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Human sensing LED driver by DC boost with PIC12F683
By nobcha all right reserved
Ver 0.1 02/21/2011 for PIC12F675
Ver 0.2 03/06/2011 for PIC12F683

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PIC16F675 + Infraired ceramic sencer + photo Diode
PIN Assign #7 GP0:焦電型赤外線センサー増幅器出力
#6 GP1:NC
#5 GP2:NC (test LED)
#4 GP3:NC
#3 GP4:フォトダイオード入力
#2 GP5:DCブーストトランジスタ駆動
OSC internal RC 4MHz

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Development Circumstance
MPLAB IDE V8.60 HiTECH C V9.71a

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#define pic_clk 8000000

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#define MHz 000000
#define _XTAL_FREQ 8MHz

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#include <htc.h>
#include "delay.h"
#include <pic.h>

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__CONFIG(BORDIS & UNPROTECT & PWRTEN & WDTDIS & MCLREN & INTIO );

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void init_a2d(void){
    ANSEL=0b00011001;    // Select Fosc/8, AN0,AN3
    ADFM=0;              // Select left justify result AD port config0
    ADON=1;              // A2D conversion START
    PEIE=0;              // Inhibit Interrupt
    GODONE=1;            // Start ADC
}

void main(){
    unsigned short i, j, bright;

    GPIO=0x00;           // GPIO initialize

    TRISIO=0x19;         // GP0,GP3,GP4 input
    ANSEL=0x19;          // GP0,GP4 are assigned as ADC port

    CMCON0=0b00001110;   // CINV:1,CIS:GP0:1,CMx:110 (675:CMCON)
    VRCON=0b10100001;    // VREN on, VRR on, VRx 1 Vdd=2.6->0.1V

    ADCON0=0b00001101;   // VCFG Vdd, CHS 11 GP4, ADON

    GPIO2=1;              // LED on for checking
    for(j=50;j>0;j--){
        __delay_ms(50);
    }
    GPIO2=0;              // LED off
    while(1){

        if(COUT==0){      // Sencer on
            __delay_ms(10); // wait 50ms
            if(COUT==0){   // Sencer still on
                GPIO2=1;
                for(i=167;i>0;i--){
                    init_a2d(); // Photo diode ADC start
                    while(GODONE){ // Waiting ADC aquisition
                        bright=ADRESH;
                        if(bright<20){ // Dark
                            for(j=5000;j>0;j--){
                                GPIO5=1;
                                GPIO5=0;
                                __delay_us(2);
                            }
                        }
                    }
                }
            }
        }
    }
}

```

