



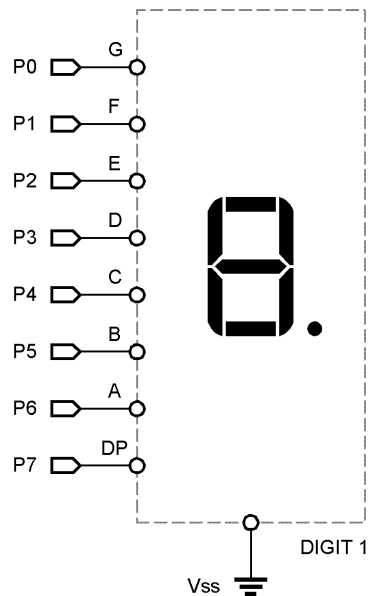
## Experiment #8: A Single-Digit Counter

The purpose of this experiment is to demonstrate the use of seven-segment LED module by creating a simple decimal counter.

### New PBASIC elements/commands to know:

- Nib

### Building The Circuit.



## Experiment #8: A Single-Digit Counter

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```
' =====
'
' File..... Ex08 - SevenSegs.BS2
' Purpose... 7-Segment Display
' Author.... Parallax
' E-mail.... stamptech@parallaxinc.com
' Started...
' Updated... 01 MAY 2002
'
'   {$STAMP BS2}
'
' =====
'
' -----
' Program Description
' -----
'
' Displays digits on a 7-segment display.
'
' -----
' I/O Definitions
' -----
'
' Segs          VAR      OutL          ' 7-segment LEDs
'
' -----
' Constants
' -----
'
' Blank          CON      %00000000    ' clears the display
'
' -----
' Variables
' -----
'
' counter        VAR      Nib
'
' -----
' EEPROM Data
' -----
```

## Experiment #8: A Single-Digit Counter

```
' Segments          .abcdefg
'
' -----
DecDig      DATA   %01111110      ' 0
            DATA   %00110000      ' 1
            DATA   %01101101      ' 2
            DATA   %01111001      ' 3
            DATA   %00110011      ' 4
            DATA   %01011011      ' 5
            DATA   %01011111      ' 6
            DATA   %01110000      ' 7
            DATA   %01111111      ' 8
            DATA   %01111011      ' 9

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

Initialize:
  DirL = %11111111      ' make segments outputs

' -----
' Program Code
' -----

Main:
  FOR counter = 0 TO 9      ' count
    READ (DecDig + counter), Segs      ' put 7-seg pattern on digit
    PAUSE 1000      ' show for about one second
  NEXT
  GOTO Main      ' do it all again

END
```

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### Behind The Scenes

This program is very similar to the light show program: a pattern is read from the EEPROM and output to the LEDs. In this program, sending specific patterns to the seven-segment LED creates the digits zero through nine.

### Challenge

Update the program to create a single-digit HEX counter. Use the patterns below for the HEX digits.

