

ECE428/528 FSM design practices

1. Design an FSM that takes a single binary bit input per clock cycle and detects bit pattern 1101.
 - a. Modify the FSM to detect pattern 1X01, where X represents a don't care.
2. Design an FSM that takes two binary bit input per clock cycle and detects bit pattern 101011
 - a. Modify the FSM to detect both pattern 101011 and 110011
3. For smart phones and tablets, a common user interface is to have users press a button with different patterns for invoke different functions. Design an FSM that recognize the following press patterns:
 - 1) A long press with a duration longer than 1s
 - 2) A short press with a duration between 0.3s and 0.5s
 - 3) Two consecutive shorts press (durations between 0.3s and 0.5s) and the time between the two consecutive press should be in the range from 0.2s to 0.3s.