WebbyJam, a Web Tune Editor to Find Enjoyment

Hiroyuki TAKAKURA
CodeNinth (Freelancer)
1-19-10 Suehiro N Building 201
takakura@codeninth.com

ABSTRACT
This paper describes the functions, concept and technical points of WebbyJam (http://www.webbyjam.com).

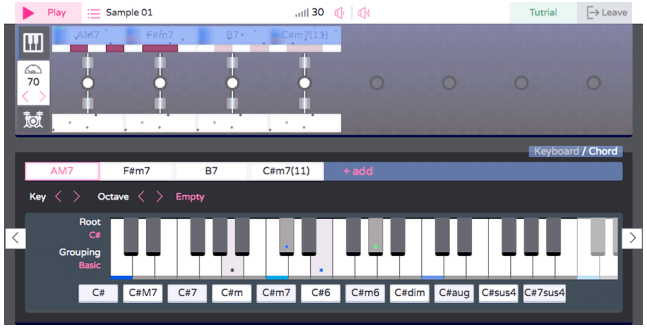

Figure 1. Screenshot

1. FUNCTIONS
WebbyJam users can make short tunes composed of keyboard and drum tracks by selecting chord names, rhythm pattern or sound sources from presets. The tunes can be saved as JSON and optionally attached to Google accounts.

2. CONCEPT
2.1 Helpful to Find Enjoyment
The main concept is to be helpful for beginners to find enjoyment in composing. I think that old composer applications are so difficult for beginners that they often keep away or leave in an early stage. Therefore, WebbyJam has simple functions and rich presets, which prevent users from getting confused and provide pleasing experiences.

2.2 Featuring Chord Theory
Since chords are very attractive and important, I think it should be easier to learn and taste them. WebbyJam users can play a number of chords by simple actions. They can learn chords seeing constituent sounds in the keyboard interface and enjoy differences among various chords.

3. TECHNICAL POINTS
3.1 Playing Sounds
All keyboard and drum sounds are ArrayBuffers whose length are up to 4 seconds (Long enough to cover one measure at 60 BPM). To play sound for arbitrary seconds, we execute AudioBufferSourceNode.start() in the same as general usages and AudioBufferSourceNode.stop() simultaneously with the duration as the argument. This is, so to speak, pseudo MIDI, which make it possible to use any sound sources with few restrictions.

3.2 Consolidating ArrayBuffers in JSON
ArrayBuffers are converted to strings via Uint8Arrays and consolidated in JSON files in advance. It is those JSON files that clients request directly. After loaded, the strings are reversely converted to the originals.(See Figure 2)

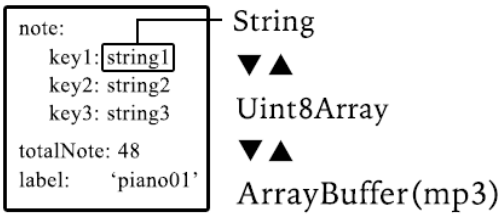

Figure 2. The scheme of JSON including ArrayBuffers.

In this way, though the total amounts of bytes become a little larger, we can reduce http requests drastically and transfer related parameters of sound sources efficiently.

4. AUTHOR BIOGRAPHY
Hiroyuki TAKAKURA

A freelance web engineer in Saitama, Japan. After Graduation from Tokyo University in 2012, he joined a design company in Tokyo. At present, he develops some web applications besides client works.

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