Lab 9: **Decomposing State machines: Traffic Light Controller**

**Primary Objectives:**

1. Design and build a clocked synchronous state machine of moderate complexity.
2. Design the data unit for the project.

**Design**

Diagram

Description automatically generated

I made a state diagram as simple as I could and simply used the 3-bit codes I gave each state as the code from the control unit to control the traffic lights.

**Implementation**



Implemented by following the state diagram and using simple logic to have the code from the control unit properly determine what color each traffic light should be. It also returns a status signal saying when the traffic lights have changed color for the control unit to know when to reset the timers.

**Testing**

Table

Description automatically generated

Testing that shows the codes work as expected.

**Conclusion**

The device works as expected.