Moore FSM for Store Switch Value

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Goal of Circuit

- Overall goal: Store value in leftmost eight slide switches in a generic register

- Leftmost pushbutton will reset value (*i.e.,* set value to all zeros) stored in the register
  - Register will be cleared on initialization
- Second to leftmost pushbutton will cause state of slide switches to be stored in the register
- Leftmost red LEDs display the contents of the register

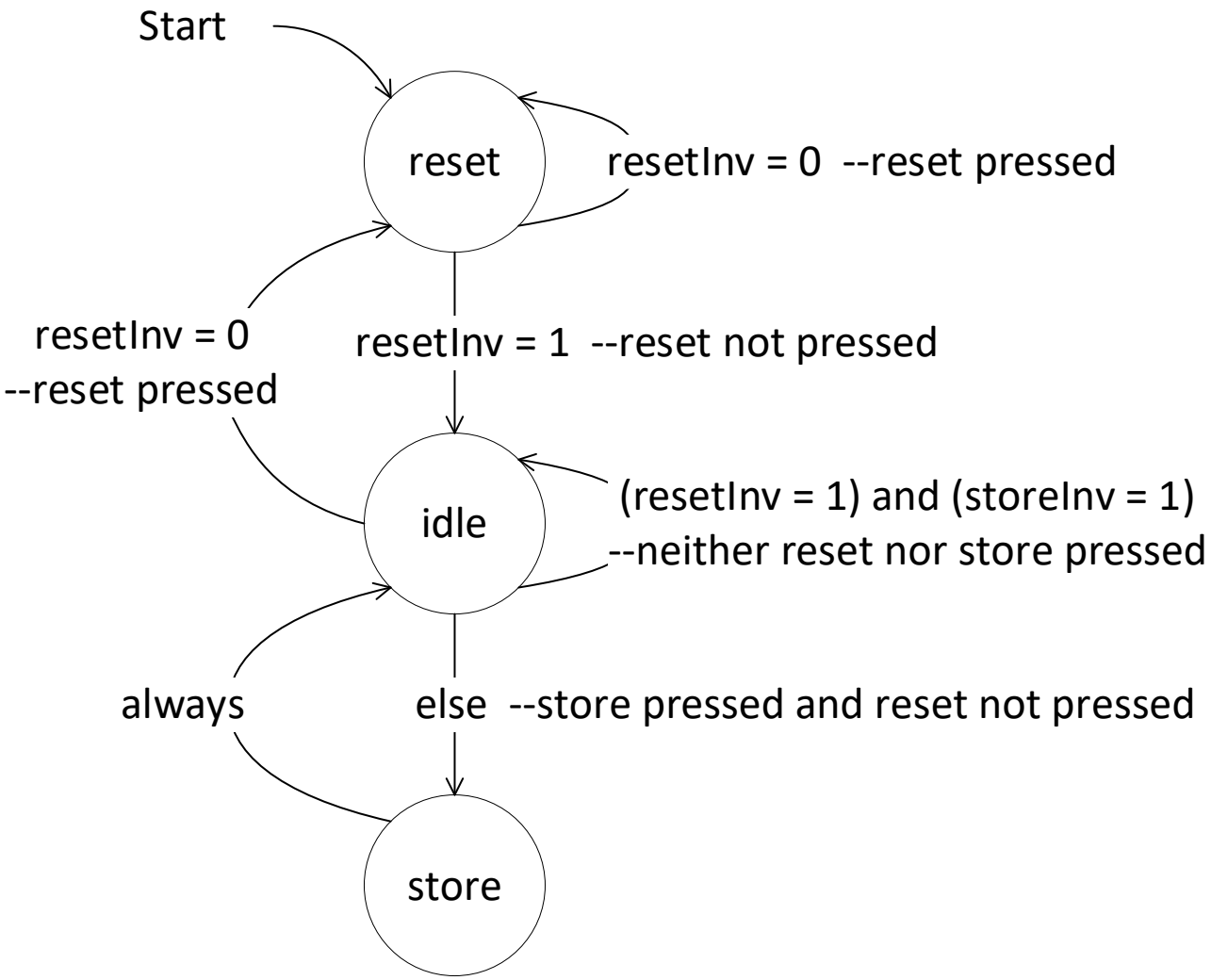
Overall Circuit Design

- Utilize a register with synchronous clear to store switch value
- Utilize a Moore FSM to monitor the pushbuttons and control the register

Clocking Scheme

- FSM changes state on each and every falling edge of the 50MHz clock
- Register is (possibly) updated on rising edge of clock
  - Register is always clocked by **`clk`** signal
  - Changes to the register are enabled by
    - **`clear`** signal to clear the register's contents
      - **`clear`** has precedence over **`en`** if both are asserted on the rising edge of the clock
    - **`en`** (enable) signal to load the register

Moore FSM



State	reset	enable
reset	1	0
idle	0	0
store	0	1