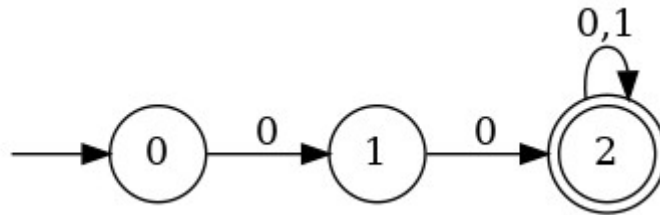


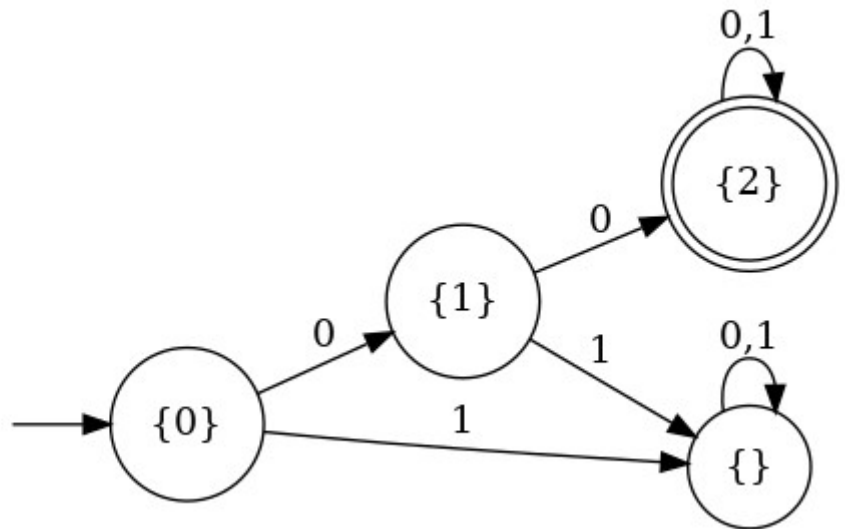
HW1 Answer Key

1. Create an NFA that accepts binary strings that start with two 0's.

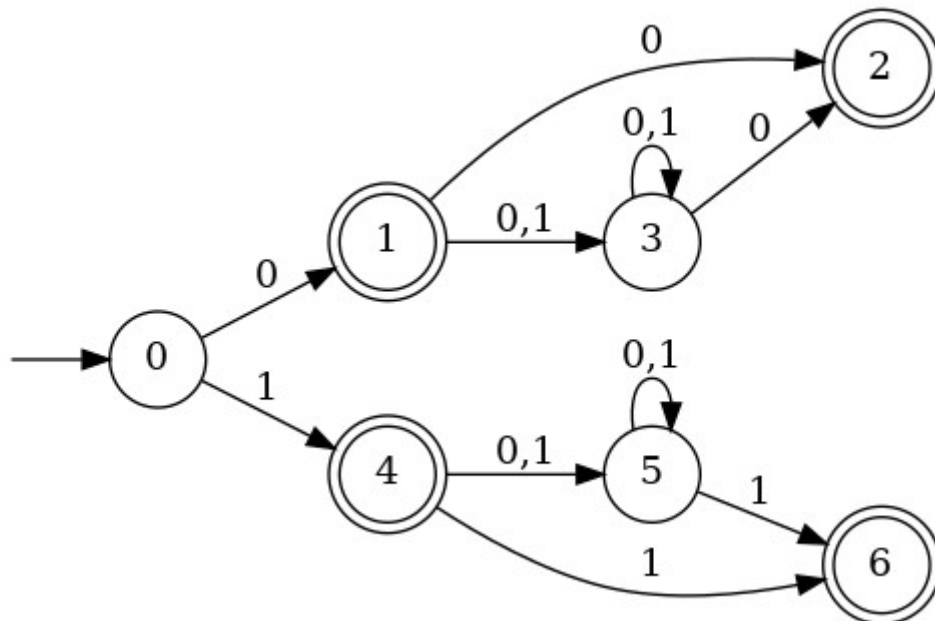


2. Convert the NFA from question #1 into a DFA.

	0	1	
{}	{}	{}	
->{0}	{1}	{}	
{1}	{2}	{}	
*{2}	{2}	{2}	



3. Create an NFA that accepts binary strings which start and end with the same symbol.



Note the edge case, strings with a length of 1 start and end with the same character.

HW1 Answer Key

4. Convert the NFA from question #3 into a DFA.

	0	1
$\rightarrow\{0\}$	$\{1\}$	$\{4\}$
$\ast\{1\}$	$\{2,3\}$	$\{3\}$
$\{3\}$	$\{2,3\}$	$\{3\}$
$\ast\{4\}$	$\{5\}$	$\{5,6\}$
$\{5\}$	$\{5\}$	$\{5,6\}$
$\ast\{2,3\}$	$\{2,3\}$	$\{3\}$
$\ast\{5,6\}$	$\{5\}$	$\{5,6\}$

