TRAFFIC LIGHTS USING FINITE STATE MACHINE

Jiawei Hao

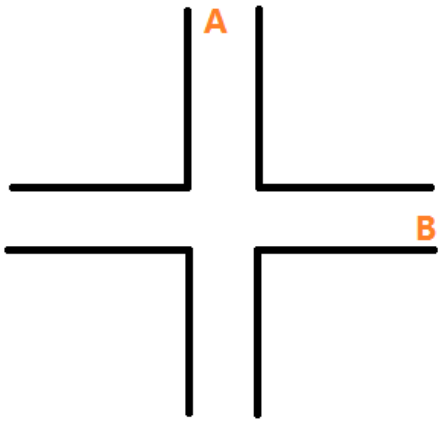
12/14/2011

ABOUT THE PROJECT

- Idea from the traffic jam in China
- How to make the traffic better?
- Priority to the main road at peak time

TRAFFIC LIGHTS FOR A & B DIRECTIONS AT A CROSSROAD

A Direction			B Direction		
Red	Yellow	Green	Red	Yellow	Green
●					●
●				●	
	●			●	
	●		●		
		●	●		
	●		●		
	●			●	
●				●	

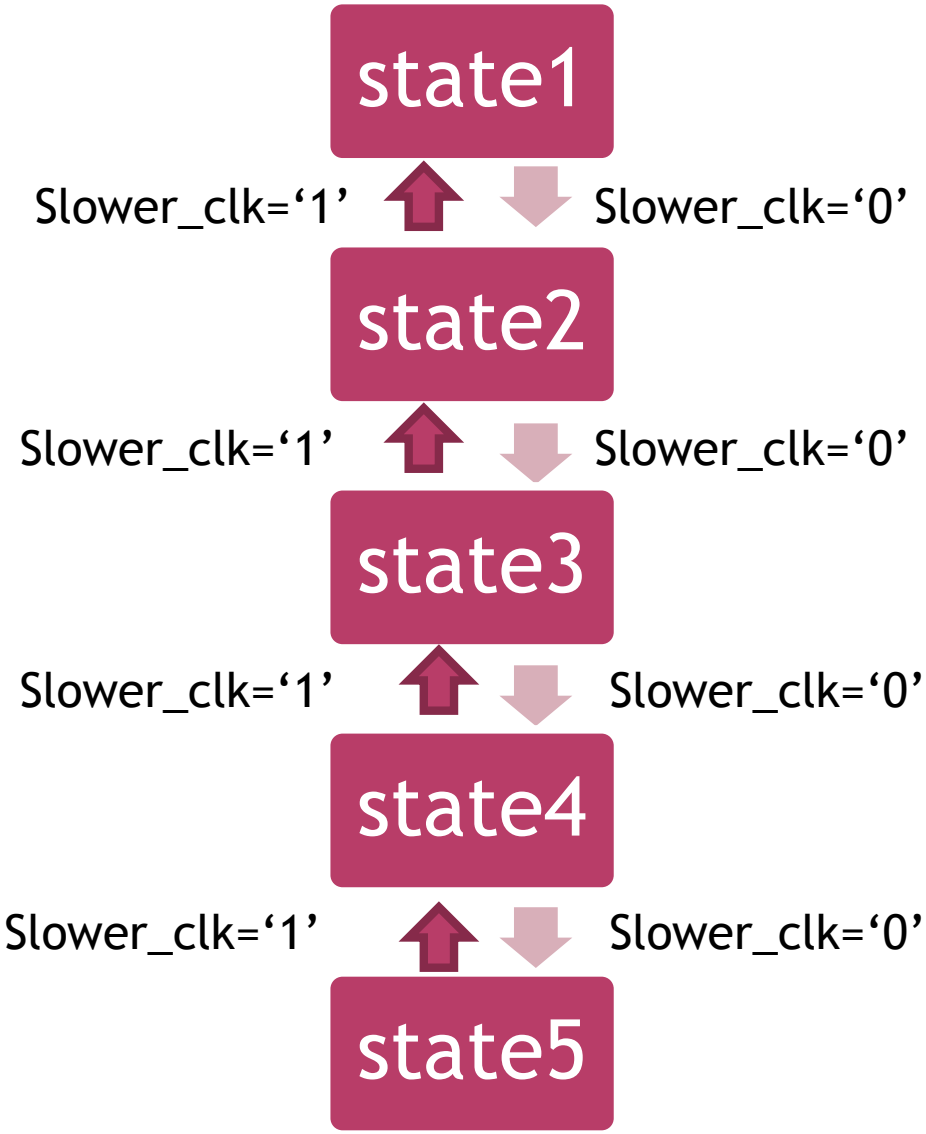


TRUTH TABLE

states	A Direction			B Direction		
	Red	Yellow	Green	Red	Yellow	Green
S1	1	0	0	0	0	1
S2	1	0	0	0	1	0
S3	0	1	0	0	1	0
S4	0	1	0	1	0	0
S5	0	0	1	1	0	0
S4	0	1	0	1	0	0
S3	0	1	0	0	1	0
S2	1	0	0	0	1	0

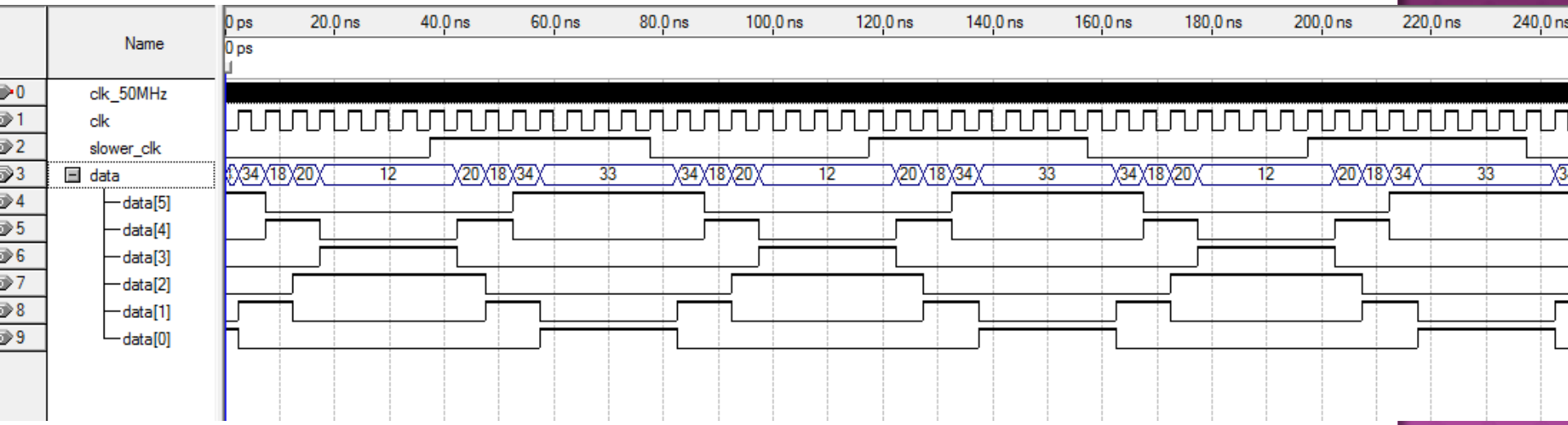
We use finite state machine to accomplish the states

FINITE STATE MACHINE



SIMULATION

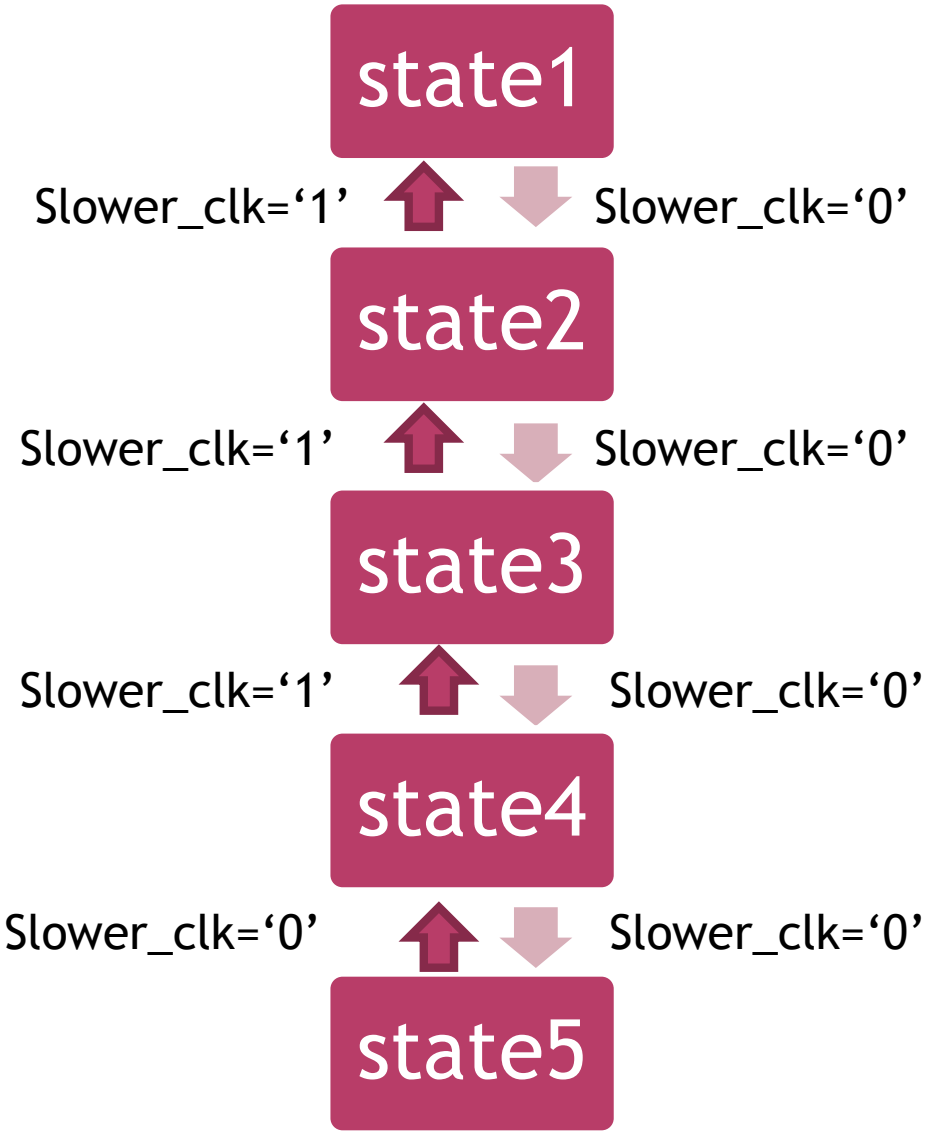
HOW TO GIVE THE PRIORITY TO THE MAIN ROAD AT PEAK TIME?



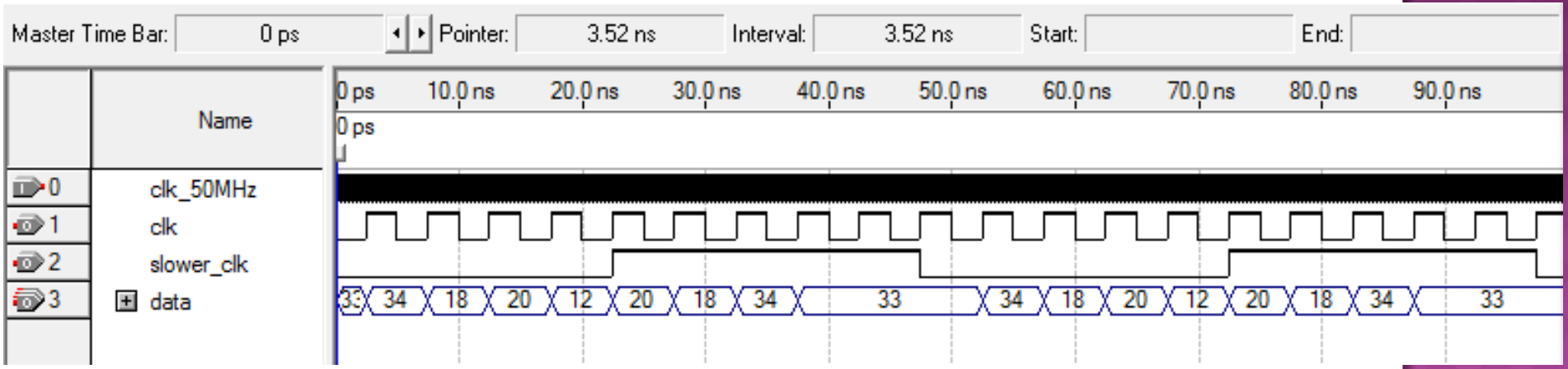
- Give the green light for one direction more time

Original traffic lights

MODIFIED FINITE STATE MACHINE

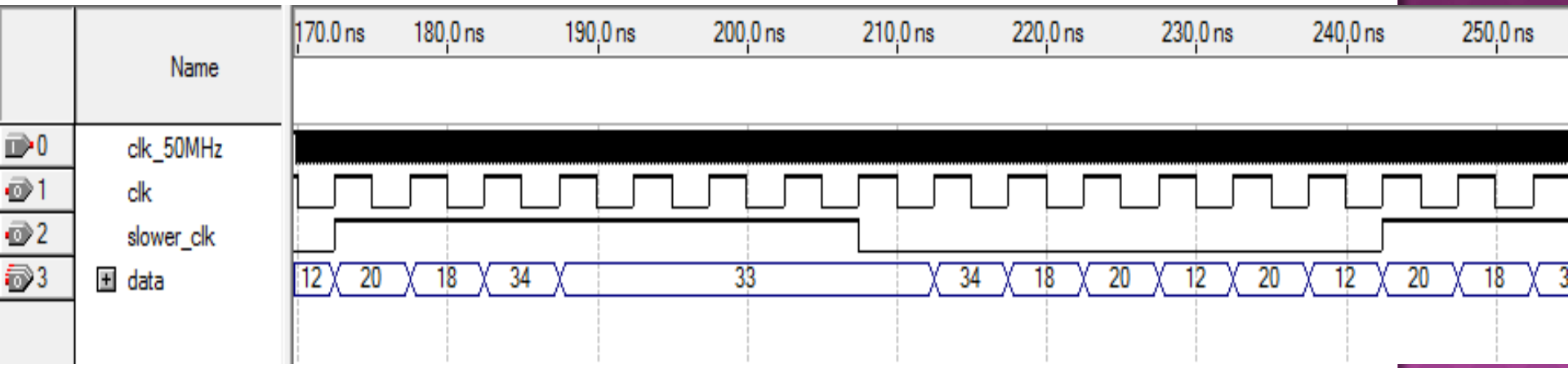


SIMULATION (CHANGE THE CLOCK IN STATES TO GIVE THE PRIORITY TO THE MAIN ROAD)



Modified traffic lights

WRONG RESULT WITH IMPROPER FREQUENCE



ORIGINAL & MODIFIED TRAFFIC LIGHTS

- Original traffic lights
- Modified traffic lights

THANK YOU