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/*
  FileName: Timer2.c
  purpose:
    Demonstrate the usage of Timer2.
  PS:
    This program use 16 bits timer2 auto reload. when timer2 is overflow, TF2 is set and
    must be cleared by software. Register pair (RCAP2H, RCAP2L) are the capture/ Reload
    register for timer 2.
*/

#include <reg52.h>
#include <stdio.h>

void init_Timer2(int count)
{
    RCAP2H = (65536-count)/256;    // register pair for reload.
    RCAP2L = (65536-count)%256;
    T2CON = 0x04;
    IE |= 0xA2;
}

void turnOnTimer2(void)
{
    ET2=1;
    TR2=1;
}

void main(void)
{
    init_Timer2(3000);
    turnOnTimer2();
    while(1);
}

void timer2_ISR (void) interrupt 5
{
    TF2=0;           // cleared by software
    P2 = 0xff;
}
```