31

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2;*
3 ;* Title:
                   enable_pullups_inven.asm
4 ;* Author:
                   Jason Chen
5 ;* Version:
6 ;* Last updated:
                   10/24/2022
7 ;* Target:
                   AVR128DB48
8 ;*
9 ;* DESCRIPTION
10 ;*
             Design Task 1:
11 ;*
             Enable internal pull up resistors in for PORTC using
12 ;*
             PORTC_PINnCTRL registers and memory reference instructions.
13 ;*
            Modified to invert input bits for PORTC
14 ;*
15 ;* VERSION HISTORY
16 ;* 1.0 Original version
18
19 start:
20
      ldi r16, 0x00
21
      out VPORTC_DIR, r16
                                 ; VPORTC - all pins configured as input
22
      ldi XH, HIGH(PORTC_PINOCTRL)
                                ; X points to PORTC_PINOCTRL
23
      ldi XL, LOW(PORTC_PINOCTRL)
24
      ldi r17, 8
                                 ; loop control variable, 8 step counter
25
26 pullups:
                      ; load value of PORTC_PINnCTRL
27
      ld r16, X
28
      ori r16, 0x88
                      ; enable input bits invert and pullup resistors
29
      st X+, r16
                      ; store results
30
      dec r17
                       ; decrement lcv
      brne pullups
```