|  |
| --- |
| 16-02-2024 |
| Type Def struct |
|  |  | -Declaration of the variable |
|  |  |  |
|  |  | Dummy[](to skip the before the required register) |
|  |  |  |
|  |  | stdint -limit the integer in bits (header) |
|  |  |  |
|  |  | Do the prog1 as multiple file |
|  |  |  |
|  |  | Prog3: |
|  |  |  |
|  |  | #include <stdint.h> |
|  |  |  |
|  |  | #define PERIPH\_BASE (0x40000000UL) |
|  |  | #define AHB1PERIPH\_OFFSET (0x00020000UL) |
|  |  | #define AHB1PERIPH\_BASE (PERIPH\_BASE + AHB1PERIPH\_OFFSET) |
|  |  | #define GPIOA\_OFFSET (0x0000UL) |
|  |  |  |
|  |  | #define GPIOA\_BASE (AHB1PERIPH\_BASE + GPIOA\_OFFSET) |
|  |  |  |
|  |  | #define RCC\_OFFSET (0x3800UL) |
|  |  | #define RCC\_BASE (AHB1PERIPH\_BASE + RCC\_OFFSET) |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  | #define GPIOAEN (1U<<0) // 0b 0000 0000 0000 0000 0000 0000 0000 0001 |
|  |  |  |
|  |  | #define PIN5 (1U<<5) |
|  |  | #define LED\_PIN PIN5 |
|  |  |  |
|  |  | #define \_\_IO volatile |
|  |  |  |
|  |  |  |
|  |  | typedef struct |
|  |  | { |
|  |  | volatile uint32\_t DUMMY[12]; |
|  |  | volatile uint32\_t AHB1ENR; /\*!< RCC AHB1 peripheral clock register, Address offset: 0x30 \*/ |
|  |  |  |
|  |  | } RCC\_TypeDef; |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  | typedef struct |
|  |  | { |
|  |  | volatile uint32\_t MODER; /\*!< GPIO port mode register, Address offset: 0x00 \*/ |
|  |  | volatile uint32\_t DUMMY[4]; |
|  |  | volatile uint32\_t ODR; /\*!< GPIO port output data register, Address offset: 0x14 \*/ |
|  |  |  |
|  |  | } GPIO\_TypeDef; |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  | #define RCC ((RCC\_TypeDef\*) RCC\_BASE) |
|  |  | #define GPIOA ((GPIO\_TypeDef\*)GPIOA\_BASE) |
|  |  |  |
|  |  |  |
|  |  | int main(void) |
|  |  | { |
|  |  | /\*1. Enable clock access to GPIOA\*/ |
|  |  |  |
|  |  | RCC->AHB1ENR |= GPIOAEN; |
|  |  |  |
|  |  | /\*2.Set PA5 as output pin\*/ |
|  |  |  |
|  |  |  |
|  |  | GPIOA->MODER |= (1U<<10); // Set bit 10 to 1 |
|  |  | GPIOA->MODER &=~(1U<<11); // Set bit 11 to 0 |
|  |  |  |
|  |  |  |
|  |  | while(1) |
|  |  | { |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  | GPIOA->ODR^= LED\_PIN; |
|  |  |  |
|  |  | for(int i=0;i<100000;i++){} |
|  |  |  |
|  |  | } |
|  |  | } |
|  |  |  |