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There are five global attributes we are using to design a sequential circuit

- State Machines
- Input
- Output
- States
- Transition

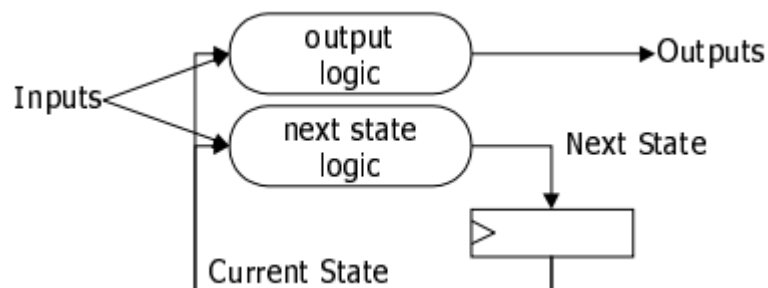
We can add more sub attributes in all of the above. Example- For state machine, we can have name, clock, reset_signal, reset_state.

We will use flip flops to hold the states clock signal controls when flip flop memory changes

N number of flip flops are used to represent 2^N states. Therefore, number of binary bits used to represent all states equals to the number of flip flops used.

First we will derive the state transition table from the state transition diagram provided. Don't care conditions will arise from unused states. Then, we will draw K-maps for next state functions. Then, we will derive the logic function from it and minimize it.

Next state is function of current state and inputs. Output is function of current state and inputs (Mealy Machine), of only current state(Moore Machine).



Considering all these, a sequential circuit can be produced.