

Tutorial 5 – State Machines

**(A) Build a sequence recognizer for the pattern 1001
using 2 JK-Flip-Flops**

- 1. Start with the state diagram from the lecture notes**
- 2. Set up a new state transition table with JK inputs.**
- 3. Derive the JK and output equations,
then minimize each output function**
- 4. Draw the completed circuit diagram**

**(B) Build a sequence recognizer for the pattern 1100
using 2 D-flip-flops**

- 1. Draw a state diagram with transitions
and input / output**
- 2. Set up a state transition table.**
- 3. Derive the transition equations for the output functions,
then minimize each output function**
- 4. Draw the completed circuit diagram**