

LabVIEW – State Machines



Gary Boorman

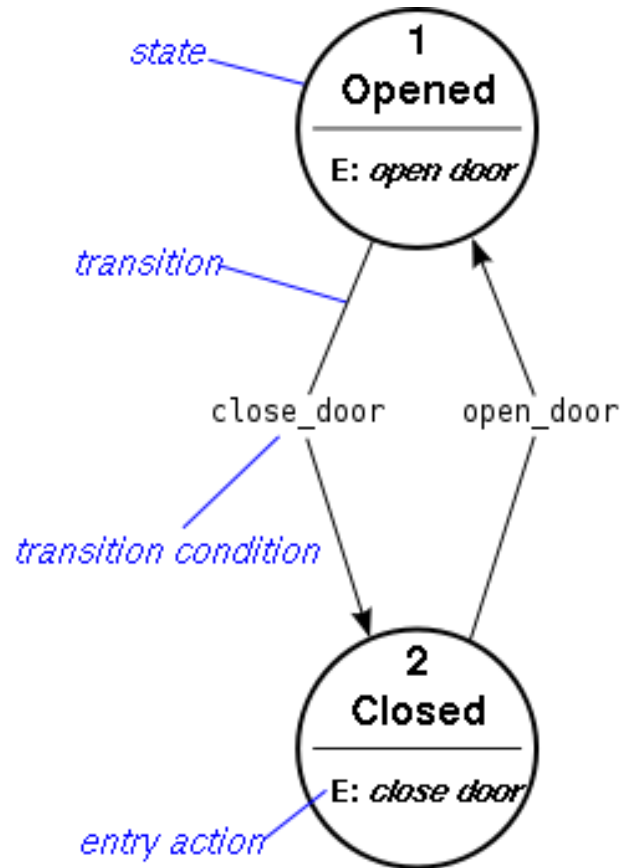


Finite State Machine I

- A Finite State Machine (FSM or State Machine) is a behavioural model used to design computer programs.
- It is composed of a finite number of states associated with transitions.
- A transition is a set of actions that starts from one state and ends in another (or the same) state.
- A transition is started by a trigger, and a trigger can be an event or a condition.

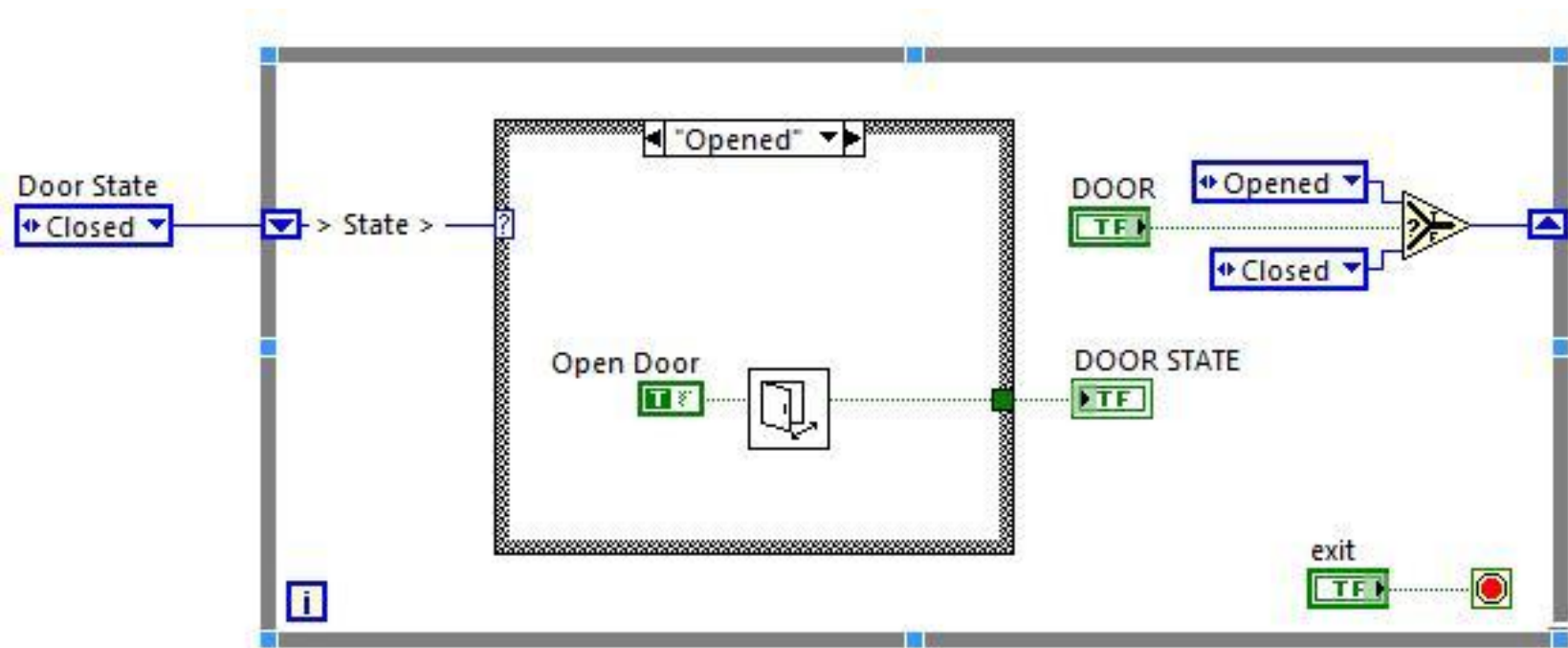


Finite State Machine II



Simple SM Implementation

- Uses a While loop with Shift Register, Case Structure and Enum



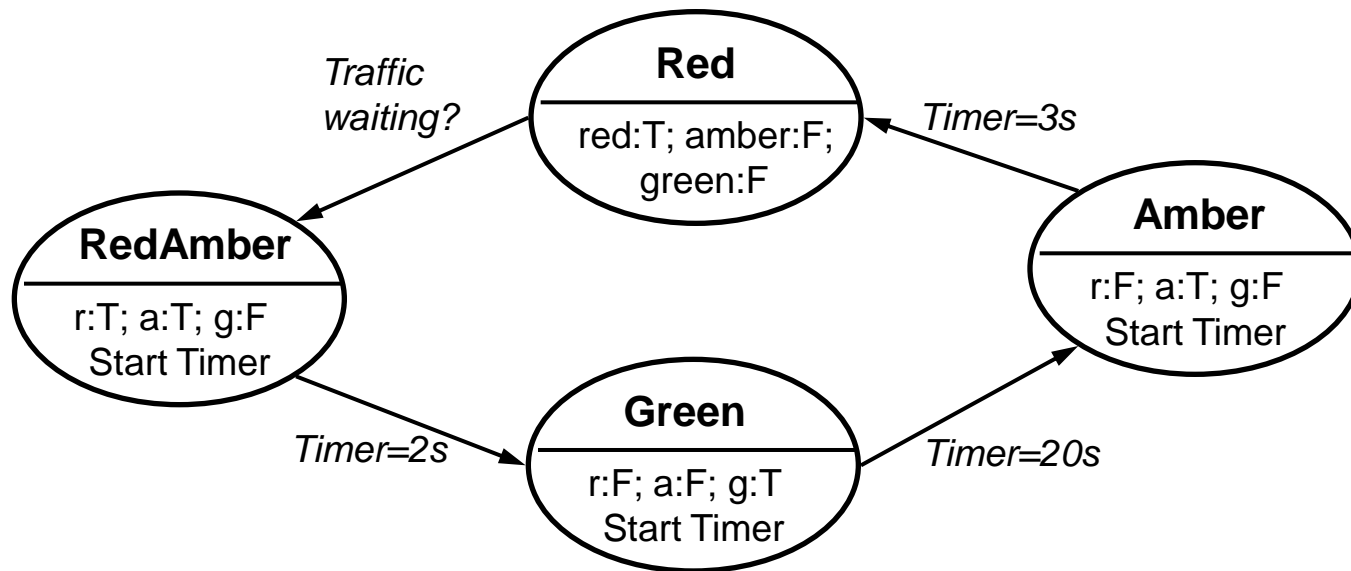
Finite State Machine III

- State Machines are extremely useful in Control, DAQ and Analysis systems
- Easily constructed in Labview
- Easily scaled to larger state machines – more states, choice of next-state



Simple Traffic Light FSM

FSM operates to defined pattern



Simple Traffic Light FSM

- FSM has a choice of next state

