Cookie Making Machine Controller

a convyer belt 

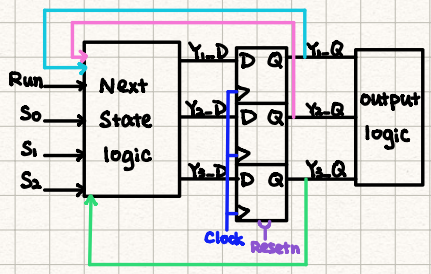
3 sensors: $S_0 = 1$, if cookie is burned
$S_1 = 1$, if cookie too light
$S_2 = 1$, if cookie not round

- want to reject the cookie if any two sensors = 1
- make a signal R=1 if any two or more sensors = 1
- if cookie is ok, need to wrap it. ⟶ set an output Wrap = 1. it takes 2 cycle to wrap.
  not ok, set Done = 1 & it will be rejected.

*: machines run when Run = 1 & doesn't when Run = 0
&: release cookie for analysis by sensors

⇒ - A FSM has several states:
we know what state we are in because an n-bit registers tells us what state we're in
- In each state we do 2 things:
① Set specific output signals
② Determine the next state based on the inputs and the current state

- Digital Harware for this machine



- Describe states & State diagram
T0: reset state, wait for Run=1 → New=1
T1: wait for sensors to sense
T2: determine if cookie is OK
T3: 1st wrap cycle
T4: 2nd wrap cycle