

Automotive Door Control System Design

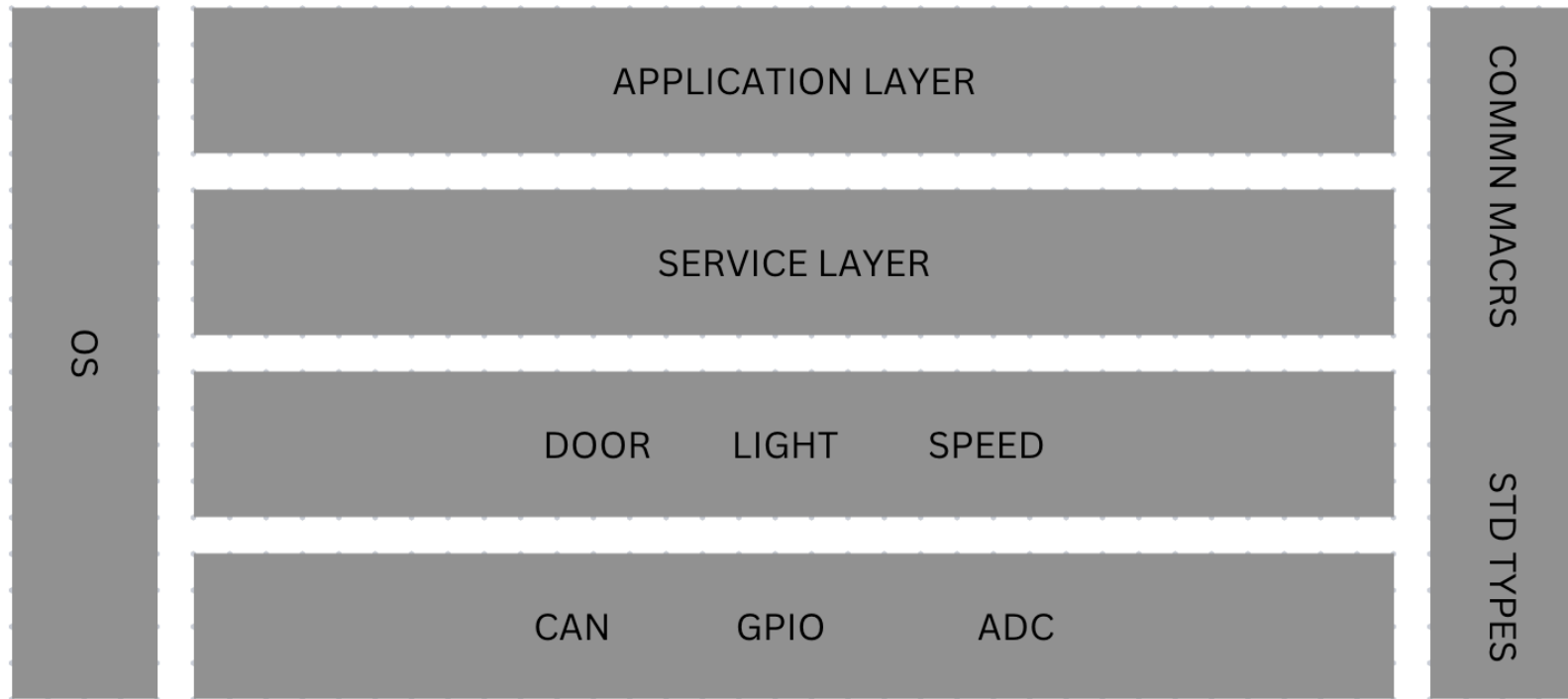
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STATIC DESIGN

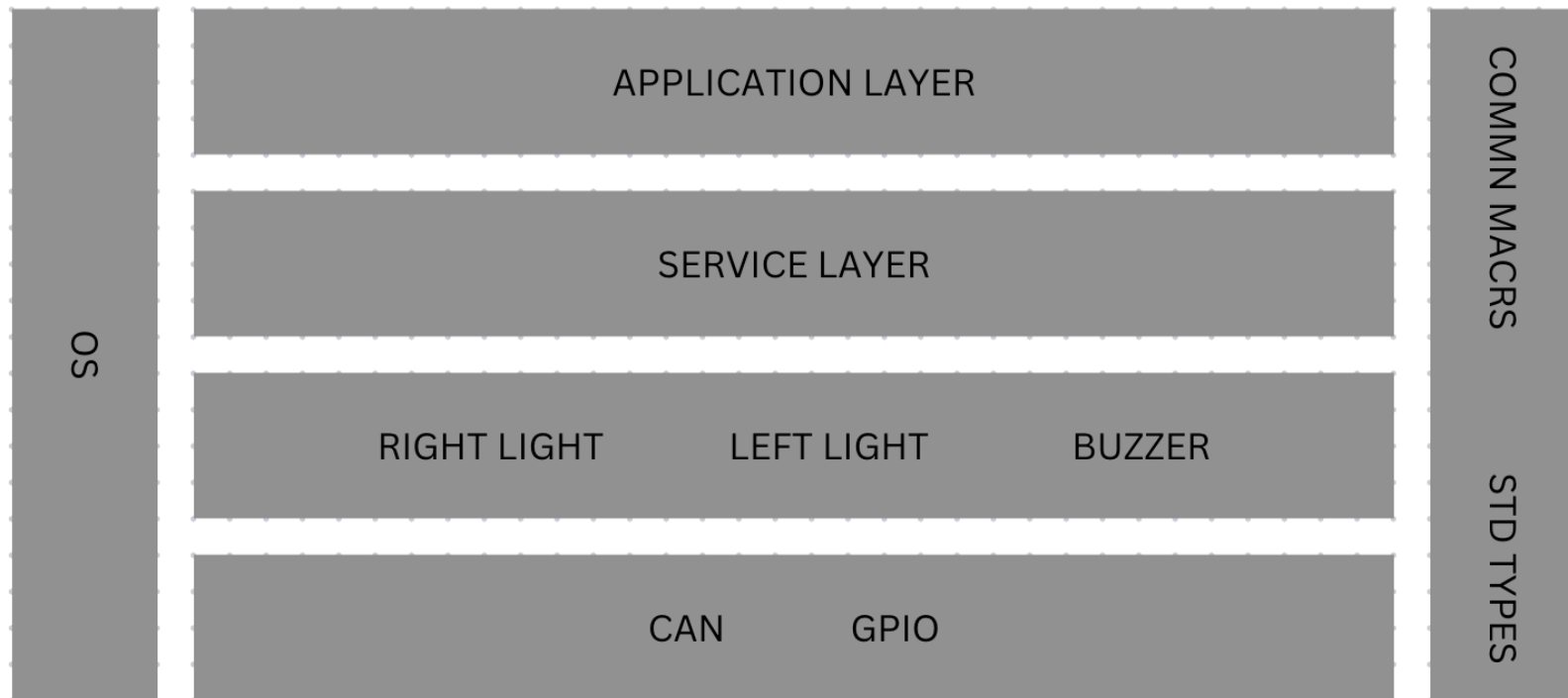
Block Diagram:



EC1:



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ECU1 APIS:

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View Zoom

Add Category Pivot Table

Insert Table Chart Text Shape Media Comment

Collaborate

Format Organize

Sheet 1

| | | |
|-------------|-------------------------|--|
| Name | pin_value | |
| Type | Enum | |
| Range | HIGH , LOW | |
| Description | Member contains the 0,1 | |

| | | |
|---------------|--|-----|
| Function name | void ADC_INIT(void) | |
| Arguments | Inputs | N/A |
| Return | void | N/A |
| Description | This function is responsible for initializing ADC driver | |

| | | |
|---------------|--|-----|
| Function name | void ADC_Start(void) | |
| Arguments | Inputs | N/A |
| Return | void | N/A |
| Description | This function is used to start ADC conversion continuously | |

| | | |
|---------------|---|-----|
| Function name | void ADC_Stop(void) | |
| Arguments | Inputs | N/A |
| Return | void | N/A |
| Description | This function is used to stop ADC conversion continuously | |

| | | |
|---------------|--|--|
| Function name | uint16 ADC_ReadValue(ADC_Channel_t ADC_Channel, ADC_res_t ADC_res) | |
| Arguments | Inputs | ADC_Channel_t ADC_Channel, ADC_res_t ADC_res |
| Return | UInt16 | data |
| Description | This function is used to get the data read on a specific channel | |

| | | |
|-------------|---------------|--|
| Name | ADC_Channel_t | |
| Type | Enum | |
| Range | A0 A5 | |
| Description | | |

| | | |
|-------------|-------------|--|
| Name | ADC_res_t | |
| Type | Enum | |
| Range | EIGHT , TEN | |
| Description | | |

| | | | | | | | | | | | | | |
|---------------|---|--------------|-------------|--------|-------|-------|------|-------|-------|---------|-------------|--------|----------|
| View | Zoom | Add Category | Pivot Table | Insert | Table | Chart | Text | Shape | Media | Comment | Collaborate | Format | Organize |
| + Sheet 1 | | | | | | | | | | | | | |
| Function name | void can_Init(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | E_OK , E_NOK | | | | | | | | | | | | |
| Description | Function to Initialize the Can module. | | | | | | | | | | | | |
| Function name | void CAN_SendByte(uint8 byte) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | Byte | | |
| Return | E_OK , E_NOK | | | | | | | | | | | | |
| Description | This function is used to send a byte of data | | | | | | | | | | | | |
| Name | byte | | | | | | | | | | | | |
| Type | uint8 | | | | | | | | | | | | |
| Range | 0 ... 255 | | | | | | | | | | | | |
| Description | | | | | | | | | | | | | |
| Function name | uint16 SpeedSensor(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | uint16 | | | | | | | | | | Data | | |
| Description | This function is used to get the data out of the speed sensor | | | | | | | | | | | | |
| Function name | uint8 LightSensor(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | uint8 | | | | | | | | | | HIGH , LOW | | |
| Description | This function is used to get the data out of the light sensor | | | | | | | | | | | | |
| Function name | uint8 DoorSensor(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | uint8 | | | | | | | | | | HIGH , LOW | | |
| Description | This function is used to get the data out of the door sensor | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---------------|---|------|--------------|-------------|--------|-------|-------|------|-------|-------|---|-------------|--------|----------|
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| Sheet 1 | | | | | | | | | | | | | | |
| Function name | void Dio_Init(const Dio_Config * configPtr) | | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | const Dio_Config * configPtr | | | |
| Return | void | | | | | | | | | | N/A | | | |
| Description | Function to Initialize the Dio module. | | | | | | | | | | | | | |
| Function name | void Dio_WriteChannel(Dio_ChannelType channel_id, Dio_LevelType Level) | | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | Dio_ChannelType channel_id, Dio_LevelType Level | | | |
| Return | void | | | | | | | | | | N/A | | | |
| Description | Function to set a Level of a channel. | | | | | | | | | | | | | |
| Function name | Dio_LevelType Dio_ReadChannel(Dio_ChannelType channel_id) | | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | Dio_ChannelType channel_id | | | |
| Return | Dio_LevelType | | | | | | | | | | output | | | |
| Description | Function to return the value of the specified DIO channel. | | | | | | | | | | | | | |
| Function name | Dio_LevelType Dio_FlipChannel(Dio_ChannelType channel_id) | | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | Dio_ChannelType channel_id | | | |
| Return | Dio_LevelType | | | | | | | | | | output | | | |
| Description | Function to flip the Level of a channel and return the Level of the channel after flip. | | | | | | | | | | | | | |
| Name | port_id | | | | | | | | | | | | | |
| Type | Enum | | | | | | | | | | | | | |
| Range | PORT A PORT F | | | | | | | | | | | | | |
| Description | Member contains the ID of the Port that this channel belongs to | | | | | | | | | | | | | |
| Name | pin_id | | | | | | | | | | | | | |
| Type | Enum | | | | | | | | | | | | | |
| Range | Pin 0.... Pin 7 | | | | | | | | | | | | | |
| Description | Member contains the ID of the Pin that this channel belongs to | | | | | | | | | | | | | |
| Name | pin_dir | | | | | | | | | | | | | |
| Type | Enum | | | | | | | | | | | | | |
| Range | INPUT , OUTPUT | | | | | | | | | | | | | |
| Description | Member contains the 0,1 | | | | | | | | | | | | | |

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|---------------|---|--------------|-------------|--------|-------|-------|------|-------|-------|---------|-------------|--------|----------|
| View | Zoom | Add Category | Pivot Table | Insert | Table | Chart | Text | Shape | Media | Comment | Collaborate | Format | Organize |
| Sheet 1 | | | | | | | | | | | | | |
| Function name | void Buzzer_on(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | Void | | | | | | | | | | N/A | | |
| Description | This function is used to turn the buzzer on | | | | | | | | | | | | |
| Function name | void Buzzer_off(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | Void | | | | | | | | | | N/A | | |
| Description | This function is used to turn the buzzer off | | | | | | | | | | | | |
| Function name | void RLight_on(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | Void | | | | | | | | | | N/A | | |
| Description | This function is used to turn the Right Light on | | | | | | | | | | | | |
| Function name | void RLight_off(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | Void | | | | | | | | | | N/A | | |
| Description | This function is used to turn the Right Light off | | | | | | | | | | | | |
| Function name | void LLight_on(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | Void | | | | | | | | | | N/A | | |
| Description | This function is used to turn the Left Light on | | | | | | | | | | | | |
| Function name | void LLight_off(void) | | | | | | | | | | | | |
| Arguments | Inputs | | | | | | | | | | N/A | | |
| Return | Void | | | | | | | | | | N/A | | |
| Description | This function is used to turn the Left Light off | | | | | | | | | | | | |