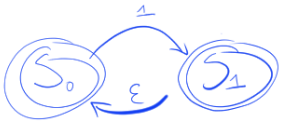
CSC 404 - Activity/Project 4 - Name: Chris Glanzer

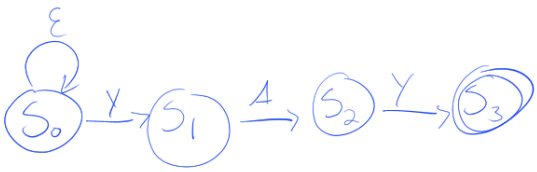
Problem 1. In what follows, try to take advantage of nondeterminism and epsilon transitions as much as possible.

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



if it begins with a 0, or fails to keep every other digit a 1, then it dies

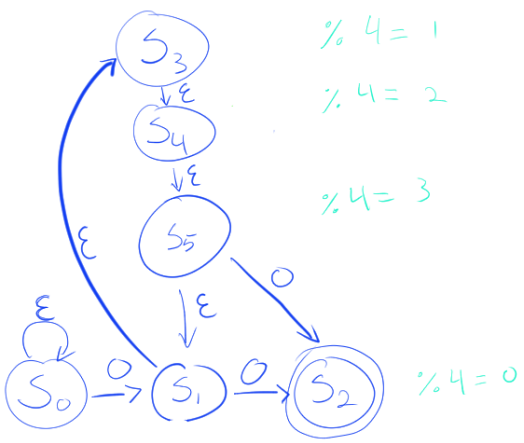
b. Construct a finite-state automaton that recognizes the set of strings over the alphabet {`a`,`b`,...,`z`} that end with `yay` or `woo`.



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

B/0 B/0123/0 B/0123/0 B/0123/0123/0

`00`, `011110`, `010100`,`0111111110`, `110101001`, `00101111001`, `0101010111100000`



% 4 = 1

% 4 = 2

% 4 = 3

% 4 = 0