

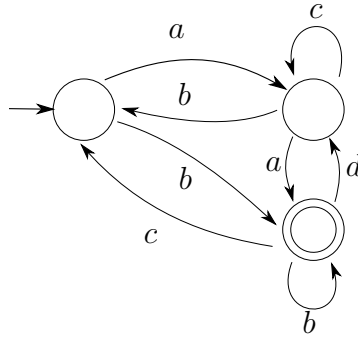
Software Specifications  
Converting State Diagram to Regex-Examples  
cont.

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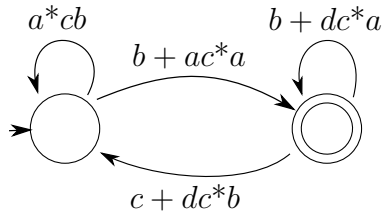
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## Example

Given the following state diagram, convert it to its corresponding Regex using the State Elimination Algorithm from lesson 15. The diagram only has 1 end state so there is no preprocessing necessary.



After removing the Top Right node the final generalized graph for the given Regex is:



And thus the resulting Regex is:

$$(ac^*b)^*(b + ac^*a)[b + dc^*a + (c + dc^*b)(ac^*b)(b + ac^*a)]^*$$

This State Diagram has a unique Regex because there is only one state that can be removed, as the other 2 are the start and end states—which cannot be removed