

ECE342 BONUS Exercise

Worth 4% (4 marks, 1% per mark)

Due – when presenting the 3rd Milestone for the project (first 5 mins)

In this exercise you will implement a traffic light controller for an intersection of two streets.

Requirements:

- a) You must implement this traffic controller in C on a microcontroller.
- b) Each traffic light will have three LEDs (ideally red, yellow and green).
- c) The change between states will happen solely based on timers, no buttons or sensors are necessary.
- d) Each state must be implemented as a struct. As a **suggestion**, here is a struct and its members:

```
struct State{  
    type output;  
    type time;  
    type next_state;  
}
```

Where:

- output will determine which lights (LED) are which colour;
- time will determine waiting time before transition (there are two waiting times)
- next_state will determine the destination for the transition

One mark if it runs at all;

One mark if they light up at all;

One mark if timers working at all;

One mark for the implementation has structs.