' PrintTemp.spin

' Created by: Z Lin, Mar 1, 2015

CON ' SET CLOCK SPEED

\_clkmode = xtal1 + pll1x ' multiply base clock freq by 1x

\_xinfreq = 5\_000\_000 ' base clock freq (5 MHz)

OBJ ' INCLUDE OTHER PROGRAMM

lcd : "ObjectLCD" ' include objectLCD and name it 'lcd'

PUB MAIN | TempK ' MAIN RPONGRAMM

lcd.start ' start lcd

lcd.clear ' clear lcd

lcd.line1 ' move to line 1

lcd.str(string("The temp is")) ' print text

repeat ' repeat forever

TempK := MEASURE\_TEMP(5,355) ' call MEASURE\_TEMP

lcd.line2 ' move to line 2

lcd.dec(TempK) ' print TempK in decimal number

lcd.str(string(" K ")) ' print text

waitcnt(clkfreq\*10+cnt) ' wait 10 seconds

PUB MEASURE\_TEMP(pin,cal) | count ' MEASURE TEMPERATURE

count := 0 ' set count 0

outa[pin] := 0 ' set pin to 0

dira[pin] := 1 ' make pin an output

waitcnt(clkfreq/1000+cnt) ' wait cap discharge

dira[pin] := 0 ' make pin an input

count := cnt ' store counter value

waitpeq(|<pin,|<pin,0) ' wait for pin to go high (>1.3 V)

count := ||(cnt-count)-11 ' clock cycles-delay

return clkfreq\*10/count\*cal/10000 ' convert count to K