

2. Design an FSM with one input A and two outputs Y and Z that monitors the inputs and sets Y if the pattern 101 is seen and sets both Y and Z to one when the pattern 10101 has been seen. If the pattern 111 is seen at any point, both outputs should be reset and the FSM returns to its initial state.

a. Step 1: Understand problem statement, determine inputs and outputs

b. Step 2: Choose Moore vs Mealy, identify states, create state diagram

c. Step 3: Determine state encoding

d. Create FSM state transition and output tables

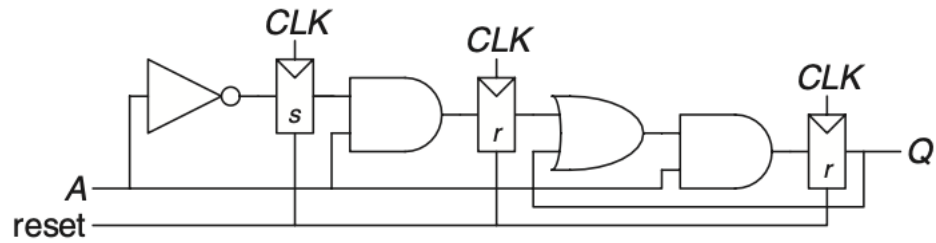
e. Step 5: Determine FSM state transition and output functions

3. (Exercise 3.31 from H&H RISC-V Edition Book)
Analyze the FSM shown below. Write the state transition and output tables and sketch the state transition diagram.

4. (Exercise 3.32 from H&H RISC-V Edition Book)

Analyze the FSM shown below. Write the state transition and output tables and sketch the state transition diagram. Recall that the s and r inputs indicate set and reset, respectively.

6. For the FSM below do the following:



a. Provide expressions for next state and output.

b. Is this a Moore or Mealy machine? Explain.

c. From the table derived in (a), draw the state diagram. What is the functionality of this FSM?