Static Design for Car Control System

Application

APP

Control Buttons	Motor

ECUAL

DIO	PWM	TIMER

MCAL
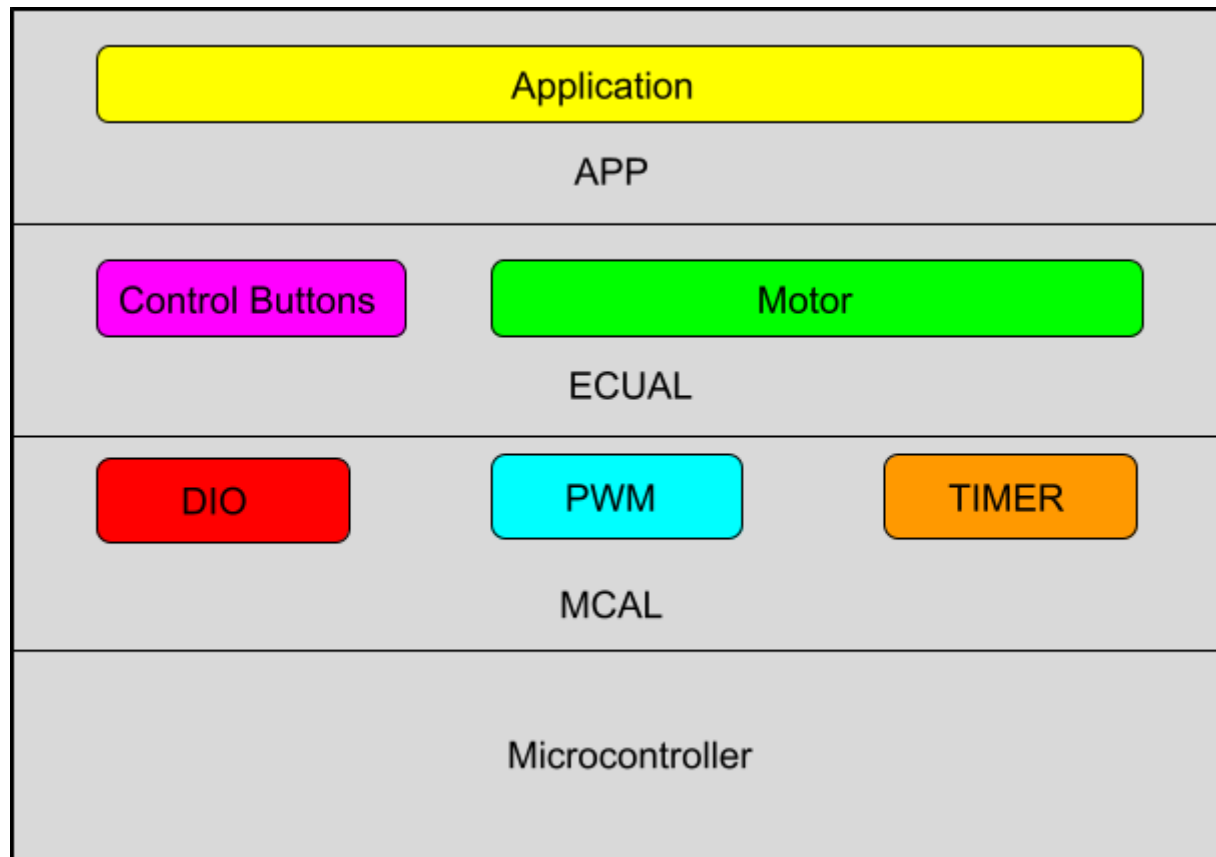
Microcontroller

MCAL APIs

- **DIO APIs**

```
E_STATUS    DIO_init(ST_DIO_config_t* configurations);
E_STATUS    DIO_write(uint8_t port, EN_pins pin, uint8_t data);
E_STATUS    DIO_read(uint8_t port, EN_pins pin, uint8_t* data);
E_STATUS    DIO_toggle(uint8_t port, EN_pins pin);
```

- **PWM APIs**

```
E_STATUS    PWM_init(ST_PWM_config_t* configurations);
E_STATUS    PWM_start(EN_frequency_t frequency, EN_duty_t dutyCycle);
E_STATUS    PWM_stop(void);
```

- **TIMER APIs**

```
E_STATUS    TIMER_init(ST_TIMER_config_t* configurations);
E_STATUS    TIMER_start(uint8_t ticks);
E_STATUS    TIMER_read(uint8_t* value);
E_STATUS    TIMER_set(uint8_t value);
E_STATUS    TIMER_checkStatus(uint8_t* status);
```

ECUAL APIs

- **Motor APIs**

```
E_STATUS      MOTOR_init(void);
E_STATUS      MOTOR_setDirection(EN_direction_t direction);
E_STATUS      MOTOR_setSpeed(EN_duty_t duty);
E_STATUS      MOTOR_stop(void);
```

- **Control Buttons APIs**

```
E_STATUS      BTN_init(EN_BTN_config_t configurations);
E_STATUS      BTN_getState(uint8_t* status);
```

APP APIs

```
E_STATUS      CAR_init(void);
E_STATUS      CAR_update(void);
```