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1   ; ********************************************************************************************************************
2   ; **  PROGRAM MAKED BY FADISHOP  Card: FADIBUS    http://www.fadishop.eu      FADITECO, S.L.U.  Lleonard G.       **
3   ; **  This program reads the PORT_0 AND TAKES THE DATA FOR READ IMMEDIATELY PORT_1                                    **
4   ; **  I2C SLAVE ADDRESS IS $ 42                                  SW2(A=0, B=0, C=1)                                   **
5   ; **  USED BY INTERRUPTION OF PUERTO_C pinC.7 PIN 7              SW1(I0=0, I1=0, I2=0, portC=1,  Rpullup=1)           **
6   ; **  ROUTING FOR TERMINATION BY PUERTO_C JP9 pin C7 (C7 BRIDGE JUMPER BLUE)                                         **
7   ; **  CAUTION: DO NOT LEAVE without connecting pinC.7 air. The electricaly noise can executes the interruption    **
8   ; ********************************************************************************************************************
9   #picaxe 28x2
10  ; SETTINGS
11  let dirsB=%00000000     ; 1=output 0=input
12  let dirsC=%00000000     ; 1=output 0=input
13  ; C.3 I2C_SCL
14  ; C.4 I2C_SDA
15  ;adcsetup = %00000000   ; SETTING ANALOG
16  ;setfreq em16           ; Oscillator / external oscillator to 16Mhz.
17  ; DEFINITIONS AND INITIALIZATIONS DEVICES.
18  device_PCA9555N:                            ;INTERNAL ADDRESS BUS EXPANDER PCA9555N
19  symbol inport_0 = 0                         ; Read register inputs port_0.
20  symbol inport_1 = 1                         ; Read register inputs port_1.
21  symbol outport_0 = 2                        ; Write register outputs port_0.
22  symbol outport_1 = 3                        ; Write register outputs port_0.
23  symbol polaritat_port_0 = 4                 ; Polarity register port_0 inputs -> 0 = no_inverted, 1 = inverted.
24  symbol polaritat_port_1 = 5                 ; Polarity register port_1 inputs -> 0 = no_inverted, 1 = inverted.
25  symbol config_port_0 = 6                    ; Configuration register port_0 as input or output. 1=input 0= utput.
26  symbol config_port_1 = 7                    ; Configuration register port_1 as input or output. 1=input 0= utput.
27  ; SETTINGS
28  config_PCA9555N_A:                          ;DEVICE_A SETUP (A, B, C, D, E, F, G, H. Maximum 8)
29  symbol adress_slave_A =$42                  ; I2C Address PCA9555N %0100ABC(rw). SLAVE PCA9555N (0X4E-0X4F).
30  symbol polport0_A = %00000000               ; polarity port_0 inputs: 0-no inverted 1-logical inverted.
31  symbol polport1_A = %00000000               ; polarity port_1 inputs: 0-no inverted 1-logical inverted.
32  symbol confport0_A = %11111111      ; IN    ; configuration port_0 1=input 0=output.
33  symbol confport1_A = %00000000      ; OUT   ; configuration port_0 1=input 0=output.
34  transfer_config_PCA9555N_A:                 ;TRANSFER ALL SETTINGS TO DEVICE_A.
35  i2cslave adress_slave_A, i2cslow, i2cbyte   ; send/call to address the peripheral/slave.
36  writei2c polaritat_port_0,(polport0_A,polport1_A); polarity send entries and port_1 port_0
37  writei2c config_port_0,(confport0_A,confport1_A); send configuration and puerto_1 puerto_0.
38  ; READ SETTINGS(NEGLIGIBLE)
39  ;lectura_inicial_debug_A:                   ;READING THE INTERNAL REGISTERS DEVICE_A
40  ;i2cslave adress_slave_A, i2cslow, i2cbyte        ; I2C Address PCA9555N %0100ABC(rw). SLAVE PCA9555N (0X4E-0X4F).
41  ;readi2c inport_0,(b0,b1)                   ; Read input ports.
42  ;readi2c outport_0,(b2,b3)                  ; Read output ports.
43  ;readi2c polaritat_port_0,(b4,b5)           ; Read polarity registers of the inputs.
44  ;readi2c config_port_0,(b6,b7)              ; Read configuration registers of the ports.
45  ; INTERRUPT SETTING
46  configuration_interrupt:
47  setint %00000000,%10000000                  ; By falling edge interrupts are enabled by the pinC.7.
48  ;CYCLIC PROGRAM
49  main:                                       ; CYCLIC PROGRAM.
50  debug                                       ; Take a pop all registros.Añande delay.
51  goto main                                   ; Start over.
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52  ; INTERRUPT SEQUENCE
53  interrupt:
54  i2cslave adress_slave_A, i2cslow, i2cbyte       ; CYCLIC PROGRAM
55  readi2c inport_0,(b0)                          ; Read input port.                          inport_0 --> b0
56  writei2c outport_1,(b0)                        ; Read what is written in the port_1        b0 --> outport_1
57  setint %00000000,%10000000                     ; By falling edge interrupts are enabled by the pinC.7.
58  return
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