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#include <avr/io.h>
#define __SFR_OFFSET 0

.global start
.global blink     ;     makes the start/blink functions accessable to the C file.

start:
  sbi     DDRE, 3 ;     set PE3 as output as the digital pins are on port E
  ret             ;     returns back to C file

blink:
  ldi     r20, 255 ;    the delay duration in ms, max val 255
  call    delay_n_ms
  sbi     PORTE, 3 ;    set PE3 high (digital pin 5)
  ldi     r20, 255
  call    delay_n_ms
  cbi     PORTE, 3 ;    set PE3 low
  ret              ;    returns back to C file


; delay function to make the flashing visable
delay_n_ms:
  ; Delay about r20*1ms. Destroys r20, r30, and r31.
  ; One millisecond is about 16000 cycles at 16MHz.
  ; The basic loop takes about 5 cycles, so we need about 3000 loops.
  ldi     31, 3000>>8   ; high(3000)
  ldi     30, 3000&255  ; low(3000)
delaylp:
  sbiw    r30, 1
  brne    delaylp
  subi    r20, 1
  brne    delay_n_ms
  ret               ;     returns back to C file


  ; https://forum.arduino.cc/t/progrsmming-arduino-with-assembly/397708
  ; https://docs.arduino.cc/hacking/hardware/PinMapping2560
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GitHub: https://github.com/Keeginator91/Micro2