```c
/***********************************************************************
 *
 * Decimal counter with 7-segment output.
 * ATmega328P (Arduino Uno), 16 MHz, AVR 8-bit Toolchain 3.6.2
 *
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 *
 **********************************************************************/

/* Includes ----------------------------------------------------------*/
#include <avr/io.h>         // AVR device-specific IO definitions
#include <avr/interrupt.h>  // Interrupts standard C library for AVR-GCC
#include "timer.h"          // Timer library for AVR-GCC
#include "segment.h"        // Seven-segment display library for AVR-GCC

uint8_t singles = 0;


/**
 * Main function where the program execution begins. Display decimal
 * counter values on SSD (Seven-segment display) when 16-bit
 * Timer/Counter1 overflows.
 */
int main(void)
{
    // Configure SSD signals
    SEG_init();

    /* Configure 8-bit Timer/Counter0
     * Set prescaler and enable overflow interrupt */
    TIM0_overflow_4ms();
    TIM0_overflow_interrupt_enable();

    /* Configure 16-bit Timer/Counter1
     * Set prescaler and enable overflow interrupt */
    TIM1_overflow_262ms();
    TIM1_overflow_interrupt_enable();

    // Enables interrupts by setting the global interrupt mask
    sei();

    // Infinite loop
    while (1)
    {
        /* Empty loop. All subsequent operations are performed exclusively
         * inside interrupt service routines ISRs */
    }

    // Will never reach this
    return 0;
}
```

```
54
55  /* Interrupt service routines ----------------------------------------*/
56  /**
57   * ISR starts when Timer/Counter0 overflows. Display value on SSD.
58   */
59  ISR(TIMER0_OVF_vect)
60  {
61          SEG_update_shift_regs(singles, 0); //first position
62  }
63
64  /**
65   * ISR starts when Timer/Counter1 overflows. Increment decimal counter.
66   */
67  ISR(TIMER1_OVF_vect)
68  {
69      // SNAKE counter 0-5
70      singles++;
71      if(singles > 5)
72      {
73          singles = 0;
74      }
75  }
```