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;>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
;1DT301, Computer Technology I
;Date: 2019-09-09
;
;Author:
;   Student name 1:          Einar van de Velde
;   Student name 2:          Abdulla Mehdi
;
;Lab number:                 1.
;Title:                      Task 3.
;
;Hardware:                   STK600, CPU ATmega2560.
;
;Function:                   Read the switches and light LED0 when you press SW5.
;                            For all other switches there should be no activity.
;
;Input ports:                On-board SWITCHES connected to PORTA.
;
;Output ports:               On-board LEDs connected to PORTB.
;
;Subroutines:                None.
;
;Included files:             m2560def.inc
;
;Other information:
;Changes in program:
;       File Created (2019-09-09)
;
;<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
.include "m2560def.inc"

ldi r16, 0xFF                ;Set the Data Direction Register as MAXimum (255).
out DDRB, r16                ;Set B Port as output Port.

ldi r16, 0x00                ;Set the Data Direction Register as MINimum (0).
out DDRA, r16                ;Set A Port as output Port.

;Turn off all LEDs on SK600 board
ldi r16, 0xFF
out PORTB, r16

ldi r17, 0b11011111          ;Listen to this SWITCH
ldi r18, 0b11111110          ;Send Action to this LED

;This loop checks for input from the SWITCHES from port A -> SW0-SW7
;It listens for this input every refresh sequence.
switch_loop:

   in r16, PINA              ;Read from the SWITCH connected in port A
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    cp r16, r17             ;Compare the r17 SWITCH input to the r16 Register.

    ;Branch Equals
    breq SW5isPressed
rjmp switch_loop            ;Jump out of loop.

;If SW5 is Pressed then activate Register 18 and turn LED 0 on.
SW5isPressed: out portB, r18
```