

Activity: Finite State Machines

A. Why?

Finite State Machines are one way to describe sequential logic circuits.

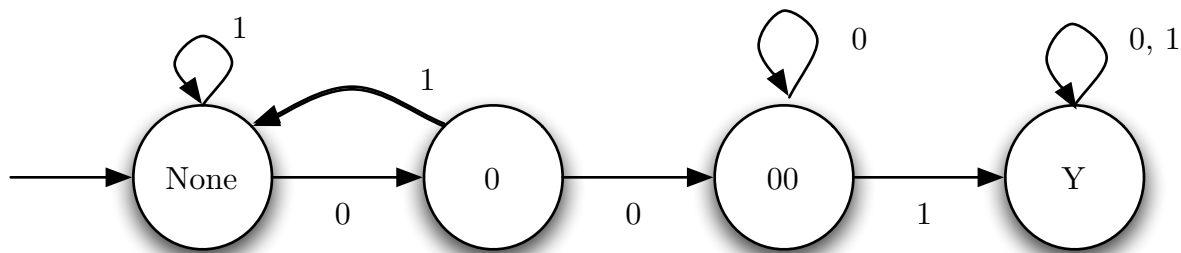
B. Outcomes

By the end of the activity you should

- Be able to trace the execution of a finite state machine using its state diagram or table.
- Be able to translate a state diagram for a finite state machine to an equivalent state table.

C. Questions

1. Below is a state diagram for a finite state machine with four states and bits as input. (The head-less arrow into “None” indicates it’s the initial state.)



- (a) What sequence of states does this machine enter if it processes the input 01000010?

- (b) Complete the given state table so that it describes the same machine.

State	Input	New State
None	0	0
None	1	None
0		
0		
00		
00		
Y		
Y		

- (c) The machine enters (and stays) in state “Y” if it detects a particular pattern. What is that pattern?