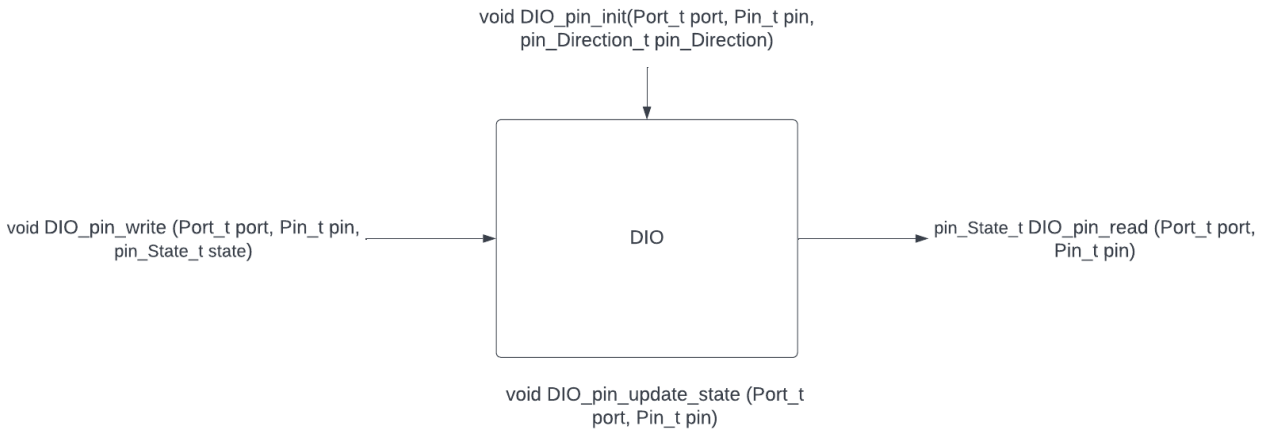
Static SW design

- **For ECU1 :**

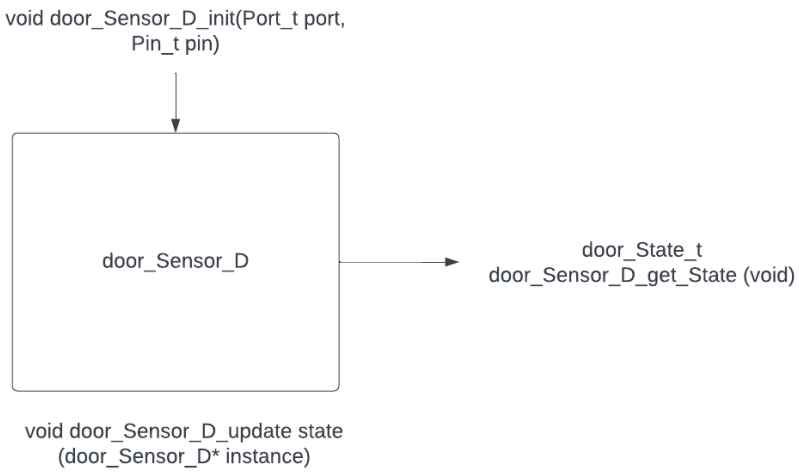
a. DIO :



API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void DIO_pin_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize given pin configurations			
Args	1. Port_t port : port which has pin to be configured 2. Pin_t pin : pin to be configured 3. pin_Direction_t pin_direction : the direction of the pin to be configured			
Return	None			
Void DIO_pin_write	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for write a value on given pin			
Args	1. Port_t port : port which has pin to output on 2. Pin_t pin : pin to write on 3. pin_State_t state : value to be written			
Return	None			

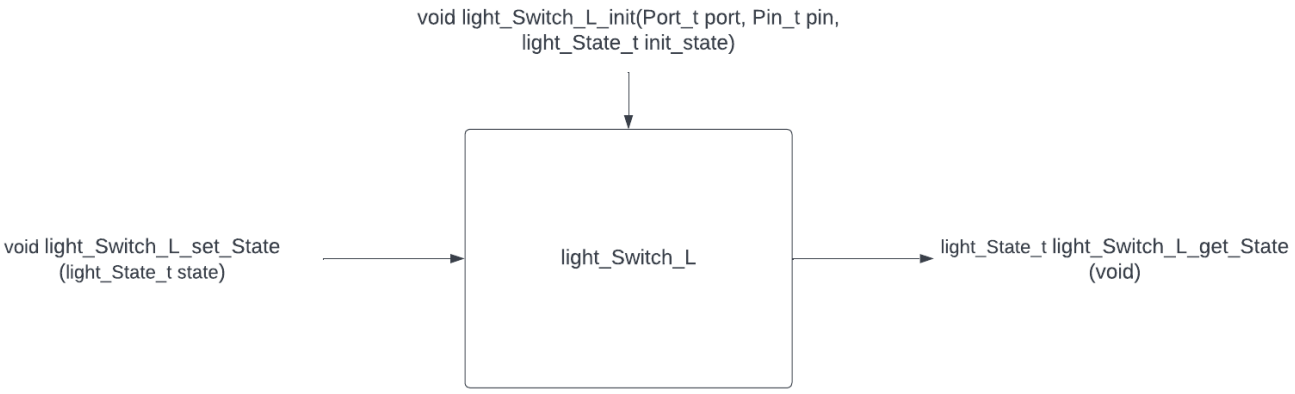
API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
pin_State_t DIO_pin_read	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for read a value from a given pin			
Args	1. Port_t port : port which has pin to be read 2. Pin_t pin : pin to be read			
Return	pin_State_t state : value to be read			
void DIO_pin_update_state	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for updating value on given pin			
Args	4. Port_t port : port which has pin to output on 5. Pin_t pin : pin to write on			
Return	None			

b. door_Sensor_D:



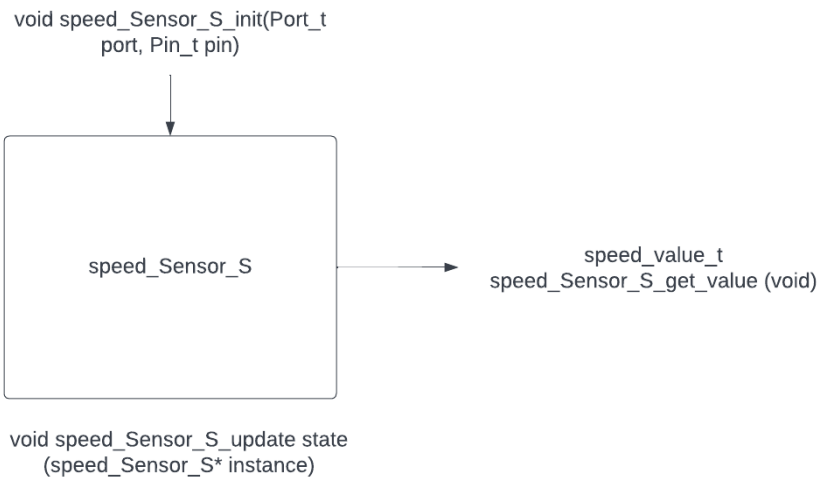
API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void door_Sensor_D_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize door sensor configurations			
Args	1. Port_t port : port which has pin connected to the sensor 2. Pin_t pin : pin connected to the sensor			
Return	None			
door_State_t door_Sensor_D_get_State	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for getting sensor value			
Args	None			
Return	door_State_t sensor_State : return the door state			
void door_Sensor_D_update_state	Non-Reentrant	sync	Non-Recursion	Function
Description	Function responsible for updating value on sensor			
Args	door_Sensor_D* instance : instance of sensor model			
Return	None			

c. light_Switch_L:



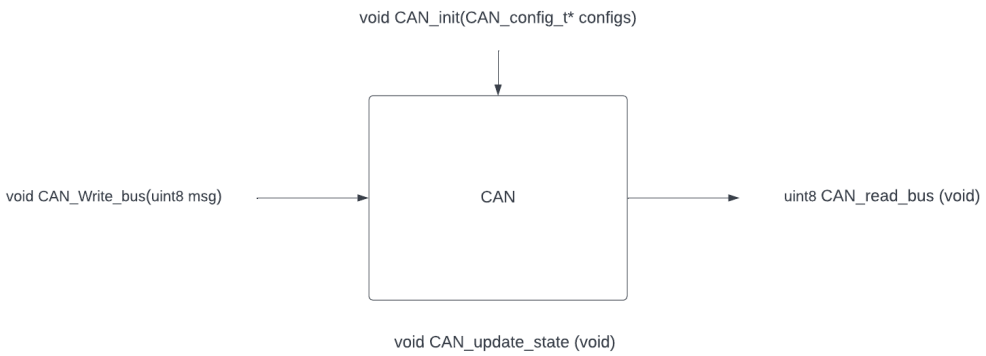
API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void light_Switch_L_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize light switch configurations			
Args	1. Port_t port : port which has pin connected to the light switch 2. Pin_t pin : pin connected to the light switch 3. light_State_t init_state : initial state of light switch			
Return	None			
light_State_t light_Switch_L_get_State ()	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for getting light switch value			
Args	None			
Return	light_State_t light_State : return the light switch state			
void light_Switch_L_set_State	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for setting light switch state			
Args	light_State_t state : the light switch state to be set			
Return	None			

d. speed_Sensor_S:



API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void speed_Sensor_S_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize speed sensor configurations			
Args	1. Port_t port : port which has pin connected to the sensor 2. Pin_t pin : pin connected to the sensor			
Return	None			
speed_value_t speed_Sensor_S_get_value	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for getting sensor value			
Args	None			
Return	speed_value_t sensor_Value: return the speed value			
void speed_Sensor_S_update state	Non-Reentrant	sync	Non-Recursion	Function
Description	Function responsible for updating value on sensor			
Args	speed_Sensor_S* instance : instance of sensor model			
Return	None			

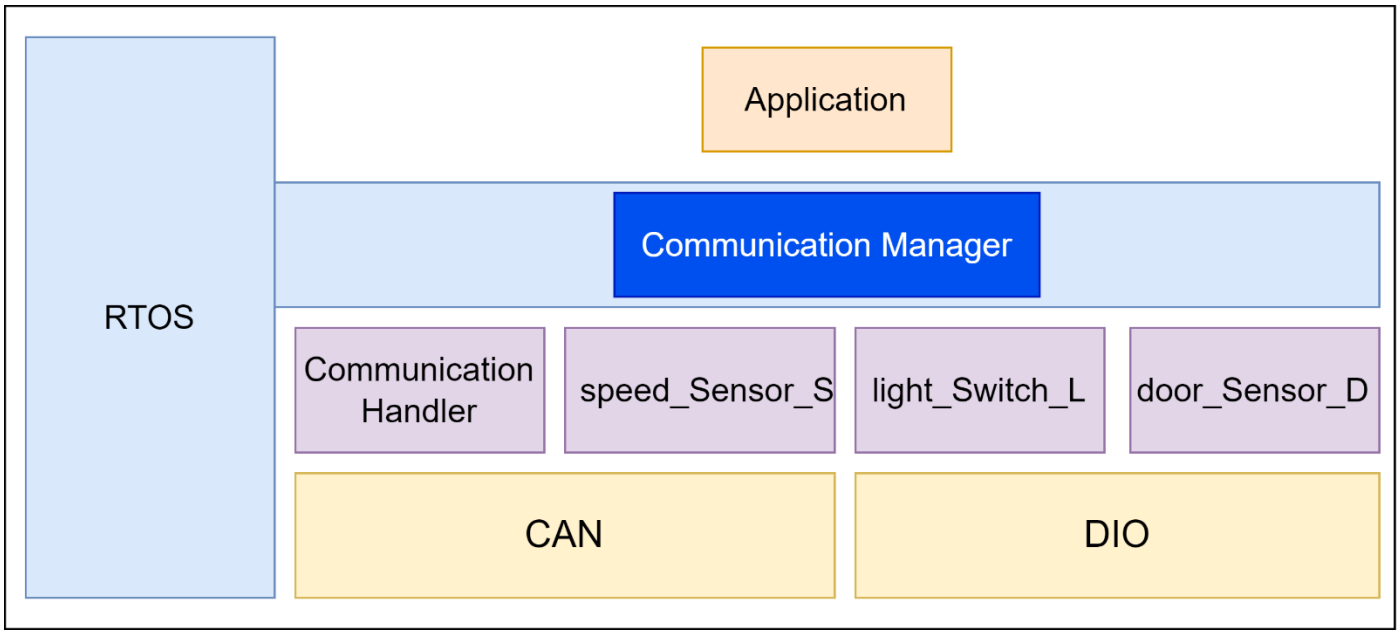
e. CAN:

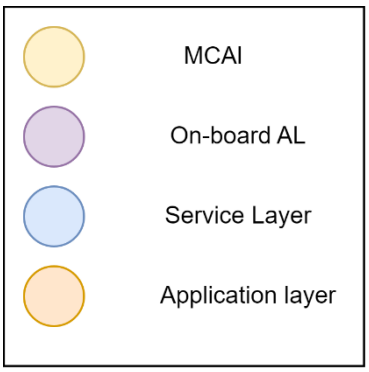


API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void CAN_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize CAN configurations			
Args	1. CAN_config_t* configs : pointer to configurations of CAN			
Return	None			
void CAN_Write_bus	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for send message on the CAN bus			
Args	uint8 msg : message to be sent.			
Return	None			

API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
uint8 CAN_read_bus	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for receiving message from CAN bus			
Args	None			
Return	uint8 received_Msg : message to be received.			
void CAN_update_state	Non-Reentrant	sync	Non-Recursion	Function
Description	Function responsible for updating CAN bus value			
Args	None			
Return	None			

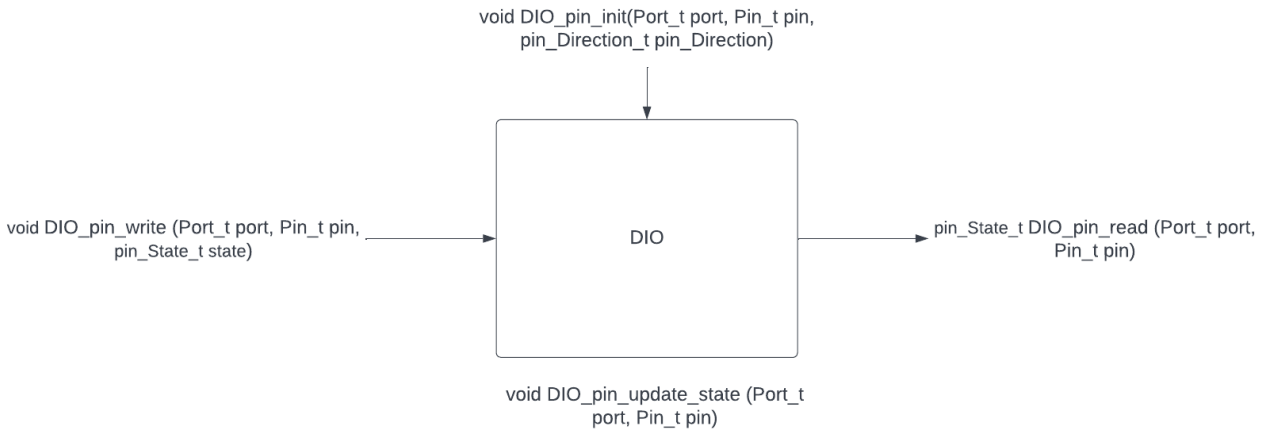
Layered Architecture:





- **For ECU 2:**

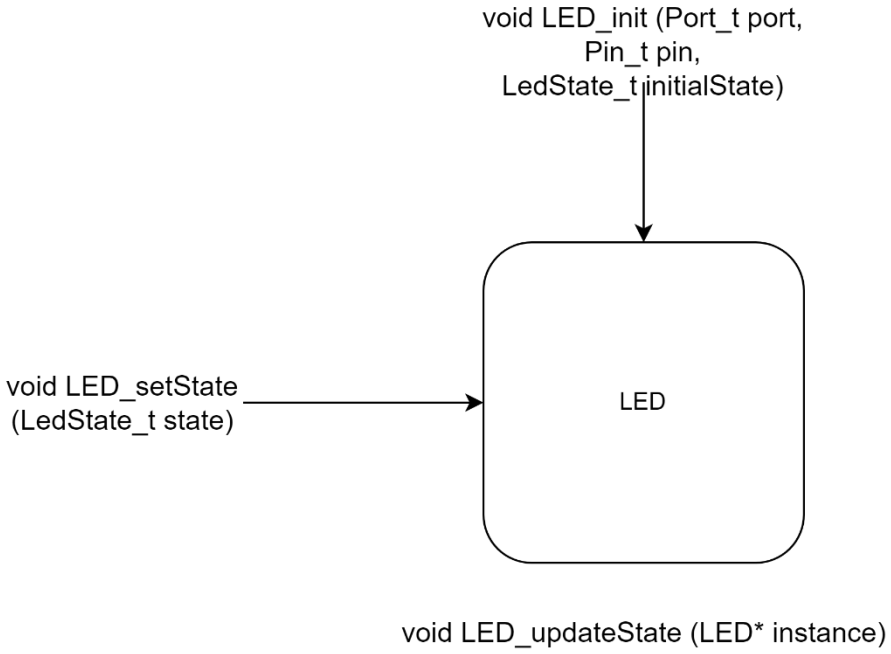
a. DIO:



API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void DIO_pin_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize given pin configurations			
Args	1. Port_t port : port which has pin to be configured 2. Pin_t pin : pin to be configured 3. pin_Direction_t pin_direction : the direction of the pin to be configured			
Return	None			
void DIO_pin_write	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for write a value on given pin			
Args	1. Port_t port : port which has pin to output on 2. Pin_t pin : pin to write on 3. pin_State_t state : value to be written			
Return	None			

API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
pin_State_t DIO_pin_read	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for read a value from a given pin			
Args	1. Port_t port : port which has pin to be read 2. Pin_t pin : pin to be read			
Return	pin_State_t state : value to be read			
void DIO_pin_update_state	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for updating value on given pin			
Args	1. Port_t port : port which has pin to output on 2. Pin_t pin : pin to write on			
Return	None			

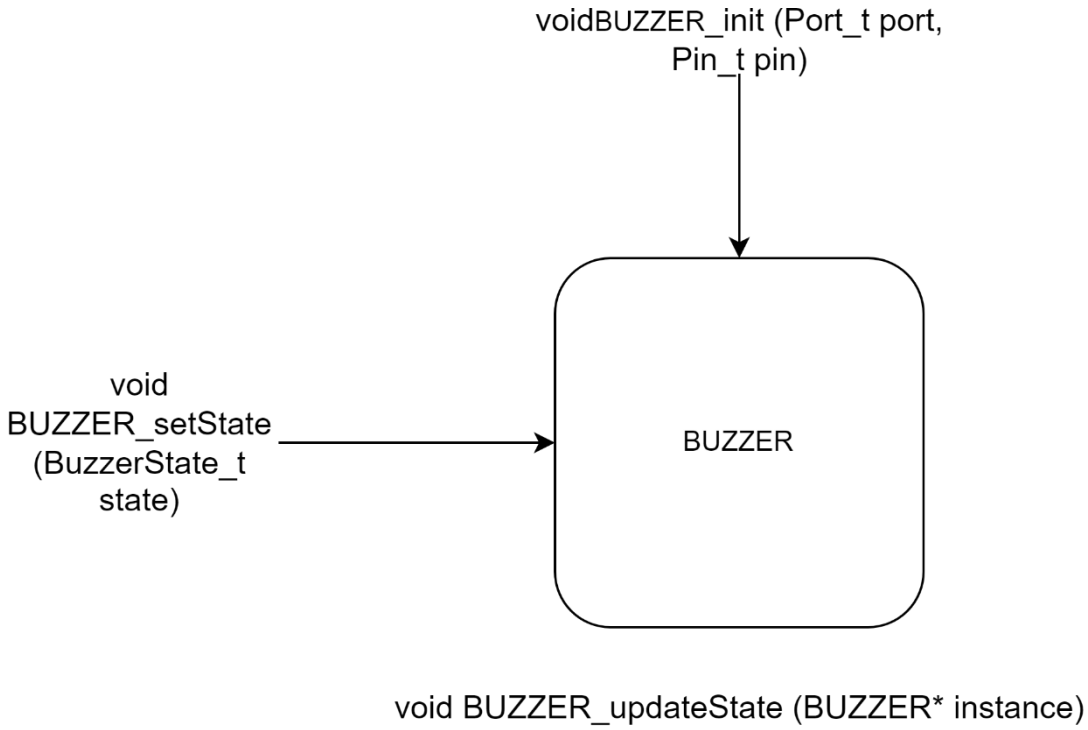
b. LED:



API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void LED_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize led configurations			
Args	1. Port_t port : port which has pin connected to led to be configured 2. Pin_t pin : pin connected to led to be configured 3. LedState_t initialState : state to output on the led as initial value			
Return	None			
void LED_setState	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for output a value on given Led			
Args	LedState_t state : state to output on the led			
Return	None			

API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void LED_updateState	Non-Reentrant	sync	Non-Recursion	Function
Description	Function responsible for updating value on given led			
Args	LED* instance :instance to the led model			
Return	None			

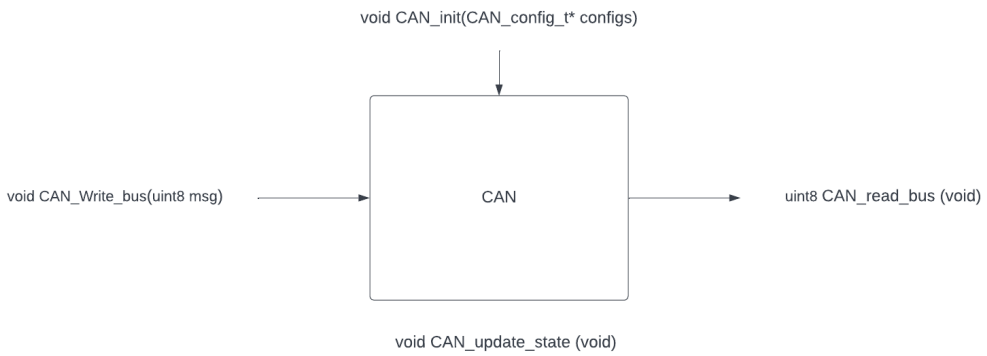
c. BUZZER:



API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void BUZZER_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize buzzer configurations			
Args	1. Port_t port : port which has pin connected to buzzer to be configured 2. Pin_t pin : pin connected to buzzer to be configured			
Return	None			
void BUZZER_setState	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for output a value on given buzzer			
Args	BuzzerState_t state : state to output on the buzzer			
Return	None			

API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void BUZZER_updateState	Non-Reentrant	sync	Non-Recursion	Function
Description	Function responsible for updating value on given buzzer			
Args	BUZZER* instance: instance to the buzzer model			
Return	None			

d. CAN:



API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
void CAN_init	Reentrant	sync	Non-Recursion	Function
Description	Function responsible for initialize CAN configurations			
Args	2. CAN_config_t* configs : pointer to configurations of CAN			
Return	None			
void CAN_Write_bus	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for send message on the CAN bus			
Args	uint8 msg : message to be sent.			
Return	None			

API	Reentrant Or Non-Reentrant	Sync Or Async	Recursion Or Non-Recursion	Type
uint8 CAN_read_bus	Reentrant	sync	Non-Recursion	MACRO
Description	Function responsible for receiving message from CAN bus			
Args	None			
Return	uint8 received_Msg : message to be received.			
void CAN_update_state	Non-Reentrant	sync	Non-Recursion	Function
Description	Function responsible for updating CAN bus value			
Args	None			
Return	None			

Layered Architecture: