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  1    ;***************** main.s ***************
  2    ; Program written by: ***Your Names**update this***
  3    ; Date Created: 1/22/2016
  4    ; Last Modified: 1/22/2016
  5    ; Section ***Tuesday 1-2***update this***
  6    ; Instructor: ***Ramesh Yerraballi**update this***
  7    ; Lab number: 2
  8    ; Brief description of the program
  9    ; The overall objective of this system an interactive alarm
 10    ; Hardware connections
 11    ;  PF4 is switch input  (1 means SW1 is not pressed, 0 means SW1 is pressed)
 12    ;  PF3 is LED output (1 activates green LED)
 13    ; The specific operation of this system
 14    ;    1) Make PF3 an output and make PF4 an input (enable PUR for PF4).
 15    ;    2) The system starts with the LED OFF (make PF3 =0).
 16    ;    3) Delay for about 100 ms
 17    ;    4) If the switch is pressed (PF4 is 0), then toggle the LED once, else turn the LED OFF.
 18    ;    5) Repeat steps 3 and 4 over and over
 19
 20    GPIO_PORTF_DATA_R       EQU    0x400253FC
 21    GPIO_PORTF_DIR_R        EQU    0x40025400
 22    GPIO_PORTF_AFSEL_R      EQU    0x40025420
 23    GPIO_PORTF_PUR_R        EQU    0x40025510
 24    GPIO_PORTF_DEN_R        EQU    0x4002551C
 25    GPIO_PORTF_AMSEL_R      EQU    0x40025528
 26    GPIO_PORTF_PCTL_R       EQU    0x4002552C
 27    SYSCTL_RCGCGPIO_R       EQU    0x400FE608
 28    PF4                     EQU    0x40025040
 29    PF3                     EQU    0x40025020
 30
 31            AREA    |.text|, CODE, READONLY, ALIGN=2
 32            THUMB
 33            EXPORT  Start
 34    Start   LDR R0,= SYSCTL_RCGCGPIO_R
 35            LDR R1,[R0]
 36            ORR R1,#0x20
 37            STR R1,[R0]
 38
 39            NOP
 40            NOP
 41
 42            LDR R0,= GPIO_PORTF_DIR_R
 43            LDR R1,[R0]
 44            BIC R1,#0x10
 45            ORR R1,#0x08
 46            STR R1,[R0]
 47
 48            LDR R0,= GPIO_PORTF_AFSEL_R
 49            LDR R1,[R0]
 50            BIC R1,#0x18
 51            STR R1,[R0]
 52
 53            LDR R0,= GPIO_PORTF_DEN_R
 54            LDR R1,[R0]
 55            ORR R1,#0x18
 56            STR R1,[R0]
 57
 58            LDR R0,= GPIO_PORTF_PUR_R
 59            LDR R1,[R0]
 60            ORR R1,#0x10
 61            STR R1,[R0]
 62
 63            LDR R0,= PF3
 64            LDR R1,[R0]
 65            MOV R1,#0x0
 66            STR R1,[R0]
 67
 68
 69    loop    BL Delay
 70
 71
 72            LDR  R0,= PF4
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```
 73              LDR   R2,= PF3
 74
 75              LDR   R1,[R0]
 76              CMP   R1,#0
 77              BEQ   Toggle
 78              BNE   Clear
 79
 80
 81    Toggle   LDR   R1,[R2]
 82              EOR   R1, R1, #0xFF
 83              STR   R1,[R2]
 84              B     loop
 85
 86    Clear    LDR   R1,[R2]
 87              AND   R1, R1, #0x0
 88              STR   R1,[R2]
 89
 90
 91              B     loop
 92
 93    Delay    MOV   R8, #0x58800
 94    wait     SUBS  R8, R8, #0x01
 95              BNE   wait
 96              BX    LR
 97
 98              ALIGN      ; make sure the end of this section is aligned
 99              END        ; end of file
100
```