**GuitarHero FAQ**

***Do I need to follow the prescribed API?***

Yes, if you want your teacher's help you need to have consistent variable / method names.

***Where do I enter keystrokes in GuitarHeroLite and GuitarHero?***

Be sure that the standard draw window has focus by clicking in it. Then, type the keystrokes.

***How do I determine the length of an array?***

Go back to CS 1, do not pass go, do not collect $200.

***Is the size of a RingBuffer equal to the number of non-zeros?***

No. Some of the elements in the buffer can be zero. To get an accurate count, increment the instance variable size each time you call enqueue and decrement it each time you call dequeue.

***What should RingBuffer do if the client attempts to dequeue from an empty buffer or enqueue into a full buffer?***

As specified, you should *throw an exception* to indicate the error.

***What happens if I call StdAudio.play(x) where x is greater than 1 or less than -1?***

The value is *clipped* - it is replaced by the value 1.0 or -1.0, respectively.

***I get an ArrayOutOfBounds or NullPointerException error in RingBuffer. What could cause this?***

Does your constructor correctly initialize all the instance variables? Did you allocate memory for your array? Did you inadvertently re-declare an instance variable in a method or constructor, thereby hiding the instance variable with the same name?

***I get a Ring buffer underflow error in GuitarHeroLite before I type any keystrokes. Why?***

Did you forget to initialize the ring buffer to contain N zeros in your GuitarString constructor?

***When I run GuitarHeroLite for the first time, I hear no sound. What am I doing wrong?***

Make sure you have tested with the main() provided for GuitarString. If that works, it is likely something wrong with pluck() since the main() provided for GuitarString does not test that method. To diagnose the problem, print out the values of sample() and check that they become nonzero after you type *lower case* characters 'a' and 'c'.

***When I run GuitarHeroLite, I hear static (either just one click, and then silence or continual static). What am I doing wrong?***

It's likely that pluck() is working, but tic() is not. The best test is to run the main() provided for GuitarString.

***How do I use keyboard.indexOf(key)?***

If keyboard is a String and key is a character, then keyboard.indexOf(key) return the integer index of the first occurrence of the character key in the string keyboard (or -1 if it does not occur).

***Should I hard-code the constants 44,100, 110.0, 440.0, 880.0, and 37 in my program?***

In general, using an unnamed constant (such as 37) in your program more than once is strongly discouraged. We recommend using the name SAMPLING\_RATE for 44,100 and CONCERT\_A for 440. There's no need to name all of the constants in the formula 2(i - 24) / 12.