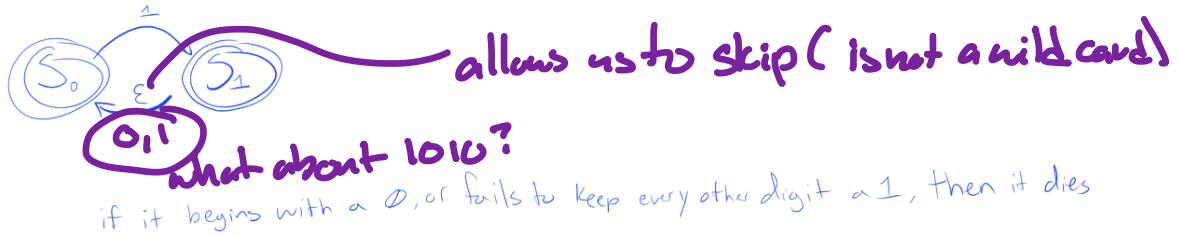
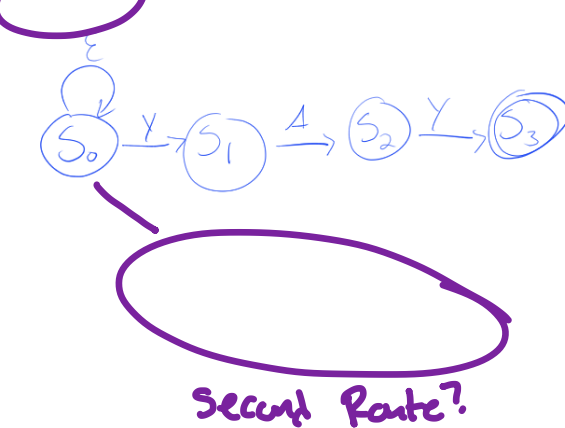


Problem 1. In what follows, try to take advantage of nondeterminism and epsilon transitions as much as possible.

- a. Construct a finite-state automaton that recognizes the set of all bit strings that begin with a 1 and every other position is a 1 (e.g., 101110).



- b. Construct a finite-state automaton that recognizes the set of strings over the alphabet $\{a, b, \dots, z\}$ that end with yay or woo.



- c. Construct a finite-state automaton that recognizes the set of all bit strings such that there are two 0s separated by a number of positions that is a multiple of 4. Note that 0 is an allowable multiple of 4. For example,

00, 011110, 010100, 011111110, 110101001, 00101111001, 0101010111100000

