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

' File......16F877A_hpwm1.pbp
' Started....1/17/08
' Microcontroller used:  Microchip Technology 16F877A
'                         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.

'------------Schematic-----------

' See schematic at:
' http://www.cornerstonerobotics.org/schematics/pic16f877a_hpwm1.pdf

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

' hpwm1.pbp (the 16F88 program) 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 PIC16F877A.
' The HPWM Channel 1 (CCP1) for the PIC16F877A is RC2.
' The HPWM Channel 2 (CCP2) for the PIC16F877A is RC1.
' 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.

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

' 1/5/09    Change MCU from 16F88 to 16F877A

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

    c0 VAR  BYTE        ' BYTE to store counter variable

'---------Initialization----------
```

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

    ADCON1 = %00000110    ' Changes PORTE and PORTA analog bits to
                          ' digital operation since not using ADC
                          ' (Analog to Digital Converter)

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



    HPWM 1,127,245        ' Format: HPWM Channel,Dutycycle,Frequency
                          ' Motor is driver by Channel 1, (RC2) on
                          ' the PIC16F877A.  Channel 2 would be RC1.
                          ' 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
```