Microcontroller Lab

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- ▶ First scenario
  - ▶ One line and one traffic light
  - ▶ Control the lights with respect to timing
    - ▶ Use time events like t20 for a

Task 1

- ▶ Model the traffic light system with the following diagrams
  - ▶ Structure: a class diagram that represents the main structural elements
  - ▶ State machine diagram for each class
    - ▶ What are the possible states, transitions, events, …?
- ▶ Develop a realistic traffic light control system.
  - ▶ Use leds as traffic light
  - ▶ Use an Arduino as µC
  - ▶ Map the state machine model to code (via switch state pattern)
  - ▶ Develop a circuit for leds.
    - ▶ Determine the required voltage, current and resistant of the series resistor
    - ▶ For the circuit design you can use MultiSim
- ▶ Deadline:
  - ▶ Submit solution to git one day before lab (next week)