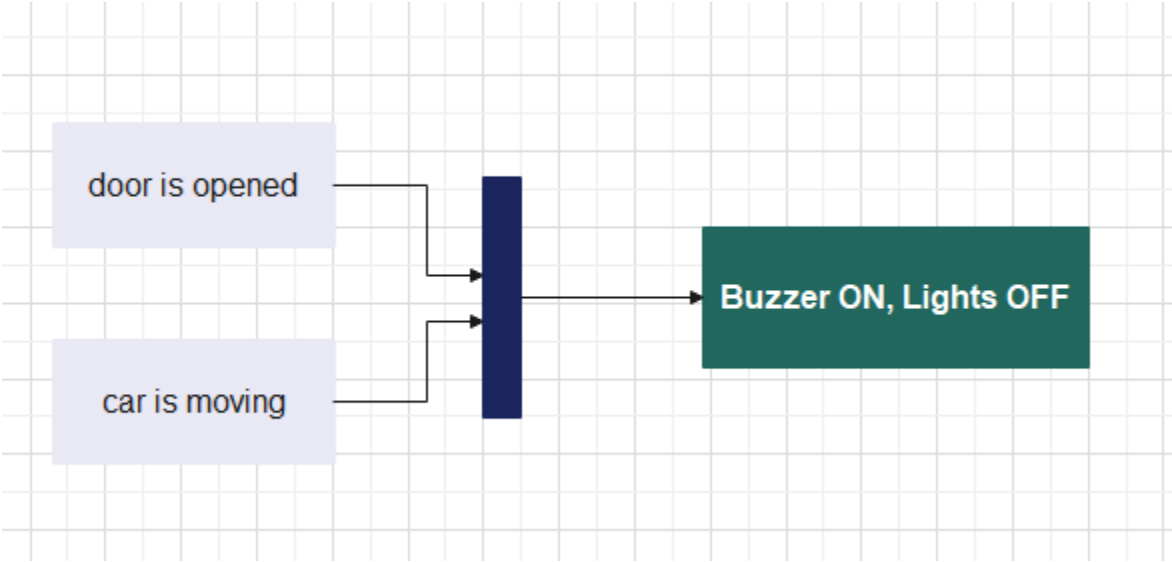
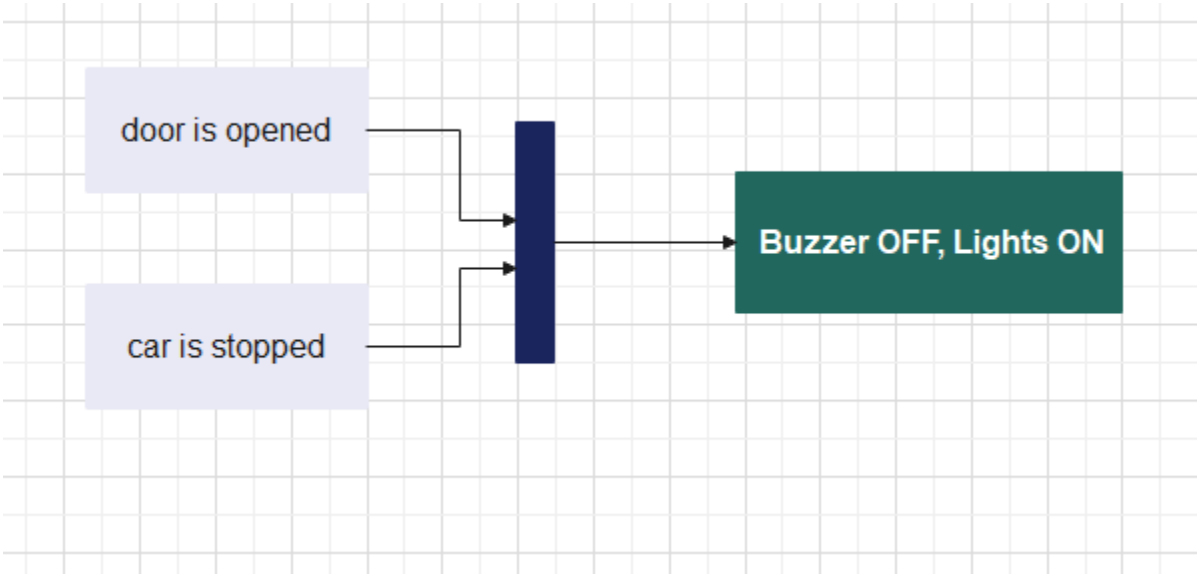
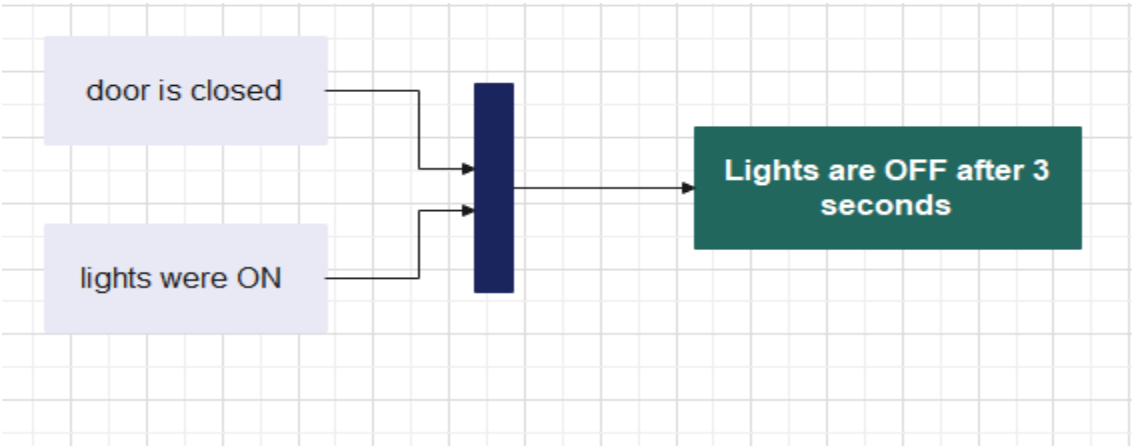
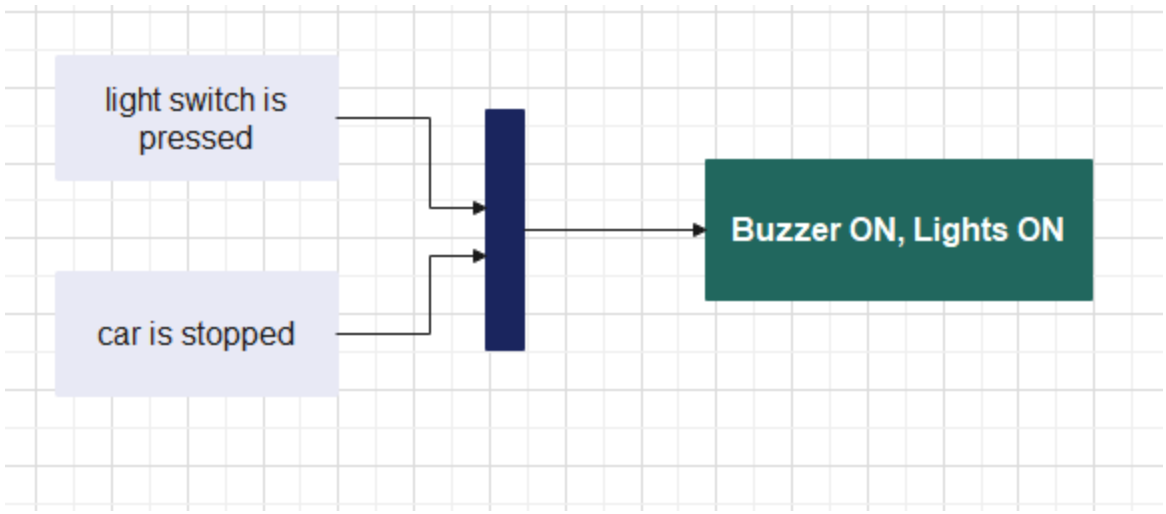
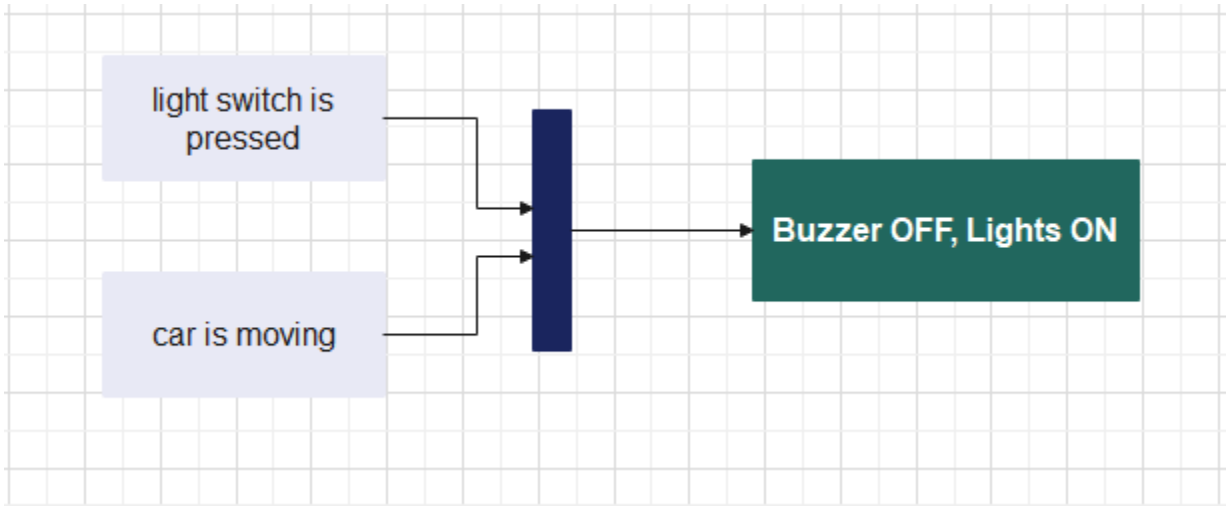
Schematic


door is opened
car is moving
Buzzer ON, Lights OFF

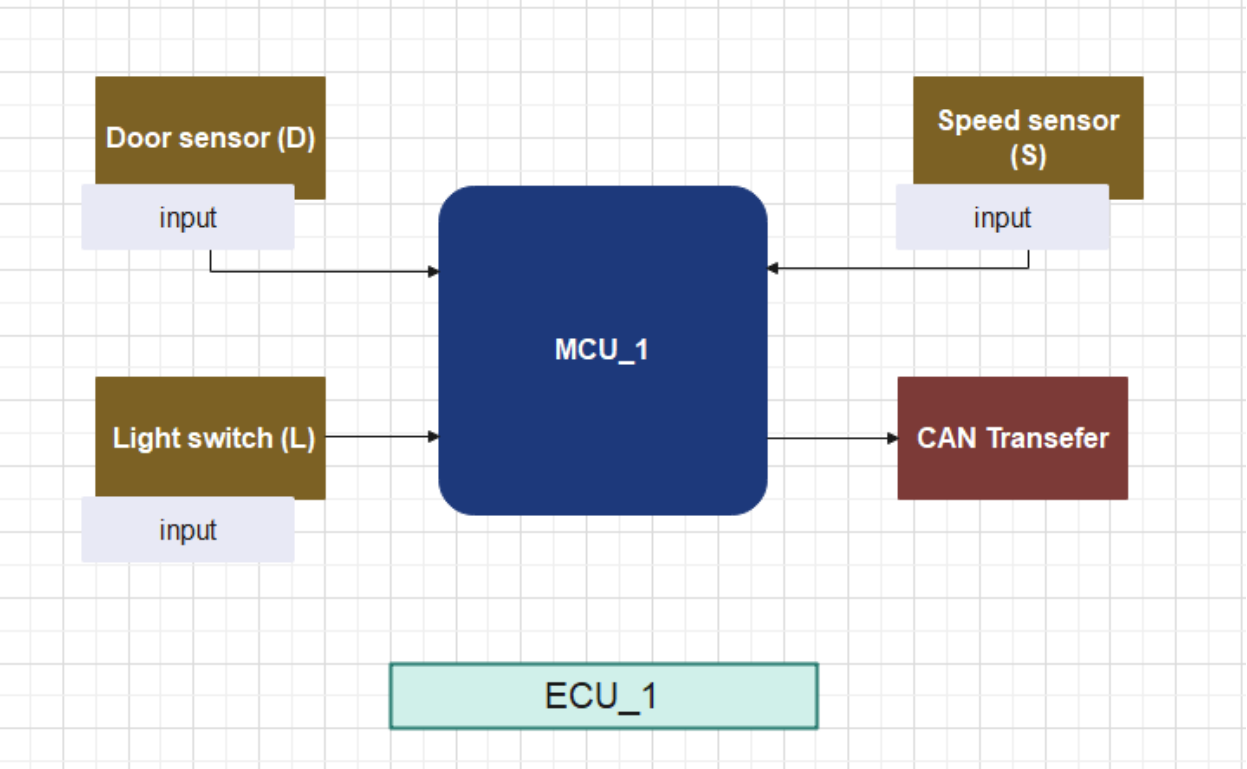

door is opened
car is stopped
Buzzer OFF, Lights ON


door is closed
lights were ON
Lights are OFF after 3 seconds

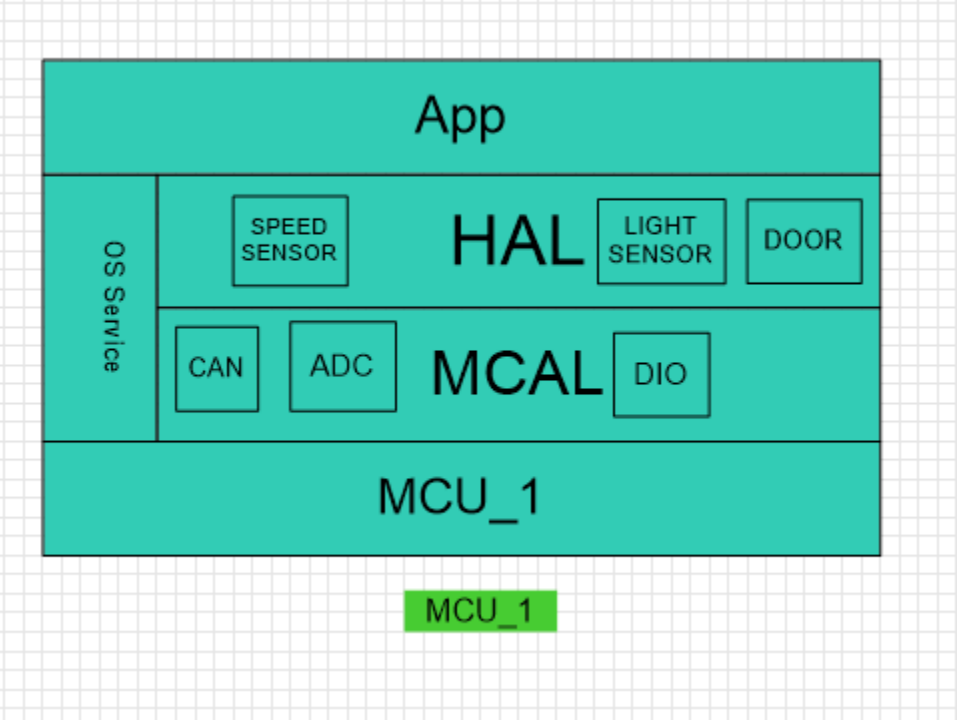

light switch is pressed
car is stopped
Buzzer ON, Lights ON


light switch is pressed
car is moving
Buzzer OFF, Lights ON

Block Diagram



Static Layer



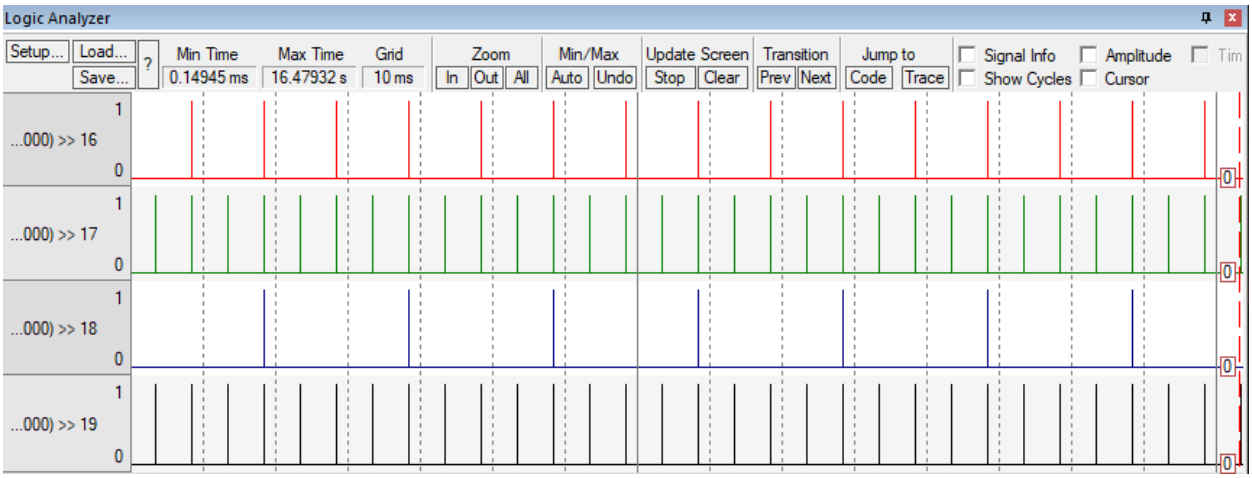
TASKS:

DOOR_task(); to read the status of Door every 10 ms

SPEED_task(); to read the Speed of Car every 5 ms

LIGHT_task(); to read the status of Switch every 20 ms

CAN_task(); to send the status of Sensors every 5 ms



API:

/***/

Name: SpeedRead
Argument: Non
Return type: unsigned char
Description: to read value of speed
unsigned char SpeedRead (void);

/***/

/***/

Name: ADC_Read

Argument:

Name: channel

Type: uint8

Range: variable

Description: channel number

Return type: unsigned short

Description: to read value of analog signal

```
unsigned short  ADC_Read (uint8 channel);
```

/***/

/***/

Name: LIGHT_Read

Argument: Non

Return type: unsigned char

Description: to read switch status

```
unsigned char LIGHT_Read(void);
```

/***/

/***/

Name: DOOR _Read

Argument: Non

Return type: unsigned char

Description: to read Door status

```
unsigned char DOOR_Read(void);
```

/***/

/***/

Name: CAN_transmit

Argument:

Name: Data_fram

Type: struct data

Range: variable

Description: hold the value and signal

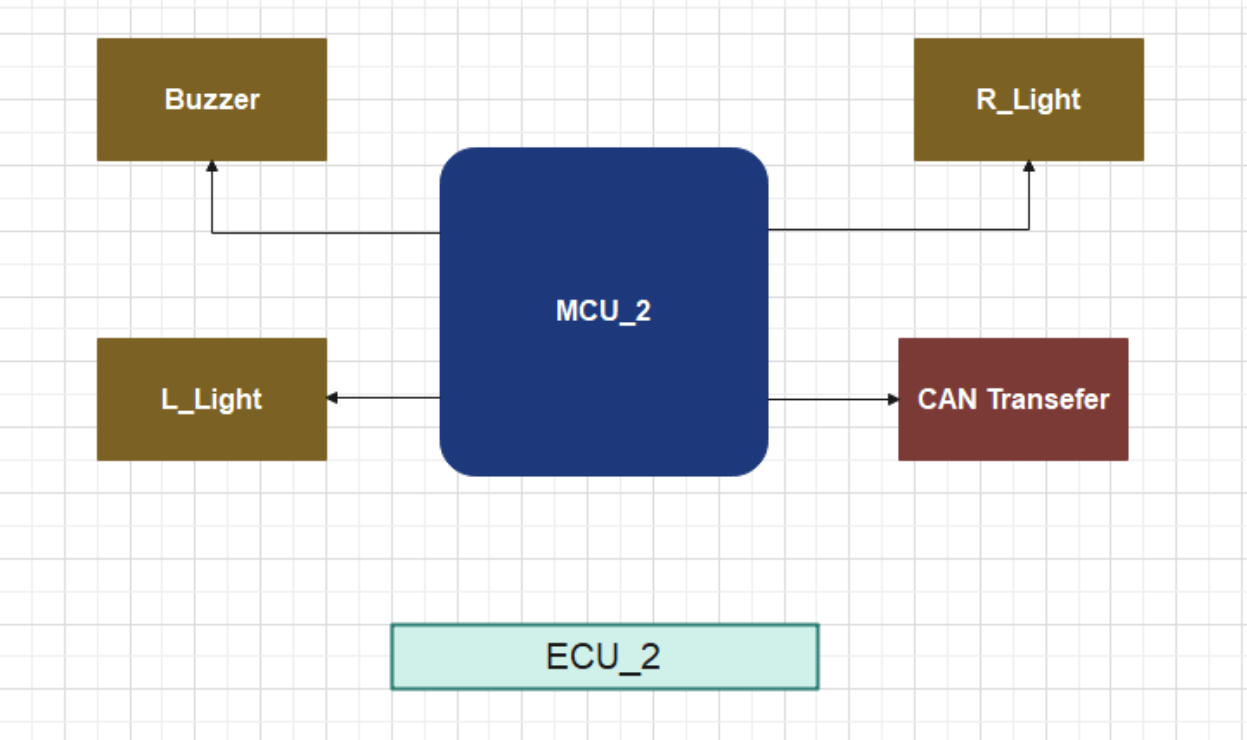
Return type: unsigned char

Description: to send data to ECU_2

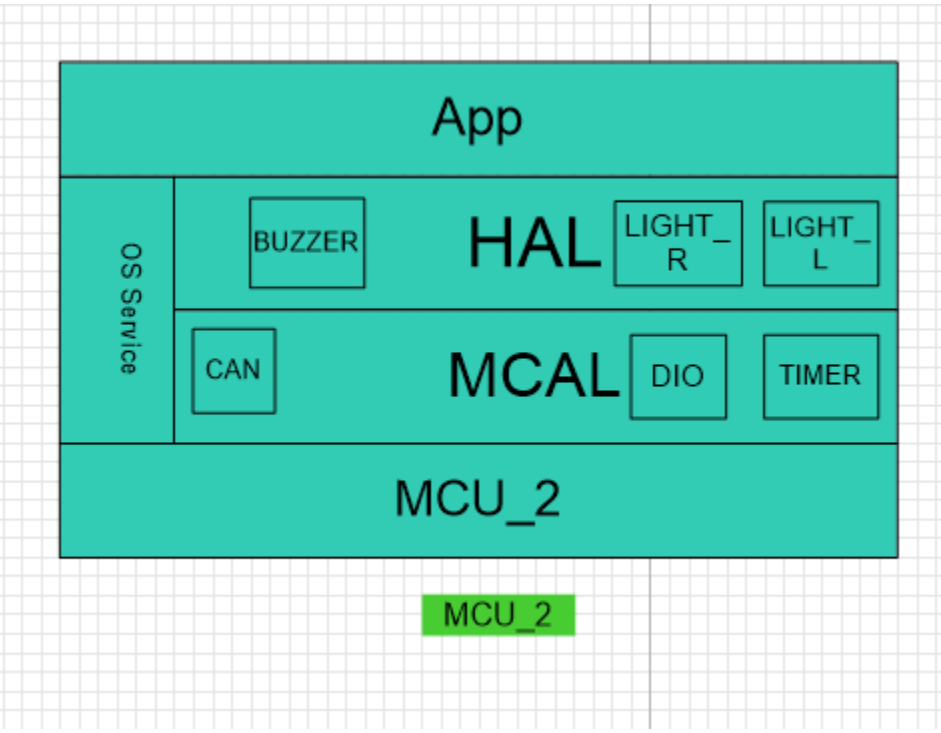
```
unsigned char CAN_transmit (struct data Data_fram);
```

/***/

Block Diagram



Static Layer



TASKS:

CAN_task(); to receive the data from ECU_1 5 ms

MAIN_task(); to tack action according to data 5 ms

API:

/***/

Name: BUZZER_ON

Argument: Non

Return type: void

Description: to turn on Buzzer

void BUZZER_ON (void);

/***/

/***/

Name: BUZZER_OFF

Argument: Non

Return type: void

Description: to turn OFF Buzzer

void BUZZER_OFF (void);

/***/

/***/

Name: RLIGHT_ON
Argument: Non
Return type: void
Description: to turn ON right led
void RLIGHT_ON (void);
/***/

/***/

Name: RLIGHT_OFF
Argument: Non
Return type: void
Description: to turn OFF right led
void RLIGH_OFF (void);
/***/

/***/

Name: LLIGHT_OFF
Argument: Non
Return type: void
Description: to turn OFF left led
void LLIGHT_OFF (void);
/***/

/***/

Name: LLIGHT_ON
Argument: Non
Return type: void
Description: to turn ON left led
void LLIGHT_ON (void);
/***/

/***/

Name: CAN_receiver
Argument: Non
Return type: struct data
Description: to receiver data to ECU_1
struct data CAN_receiver (void);
/***/