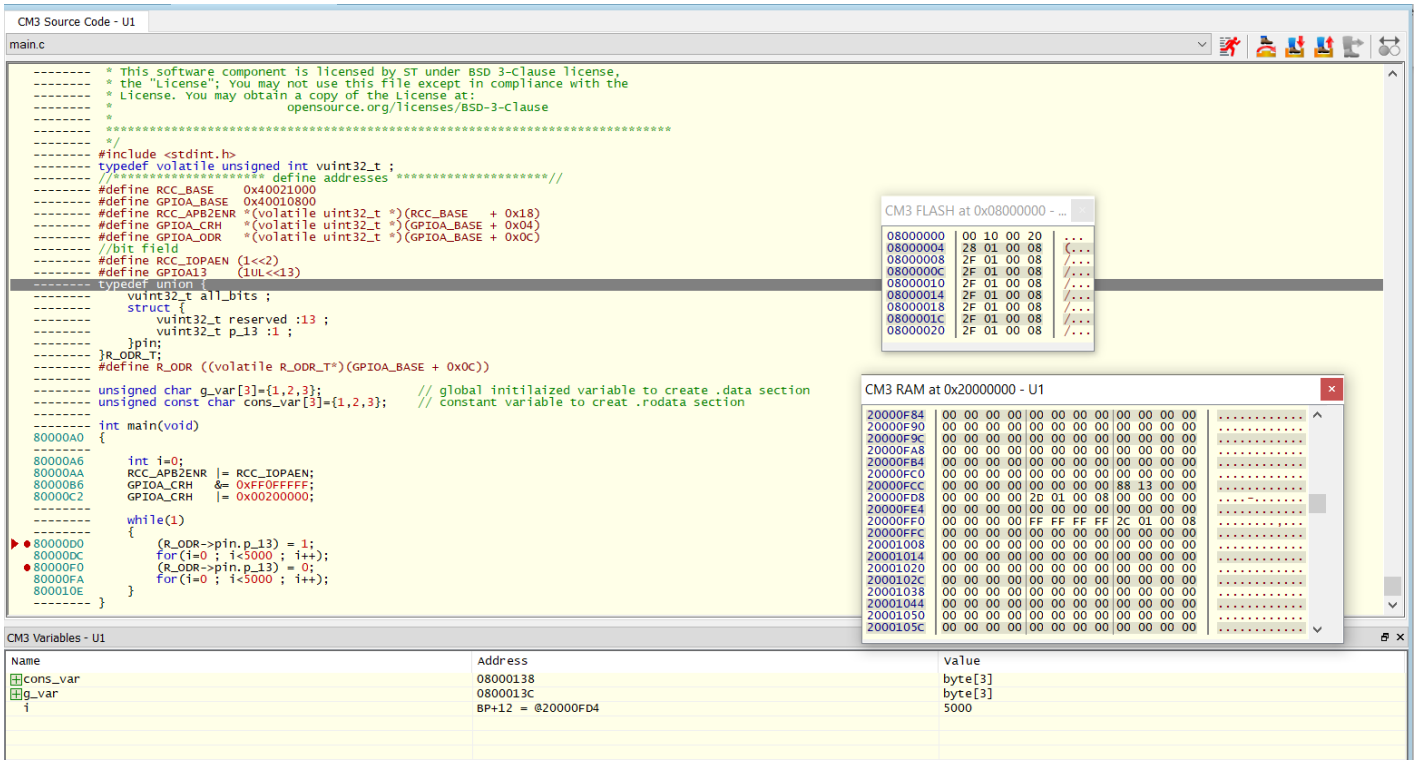
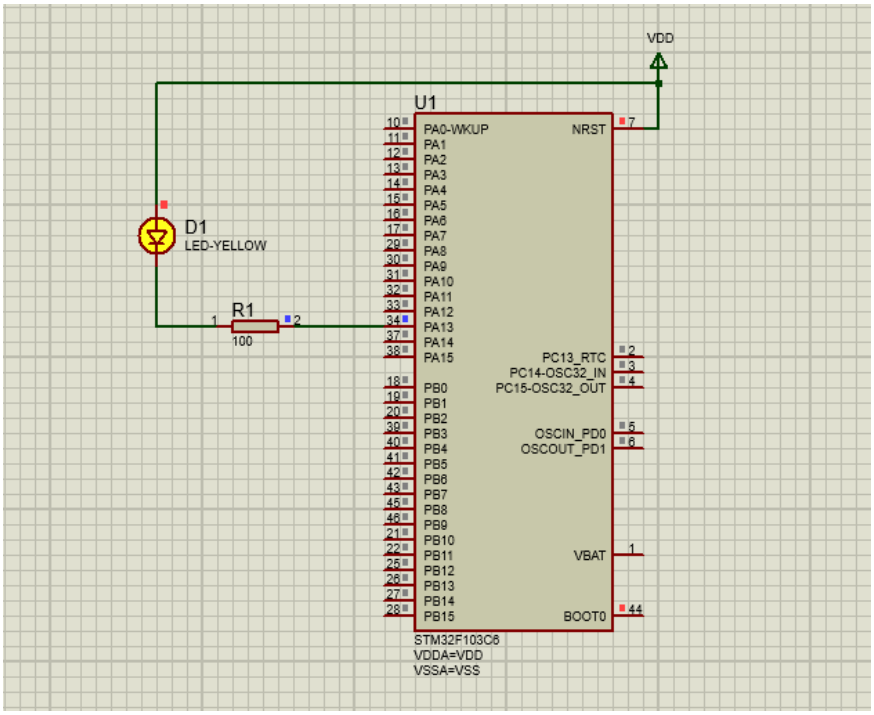
Mohanad Mohamed Abdelmonem Eissa

Lab 2





CM3 Source Code - U1

main.c

```
--------  * This software component is licensed by ST under BSD 3-Clause license,
--------  * the "License"; You may not use this file except in compliance with the
--------  * License. You may obtain a copy of the License at:
--------  *                        opensource.org/licenses/BSD-3-Clause
--------  *
--------  ******************************************************************************
--------  */
--------  #include <stdint.h>
--------  typedef volatile unsigned int vuint32_t ;
--------  //******************** define addresses *********************//
--------  #define RCC_BASE     0x40021000
--------  #define GPIOA_BASE   0x40010800
--------  #define RCC_APB2ENR *(volatile uint32_t *)(RCC_BASE   + 0x18)
--------  #define GPIOA_CRH   *(volatile uint32_t *)(GPIOA_BASE + 0x04)
--------  #define GPIOA_ODR   *(volatile uint32_t *)(GPIOA_BASE + 0x0C)
--------  //bit field
--------  #define RCC_IOPAEN (1<<2)
--------  #define GPIOA13     (1UL<<13)
--------  typedef union {
--------      vuint32_t all_bits ;
--------      struct {
--------          vuint32_t reserved :13 ;
--------          vuint32_t p_13 :1 ;
--------      }pin;
--------  }R_ODR_T;
--------  #define R_ODR ((volatile R_ODR_T*)(GPIOA_BASE + 0x0C))
--------
--------  unsigned char g_var[3]={1,2,3};            // global initilaized variable to create .data section
--------  unsigned const char cons_var[3]={1,2,3};    // constant variable to creat .rodata section
--------
--------  int main(void)
80000A0  {
--------
80000A6      int i=0;
80000AA      RCC_APB2ENR |= RCC_IOPAEN;
80000B6      GPIOA_CRH   &= 0xFF0FFFFF;
80000C2      GPIOA_CRH   |= 0x00200000;
--------
--------     while(1)
--------     {
80000D0          (R_ODR->pin.p_13) = 1;
80000DC          for(i=0 ; i<5000 ; i++);
80000F0          (R_ODR->pin.p_13) = 0;
80000FA          for(i=0 ; i<5000 ; i++);
800010E      }
--------  }
```

CM3 FLASH at 0x08000000 - ...

08000000	00 10 00 20	...
08000004	28 01 00 08	(...
08000008	2F 01 00 08	/...
0800000C	2F 01 00 08	/...
08000010	2F 01 00 08	/...
08000014	2F 01 00 08	/...
08000018	2F 01 00 08	/...
0800001C	2F 01 00 08	/...
08000020	2F 01 00 08	/...

CM3 RAM at 0x20000000 - U1

20000F84	00 00 00 00 00 00 00 00 00 00 00 00	....
20000F90	00 00 00 00 00 00 00 00 00 00 00 00	....
20000F9C	00 00 00 00 00 00 00 00 00 00 00 00	....
20000FA8	00 00 00 00 00 00 00 00 00 00 00 00	....
20000FB4	00 00 00 00 00 00 00 00 00 00 00 00	....
20000FC0	00 00 00 00 00 00 00 00 00 00 00 00	....
20000FCC	00 00 00 00 00 00 00 00 88 13 00 00	....
20000FD8	00 00 00 00 2D 01 00 08 00 00 00 00	....-.......
20000FE4	00 00 00 00 00 00 00 00 00 00 00 00	....
20000FF0	00 00 00 00 FF FF FF FF 2C 01 00 08	........,...
20000FFC	00 00 00 00 00 00 00 00 00 00 00 00	....
20001008	00 00 00 00 00 00 00 00 00 00 00 00	....
20001014	00 00 00 00 00 00 00 00 00 00 00 00	....
20001020	00 00 00 00 00 00 00 00 00 00 00 00	....
2000102C	00 00 00 00 00 00 00 00 00 00 00 00	....
20001038	00 00 00 00 00 00 00 00 00 00 00 00	....
20001044	00 00 00 00 00 00 00 00 00 00 00 00	....
20001050	00 00 00 00 00 00 00 00 00 00 00 00	....
2000105C	00 00 00 00 00 00 00 00 00 00 00 00	....

CM3 Variables - U1

Name	Address	
cons_var	0800013	
g_var	0800013C	byte[3]
i	BP+12 = @20000FD4	5000