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

' File......hpwm1.pbp
' Started....1/17/08
' Microcontroller used:  Microchip Technology 16F88
'                        microchip.com
' PicBasic Pro Code: micro-Engineering Labs, Inc.
'                    melabs.com

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

' Uses HPWM command to set the motor speed
' of a motor.  The HPWM command works in the
' background while two LEDs blink.

'----------Related Lesson----------

' hpwm1.pbp is used in the lesson MOTOR CONTROL WITH PWM at:
' http://www.cornerstonerobotics.
org/curriculum/lessons_year2/erii21_motor_control_pwm.pdf

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

' The PicBasic Pro Compiler Manual is on line at:
' http://www.microengineeringlabs.com/resources/index.htm#Manuals
'
' HPWM Channel,Dutycycle,Frequency
'
' Outputs a PWM signal using the PICs hardware which
' is available on some PICs including the PIC16F88.
' The default HPWM Channel 1 (CCP1) for the PIC16F88 is RB0.
' The CCP module's input/output pin (CCP1) can be
' configured as RB0 or RB3. To configure the CCP1 as RB3,
' compile the same program but before you physically program
' the 16F88 from meProg, click on the C (Configuration), then
' change the CCP Multiplexed With from RB0 to RB3.
' The Dutycycle ranges from 0 (0%) to 255 (100%).
' For the PIC16F88, the frequency ranges from 245Hz
' to 32,767 Hz.
' Look around page 75 in the PicBasic Pro Compiler Manual
' The frequency of 245 Hz seems to work best for the
' Jameco #155855 gearhead motor.

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

    c0 VAR  BYTE        ' BYTE to store counter variable

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

    TRISB = %00000000   ' Sets all pins of PORTB as outputs

    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------------


    HPWM 1,127,245      ' Format: HPWM Channel,Dutycycle,Frequency
                        ' Motor is driver by Channel 1, (RB0 by default)
                        ' on the PIC16F88.  The Dutycycle is set at
                        ' 127, sending a 50% duty cycle pulse.
                        ' The frequency is set for 245 Hz.
                        ' This command will continue to run
                        ' in the background while the program is
                        ' executing the rest of the program
                        ' instructions.

start:                   ' This part of the program makes the LEDs blink.

    FOR c0 = 1 TO 5
    HIGH 1
    LOW 2
    PAUSE 100
    LOW 1
    HIGH 2
    PAUSE 100
    NEXT c0

    FOR c0 = 1 TO 2
    HIGH 1
    LOW 2
    PAUSE 500
    LOW 1
    HIGH 2
    PAUSE 500
    NEXT c0

    GOTO start

    END
```