; Assembler equates

PORTT = $00AE ; input port for DELAY\_CNT

DDRT = $00AF

PORTJ = $0028 ; output port for LEDs

DDRJ = $0029

LED\_MSK = 0b01100000 ; LED output pins

R\_LED = 0b00100000 ; red LED output pin

G\_LED = 0b01000000 ; green LED output pin

; RAM area

.area bss

DELAY\_CNT:: .blkb 1

; code area

.area text

;

;===============================================================

;

; main

\_main::

jsr SETUP ; jump to SETUP subroutine

; YOUR CODE GOES HERE

Top:

bset PORTJ, G\_LED ; Green ON and red OFF

jsr DELAY

bclr PORTJ, LED\_MSK ; Green OFF and red OFF

jsr DELAY

bset PORTJ, R\_LED ; Green OFF and red ON

jsr DELAY

bclr PORTJ, R\_LED ; Green OFF and red OFF

jsr DELAY

bset PORTJ, LED\_MSK ; Green ON and red ON

jsr DELAY

bclr PORTJ, LED\_MSK ; Green OFF and red OFF

;bclr PORTJ,

jsr DELAY

bra Top

; end main

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; Subroutine Delay Delay[s] = ~100ms per DELAY\_CNT

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DELAY:

ldaa PORTT ; (3) load 8-bit DELAY\_CNT

staa DELAY\_CNT ; (3)

OUTER: ; outer loop

ldaa DELAY\_CNT ; (3)

cmpa #0 ; (1)

beq EXIT ; (1)

dec DELAY\_CNT ; (4)

ldy #$FFFC ; (2)

INNER: ; inside loop

cpy #0 ; (2)

beq OUTER ; (1)

dey ; (1)

bra INNER ; (3)

EXIT:

rts ; (5) exit DELAY

; end subroutine DELAY

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; Subroutine SETUP

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SETUP:

; setup IO ports

clr DDRT ; set PORTT to input

bclr PORTJ, LED\_MSK ; initialize LEDs to off

bset DDRJ,LED\_MSK ; set LED pins to output

rts ; exit SETUP

;;;; end subroutine SETUP

;===============================================================

.area interrupt\_vectors (abs)

.org $FFFE ; at reset vector location,

.word \_\_start ; load starting address