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EE M116L Prelab #5

1. There exist two different models to construct a Finite State Machine (FSM): (i) Mealy model and (ii) Moore model. Please discuss the differences between the two models and discuss which model is more suitable for our design.

→In the (i) Moore model, outputs depend only on the state, whereas the outputs in a (ii) Mealy model depend both on current state and inputs. Because of this fact, Mealy machines usually can be constructed with fewer states and respond to input faster (that is, in the same cycle). But Moore machines tend to be easier to synchronize due to outputs changing at the clock edge one cycle later.

Although Moore machines benefit from simplicity, it seems that our lab can benefit more from the Mealy model by using a minimal number of states and receiving "instantaneous" output via both current state and input.

2. Sketch your initial design for the FSM block in Figure 3 below.