

'-----Title-----

' File.....3 TSA Music'10.pbp
' Started....1/25/10
' Microcontroller used: Microchip Technology 16F88
' microchip.com
' PicBasic Pro Code: micro-Engineering Labs, Inc.
' melabs.com

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

' TSA Music Production Program 2010: Track 3

'-----Revision History-----

' 2/1/10 Changed VAR to CON
' 2/11/10 Program Finalized

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

DEFINE OSC 20 ' Sets microcontroller operating frequency
 ' to 20 MHZ.

TRISB = %11111000 ' Sets up pins RB0 - 3 of PORTB as an output

PORTB = %00000000 ' Sets all pins on PORTB to low (0V).

' The variable "x" represents the eighth note. The length of time that the
' eighth note (x) is played is deteremined by the value set at 200.
' A quarter note is two times an eighth note or 2x.

x VAR WORD

' These are the constants that we used to declare the frequencies as notes.
' For example shg represents Super High G which has a frequency of 1568 Hz.

shg **CON** 1568
shf **CON** 1244
shc **CON** 1046
shbf **CON** 932
shaf **CON** 830
hg **CON** 784
hf **CON** 698
hef **CON** 622
hd **CON** 587
hc **CON** 523
hbf **CON** 466
haf **CON** 415
g **CON** 392
f **CON** 349
ef **CON** 311
d **CON** 293

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c CON    261
bf CON   233
af CON   208
lg CON   196
lf CON   174
lef CON  155
ld CON   146
lc CON   130
lbf CON  116
laf CON  103
slg CON   98
slf CON   87
slef CON  78
sld CON   73
slc CON   65

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

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    x = 200           ' An eighth note (x) will be 200 ms long.

' line1
    PAUSE 1000       ' Pause 1000 ms before starting generating tones

' line1
    FREQOUT 1, 2*x, c ' We use FREQOUT to generate a tone. 1 represents
the                    ' output pin RB1 on the Pic16F88. "x" symbolizes
Hz.                    ' eighth note. "c" is defined as the frequency 392

    FREQOUT 1, 12*x, 0
    FREQOUT 1, 2*x, c
    FREQOUT 1, 12*x, 0
    FREQOUT 1, 2*x, c

' line 2
    FREQOUT 1, 12*x, 0
    FREQOUT 1, 8*x, lg
    FREQOUT 1, 2*x, hc
    FREQOUT 1, 12*x, 0

' line 3
    FREQOUT 1, 2*x, hc
    FREQOUT 1, 12*x, 0
    FREQOUT 1, 2*x, hc
    FREQOUT 1, 11*x, 0
    FREQOUT 1, 9*x, g
    FREQOUT 1, 4*x, 0

' line 4

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FREQOUT 1, 84*x, 0

'line 5

'line 6

FREQOUT 1, 2*x, hc
FREQOUT 1, 2*x, hef

'line 7

FREQOUT 1, 2*x, hg
FREQOUT 1, 4*x, shc
FREQOUT 1, 2*x, c
FREQOUT 1, 12*x, 0
FREQOUT 1, 2*x, c
FREQOUT 1, 12*x, 0

'line 8

FREQOUT 1, 2*x, c
FREQOUT 1, 12*x, 0
FREQOUT 1, 8*x, lg
FREQOUT 1, 2*x, hc
FREQOUT 1, 12*x, 0

'line 9

FREQOUT 1, 2*x, hc
FREQOUT 1, 12*x, 0
FREQOUT 1, 2*x, hc
FREQOUT 1, 11*x, 0
FREQOUT 1, 8*x, shc
END