

Pentru implementarea laturii 'interactive' a cursului de chitara, vom folosi API-ul alphaTab (<https://github.com/CoderLine/alphaTab>) pentru a afisa tabulaturile/partiturile unor melodii stocate pe server (sub formate .gp4, .gp5, .gpx etc).

De asemenea, se va folosi si API-ul alphaSynth (<https://github.com/CoderLine/alphaSynth>) pentru mostrele sonore relative la partitura respectiva.

In esenta, alphaTab preia un fisier de tabulaturi (exista mai multe formate disponibile, dar le vom folosi doar pe cele mentionate anterior) si il randeaza astfel incat putem obtine o reprezentare a partituri/tabulaturii codificate in fisierul propriu-zis. Implicit,

```
var score = alphatab.importer.loadScore("MyScore.gp5");
```

Astfel, facem load la un fisier de tip .gp5.

Pentru a-l randa, ne folosim de clasa ScoreRenderer care primeste o instanta a clasei Settings drept configurare. Randarea propriu-zisa se face folosind o implementare a ICanvas.

Pentru afisare, se poate folosi un engine bazat pe canvas-ul din HTML5 (aflat in implementarea JS a alphaTab). Trebuie specificata o referinta DOM catre elementul canvas drept al doilea parametru in crearea ScoreRenderer (primul parametru = Settings, al doilea depinde de implementare). Astfel, engine-ul va redimensiona si afisa continutul tabulaturii in interiorul canvas-ului.

Drept functionalitate suplimentara, vom putea folosi si API-ul toFret (<http://www.tofret.com/api/>) care se bazeaza pe tabulaturi in format text (pe care le vom furniza direct in cod). toFret recunoaste automat tabulaturile si avantajul utilizarii lui e ca putem avea si un player care sa ne arate notele direct pe o tastiera (aici vine partea interactiva). Pentru a utiliza toFret, este necesar doar sa includem tofret-embedded.js, sa punem tabulatura text intr-un div cu id unic si sa adaugam o functie de trigger unui element de pe pagina. Un exemplu (cu player-ul integrat) avem in cele ce urmeaza :

```
<script src="http://www.tofret.com/Webservice/js/tofret-embedded.js"></script>
```

```
<pre id="riff_1" onclick="toFretIntegration(this.id, 'bass', 6, 1);">
```

```
G-----|
D-3-33-0-----0-----|
A-----2-2-3-----|
E-----|
</pre>
```

```
<span onclick="toFretIntegration('riff_1', 'bass', 6, 1);">Trigger toFret</span>
```

Referitor la toFretIntegration, toFretIntegration( 'myClassId', 'guitar', 24 ) reprezinta o chitara cu 24 de freturi asignata

la id-ul dat drept prim parametru. Practic, putem extinde aplicatia si pentru alte instrumente cu corzi, precum basul sau ukulelele, folosind acelasi API.

De asemenea, putem adauga un curs referitor la acorduri in care sa putem returna o lista de acorduri incepand cu nota/notele

date drept parametri. Acest API (JSON reverse chord :

<http://www.tofret.com/api/reverse-chord.php>) returneaza un obiect de tip

JSON. De exemplu, pentru nota C#, fisierul returnat va contine :

```
{ "chords": { "C#": { "major": "C# F G#", "major6": "C# F G# A#", "major7": "C# F G# A#", "major9": "C# F G# C D#", "major11": "C# F# G# C D#", "minor": "C# E G#", "minor6": "C# E G# A#", "minor7": "C# E G# B", "add9": "C# F G# D#", "madd9": "C# E G# D#", "minor9": "C# E G# B D#", "sus2": "C# D# G#", "sus4": "C# F# G#", "7sus4": "C# F# G# B", "9sus4": "C# F# G# B D#", "augmented": "C# F A", "augmented7": "C# F A B", "diminished": "C# E G", "diminished7": "C# E G A#", "dominant7th": "C# F G# B", "dominant9th": "C# F G# B D#", "m7b5": "C# E G B", "JimiHendrix": "C# E F G# B" }, "Db": { "major": "Db F Ab", "major6": "Db F Ab Bb", "major7": "Db F Ab C", "major9": "Db F Ab C Eb", "major11": "Db Gb Ab C Eb", "minor": "Db E Ab", "minor6": "Db E Ab Bb", "minor7": "Db E Ab B", "add9": "Db F Ab Eb", "madd9": "Db E Ab Eb", "minor9": "Db E Ab B Eb", "sus2": "Db Eb Ab", "sus4": "Db Gb Ab", "7sus4": "Db Gb Ab B", "9sus4": "Db Gb Ab B Eb", "augmented": "Db F A", "augmented7": "Db F A B", "diminished": "Db E G", "diminished7": "Db E G Bb", "dominant7th": "Db F Ab B", "dominant9th": "Db F Ab B Eb", "m7b5": "Db E G B", "JimiHendrix": "Db E F Ab B" }, "F#": { "major": "F# A# C#", "major6": "F# A# C# D#", "major7": "F# A# C# F", "major9": "F# A# C# F G#", "major11": "F# B C# F G#", "minor": "F# A C#", "minor6": "F# A C# D#", "minor7": "F# A C# E", "add9": "F# A# C# G#", "madd9": "F# A C# G#", "minor9": "F# A C# E G#", "sus2": "F# G# C#", "sus4": "F# B C#", "7sus4": "F# B C# E", "9sus4": "F# B C# E G#", "dominant7th": "F# A# C# E", "dominant9th": "F# A# C# E G#", "JimiHendrix": "F# A A# C# E" }, "Gb": { "major": "Gb Bb Db", "major6": "Gb Bb Db Eb", "major7": "Gb Bb Db F", "major9": "Gb Bb Db F Ab", "major11": "Gb B Db F Ab", "minor": "Gb A Db", "minor6": "Gb A Db Eb", "minor7": "Gb A Db E", "add9": "Gb Bb Db Ab", "madd9": "Gb A Db Ab", "minor9": "Gb A Db E Ab", "sus2": "Gb Ab Db", "sus4": "Gb B Db", "7sus4": "Gb B Db E", "9sus4": "Gb B Db E Ab", "dominant7th": "Gb Bb Db E", "dominant9th": "Gb Bb Db E Ab", "JimiHendrix": "Gb A Bb Db E" }, "A": { "major": "A C# E", "major6": "A C# E F#", "major7": "A C# E G#", "major9": "A C# E G# B", "add9": "A C# E B", "augmented": "A C# F", "augmented7": "A C# F G", "dominant7th": "A C# E G", "dominant9th": "A C# E G B", "JimiHendrix": "A C C# E G" }, "E": { "major6": "E G# B C#", "minor6": "E G B C#", "diminished7": "E G A# C#" }, "D": { "major7": "D F# A C#", "major9": "D F# A C# E", "major11": "D G A C# E" }, "B": { "major9": "B Eb Gb Bb Db", "major11": "B E Gb Bb Db", "add9": "B Eb Gb Db", "madd9": "B D Gb Db", "minor9": "B D Gb A Db", "sus2": "B Db Gb", "9sus4": "B E Gb A Db", "dominant9th": "B Eb Gb A Db" }, "G#": { "major11": "G# C# D# G A#", "sus4": "G# C# D#", "7sus4": "G# C# D# F#", "9sus4": "G# C# D# F# A#" }, "Ab": { "major11": "Ab Db Eb G Bb", "sus4": "Ab Db Eb", "7sus4": "Ab Db Eb Gb", "9sus4": "Ab Db Eb Gb Bb" }, "A#": { "minor": "A# C# F", "minor6": "A# C# F G", "minor7": "A# C# F G#", "madd9": "A# C# F C", "minor9": "A# C# F G# C", "diminished": "A# C# E", "diminished7": "A# C# E G", "m7b5": "A# C# E G#", "JimiHendrix": "A# C# D F G#" }, "Bb": { "minor": "Bb Db F", "minor6": "Bb Db F G", "minor7": "Bb Db F Ab", "madd9": "Bb Db F C", "minor9": "Bb Db F Ab C", "diminished": "Bb Db E", "diminished7": "Bb Db E G", "m7b5": "Bb Db E Ab", "JimiHendrix": "Bb Db D F Ab" }, "D#": { "minor7": "D# F# A# C#", "minor9": "D# F# A# C# E" } }
```

C# F", "7sus4": "D# G# A# C#", "9sus4": "D# G# A# C# F", "augmented7": "D# G B C#", "dominant7th": "D# G A# C#", "dominant9th": "D# G A# C# F", "m7b5": "D# F# A C#", "JimiHendrix": "D# F# G A# C#", "Eb": {"minor7": "Eb Gb Bb Db", "minor9": "Eb Gb Bb Db F", "7sus4": "Eb Ab Bb Db", "9sus4": "Eb Ab Bb Db F", "augmented7": "Eb G B Db", "dominant7th": "Eb G Bb Db", "dominant9th": "Eb G Bb Db F", "m7b5": "Eb Gb A Db", "JimiHendrix": "Eb Gb G Bb Db"}, "F": {"augmented": "F A C#", "augmented7": "F A C# D#", "G": {"diminished": "G A# C#", "diminished7": "G A# C# E", "m7b5": "G A# C# F"}}, "scales": {"C#": {"major": "C# D# F F# G# A# C", "minor": "C# D# E F# G# A B", "Minor pentatonic": "C# E F# G# B", "major pentatonic": "C# D# F G# A#", "Harmonic minor": "C# D# E F# G# A C", "Melodic minor": "C# D# E F# G# A# C", "Diminished": "C# D# E F# G A A# C", "Blues": "C# E F# G G# B"}, "Db": {"major": "C# D# F F# G# A# C", "minor": "C# D# E F# G# A B", "Minor pentatonic": "C# E F# G# B", "major pentatonic": "C# D# F G# A#", "Harmonic minor": "C# D# E F# G# A C", "Melodic minor": "C# D# E F# G# A# C", "Diminished": "C# D# E F# G A A# C", "Blues": "C# E F# G G# B"}, "D": {"major": "D E F# G A B C#", "Harmonic minor": "D E F G A A# C#", "Melodic minor": "D E F G A B C#", "Diminished": "D E F G G# A# B C#"}, "E": {"major": "E F# G# A B C# D#", "major pentatonic": "E F# G# B C#", "Melodic minor": "E F# G A B C# D#", "Diminished": "E F# G A A# C# D#"}, "F#": {"major": "F# G# A# B C# D# F", "minor": "F# G# A B C# D E", "Minor pentatonic": "F# A B C# E", "major pentatonic": "F# G# A# C# D#", "Harmonic minor": "F# G# A B C# D F", "Melodic minor": "F# G# A B C# D# F", "Blues": "F# A B C C# E"}, "Gb": {"major": "F# G# A# B C# D# F", "minor": "F# G# A B C# D E", "Minor pentatonic": "F# A B C# E", "major pentatonic": "F# G# A# C# D#", "Harmonic minor": "F# G# A B C# D F", "Melodic minor": "F# G# A B C# D# F", "Blues": "F# A B C C# E"}, "G#": {"major": "G# A# C C# D# F G", "minor": "G# A# B C# D# E F#", "Minor pentatonic": "G# B C# D# F#", "Harmonic minor": "G# A# B C# D# E G", "Melodic minor": "G# A# B C# D# F G", "Diminished": "G# A# B C# D E F G", "Blues": "G# B C# D D# F#"}, "Ab": {"major": "G# A# C C# D# F G", "minor": "G# A# B C# D# E F#", "Minor pentatonic": "G# B C# D# F#", "Harmonic minor": "G# A# B C# D# E G", "Melodic minor": "G# A# B C# D# F G", "Diminished": "G# A# B C# D E F G", "Blues": "G# B C# D D# F#"}, "A": {"major": "A B C# D E F# G#", "major pentatonic": "A B C# E F#"}, "B": {"major": "B C# D# E F# G# A#", "minor": "B C# D E F# G A", "major pentatonic": "B C# D# F# G#", "Harmonic minor": "B C# D E F# G A#", "Melodic minor": "B C# D E F# G# A#", "Diminished": "B C# D E F G G# A#"}, "D#": {"minor": "D# F F# G# A# B C#", "Minor pentatonic": "D# F# G# A# C#", "Blues": "D# F# G# A A# C#"}, "Eb": {"minor": "D# F F# G# A# B C#", "Minor pentatonic": "D# F# G# A# C#", "Blues": "D# F# G# A A# C#"}, "F": {"minor": "F G G# A# C C# D#", "Harmonic minor": "F G G# A# C C# E", "Diminished": "F G G# A# B C# D E"}, "A#": {"minor": "A# C C# D# F F# G#", "Minor pentatonic": "A# C# D# F G#", "Harmonic minor": "A# C C# D# F F# A", "Melodic minor": "A# C C# D# F G A", "Diminished": "A# C C# D# E F# G A", "Blues": "A# C# D# E F G#"}, "Bb": {"minor": "A# C C# D# F F# G#", "Minor pentatonic": "A# C# D# F G#", "Harmonic minor": "A# C C# D# F F# A", "Melodic minor": "A# C C# D# F G A", "Diminished": "A# C C# D# E F# G A", "Blues": "A# C# D# E F G#"}, "G": {"Diminished": "G A A# C C# D# E F#", "Blues": "G A# C C# D F"}}}