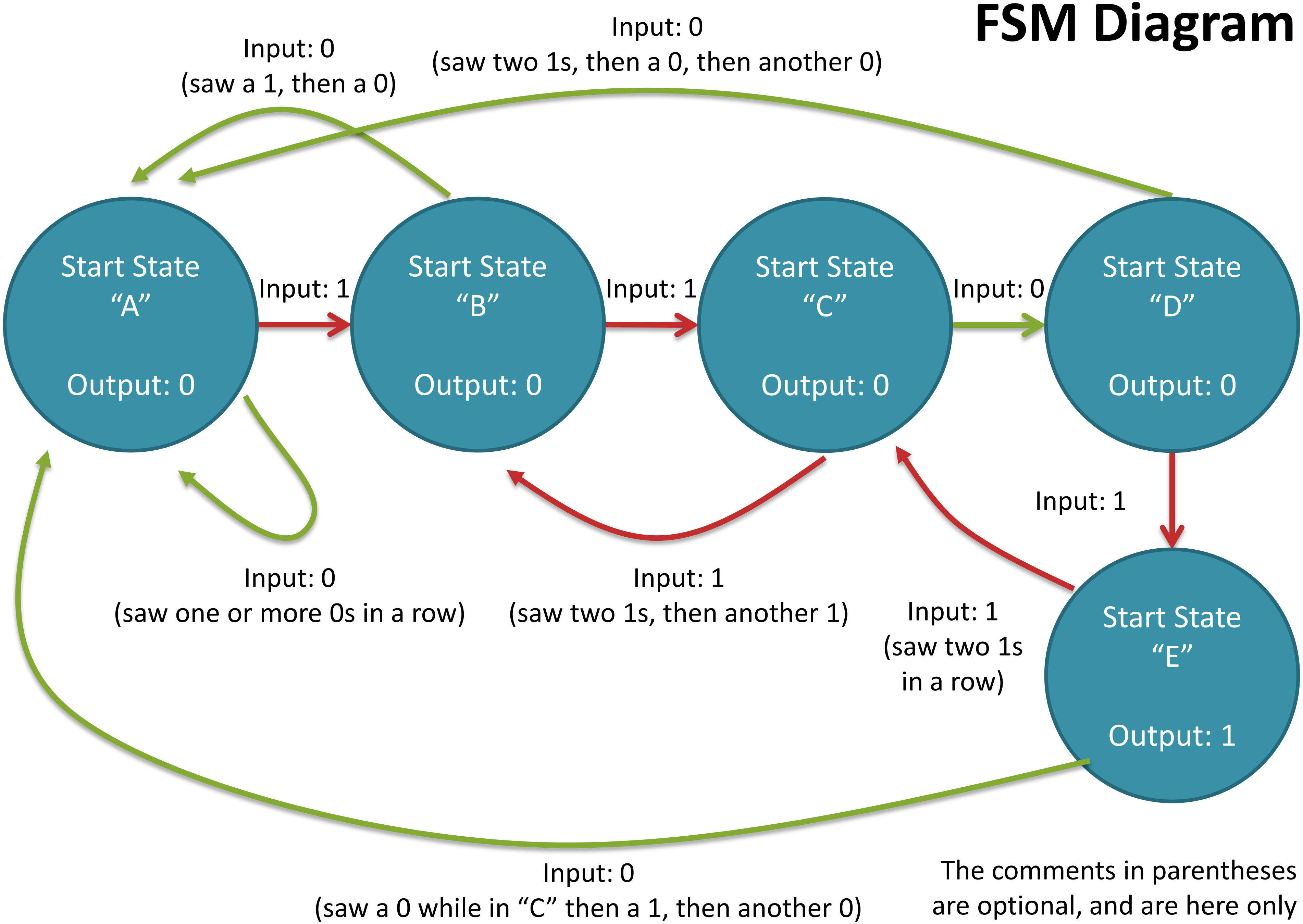
FSM Diagram



The comments in parentheses are optional, and are here only to better explain the diagram.

State Encoding

State Name	State_2	State_1	State_0
A	0	0	0
B	0	0	1
C	0	1	0
D	0	1	1
E	1	0	0

Since there are 5 states, we will need at least 3 bits of state. You can encode the names into numbers in any way you want to, so long as each state is assigned a different number.

In this example, state “A” is now named 0 while state “B” is 1, …, and state “E” is 4.

State Transition table

State_2	State_1	State_0	Input	New State_2	New State_1	New State_0
0	0	0	0	0	0	0
0	0	0	1	0	0	1
0	0	1	0	0	0	0
0	0	1	1	0	1	0
0	1	0	0	0	1	1
0	1	0	1	0	0	1
0	1	1	0	0	0	0
0	1	1	1	1	0	0
1	0	0	0	0	0	0
1	0	0	1	0	1	0

There are 5 states and each state has 2 possible inputs. Therefore, there are 10 transitions that may take place. Filling in this table requires only consulting the drawn diagram.

Output table

State_2	State_1	State_0	Output
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1