ECU2 Static Design

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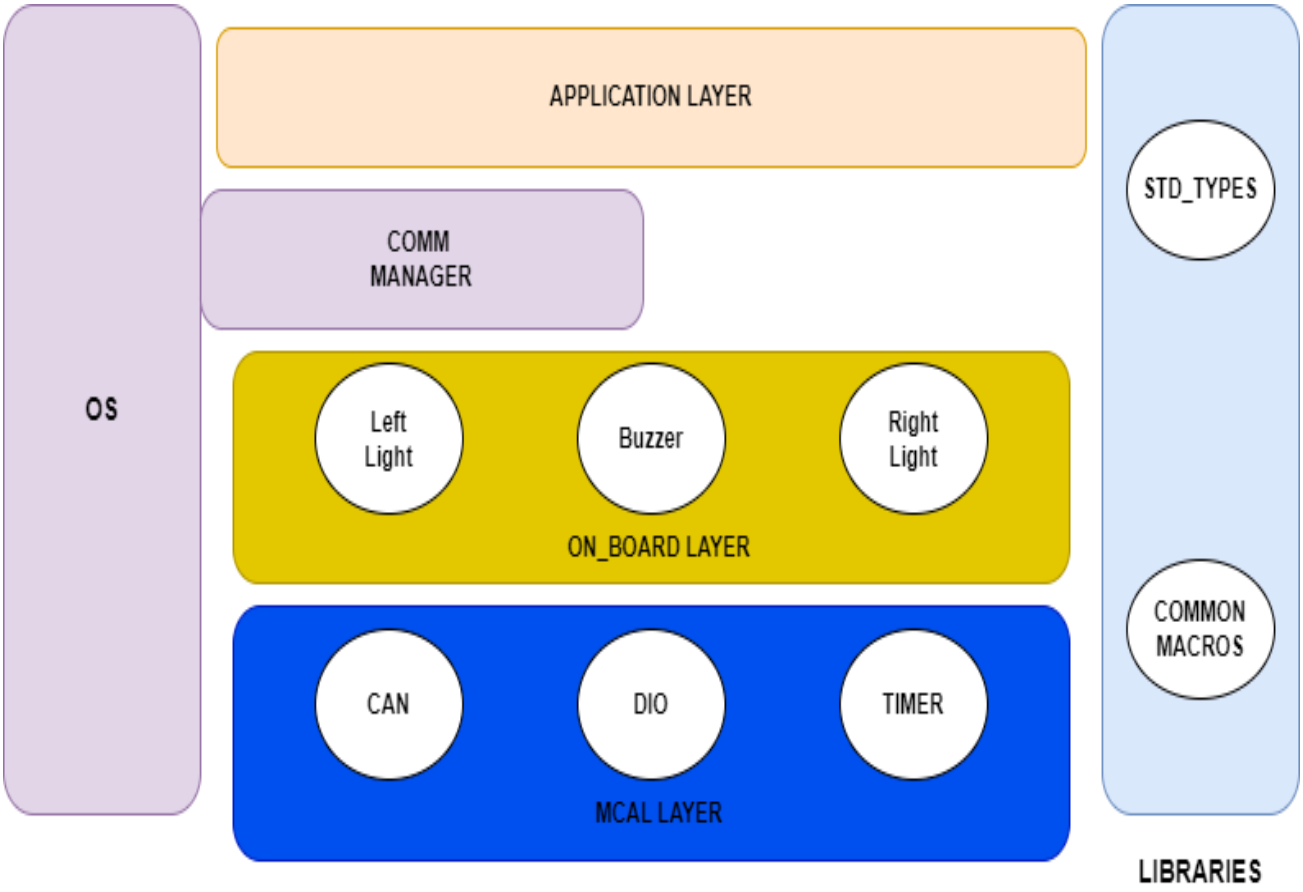
➢ ECU2 LAERED ARCHITECTURE



- **ECU2 Contain 6 Modules:**
  - **CAN**
  - **DIO**
  - **TIMER**
  - **LEFT LIGHT**
  - **RIGHT LIGHT**
  - **BUZZER**

➢ ECU2 DETAILS APIS&TYPES:

- **DIO**
  - **TYPES**

NAME	pinConfg	
TYPE	STRUCTURE	
RANGE	portNo	Port which pin belongs to
	pinNo	Number of the pin in the port
	pinDr	The direction of the pin
	inRes	The internal resistor
DESCRIPTION	Structure to configure each individual pin	

Name	PinDir	
TYPE	ENUM	
RANGE	INDIR	0
	OURDIE	1
DESCRIPTION	Enum to hold pin direction	

NAME	inResType	
TYPE	ENUM	
RANGE	PULLUP	0
	PULLDOWN	1
	NOA	2
DESCRIPTION	Enum to hold pin resistor	

NAME	pinStatus	
TYPE	ENUM	
RANGE	LOW	0
	HIGH	1
DESCRIPTION	Enum to hold the status of the pin	

NAME	portID	
TYPE	ENUM	
RANGE	PORTA	0
	PORTB	1
	PORTC	2
	PORTD	3
	PORTE	4
	PORTF	5
DESCRIPTION	Enum to hold port id	

NAME	pinID	
TYPE	ENUM	
RANGE	PIN0	0
	PIN1	1
	PIN2	2
	PIIN3	3
	PIN4	4
	PIN5	5
	PIN6	6
	PIN7	7
DESCRIPTION	Enum to hold pin id	

- **APIS**

Function Name	**Dio_Init**		
Parameters	**Input**		**Output**
	configPtr	**Pointer to pin configuration data**	**None**
Return	**none**		
Description	**Function to initialize the DIO module**		

Function Name	**DIO_PIN_write**	
Parameters	**Input**	
	pinID	**Indicates the index of the pin**
	pinStatus	**Indicates the status of the pin**
Return	**none**	
Description	**Function to set the level of a pin**	

Function Name	**DIO_PIN_read**	
Parameters	**Input**	
	pinID	**Indicates the index of the pin**
Return	**pinStatus**	**Indicates the state of the pin**
Description	**Function to read a level of a pin**	

- **TIMER**
  - **TYPES**

NAME	timerConfig
TYPE	STRUCTURE
RANGE	
DESCRIPTION	Sturcture holds the timer call back function

  - **APIS**

Function Name	timer_init	
Parameters	input	
	TimerConfig	Pointer to timer configuration data
Return	None	
Description	Function to initialize the timer module	

Function Name	timer_start	
Paramteters	Input	
	time	Unit32 time in seconds
Return	None	
Description	Function to start the timer module	

Function Name	timer_stop
Parameters	None
Return	None
Description	Function to stop the timer module

- **CAN**
  - **APIS**

Function Name	**CAN_init**
Parameters	**None**
Return	**None**
Description	**Function to initialize CAN module**

Function Name	**CAN_send_data**	
Parameters	**Input**	
	Unit32 data	**Data that will be sent through CAN**
Return	**None**	
Description	**Function to send data through can module**	

Function Name	**CAN_recieve_data**	
Parameters	**output**	
	Unint32*data	**Data that will be received through CAN**
Return	**None**	
Description	**Function to receive data through CAN module**	

- **Buzzer module**
  - **APIS**

Function Name	Buzzer_init
Parameters	None
Return	None
Description	Function to initialize the Buzzer

Function Name	TurnON_Buzzer
Parameters	None
Return	None
Description	Function to turn on the Buzzer

Function Name	TurnOFF_Buzzer
Parameters	None
Return	None
Description	Function to turn off the Buzzer

- **R_light module**
  - **APIS**

Function Name	**Rlight_init**
Parameters	**None**
Return	**None**
Description	**Function to initialize the right light**

Function Name	**TurnON_Rlight**
Parameters	**None**
Return	**None**
Description	**Function to turn on the right light**

Function Name	**TurnOFF_Rlight**
Parameters	**None**
Return	**None**
Description	**Function to turn off the right light**

- **L_light module**
  - **APIS**

Function Name	**Llight_init**
Parameters	**None**
Return	**None**
Description	**Function to initialize the left light**

Function Name	**TurnON_Llight**
Parameters	**None**
Return	**None**
Description	**Function to turn on the left light**

Function Name	**TurnOFF_Llight**
Parameters	**None**
Return	**None**
Description	**Function to turn off the left light**