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Topic: **Automotive Door Control System Design**

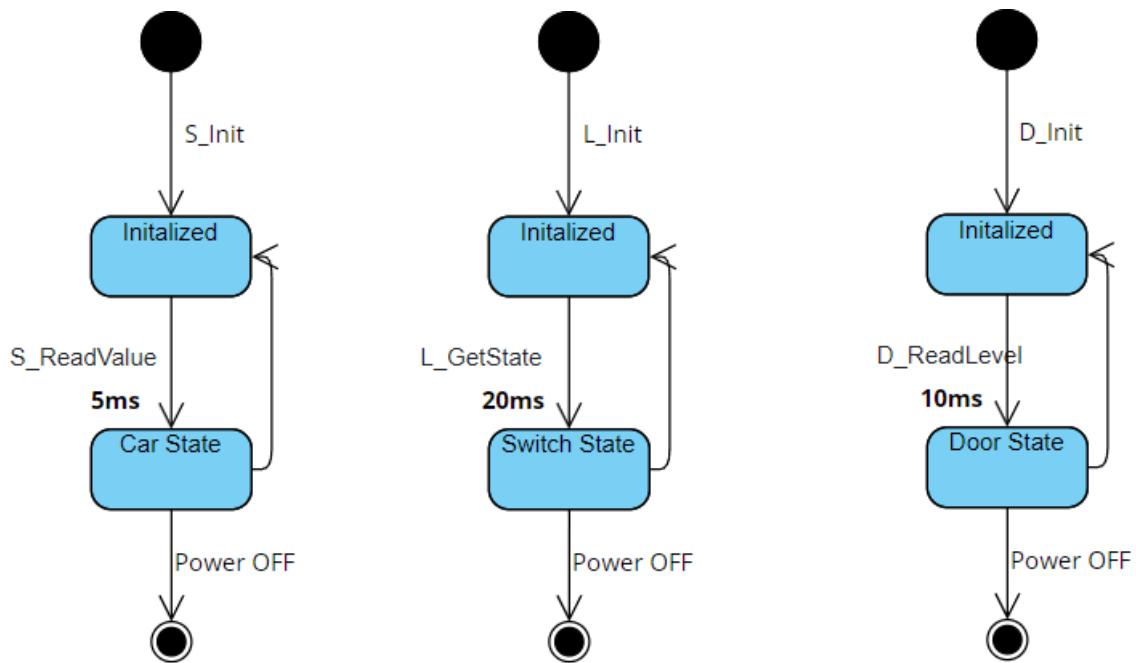
1. ECU 1

a. State Machine diagram for each ECU component

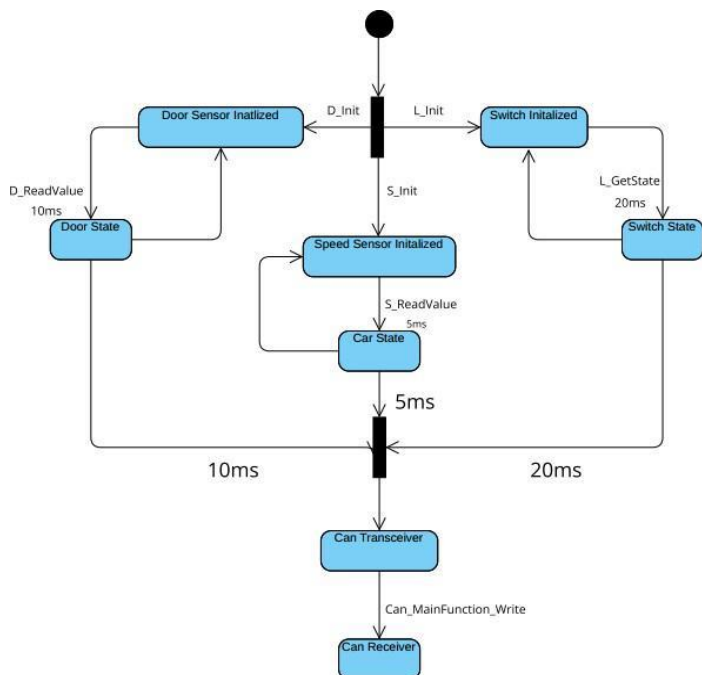
1. Speed Sensor

2. Light Switch

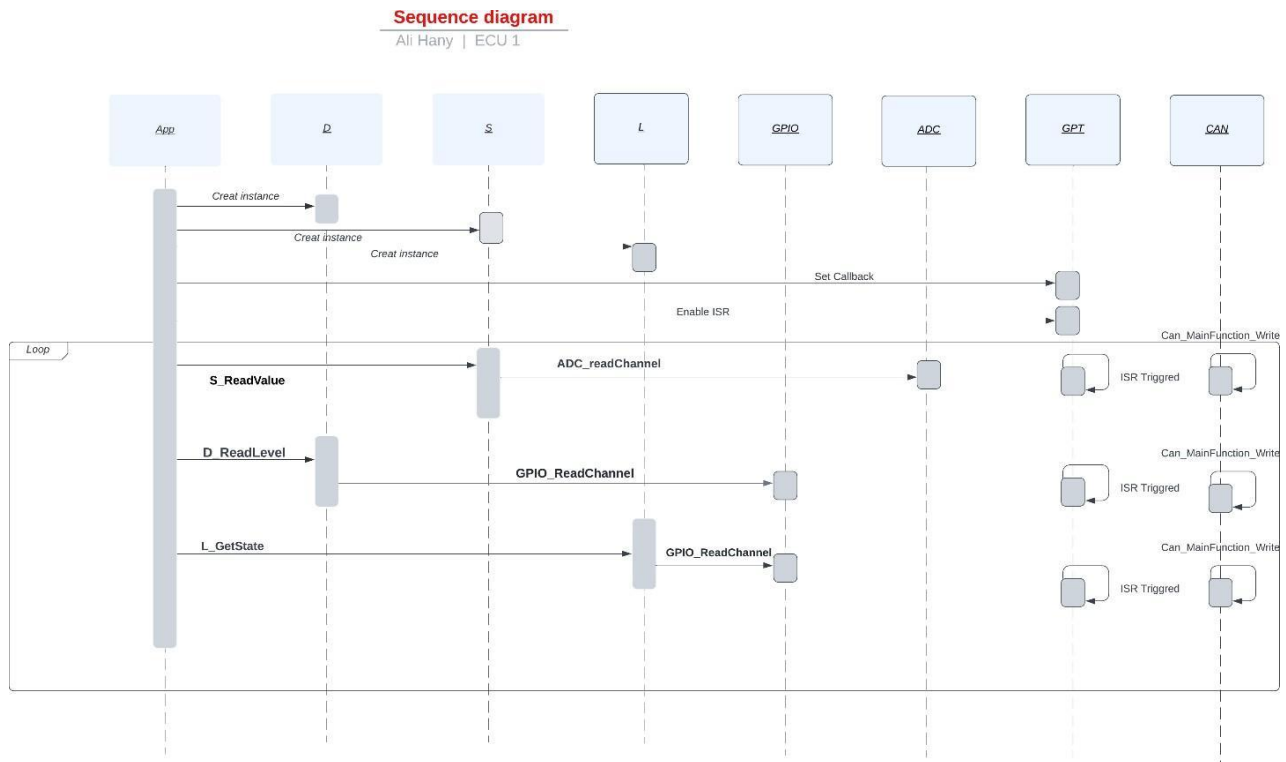
3. Door Sensor



b. State Machine diagram for the ECU operation



c. Sequence diagram for the ECU



d. CPU Load

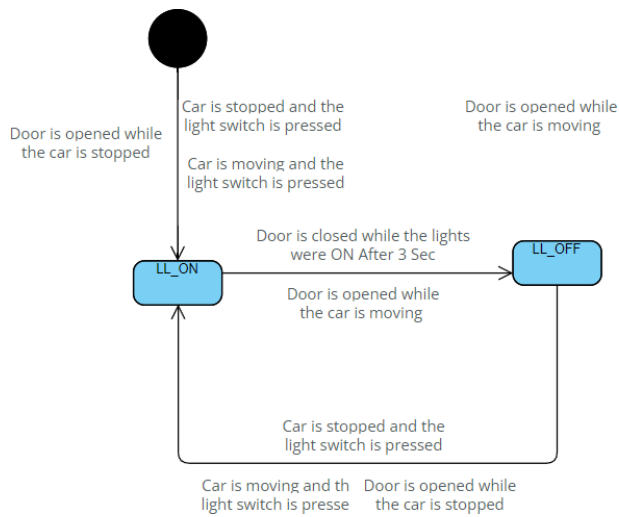
CPU Utilization = 100 - idle time = 100 - 65

CPU Utilization = 35%

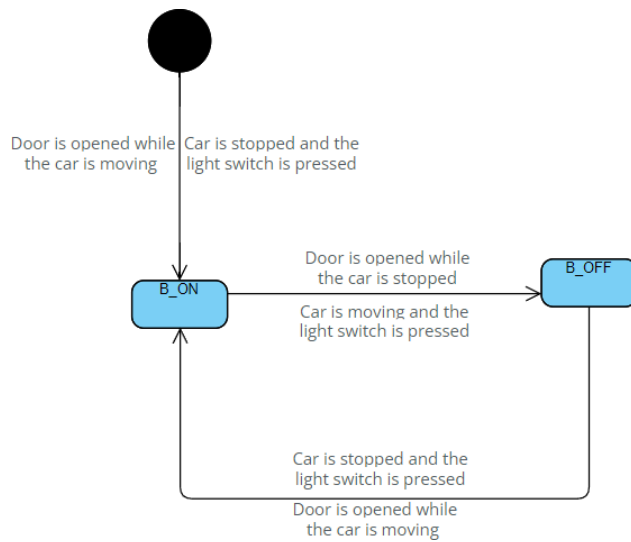
2. ECU 2

a. State Machine diagram for each ECU component

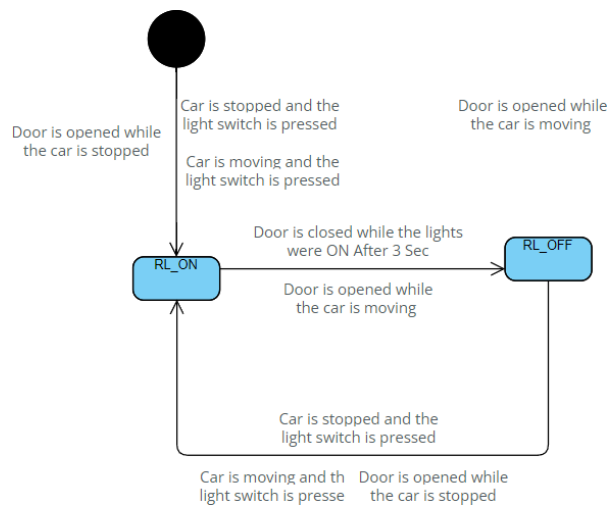
1. Left Light



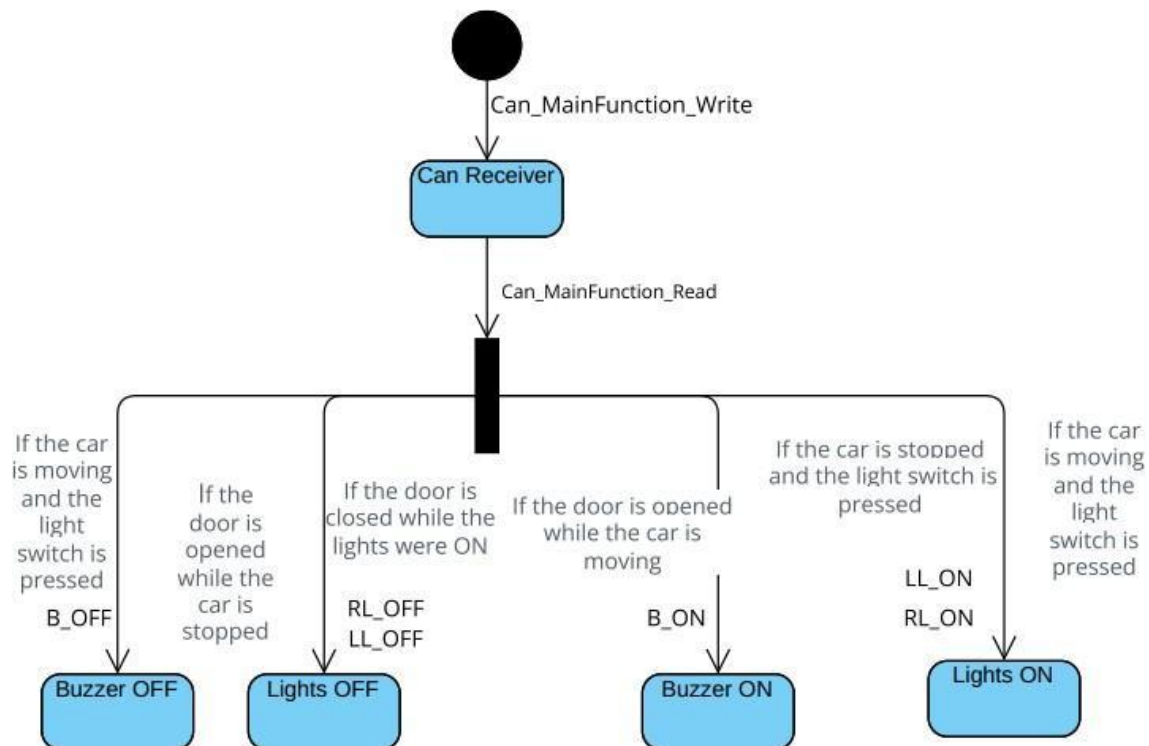
2. Buzzer



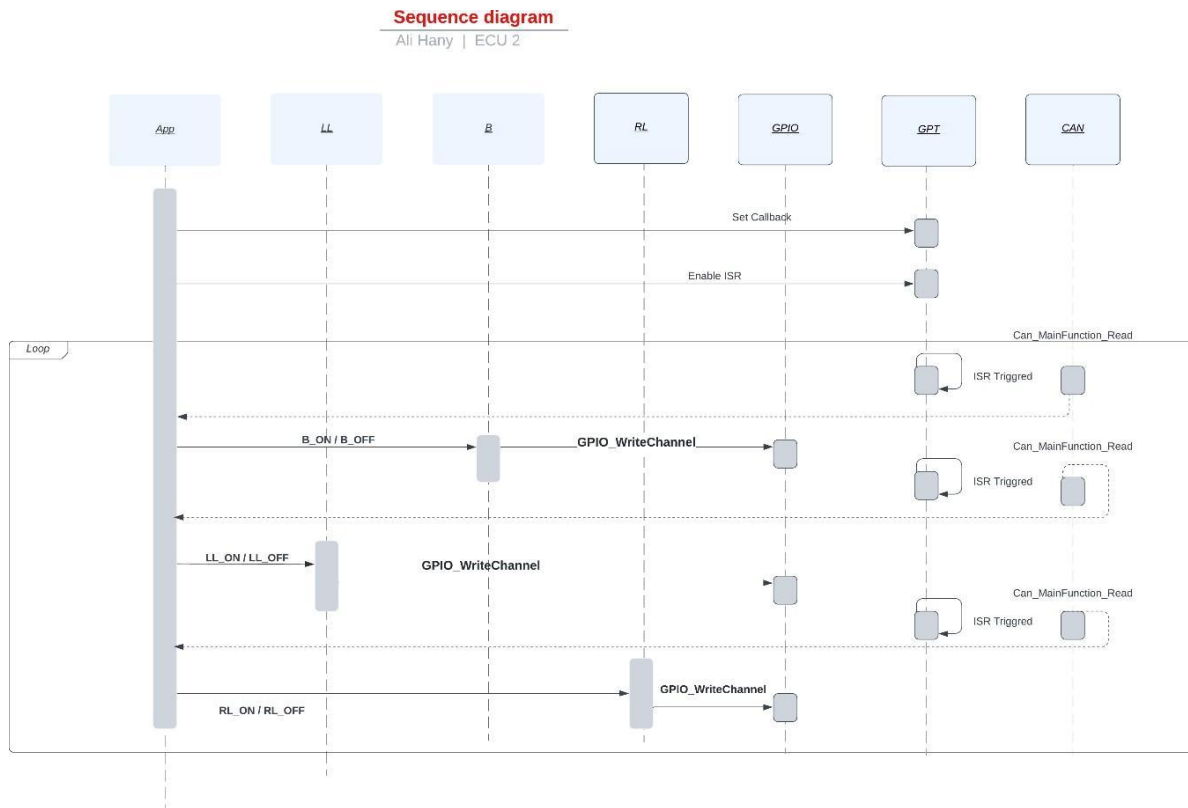
3. Right Light



b. State Machine diagram for the ECU operation



c. Sequence diagram for the ECU



d. CPU Load

CPU Utilization = 100 - idle time = 100 - 65

CPU Utilization = 35%