```
'--------Title--------

' File......LCD3.pbp
' Started....3/23/06
' Microcontroller used:  Microchip Technology PIC16F88
'                        microchip.com
' PicBasic Pro Code: micro-Engineering Labs, Inc.
'                    melabs.com

'--------Program Desciption--------

' Display resistance readings from a potentiometer
' on parallel LCD display.

'----------Related Lessons---------

' See LCD BASICS lesson at:
' http://cornerstonerobotics.org/curriculum/lessons_year2/erii14_lcd1.pdf
'
' lcd3.pbp is used in the lesson LCD POT COMMAND AND LCD DEFINES at:
' http://www.cornerstonerobotics.
org/curriculum/lessons_year2/erii16_lcd3_pot_command_and_lcd_defines.pdf

'------------Comments--------------

' Other resistive components(5k to 50K) may be substituted
' for the potentiometer such as, ceramic photo
' resistor or resistive flex sensor.
' See PIC Microcontroller Project Book by John Iovine,
' pages 189 and following for a discussion on reading
' resistive sensors.

'-----New PicBasic Pro Commands----

' The PicBasic Pro Compiler Manual is on line at:
' http://www.microengineeringlabs.com/resources/index.htm#Manuals
'
' POT Pin, Scale, Var
' POT reads a potentiometer or other resistive components
' (5K-50K) from a specified Pin.
' Adjust Scale for the varying RC constants.
' Look around page 118 in the PicBasic Pro Compiler Manual

'------------Connections-----------

'       16F88 Pin           Wiring
'       ---------           ----------
'       RA0                 LCD pin 11(DB4)
'       RA1                 LCD pin 12(DB5)
'       RA2                 LCD pin 13(DB6)
'       RA3                 LCD pin 14(DB7)
'       RA4                 LCD Register Select(RS)
'       RB3                 LCD Enable(E)
'       RB1                 Resistive Input
'       See schematic for the usual connections
```

```
'---------LCD Connections---------

'        LCD Pin              Wiring
'       ---------           ----------
'          1                Ground(Vss)
'          2                + 5v(Vdd)
'          3                Center of 20K Pot(Contrast)
'          4                RA4(Register Select,RS)
'          5                Ground(Read/Write,R/W)
'          6                RB3(Enable)
'          7                No Connection(DB0)
'          8                No Connection(DB1)
'          9                No Connection(DB2)
'         10                No Connection(DB3)
'         11                RA0(DB4)
'         12                RA1(DB5)
'         13                RA2(DB6)
'         14                RA3(DB7)

'--------Revision History--------

' 11/28/07 Change MCU from 16F84A to 16F88
' 11/28/07 Add 16F88 oscillator and ANSEL = 0
'          initializations

'---------Variables---------

    p0 VAR BYTE              ' Byte for potentiometer reading

'---------Initialization--------

    ANSEL = 0                ' Configure all pins to digital
                             ' operation since not using ADC
                             ' (Analog to Digital Converter)

    OSCCON = $60             ' Sets the internal oscillator in the
                             ' 16F88 to 4 MHz

'--------Main Code--------

    PAUSE 1000               ' 1 second pause to allow LCD to setup

start:                       ' Start label for loop

    POT 1,255,p0             ' POT command, potentiometer reading
                             ' sent to RB1, scale set for 255, p0
                             ' assigned reading of potentiometer.
                             ' p0 value may vary from a
                             ' minimum of 0 to a maximum of 255.
                             ' In order to obtain the maximum reading
                             ' of 255, you will probably have to
                             ' experiment with the value of the capacitor.

    LCDOUT $FE,1,"Pot Reading", $14, #p0
```

```
                        ' Clears LCD screen, displays "Pot Reading"
                        ' Cursor moves to right one position and
                        ' displays value of p0

PAUSE 100               ' Pause 1/10 second

GOTO start              ' Loop to start label

END
```