Automotive Door Control
Static Design
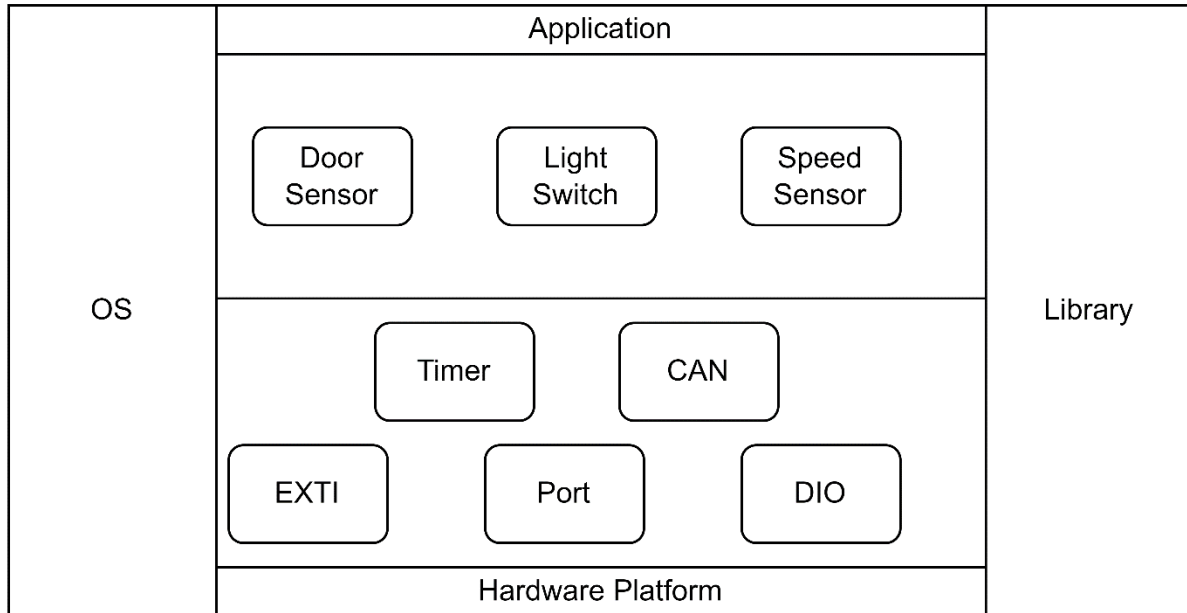
System Components

Automotive Door Control

Input Devices

1. One Door Sensor (D)
2. One Light Switch (L)
3. One Speed Sensor (S)

Output Devices

1. Right Light (RL)
2. Lift Light (LL)
3. One Buzzer (B)

| ECU1 | ←→ | CAN Protocol | ←→ | ECU2 |

| D | L | S |

| RL | LL | B |

ECU-1 Layered Architecture

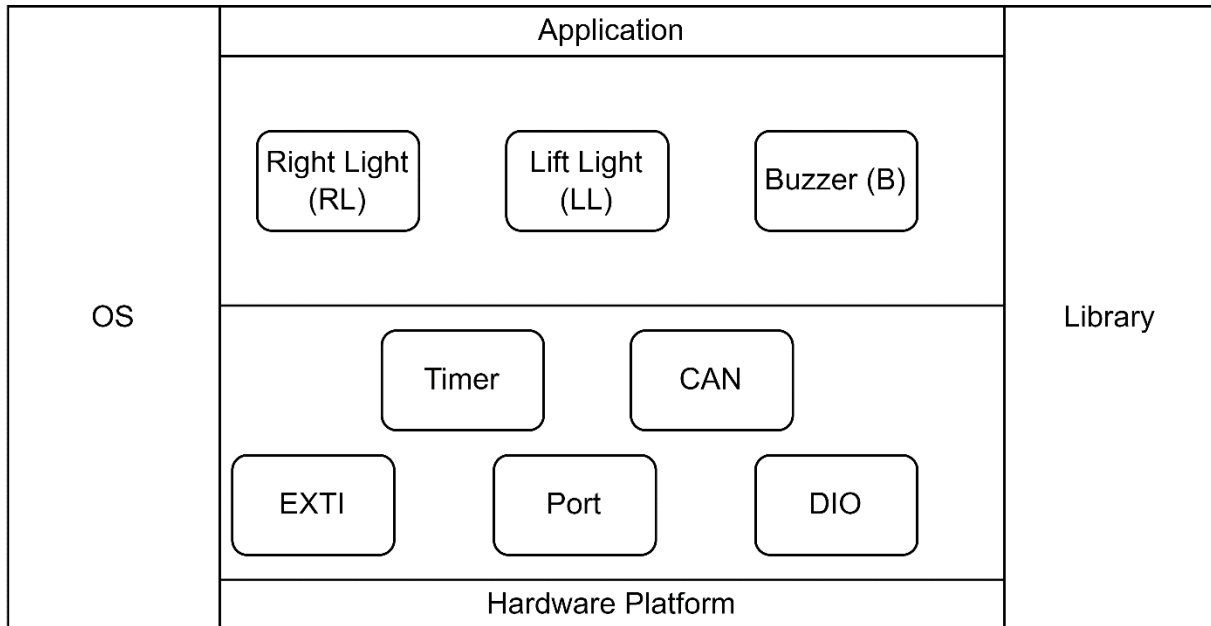|	Application	
	Door Sensor Light Switch Speed Sensor	
OS	Timer CAN EXTI Port DIO	Library
	Hardware Platform	
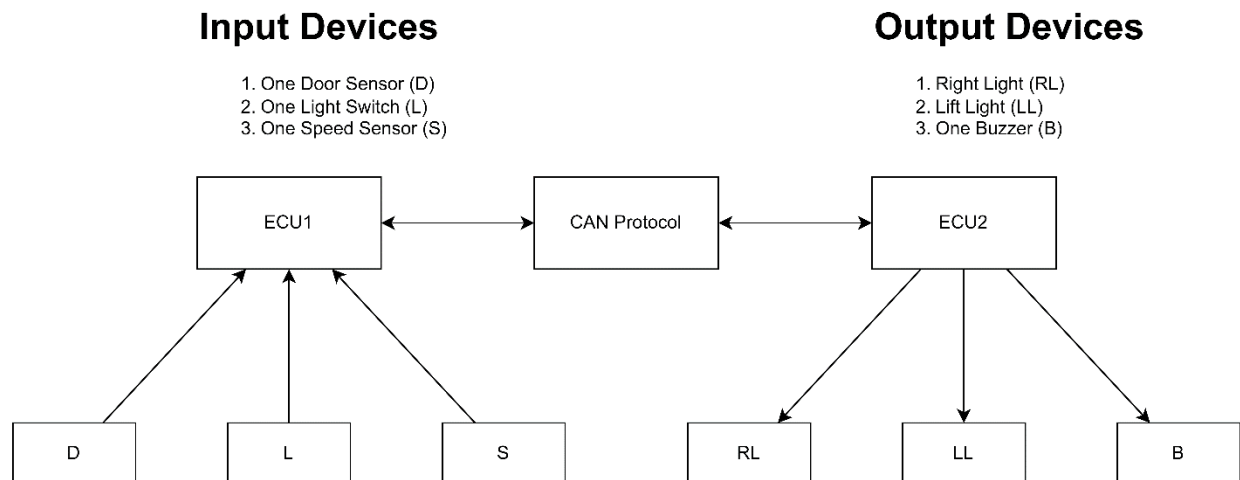
ECU-1 Components and Modules

MCAL

- Port Driver
- DIO Driver
- EXTI Driver
- Timer Driver
- CAN Driver

HAL

- Door Sensor Driver
- Light Switch Driver
- Speed Sensor Driver

ECU-2 Layered Architecture

ECU-2 Layered Architecture

OS	Application	Library
	Right Light (RL) Lift Light (LL) Buzzer (B)	
	Timer CAN	
	EXTI Port DIO	
	Hardware Platform	

ECU-2 Components and Modules

MCAL Layer

- Port Driver
- DIO Driver
- EXTI Driver
- CAN Driver
- Timer Driver

HAL Layer

- Buzzer Driver
- Lift Light Driver
- Right Light Driver