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'-----Title-----
' File.....serout2_hello.pbp
' Started....12/15/08
' Microcontroller used:  Microchip Technology PIC16F88
'                          microchip.com
' PicBasic Pro Code:  micro-Engineering Labs, Inc.
'                          melabs.com

'-----Program Description-----

' Program uses SEROUT2 command to
' send "hello" to 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

'-----New PicBasic Pro Command-----

' SEROUT2
' DataPin{\FlowPin},Mode,{Pace},{Timeout,Label,}[Item...]

' The PicBasic Pro Compiler Manual is on line at:
' http://www.melabs.com/support/index.htm then under the
' Compiler Documentation: click on PICBASIC PRO Compiler
' Manual and then look at about page 142 in the manual

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

'   16F88 Pin   Function      Name Given      Wiring
'                                     In Program
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' -----
'
'      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_hello.pdf

'-----Revisions-----
' 9/21/10 Initiatize RB5 to HIGH

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

MODE          VAR   WORD   ' WORD for MODE value
PICSO         VAR   PORTB.5 ' Defines PORTB.5 name as PICSO
                (PIC Serial Out)

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

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.

ANSEL = 0              ' Changes analog bits to digital.

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-----

MODE = 84              ' Sets RX/TX speed to 84 (9600 baud)
                        ' MODE = 188 (4800 baud)
                        ' MODE = 396 (2400 baud)

SEROUT2 PICSO, MODE, ["hello", 10, 13]
                        ' Format: SEROUT2 Pin, Mode, [Item1]
                        ' Pin = PICSO, Declared in Variables

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' Mode = 84 (9600 baud rate)
' [Item1] = ["hello", 10, 13]
' Transmits hello, then
' 10 (the ASCII codes for line feed),
' and 13 (the ASCII code for carriage
' return to PC.
```

END