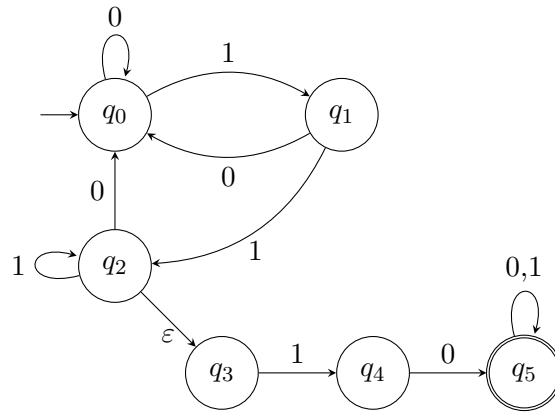


# Exploring NFAs

CS 311, Fall 2015

**Exercise 1** Consider the following NFA  $N$ , and the string  $s = 011101110$ :



a) Give two legal sequences of states the machine could go through that end in an accepting state.

b) Give one legal sequence of states the machine could go through that doesn't end in an accepting state.

c) Does the NFA  $N$  accept  $s$ ?

d) What language is recognized by  $N$ ?

**Exercise 2** Draw a state machine for the NFA that recognizes each of the following languages and has the specified number of states.

a)  $\{w \mid w \text{ ends with } 00\}$  with three states.

b)  $\{w \mid w \text{ contains the substring } 0101\}$  with five states.

c) The language  $\{0\}$  with two states.