

Types of [[Finite State Machines]]

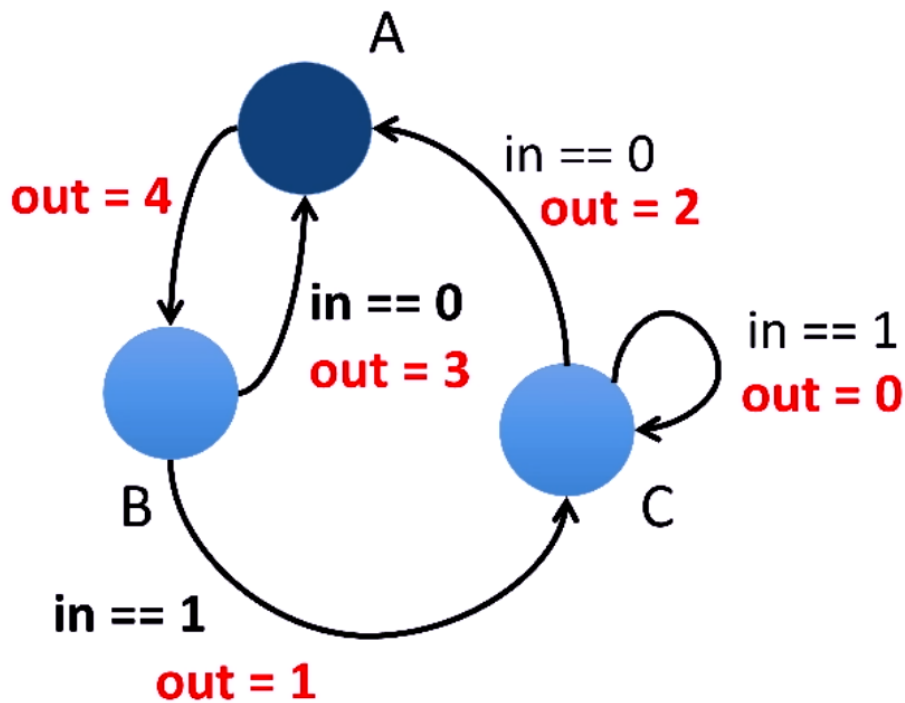
Moore Machines

- next state = function of present state and input
- output = function of present state

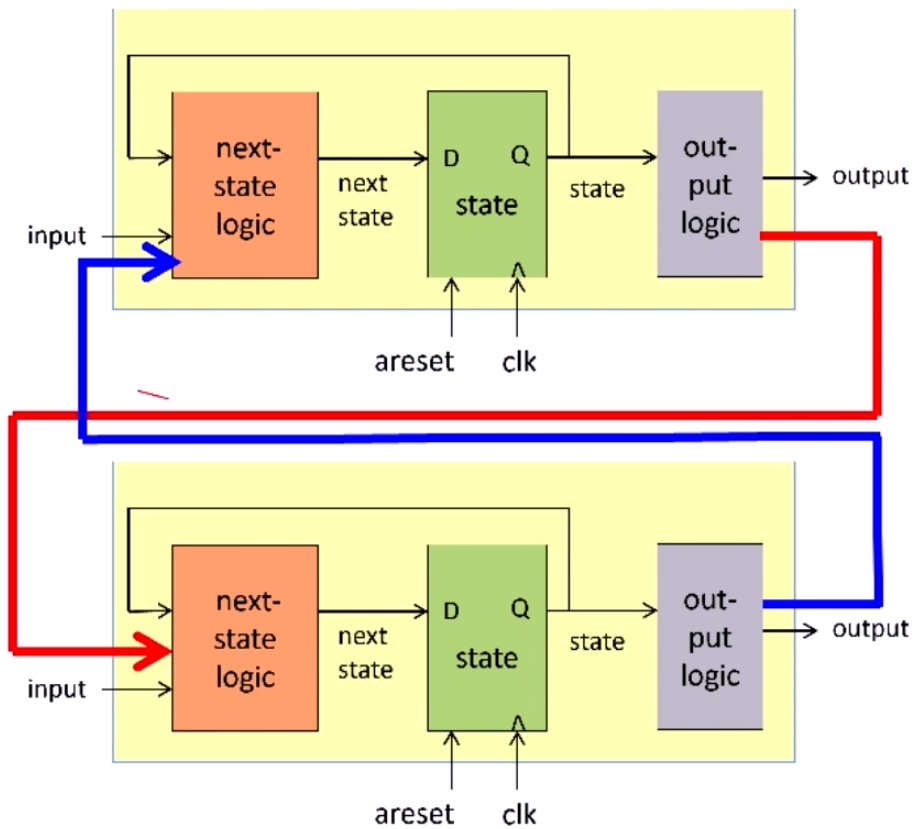
Mealy Machines

- next state = function of present state and input
- output = function of present state **and input**
- mealy machines have different outputs for the same state
 - output written outside of state circle
 - next to state transition
 - value of input affect timing diagram

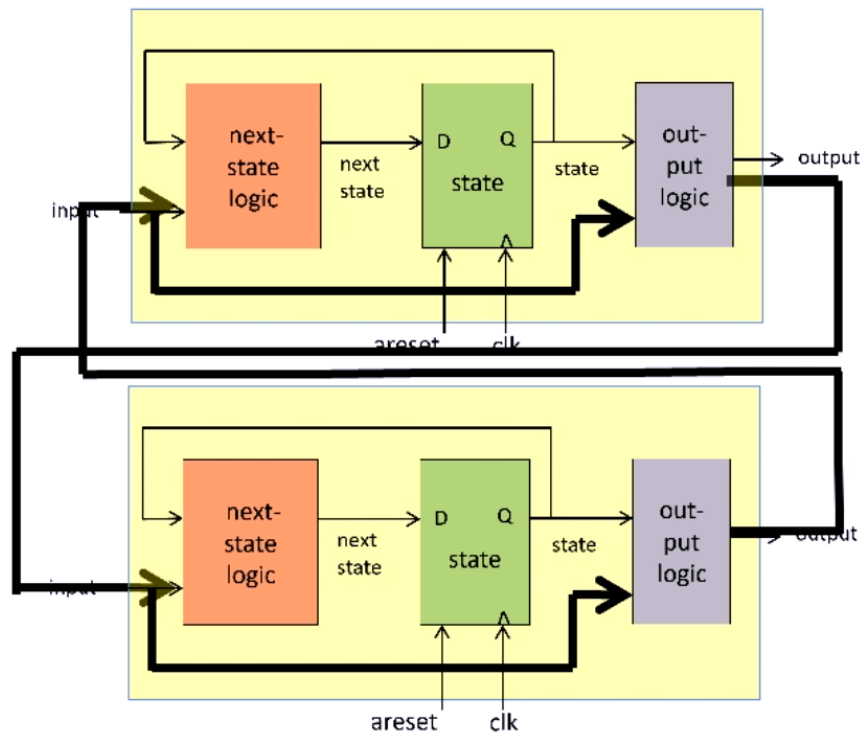
| state | in | output |
|-------|----|--------|
| A | 0 | 4 |
| A | 1 | 4 |
| B | 0 | 3 |
| B | 1 | 1 |
| C | 0 | 2 |
| C | 1 | 0 |



- machine combinations
 - multiple moore machines cause no problems



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 - moore with mealy machine cause no problems
 - two mealy machine may cause problems
 - * one needs to avoid combinational loops



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