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; conditional_input.asm
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; Created: 10/2/2023 6:53:51 PM
; Author : CAD
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; Replace with your application code
start:
    ldi r16, 0xFF    //make into output
    out VPORTD_DIR, r16
    ldi r16, 0x00    //make into input
    out VPORTC_DIR, r16

    cbi VPORTE_DIR, 0    ; makes PE0(pushbutton) to input
    sbi VPORTE_DIR, 1    ; makes PE1(clear) to output
    cbi VPORTE_DIR, 2    // input directly from pushbutton

wait_for_0:
    sbic VPORTE_IN, 0    ;wait for PE0 being 0
    rjmp wait_for_0      ;skips this line if PE0 is 0

wait_for_1:
    sbis VPORTE_IN, 0    ;wait for PE0 being 1
    rjmp wait_for_1      ;skip this line if PE0 is 1
    rjmp delay_make      ;jump to delay when PE0 is 1

delay_make:              ;delay label for make delay
outer_loop_make:
    ldi r17, 133
inner_loop_make:
    dec r17
    brne inner_loop_make
    dec r16
    brne outer_loop_make
    rjmp still_1          ; jump to still_1

wait_for_0_delay_after: ;comes here after output
    rcall check_pushbutton_released    // check if the pushbutton has completely
    released
    rcall clear_flip_flop
    sbic VPORTE_IN, 0
    rjmp wait_for_0_delay_after ;skips this line if PE0 is 0
    rjmp delay_break

delay_break:              ;delay lable for break delay
outer_loop_break:
    ldi r17, 133
inner_loop_break:
    dec r17
    brne inner_loop_break
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    dec r16
    brne outer_loop_break
    rjmp still_0

still_1:
    sbis VPORTE_IN, 0    ;check if PE0 is still 1
    rjmp wait_for_0      ; if PE0 is 0 then go jump to wait_for_0
    rjmp output          ; outputs the value

still_0:
    sbic VPORTE_IN, 0    ;check if PE0 is still 0
    rjmp wait_for_0_delay_after
    rjmp wait_for_0      ;go back to start

output:
    //code for output the values from PC ports to PD ports
    inc r16
    com r16
    out VPORD_OUT, r16
    com r16
    rjmp wait_for_0_delay_after ; jump to wait for 0 but that has delay after

clear_flip_flop:
    cbi VPORTE_DIR, 1
    sbi VPORTE_DIR, 1
    rjmp wait_for_0

display:
    in r16, VPORC_DIR
    com r16
    out r16, VPORD_DIR
    rjmp clear_flip_flop

check_pushbutton_released:
    rcall delay_break_pushbutton
    sbic VPORTE_IN, 2    //check if PE) which is directly connected to pushbutton is
    still 0
    rjmp check_pushbutton_released

delay_break_pushbutton:          ;delay lable for break delay for pushbutton directly
outer_loop_break:
    ldi r17, 133
inner_loop_break:
    dec r17
    brne inner_loop_break
    dec r16
    brne outer_loop_break

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