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

' File......serout2_potentiometer_8bit.pbp
' Started....12/16/08
' Microcontroller used:  Microchip Technology PIC16F88
'                        microchip.com
' PicBasic Pro Code: micro-Engineering Labs, Inc.
'                    melabs.com

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

' Program uses SEROUT2 command to send 8-bit value
' of potentiometer reading to a PC terminal program.

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

' RS232 Serial Communications Hardware:
' http://www.cornerstonerobotics.org/curriculum/lessons_year2/erii_rs232_1.
pdf

' --------Terminal Program---------

' For the PIC to communicate with the PC,
' you will need to install a terminal program.
' Windows XP comes with HyperTerminal.
' HyperTerminal is found in your start menu via,
' Start Menu > Accessories > Communications > HyperTerminal.
' At the Connection Description screen, type in a name such
' as 9600_link and choose any icon.  Press the OK button.
' At the Connect To screen, set the "Connect using:"
' to the proper com port -  for example COM1.  Press OK.
' At the COM1 Properties screen, make the following settings:
'
'   Bits per second     9600
'   Data bits           8
'   Parity              None
'   Stop bits           1
'   Flow control        None
'
' Press OK button

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

'   16F88 Pin   Function      Name Given      Wiring
'                             In Program
'   ---------  ------------   ----------    ----------
'
'      RA4                        -         Potentiometer
'      RB2     Receiver Pin       -         MAX232 Pin 9
'      RB5     Transmit Pin     PICSO       MAX232 Pin 10
'
' See the schematic for the PIC power and MCLR connections


' MAX232 Pin  Datasheet          Function and Wiring
```

```
'            Designation
' ---------   ---------   ------------------------------------
'
'  Pin 7      T2OUT       Receive Data to Male RS232 DB9 Pin 2
'  Pin 8      R2IN        Transmit Data from Male RS232 DB9 Pin 3
'  Pin 9      R2OUT       Receive Data to PIC RB2
'  Pin 10     T2IN        Transmit Data from PIC RB5
'
' See schematic at:
' http://www.cornerstonerobotics.
org/schematics/pic_programming_serout2_potentiometer.pdf

'------------Revisions------------

' 9/21/10 Initiatize RB5 to HIGH

'---------Constants/Defines-------

    DEFINE OSC 8              ' Defines oscillator setting at 8 MHz.
                              ' For SEROUT2, an oscillator speed faster
                              ' than 4MHZ may be required for reliable
                              ' operation at 9600 baud and above.

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

     x      VAR   BYTE        ' BYTE for potentiometer input
     PICSO  VAR   PORTB.5     ' Defines PORTB.5 name as PICSO
                              ' (PIC Serial Out)

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

    ANSEL = %00010000         ' Leaves AN4 in analog mode, but

                              ' changes other analog bits to digital.
                              ' See table below.

'    Analog Bit    Analog or Digital      PIC16F88 Pin
'   ------------  ------------------     --------------
'       AN0            Digital               RA0
'       AN1            Digital               RA1
'       AN2            Digital               RA2
'       AN3            Digital               RA3
'       AN4            Analog                RA4
'       AN5            Digital               RB6
'       AN6            Digital               RB7

    OSCCON = $70              ' Sets the internal oscillator in the
                              ' 16F88 OSCCON register to 8 MHz

    PORTB = %00100000         ' Sets PIC transmit pin RB5 to HIGH

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

start:
```

```
ADCIN 4, x                  ' Read analog voltage on AN4 (pin RA4)
                            ' and convert to 8-bit digital value
                            ' and store as x.

SEROUT2 PICSO, 84, ["POT = ", #x, 10, 13]
                            ' Format:  SEROUT2 Pin, Mode, [Item1]
                            ' Pin = PICSO, Declared in Variables
                            ' Mode = 84 (9600 baud rate)
                            ' [Item1} = ["POT = ", #x, 10, 13]
                            ' Transmits POT = , the 8-bit
                            ' value of x, 10 (the ASCII codes for
                            ' line feed), and 13 (the ASCII code
                            ' for carriage return) to the PC.


PAUSE 1000                  ' Pause 1 sec between readings

GOTO start                   ' Go to loop label

END
```