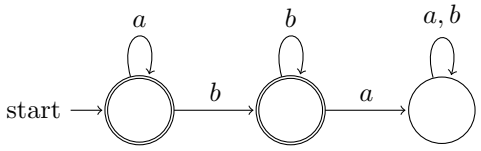
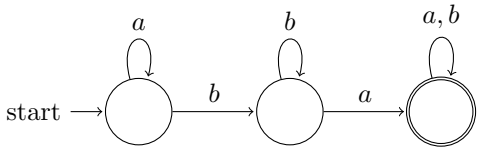
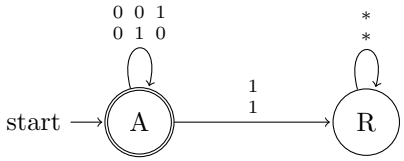
Problem 1, part a DFA:



Part b DFA:

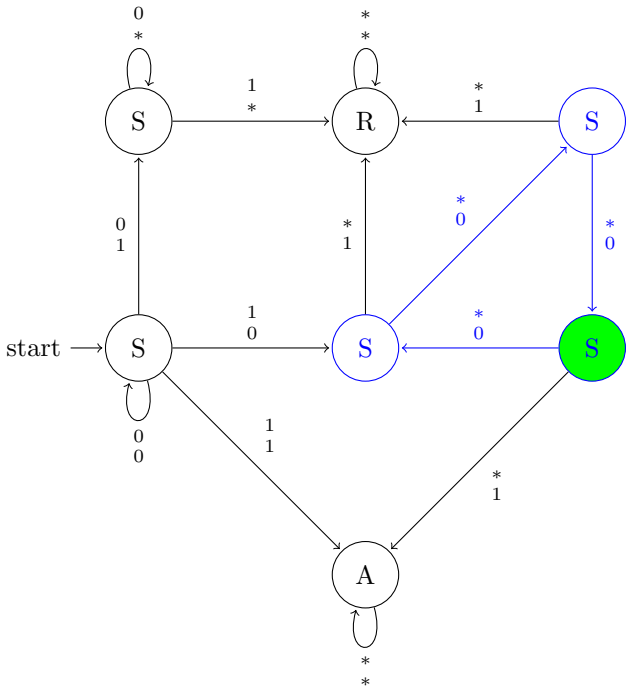


Problem 2 (WS1S nonempty intersection) DFA:

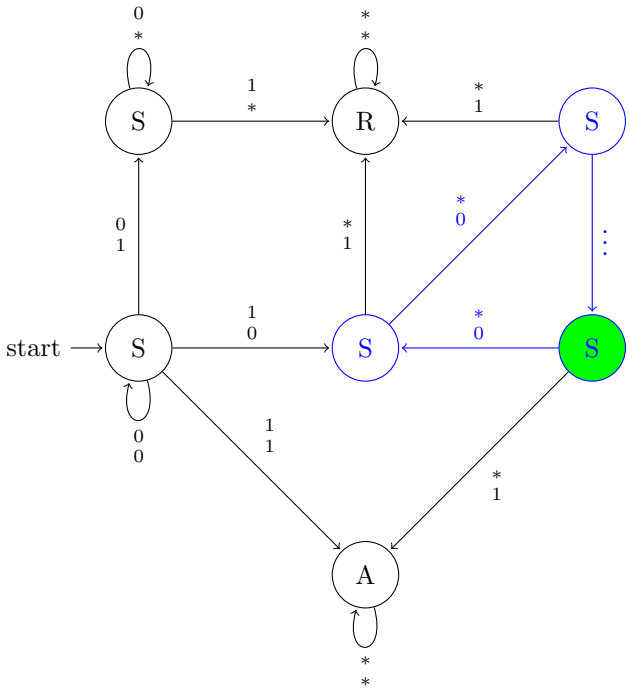


Regex: $((0,0) \cup (0,1) \cup (1,0))^*$

Problem 3 (WS1S), part a DFA:



The solution for part b is similar to part a, except that the loop (blue) is bigger The total number of nodes in the loop is n. Only the green state can transition to the accept state. DFA below: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