CSE 311: Foundations of Computing I

QuickCheck: Languages Solutions (due Thursday, May 19)

0. All The Things!

Let L be the language where $\Sigma = \{0, 1\}$ such that $w \in L$ iff "01" is a substring of w.

(a) Construct a regular expression that matches L.

Solution:

One such regular expression:

$$(0 \cup 1)^* 01 (0 \cup 1)^*$$

(b) Construct a CFG that generates L.

Solution:

One such CFG:

$$L = S01S$$
$$S = 0S \mid 1S \mid \varepsilon$$

(c) Construct a DFA that accepts L.

Solution:

One such DFA: