

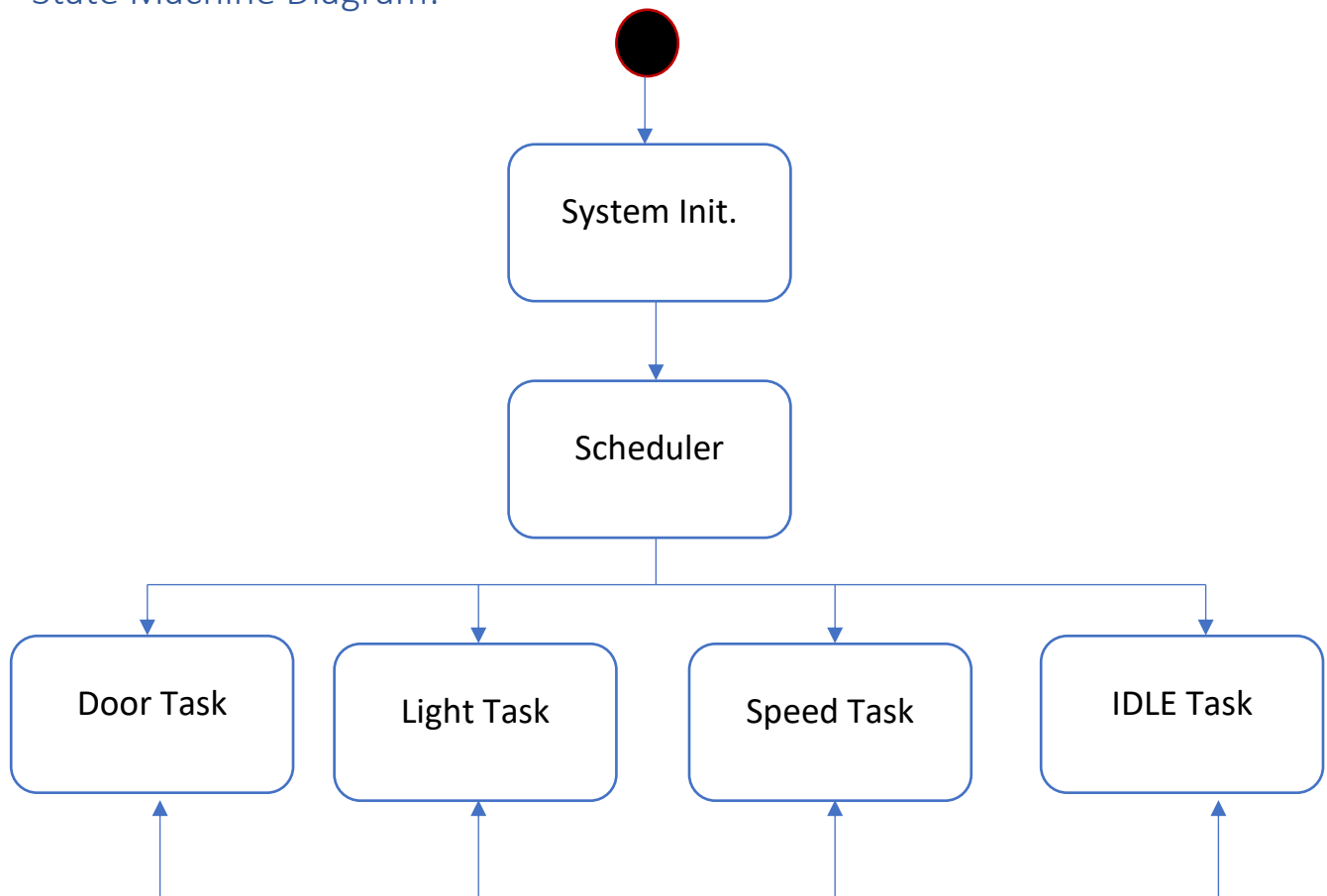


AUTOMOTIVE DOOR CONTROL SYSTEM DESIGN Dynamic Design

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ECU 1

State Machine Diagram:

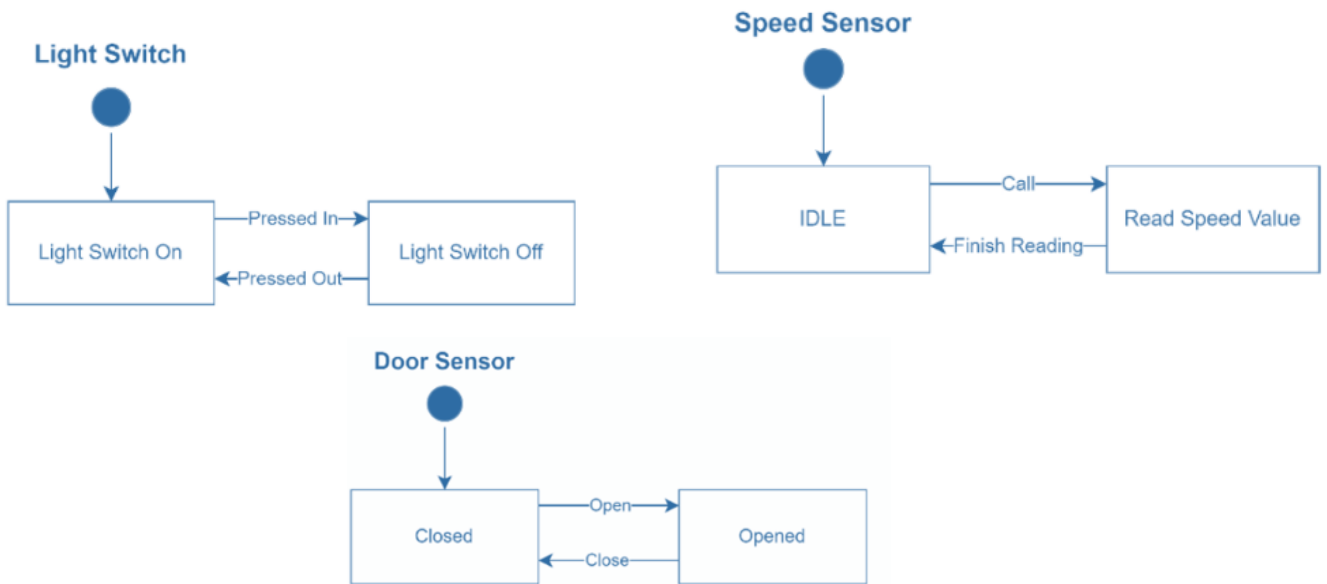


CPU Load:

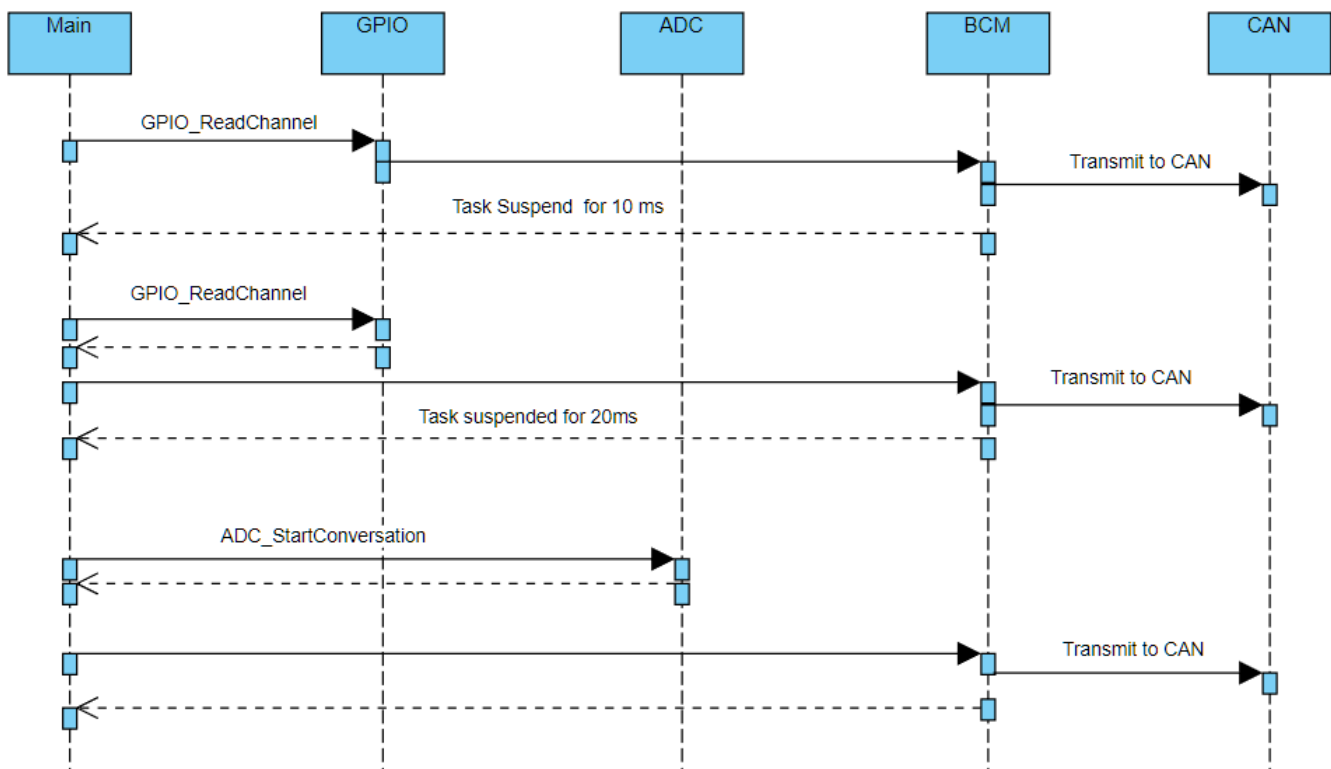
- Hyper period = 20 ms
- Estimate each task has execution time of 1.5 ms

$$\text{CPU Load} = \frac{1.5}{5} + \frac{1.5}{10} + \frac{1.5}{20} = 52.5\%$$

ECU1 Components:

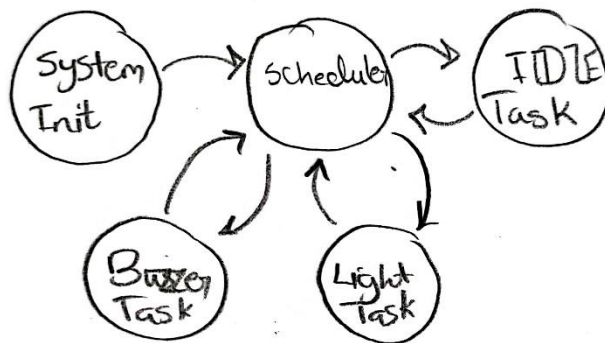
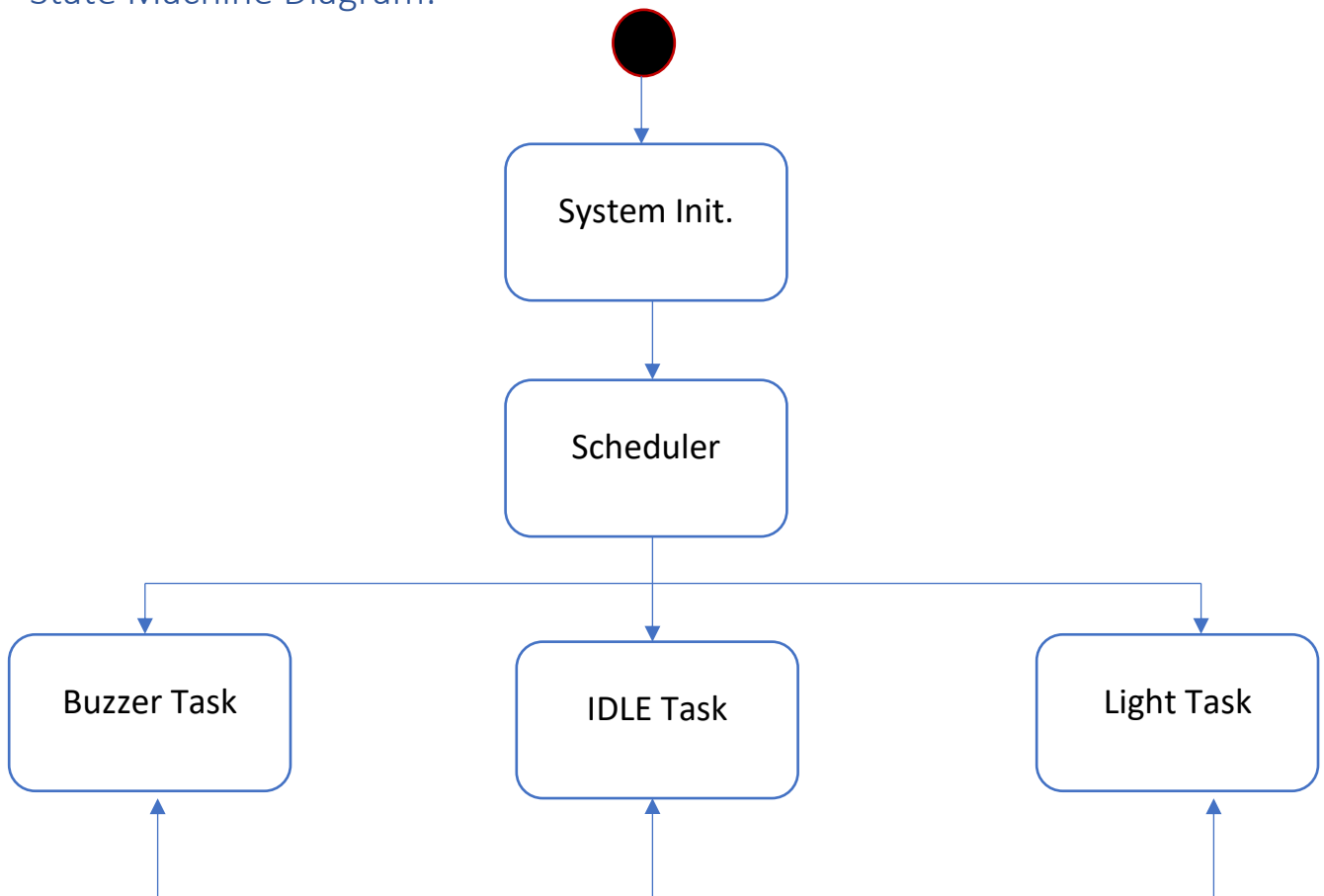


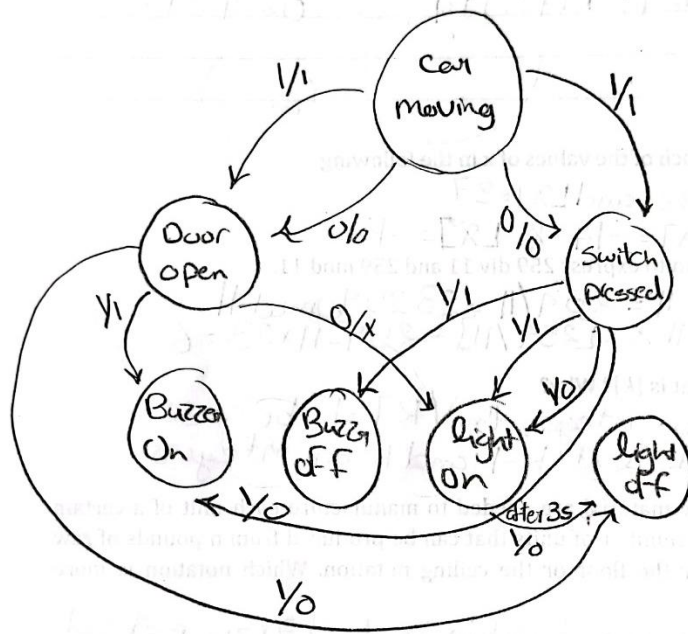
Sequential Diagram:



ECU 2

State Machine Diagram:





ECU1 Components:



CPU Load:

- Hyper period = 5 ms
- Estimate each task has execution time of 1.5 ms

$$\text{CPU Load} = \frac{1.5}{5} + \frac{1.5}{5} = 60\%$$

Sequential Diagram:

