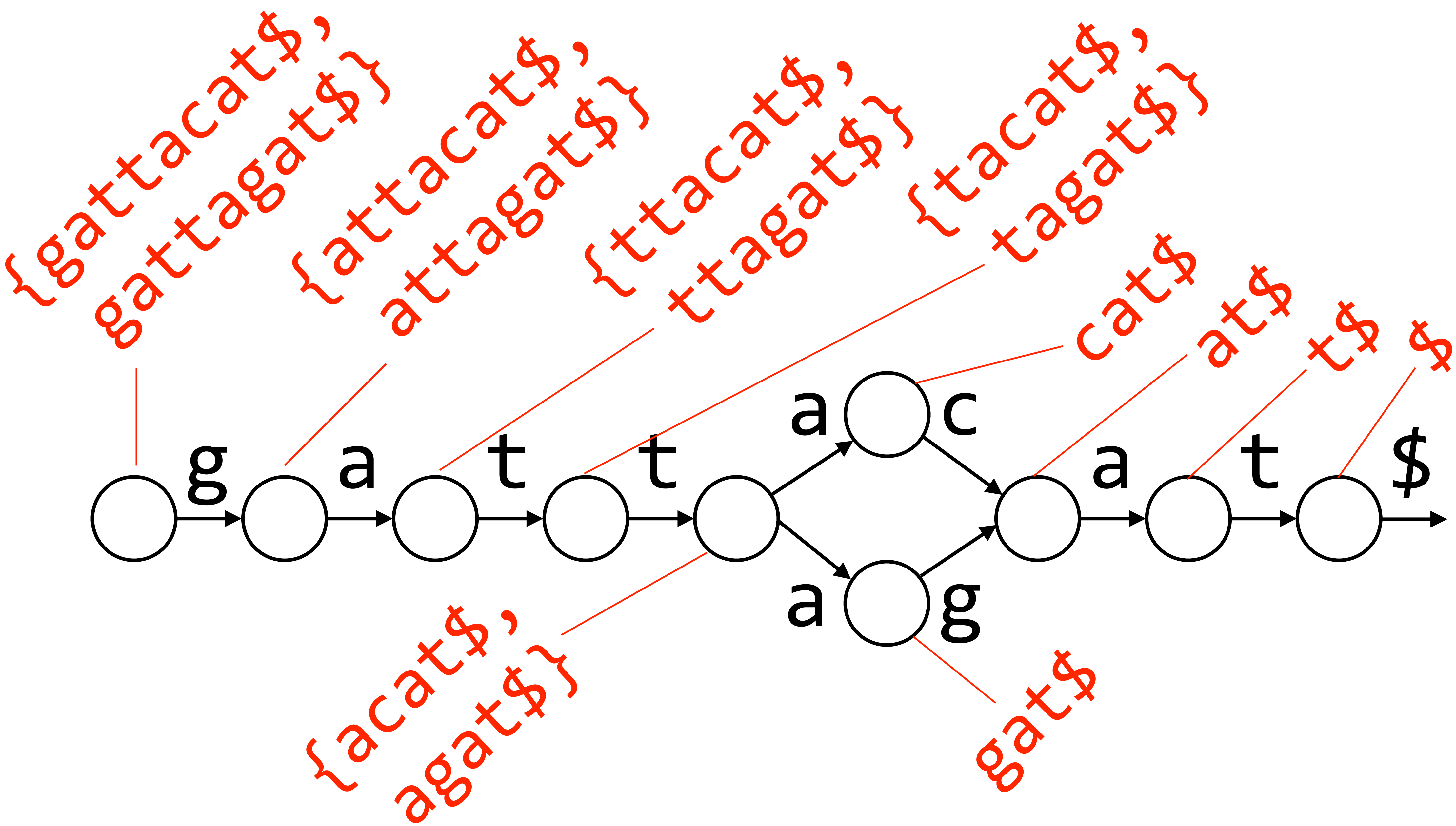

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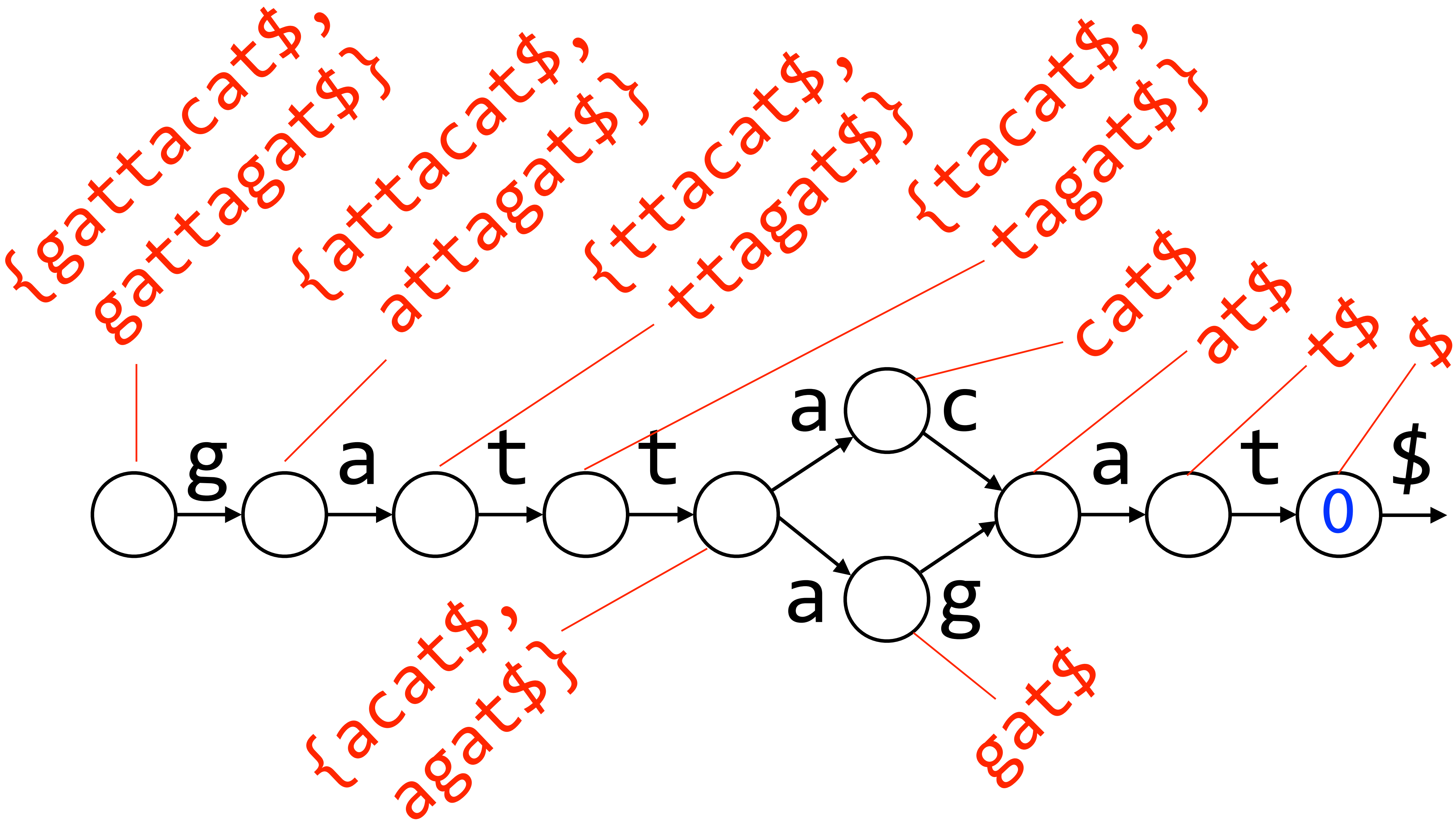

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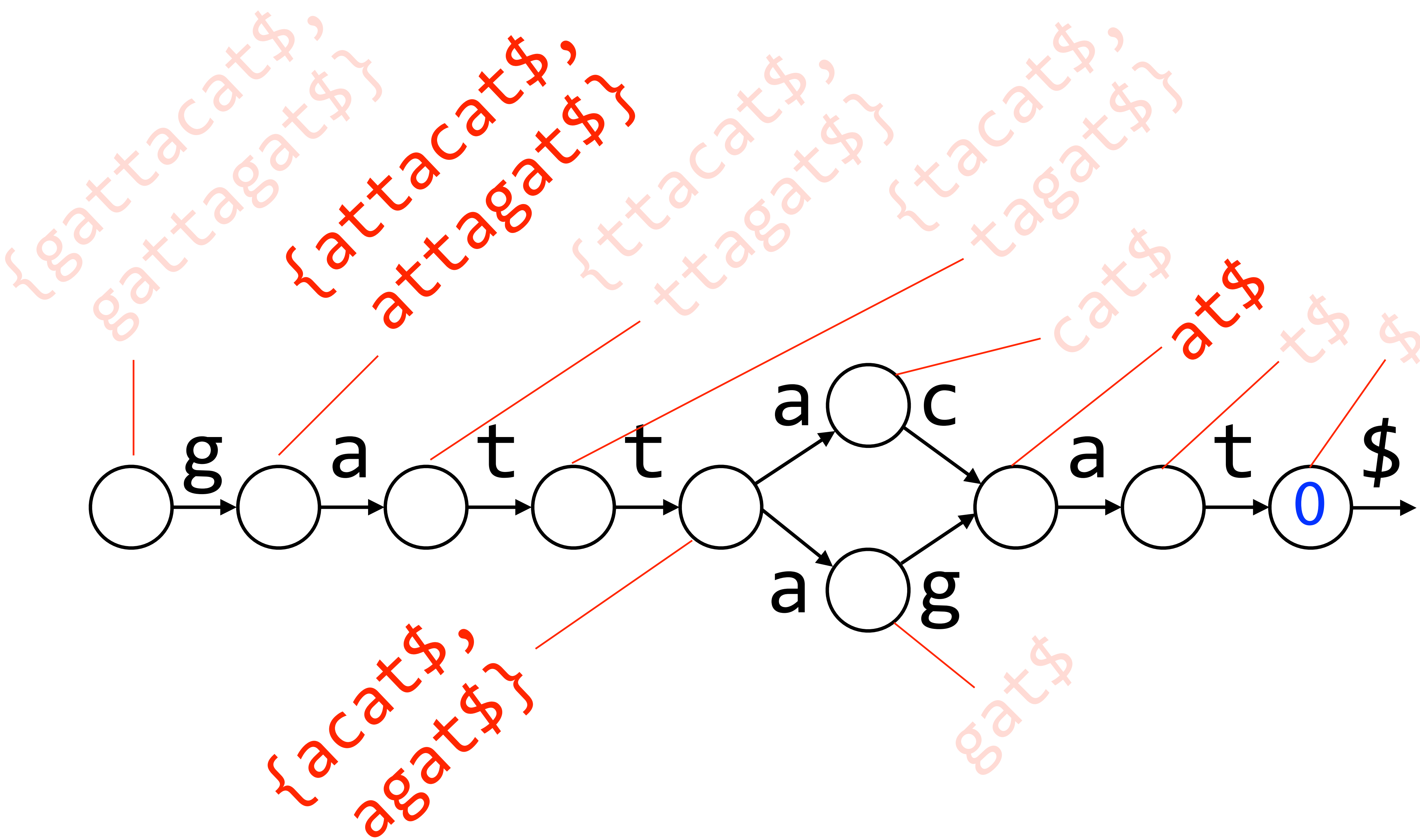

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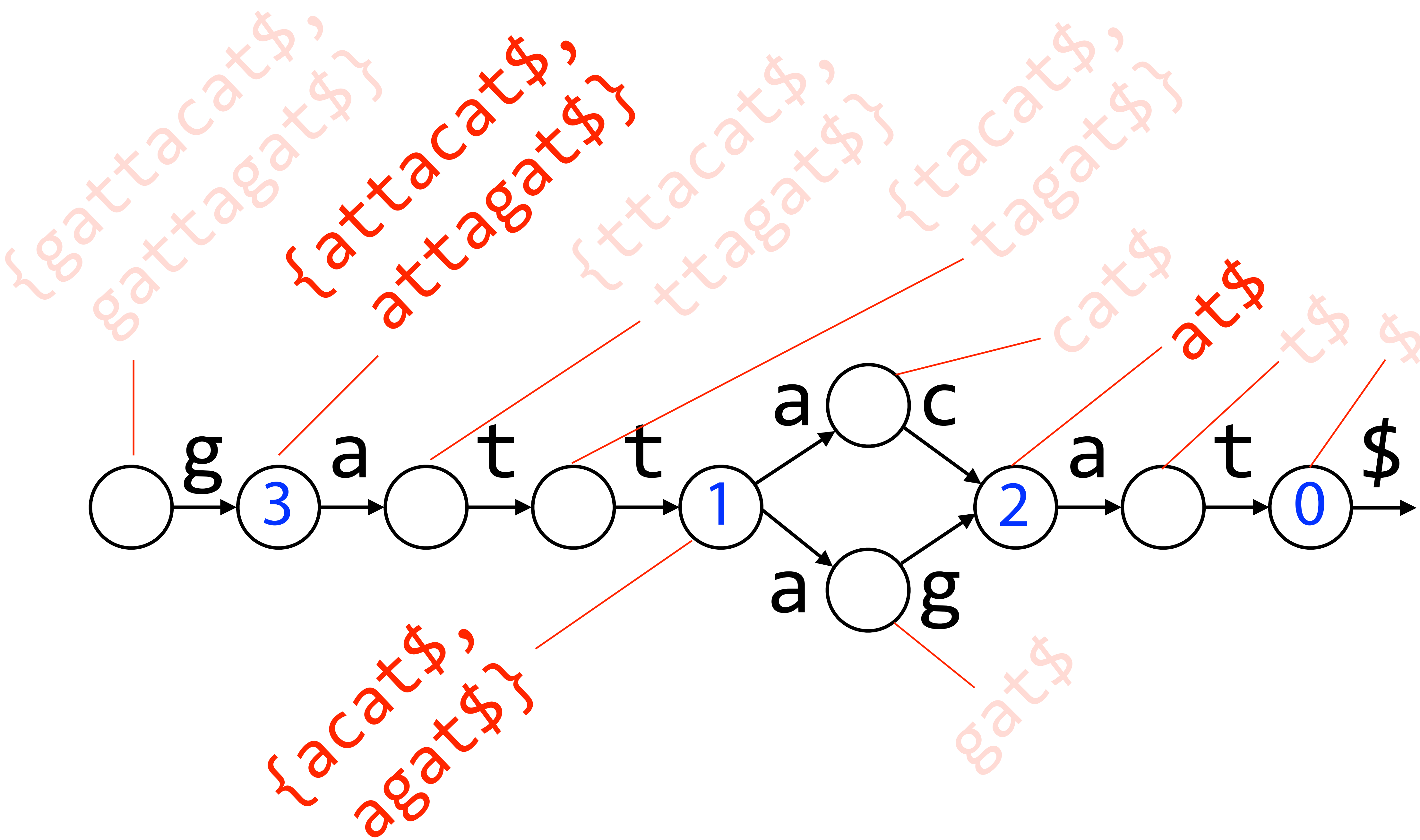

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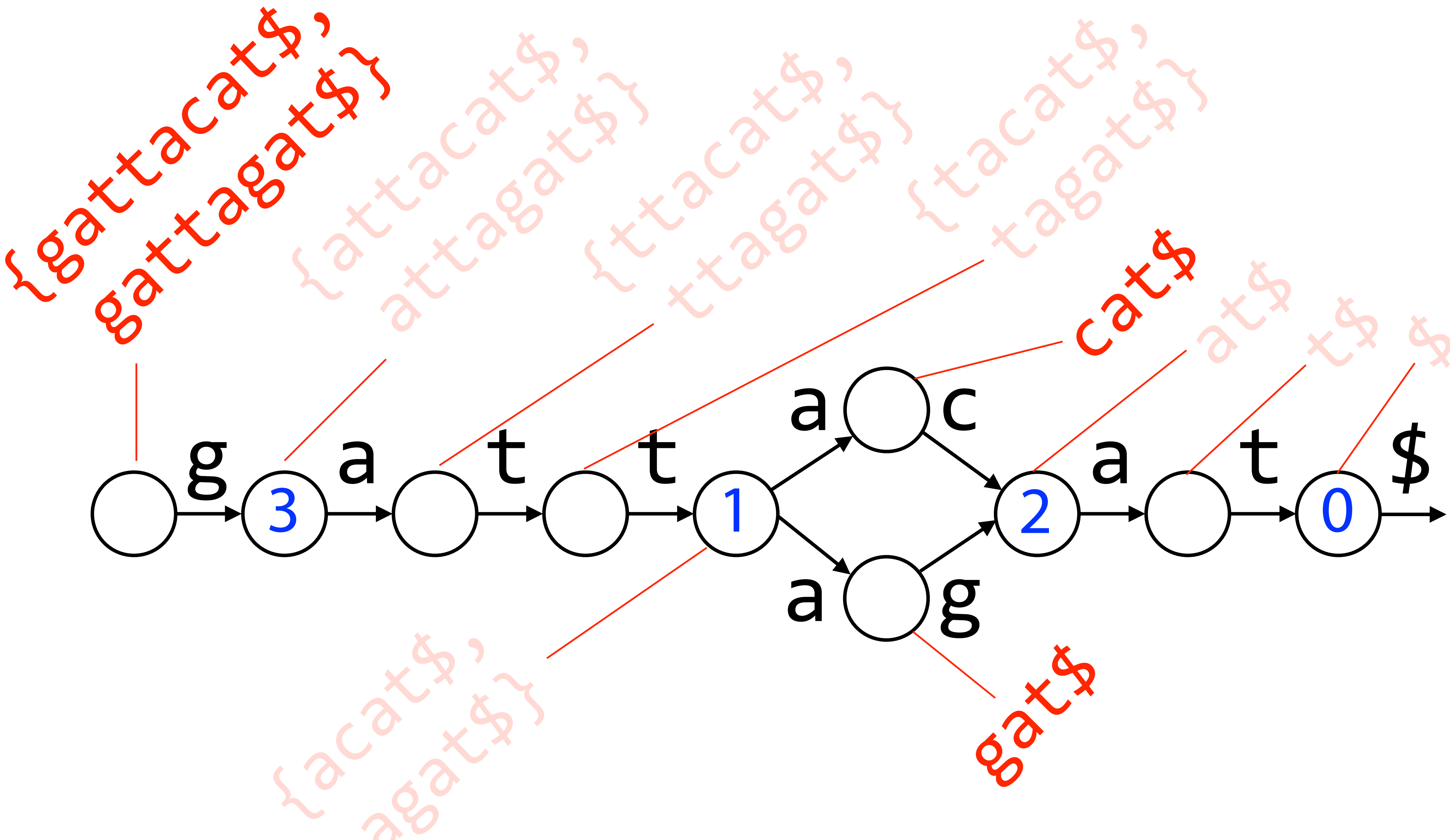

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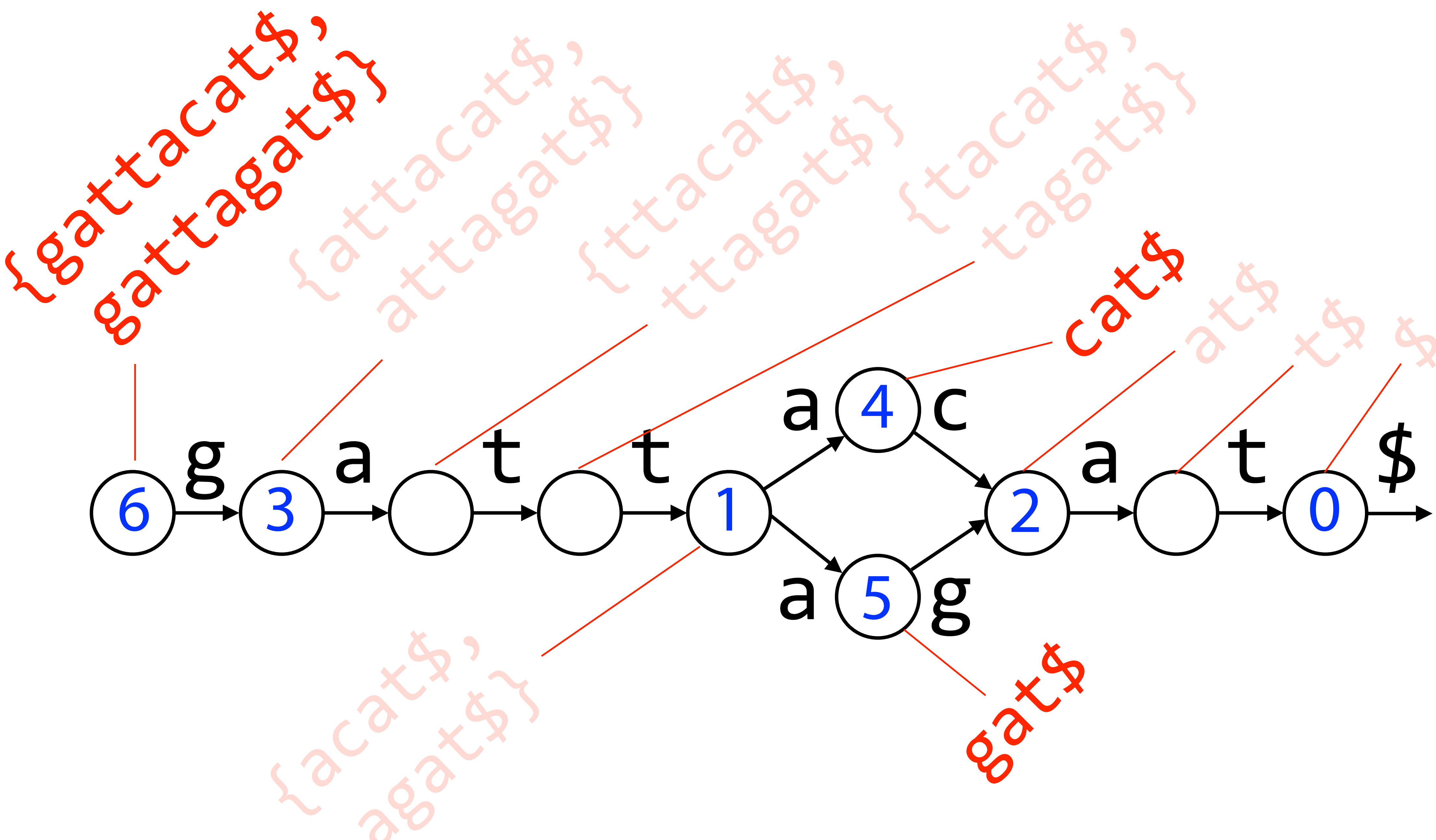

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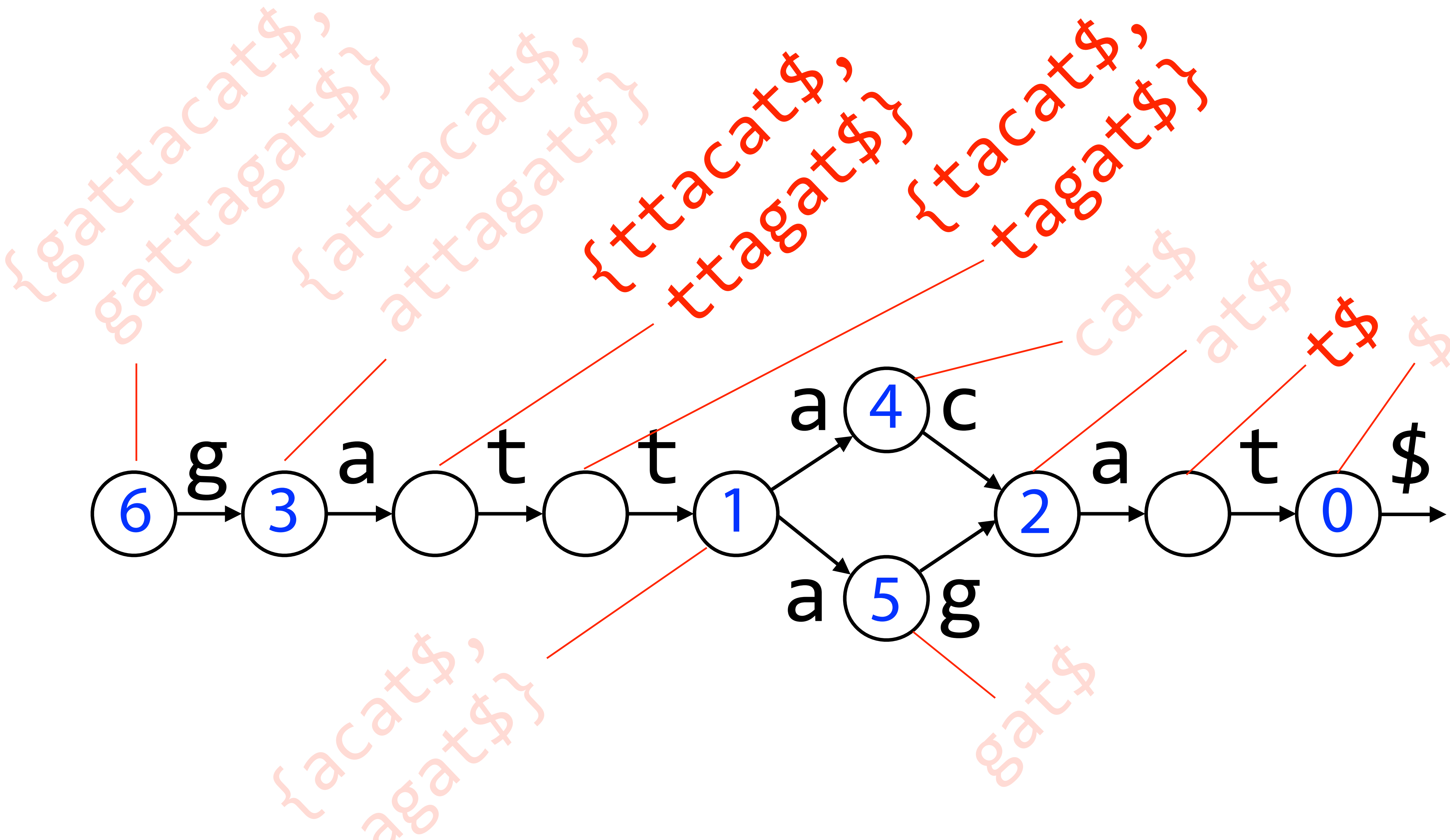

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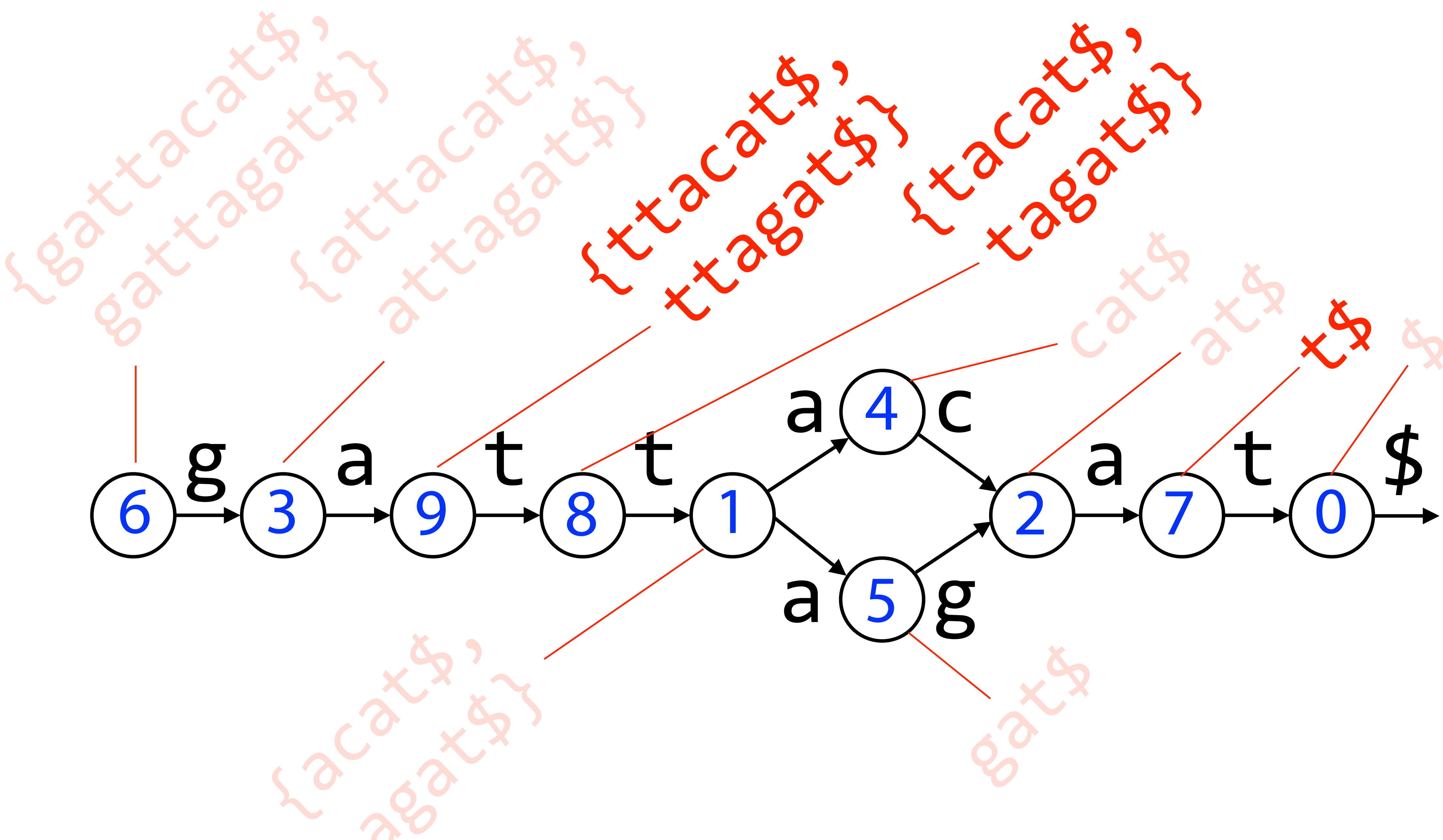
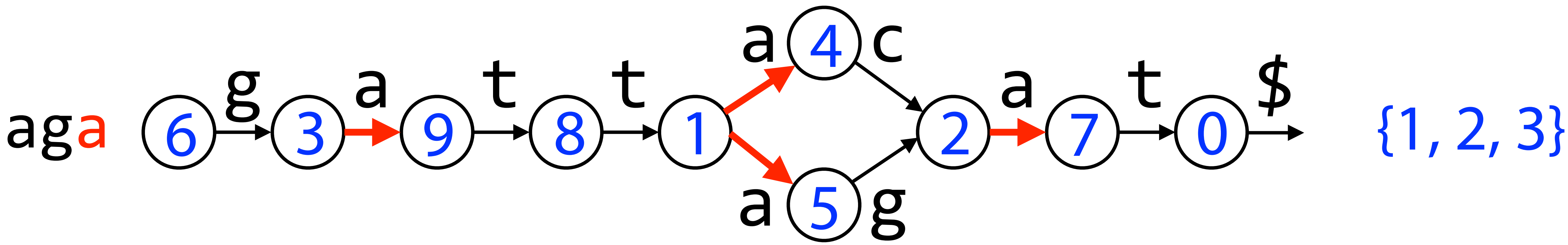


BW order

Graph has something like a BW order!

Matching aga, we still have consecutivity.



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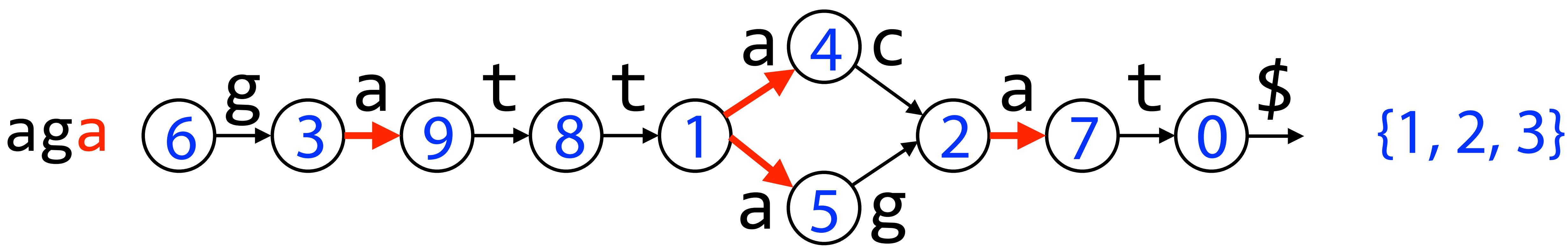

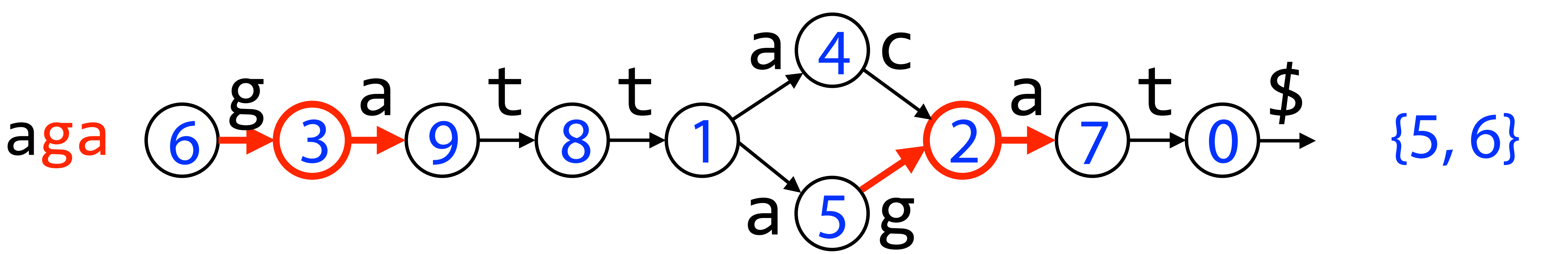

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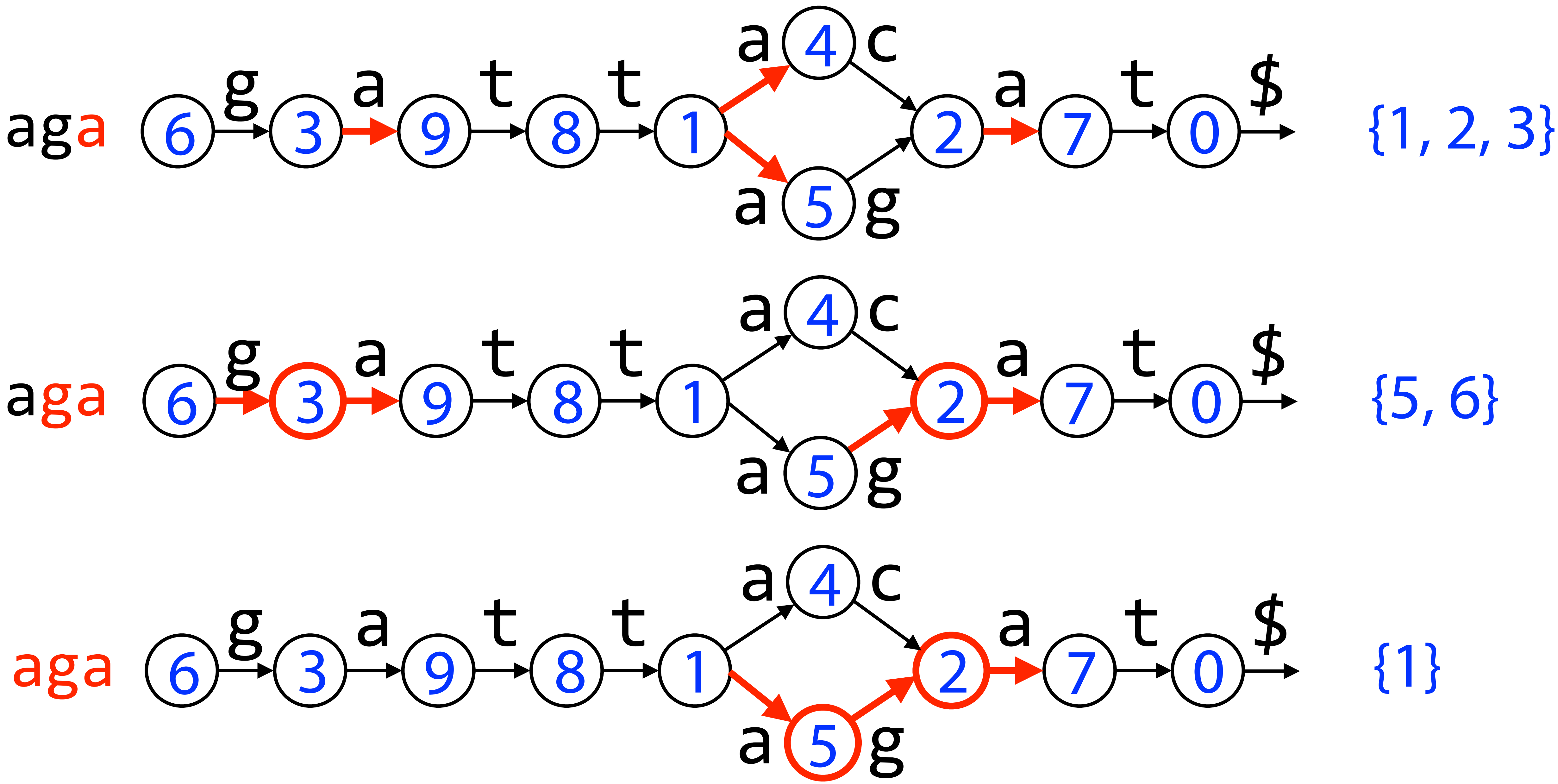
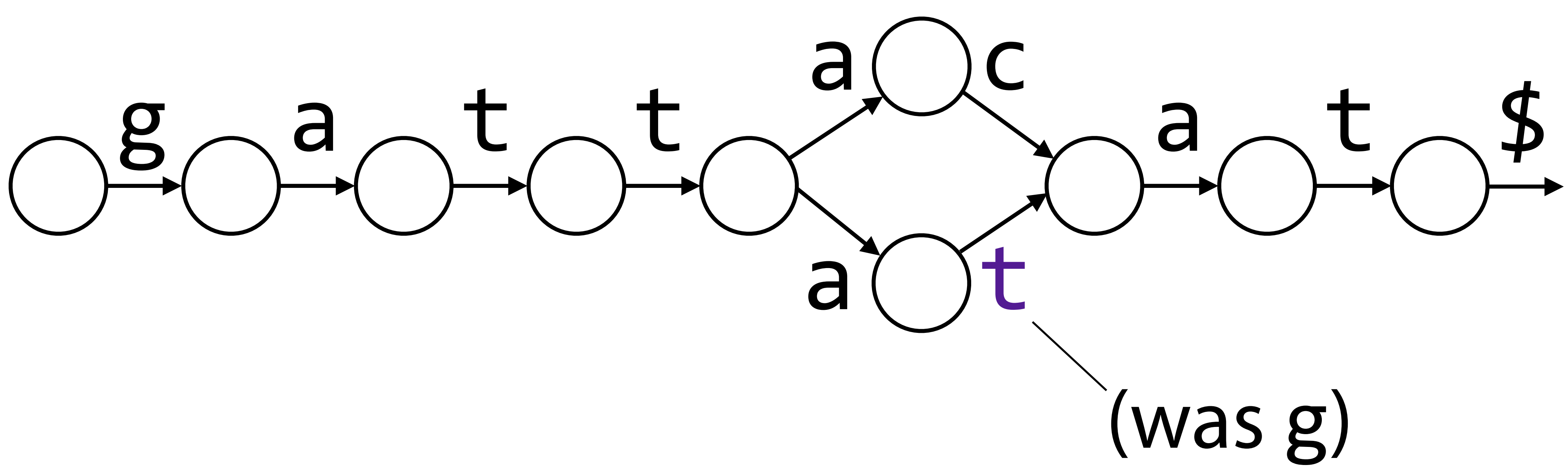


BW order

Does it work for every graph?



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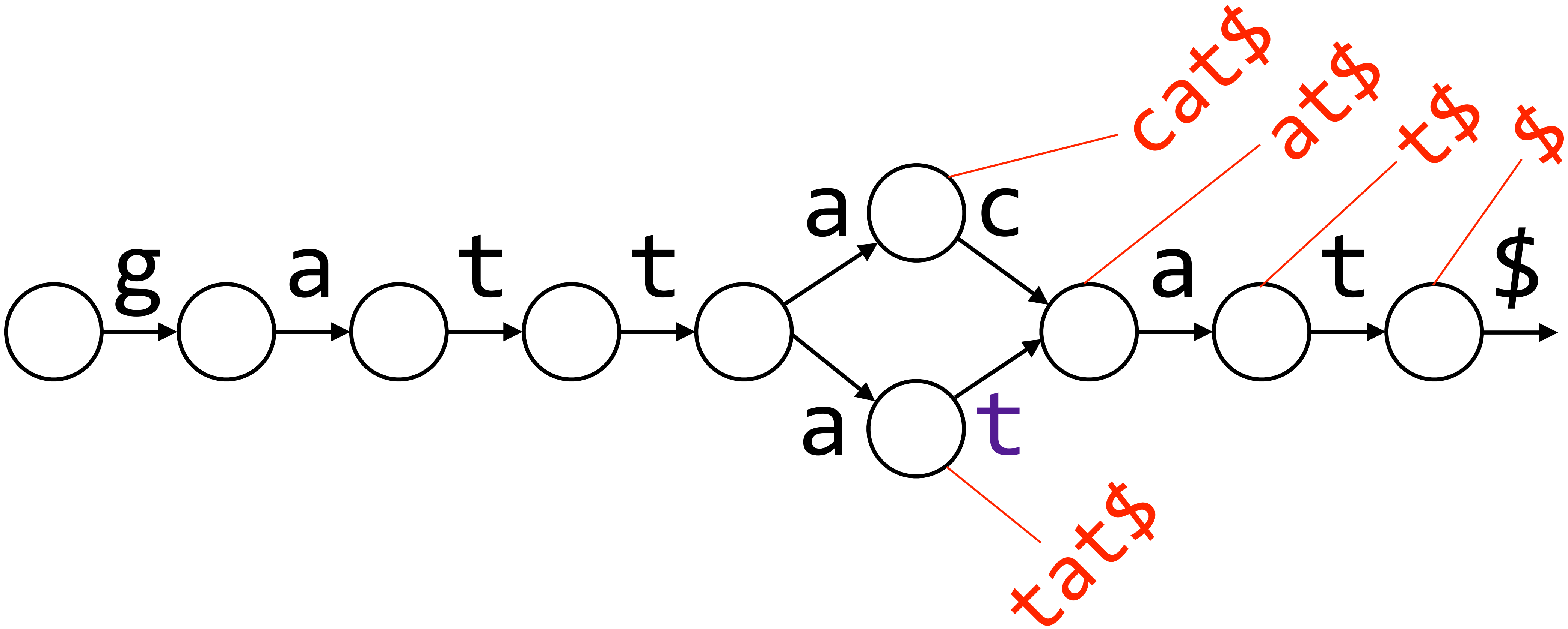

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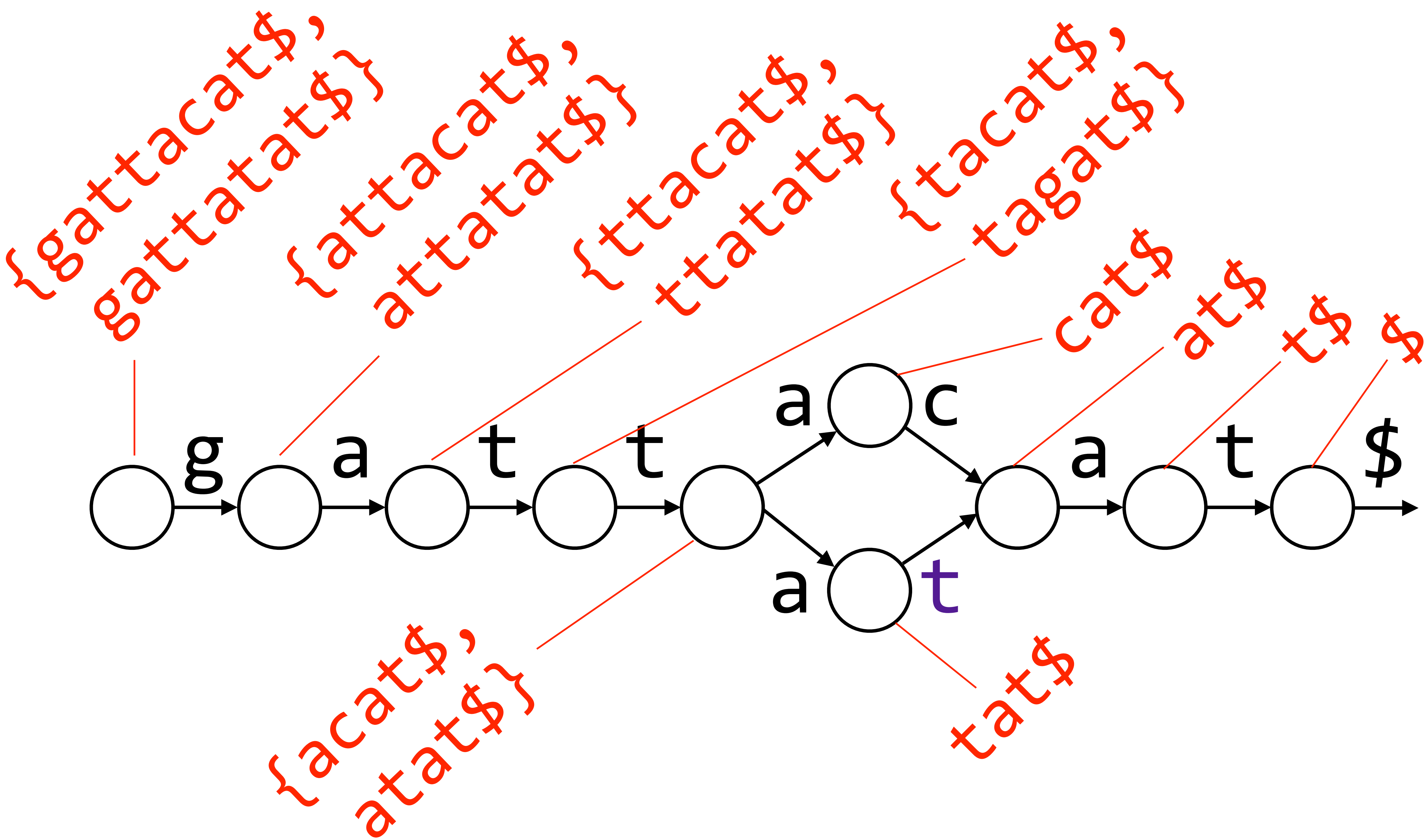

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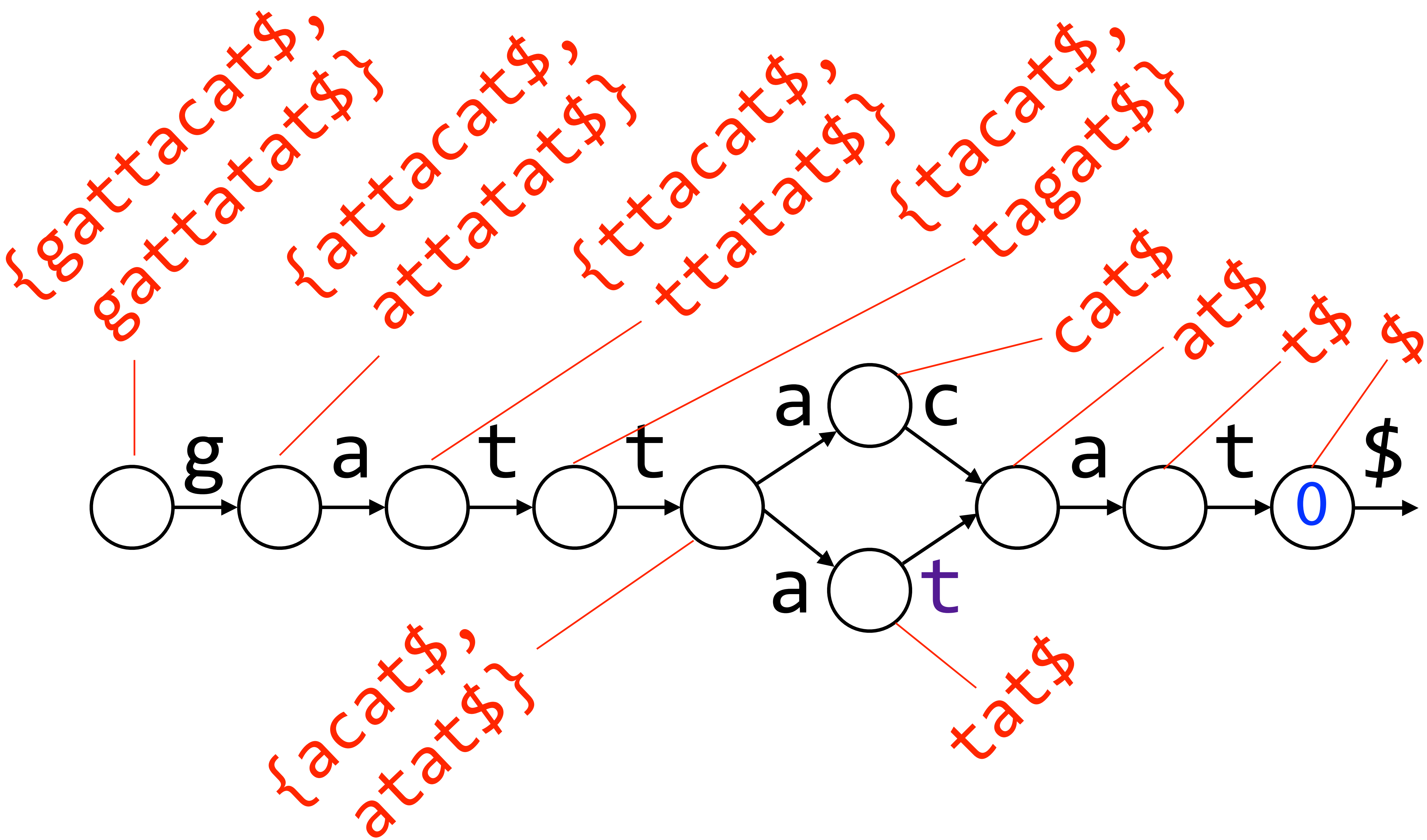

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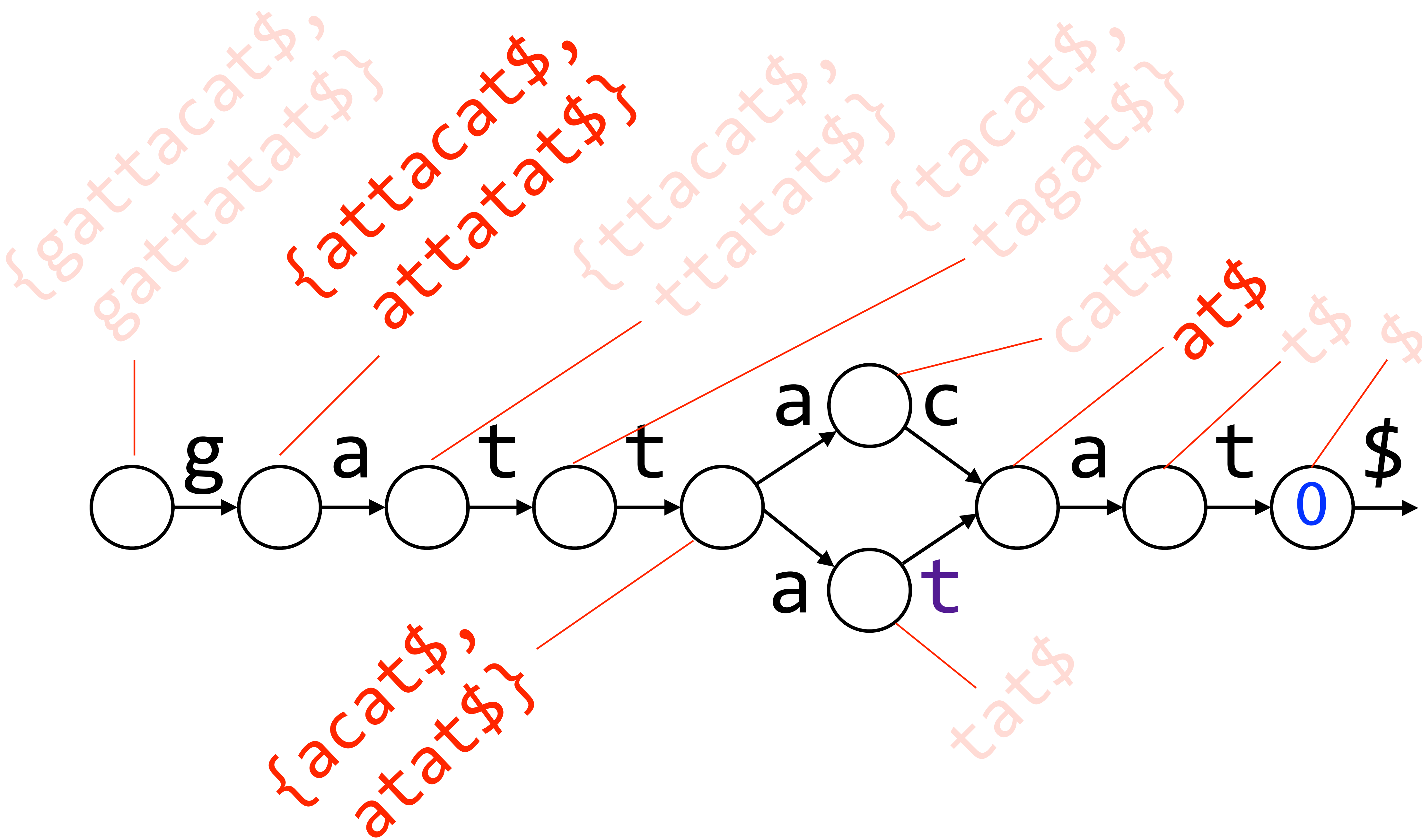

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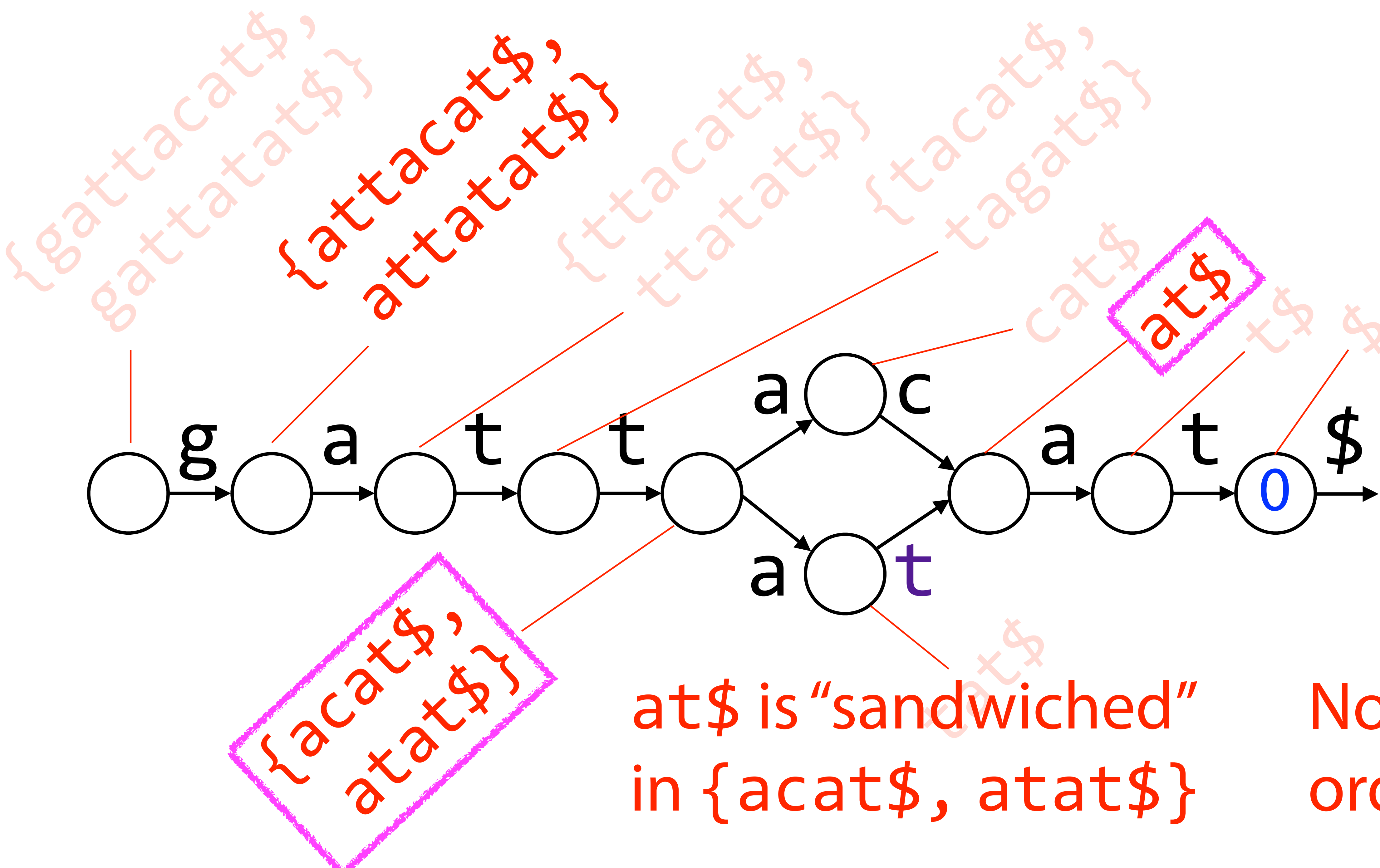
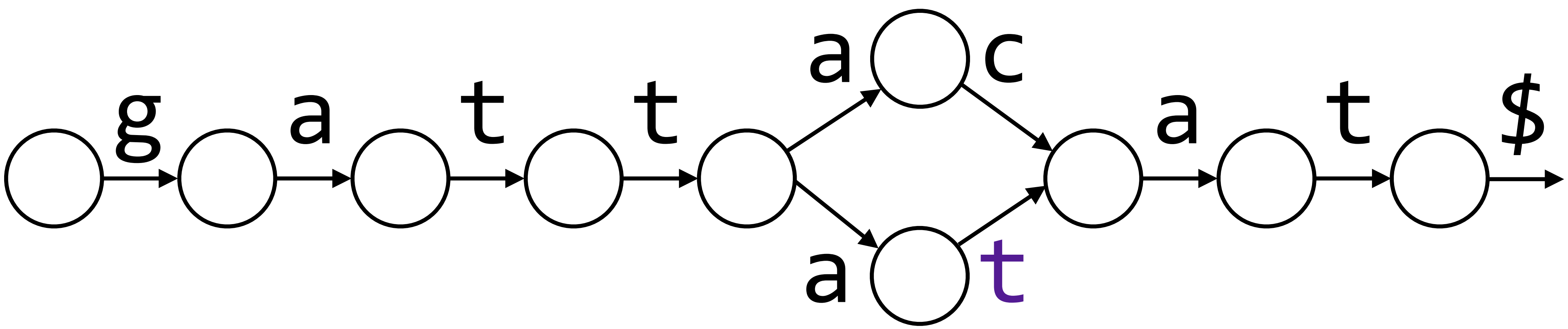


at$ is "sandwiched" in {acat$, atat$}

No total order!

BW order

Can we fix it?



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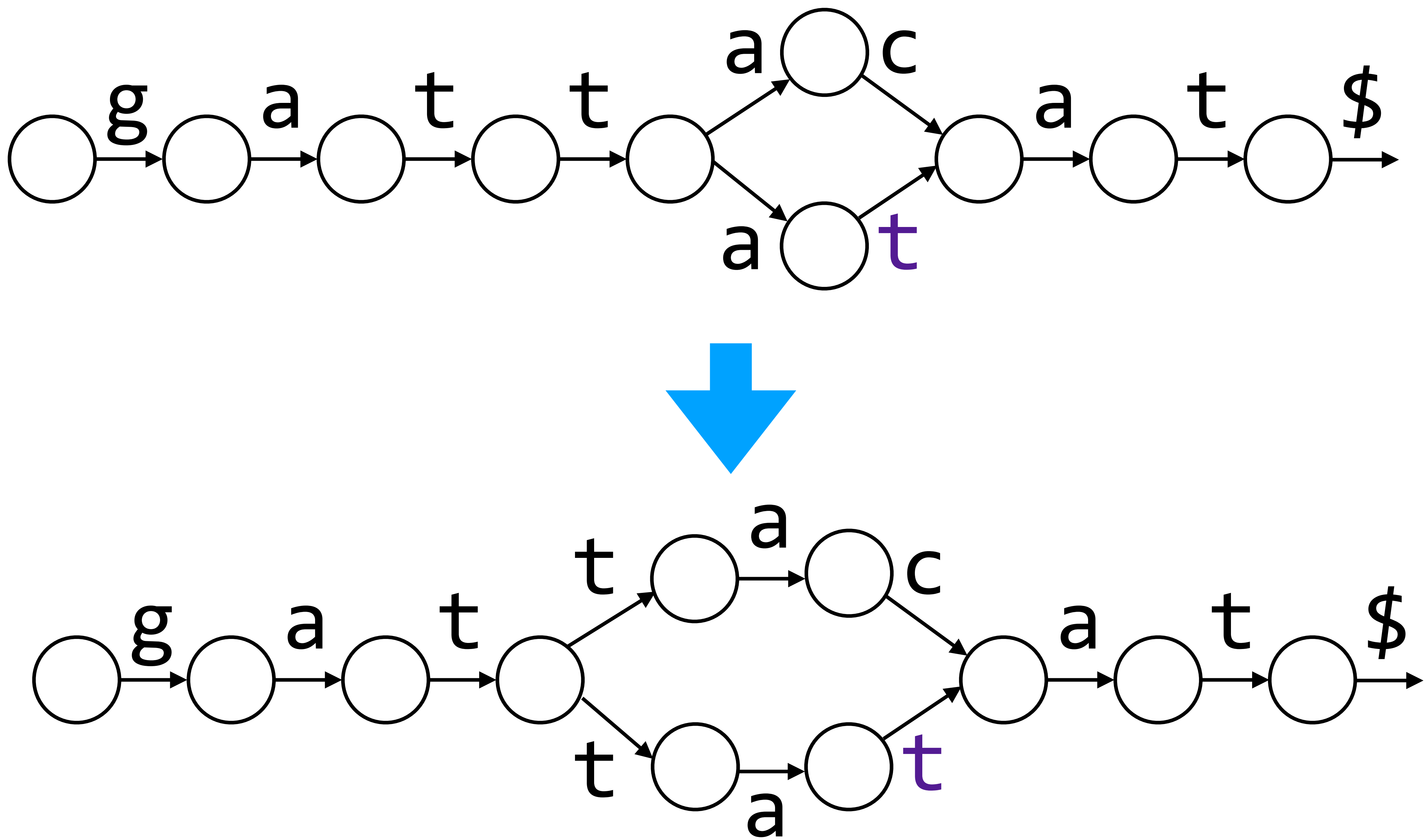

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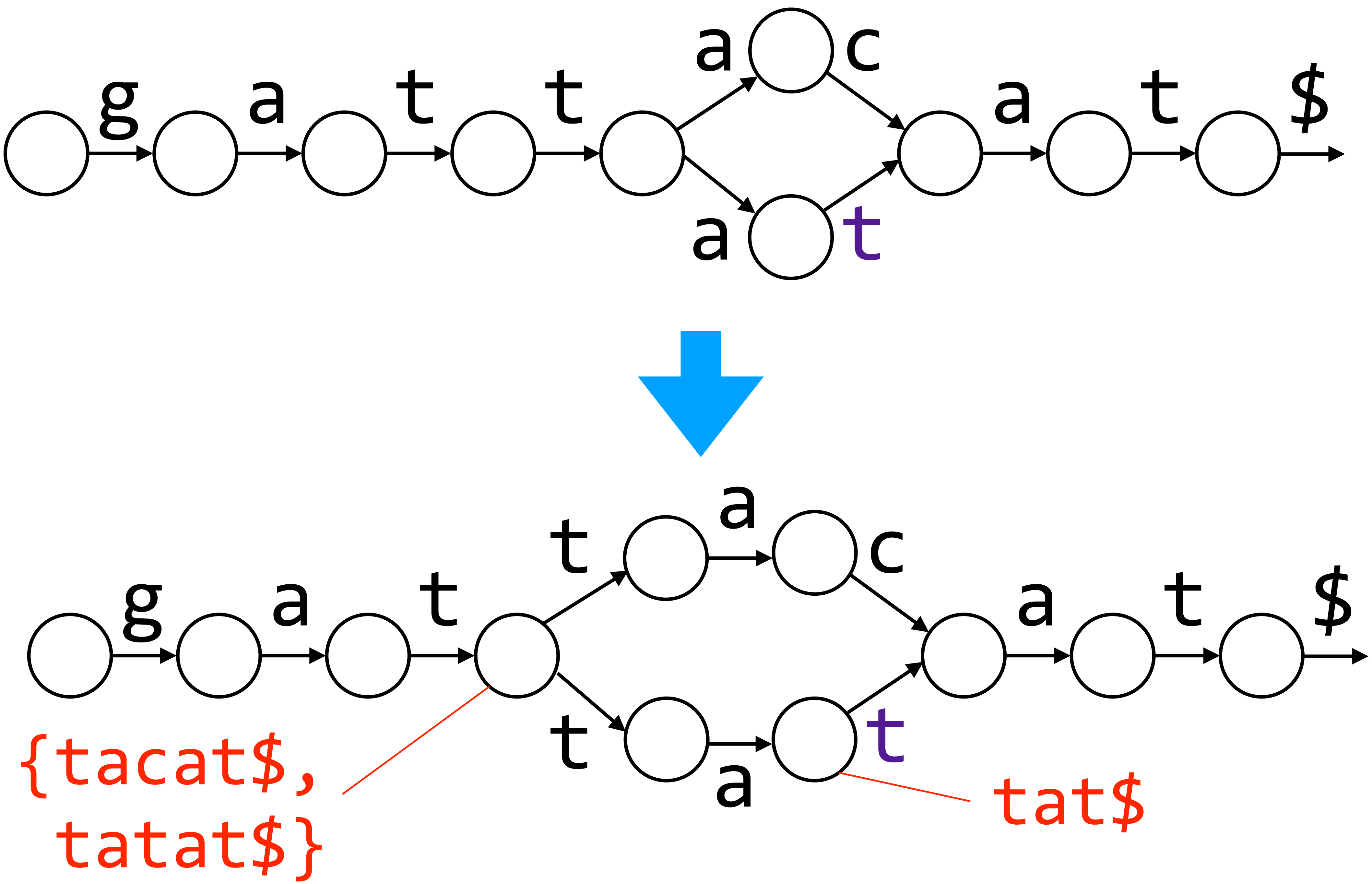

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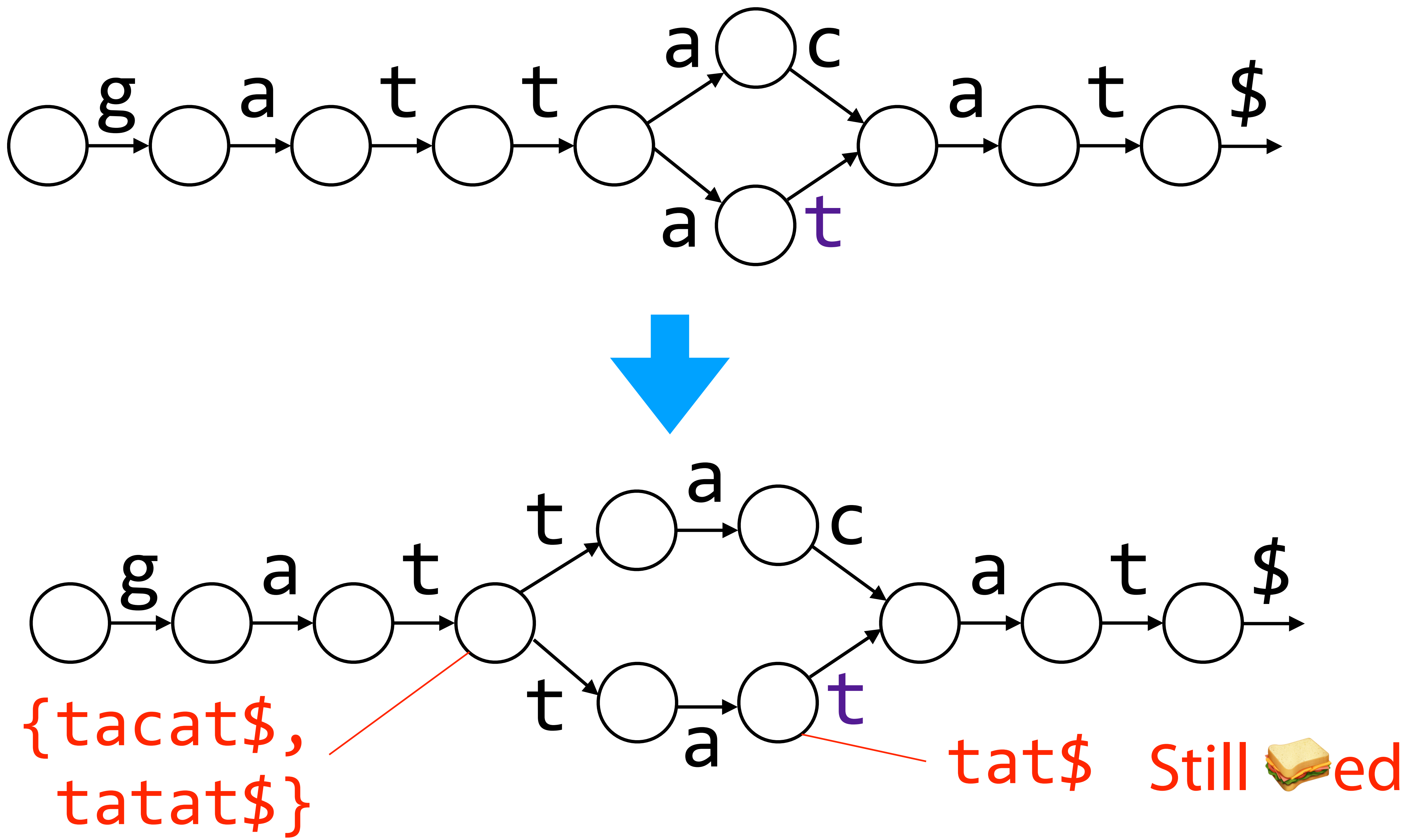

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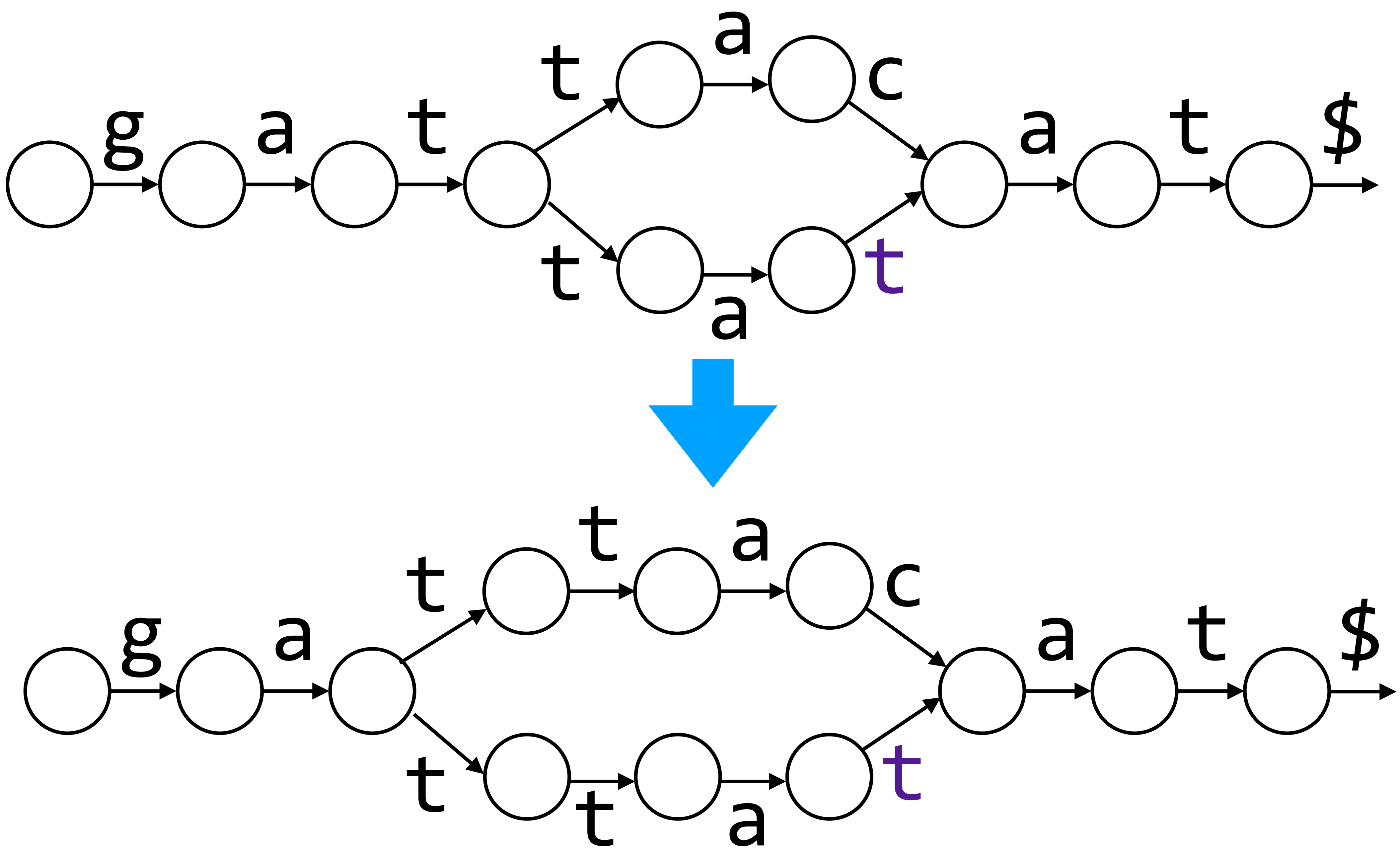

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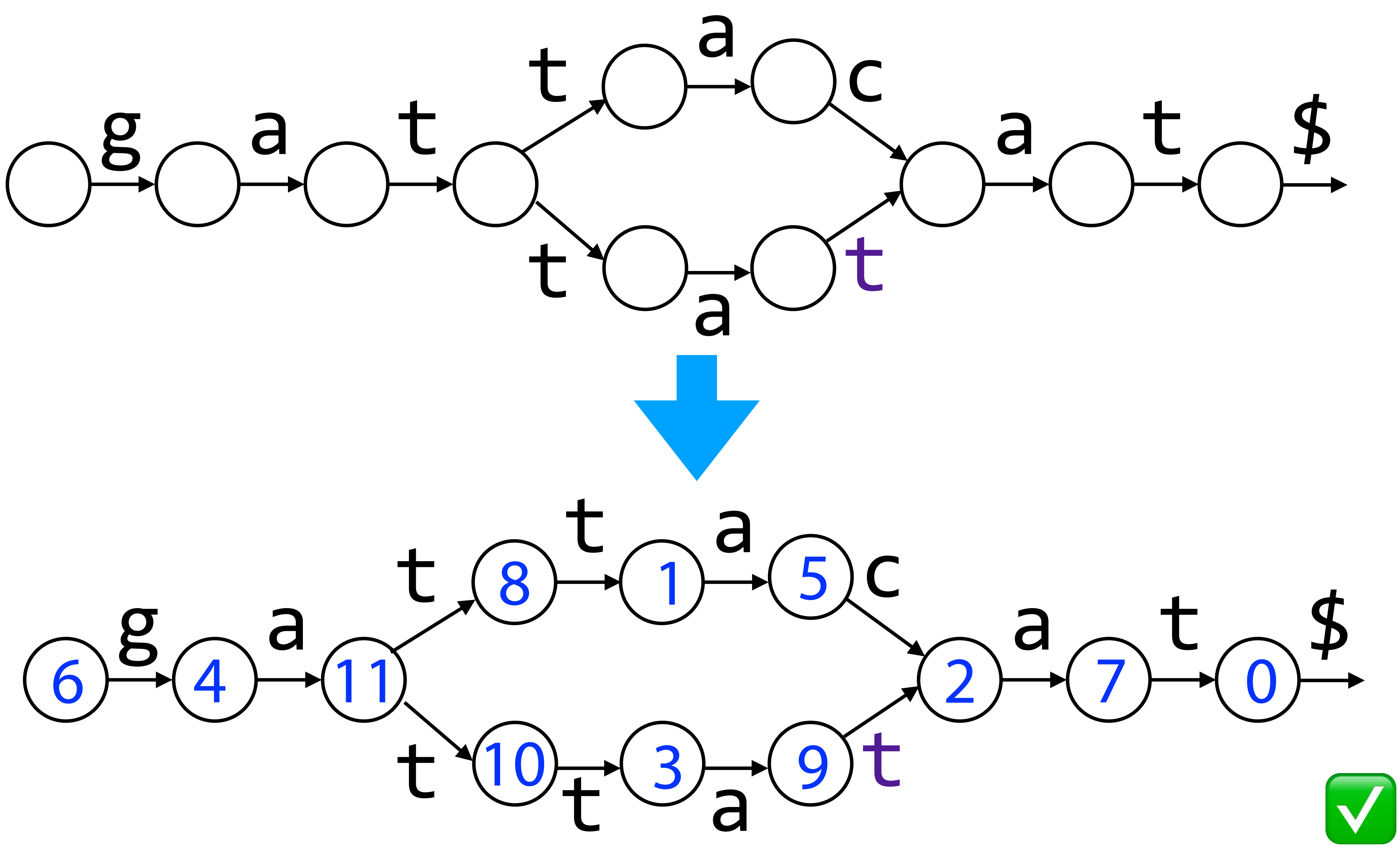
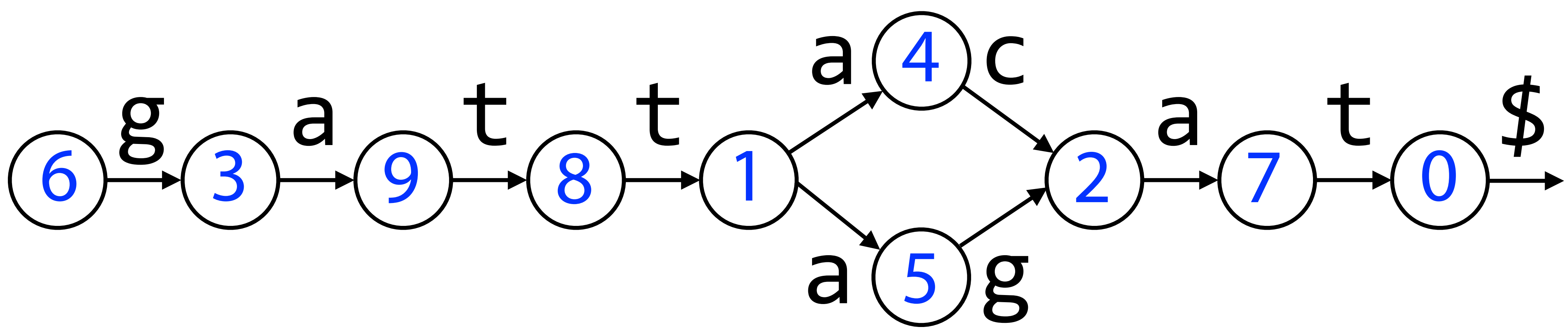


BW order

For some graphs, total order exists



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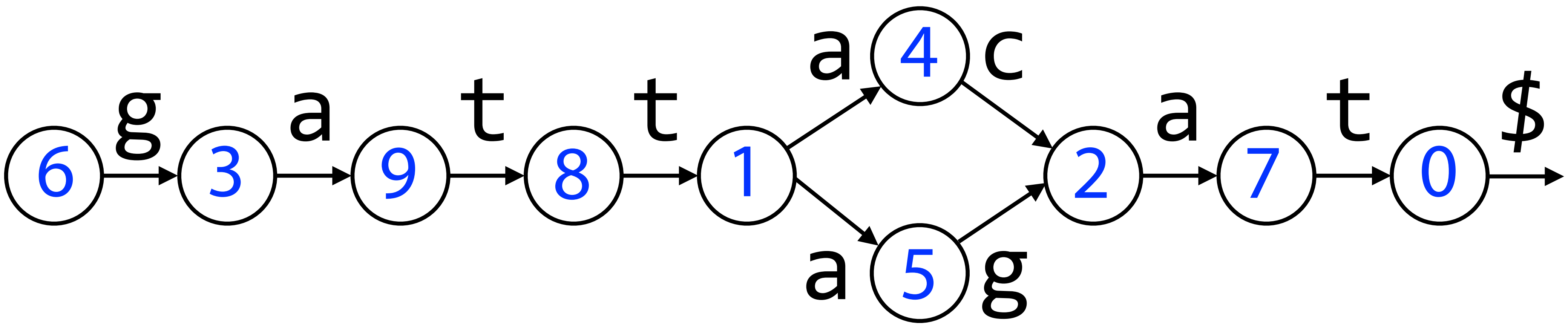
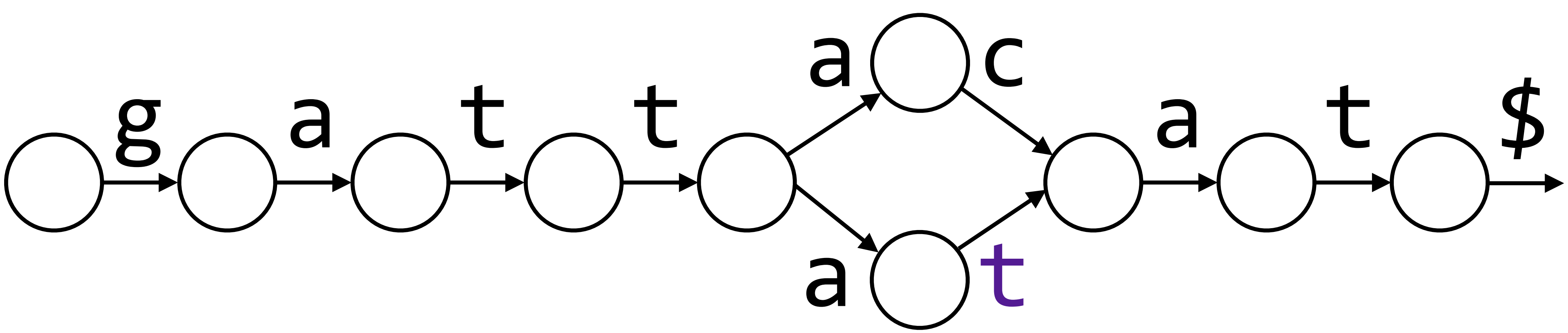


For others, not:



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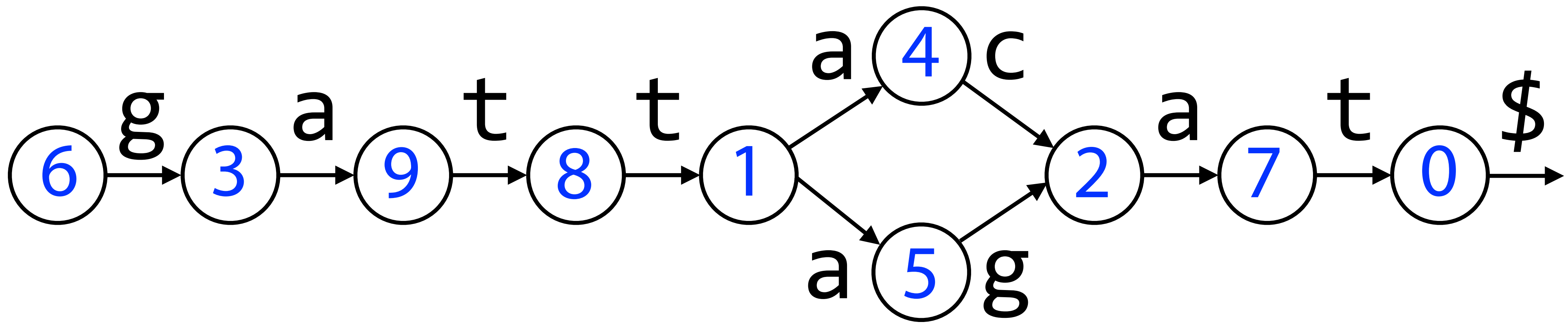
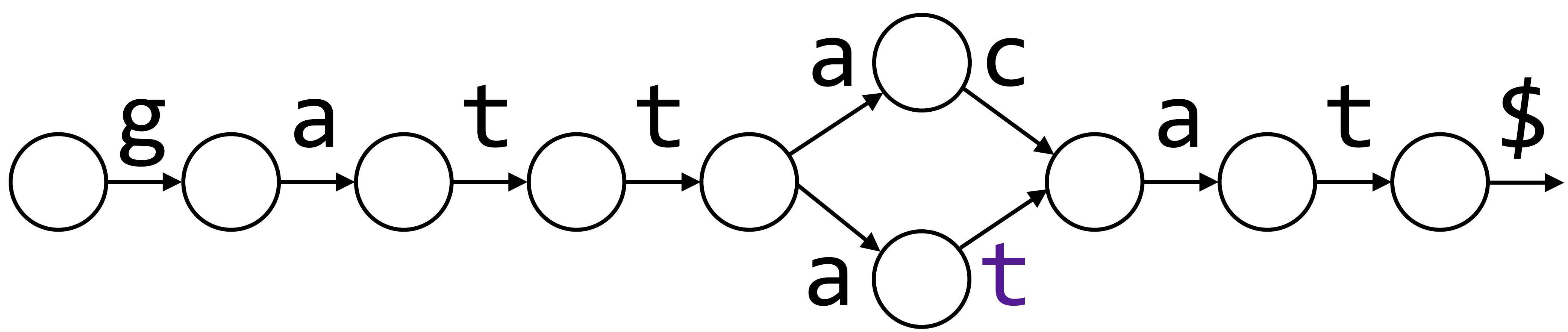


For others, not: (but we can “fix" them sometimes)



BW for graphs: TODO

Which graphs does it work for?

Do we have the consecutivity property,
as needed for matching?

How do we represent and query the graph?