```
import java.util.*;
public class KeyboardHero {
	public static void main(String[] args) throws InterruptedException
	{
		String LetPlay = "nn//SS/..,,mmn|//..,,m//..,,mnn//SS/..,,mmn";
		final double TEXT_POS_X = .5;
		final double TEXT_POS_Y = .8;
		final double TEXT_POS_Y2 = .5;
		StdDraw.text(TEXT_POS_X, TEXT_POS_Y, "Twinkle Twinkle little star");
		GuitarString[] arr = new GuitarString[37]; // new array with 37 chars
	for(int i = 0; i < arr.length; i++) {
		arr[i] = new GuitarString(440 * Math.pow(1.05956, i - 25)); // each element in the
array has a certain frequency
	}

	// creating a map to store frequency of each character
	HashMap<Character, GuitarString> map = new LinkedHashMap<>();
	int i = 0;

	//Adding the keys to the map with values being the frequency
	map.put('q', arr[i++]);
	map.put('2', arr[i++]);
	map.put('w', arr[i++]);
	map.put('e', arr[i++]);
	map.put('4', arr[i++]);
	map.put('r', arr[i++]);
	map.put('5', arr[i++]);
	map.put('t', arr[i++]);
	map.put('y', arr[i++]);
	map.put('7', arr[i++]);
	map.put('u', arr[i++]);
	map.put('8', arr[i++]);
	map.put('i', arr[i++]);
	map.put('9', arr[i++]);
	map.put('o', arr[i++]);
	map.put('p', arr[i++]);
	map.put('-', arr[i++]);
	map.put('[', arr[i++]);
	map.put('=', arr[i++]);
	map.put('z', arr[i++]);
	map.put('x', arr[i++]);
	map.put('d', arr[i++]);
	map.put('c', arr[i++]);
	map.put('f', arr[i++]);
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        map.put('v', arr[i++]);
        map.put('g', arr[i++]);
        map.put('b', arr[i++]);
        map.put('n', arr[i++]);
        map.put('j', arr[i++]);
        map.put('m', arr[i++]);
        map.put('k', arr[i++]);
        map.put(',', arr[i++]);
        map.put('.', arr[i++]);
        map.put(';', arr[i++]);
        map.put('/', arr[i++]);
        map.put('\'', arr[i++]);
        map.put(' ', arr[i++]);
                for(int x = 0; x < LetPlay.length(); x++)
                {
                        String car = Character.toString(LetPlay.charAt(x));
                        StdDraw.text(TEXT_POS_X, TEXT_POS_Y2, "Press this: " + car);
              play(map);
             StdDraw.clear();
                }



        }
        private static void play(HashMap<Character, GuitarString> map) {        // the main input
loop
                String LetPlay = "nn//SS/..,,mmn|//..,,m//..,,mnn//SS/..,,mmn";
                int inc = 0;
      while (true) {

        // check if the user has typed a key, and, if so, process it
        if (StdDraw.hasNextKeyTyped()) {

           // the user types this character
           char key = StdDraw.nextKeyTyped();
           String key2 = "" + key;
           if(key2.equals(LetPlay.substring(inc, inc + 1)));
           {
                 // whether the key pressed is one of the 37 chars
              for(char item : map.keySet()) {
                 if(item == key) {
                        map.get(item).pluck();
                 }
              }
```

```
            }
        }

        // compute the superposition of the samples
        double sample = 0.0;
        for(char item : map.keySet()) {
                sample = sample + map.get(item).sample();
        }
        // send the result to standard audio
        StdAudio.play(sample);
        // advance the simulation of each guitar string by one step
        for(char item : map.keySet()) {
                map.get(item).tic();
        }

    }

  }
}
```

```
// Devansh Joshi and Finley Krug
// Period 5
// 11/14/2023
// GuitarHero.java

import java.util.*;

public class GuitarHero {

   public static void main(String[] args) {
        GuitarString[] arr = new GuitarString[37]; // new array with 37 chars
        for(int i = 0; i < arr.length; i++) {
                arr[i] = new GuitarString(440 * Math.pow(1.05956, i - 25)); // each element in the
array has a certain frequency
        }

        // creating a map to store frequency of each character
        HashMap<Character, GuitarString> map = new LinkedHashMap<>();
```

```
    int i = 0;

    //Adding the keys to the map with values being the frequency
    map.put('q', arr[i++]);
    map.put('2', arr[i++]);
    map.put('w', arr[i++]);
    map.put('e', arr[i++]);
    map.put('4', arr[i++]);
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    map.put(',', arr[i++]);
    map.put('.', arr[i++]);
    map.put(';', arr[i++]);
    map.put('/', arr[i++]);
    map.put('\'', arr[i++]);
    map.put(' ', arr[i++]);


final double TEXT_POS_X = .5;
final double TEXT_POS_Y = .5;
```

```
        StdDraw.text(TEXT_POS_X, TEXT_POS_Y, "Type any character to play a note!");

        // calling the play method
        play(map);
    }

    private static void play(HashMap<Character, GuitarString> map) {        // the main input loop
        while (true) {

            // check if the user has typed a key, and, if so, process it
            if (StdDraw.hasNextKeyTyped()) {

                // the user types this character
                char key = StdDraw.nextKeyTyped();

                // whether the key pressed is one of the 37 chars
                for(char item : map.keySet()) {
                        if(item == key) {
                                map.get(item).pluck();
                        }
                }
            }

            // compute the superposition of the samples
            double sample = 0.0;
            for(char item : map.keySet()) {
                    sample = sample + map.get(item).sample();
            }
            // send the result to standard audio
            StdAudio.play(sample);
            // advance the simulation of each guitar string by one step
            for(char item : map.keySet()) {
                    map.get(item).tic();
            }

        }

    }
}
```