ESP Math 294 | Spring 2021

Week 14
Deterministic Finite Automata

April 20, 2021

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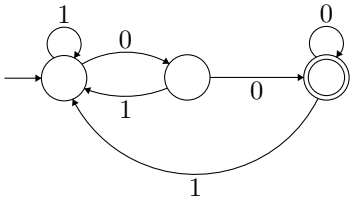
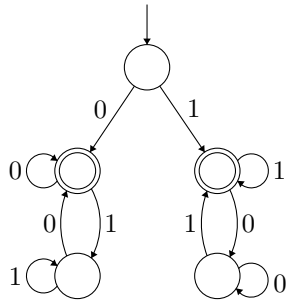
1. Give a description of the strings that each of the following DFAs accept:

(a)



(b)



2. For each of the following, construct a DFA that accepts the strings described:
   (a) strings with at least two 0's;
   (b) strings that begin with a 1 and end with a 0;
   (c) strings that contain 0101 somewhere.
3. Let M and N be two DFAs. We discussed how to construct a DFA that accepts any string accepted by either M or N. Can we modify the construction to get a DFA that accepts any string accepted by <u>both</u> M and N?
4. Design a DFA that accepts all strings with an even number of 0's, an odd number of 1's, and does not contain 01. Bonus points for a DFA with at most 5 states.