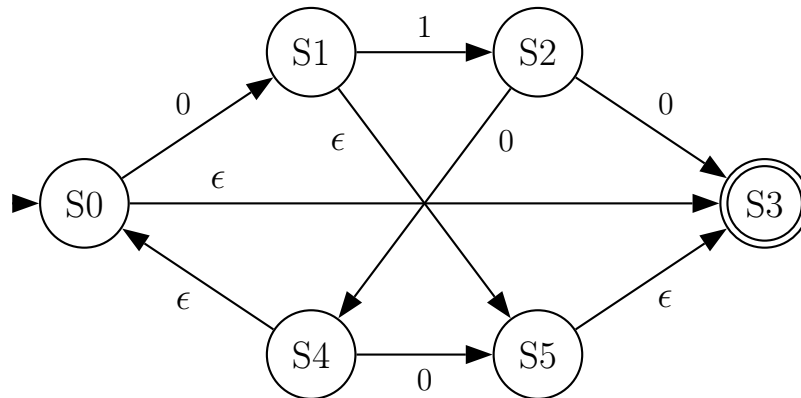


1. When does an NFA accept a string?
2. How long could it take to reduce a NFA with n states and t transitions to a DFA?
3. What language (or set of strings) is accepted by the following NFA?



4. Construct an NFA that accepts or recognizes binary numbers that contain the digit sequence 101.
5. Construct an NFA that accepts or recognizes binary numbers that include either the digit sequence 00 or the digit sequence 11.
6. Construct an NFA that accepts or recognizes binary numbers that include the digit sequence 00 **and** the digit sequence 11.
7. Compute the ϵ -closure of the start state for the the NFAs in the four subparts above.
8. Apply the construction given in lecture to produce an NFA that accepts or recognizes the same language as the regular expression $(a|b)^*b$.
9. For the regular expression 1^* :
 - a. Apply the construction given in lecture to produce an NFA that accepts or recognizes the same language.
 - b. Reduce the resulting NFA to a DFA using the subset algorithm.
 - c. Minimize the resulting DFA using Hopcroft reduction
10. For the regular expression $(0|01)^*0$:
 - a. Apply the construction given in lecture to produce an NFA that accepts or recognizes the same language.
 - b. Reduce the resulting NFA to a DFA using the subset algorithm.
 - c. Minimize the resulting DFA using Hopcroft reduction