/* Three switch functions with a momentary switch and microcontroller: */
/* Turn on the LED if the momentary switch has been pressed once */
/* Blink the LED if the momentary switch has been pressed twice */
/* Turn off the LED if the momentary switch has been pressed a third time */
/* Copywrite by BJ Fursman 27APR00 */

#define PORTA *(unsigned char *)0x1000; /* PORTA is a symbol for Port A */

void main(void)
{
    int i; /* delay loop counter variable */
    unsigned char PAdata; /* variable to hold Port A data */
    unsigned char swlp, swlc; /* previous and current state variables for 
                                state of switch 1 */
    unsigned char press_no=0; /* counter for number of times switch 
                                has been pressed */
    PORTA=0; /* make sure LED is off */
    swlp=1; /* initialize previous state of switch 1 to open */

    while (1) /* main program loop */
    {
        PAdata=PORTA; /* read Port A */
        swlc=PAdata&2; /* get current state of switch 1 */
        while (!((PAdata & 0x01))) /* do what follows if switch 0 is closed */
        {
            PAdata=PORTA; /* read the port */
            swlc=PAdata&2; /* save current state of switch 1 */
            if(swlc==0) /* if true, then switch 1 is being pushed */
            {
                if(swlp > 0) /* check previous state of switch - true means 
                                switch is being pressed anew */
                {
                    press_no++; /* increment counter for number of times switch 
                                   has been pressed anew: press_no=press_no + 1 */
                }
            }
            switch (press_no) /* a compact way to handle alternatives depending 
                                on the value of press_no */
            {
                case 0: /* switch 1 has yet to be pressed, so */
                    PORTA=0; /* keep LED off */
                case 1: /* switch 1 pressed for the first time, so */
                    PORTA=0x10; /* turn on LED, i.e., bit 4 */
                    break;
                case 2: /* switch 1 pressed for the second time, so */
                    PORTA=0x10; /* turn on LED */
                    for(i=1; i<10000; i++){} /* blink delay */
                    PORTA=0; /* turn off LED */
                    break;
                case 3: /* switch 1 pressed for the third time, so */
                    PORTA=0; /* turn off the LED, and */
                    press_no=0; /* reset the press no. counter */
                    break;
            }
            swlp=swlc; /* update previous state of switch 1 */
        }
    }
}