

# Lab 9 - Decomposing State Machines

- Purpose:
  - Design and implement a data path for a circuit that controls a traffic light at an intersection
- Design:
  - The traffic light for the highway road (HL) is to remain GREEN and the farm road light RED (FL) until the car detector for the perpendicular farm road detects a vehicle.
  - A sequence will then be triggered to switch the highway light to YELLOW, then RED
  - Following the farm light will switch to GREEN and then to end the sequence to YELLOW and back to RED.
  - The sequence will then repeat after a new car is detected and a preset time has been met
- Final circuit design that was functional

Functional version of data path

