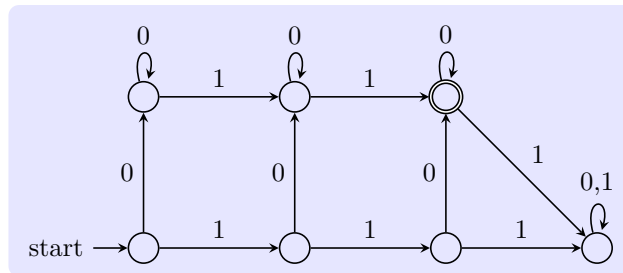
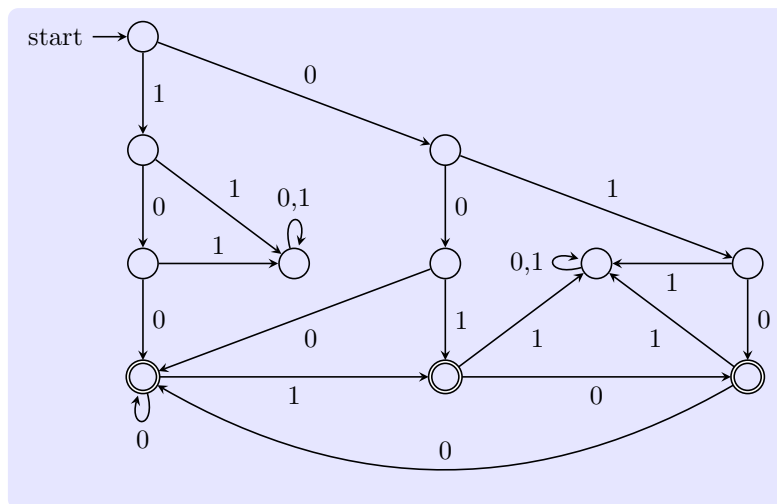


Give DFA's accepting the languages over the alphabet $\{0, 1\}$.

1. the set of all strings with at least one 0 and exactly two 1's. (所有以 01 开始或结尾的串.)

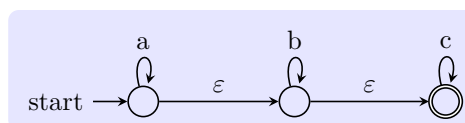


2. The set of all strings such that each block of three consecutive symbols contains at least two 0's. (任何 3 个连续的字符都至少有两个 0.)

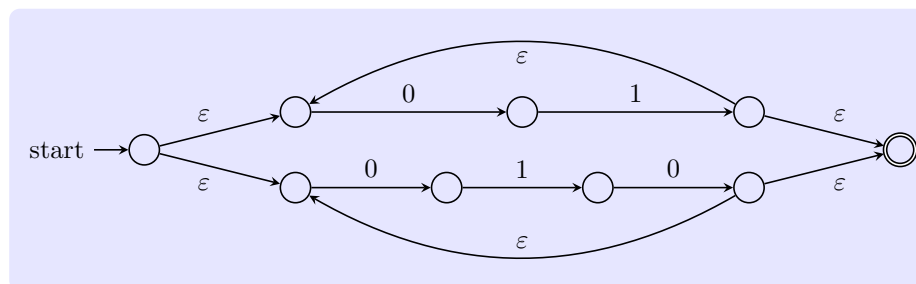


Design ϵ -NFA's for the following languages. Try to use ϵ -transitions to simplify your design.

3. The set of strings consisting of zero or more a's followed by zero or more b's, followed by zero or more c's.



4. The set of strings that consist of either 01 repeated one or more times or 010 repeated one or more times.



Design regular expression:

5. The set of all strings of 0's and 1's not containing 101 as a substring.

$$0^*(1 + 000^*)^*0^*$$

or

$$(0 + \epsilon)(1 + 000^*)^*(0 + \epsilon)$$