Advanced Traffic Intersection

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Abstract: The purpose of this project is to create an advanced traffic light using the NexysA7 board's on-board LEDs, switches and buttons. The 12 LEDs on the board will be displayed the entire time and will represent the North, South, East, and West lights. We will be simulating the regular California traffic light, as for the buttons, we will be using them to switch between allowing the traffic to go North/South or East/West. This project will be using a Moore or Mealy FSM (We are deciding which one is most efficient between the two at the moment) to set the delay between the switching of the LEDs as well as the NS and EW sensors. Ie. Green-Yellow-Red-Green. We plan to display the board's LEDs through a constraint file.