

# CPE 166 Discussion Worksheet

Group Number: \_\_\_\_\_

Student Names: \_\_\_\_\_

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**Topic:**

Design a traffic light control system for the operation of traffic lights at an intersection. You can refer to the California Department of Transportation (Caltrans) regulations for specifications regarding road lanes and traffic light timing configuration.

**Requirements:**

1. You need to specify the configuration of the intersection, including the number of roads, and the number of lanes.
2. You need to determine the timing configuration for the traffic lights at the intersection. This should include the duration of each state (red, yellow, green) for each direction of traffic flow.
3. You need to ensure that lights on intersecting roads should not display conflicting signals simultaneously.
4. Incorporate pedestrian crossing signals into the design and the traffic light should ensure pedestrian safety.
5. Design the system to allow for reset, returning all lights to their default states.

# **Deliverables:**

## **1). Design Specification**

Your discussion description should encompass details regarding the number of traffic lanes at the intersection, the directions of traffic flow, and the specific timing configuration designed for the traffic lights.

You may refer to the Caltrans regulations for guidance. However, you have the flexibility to make some adjustments tailored to your design requirements.

2). **The deliverables** should include your design specification description, the SystemVerilog code, testbench, and simulation waveforms.

Each group is required to submit a WORD or PDF file online. You must include your group number as part of your file name.