

The traffic light system has four states, controlling the East Side and North Side traffic lights.

Traffic Light States:

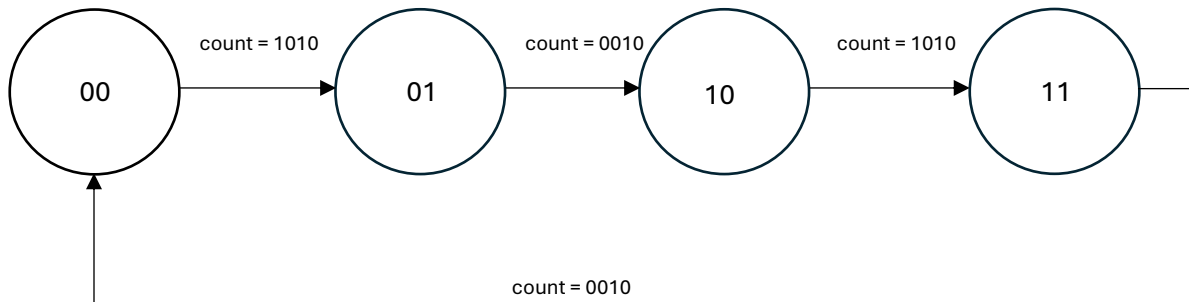
- East Side Green (00) and North Side Red (01)
 - East side: Green
 - North side: Red
- East Side Red (01) and North Side Yellow (10)
 - East side: Red
 - North side: Yellow
- East Side Red (01) and North Side Green (00)
 - East side: Red
 - North side: Green
- East Side Yellow (10) and North Side Green (00)
 - East side: Yellow
 - North side: Green

Green Light: 10 cycles wait time

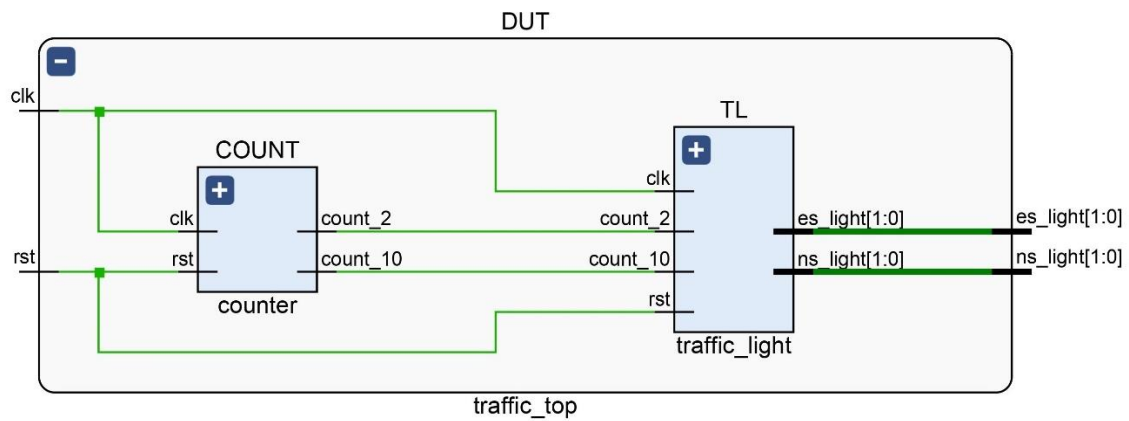
Red Light: 10 cycles wait time

Yellow Light: 2 cycles wait time

FSM:



Schematic after Synthesis:



Output of the RTL:

