[This is optional, but recommended. This is very similar to an exam question.] **Replaces your lowest homework grade.**

Create a **Mealy-style**FSM that implements a sequence detector. It should have a single input, A, and a single output, Y. When the machine detects as the last four inputs '1101', the output Y should be '1'.

Implement S1 using a JK flip flop and S0 using a D flip flop. You need to show:

* State transition diagram
* State transition/output table
* K-maps and equations for: J1, K1, D0, Y

Draw the FSM circuit.