

Project 3: FSM

Preface:

Alyssa P. Hacker owns a pet robotic snail with an FSM brain. The snail crawls from left to right along a paper tape containing a sequence of 1's and 0's. On each clock cycle, the snail crawls to the next bit. The snail smiles whenever he slides over the pattern 1101 or the pattern 1110, from left to right. Design an FSM to compute when the snail should smile. The input A is the bit underneath the snail's antennae. The output Y is TRUE when the snail smiles.

Tasks:

1. Design the module described above
 - a. Module name: snail
 - b. Input: A, clk, rst
 - c. Output: Y
2. Write a test bench for the snail
 - a. Input: 111000110100111011101101
 - b. Output: 000100000100000110011001
3. Depending on which design you use (Moore or Mealy), name your design accordingly
 - a. Moore:
 - i. snail_moore.sv and snail_moore_tb.sv
 - ii. snail_mealy.sv and snail_mealy_tb.sv

Submission:

- The module name, inputs and outputs are all provided in the writeup. Please do name your module accordingly.
- Your file name should be exactly same as the module name, with all the submodules within the same file.
- Each test bench should be named with _tb as extension (i.e. adder_tb.sv for adder.sv)
- Put all your screenshots into screenshot.pdf, (one picture per page if you use Word to create it). And include corresponding name immediately preceding the picture.
- Please make sure the codes you turn in is compilable.
- Please only submit the required files specified, all other files will be ignored.