## **Advanced Coding Tools and Methodologies**

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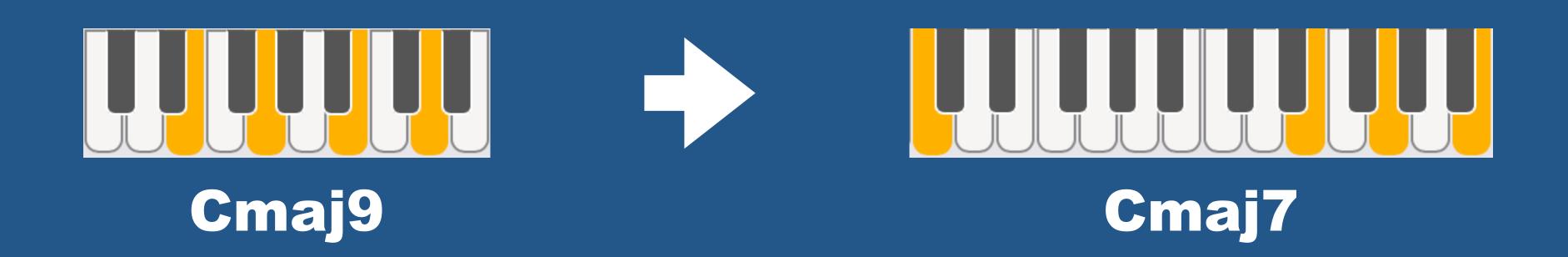


# Voicings Generator



### What are voicings?

A chord voicing is just a way of altering the order of and intervals between the notes in a chord.



In Jazz, there are many types of chords voicings

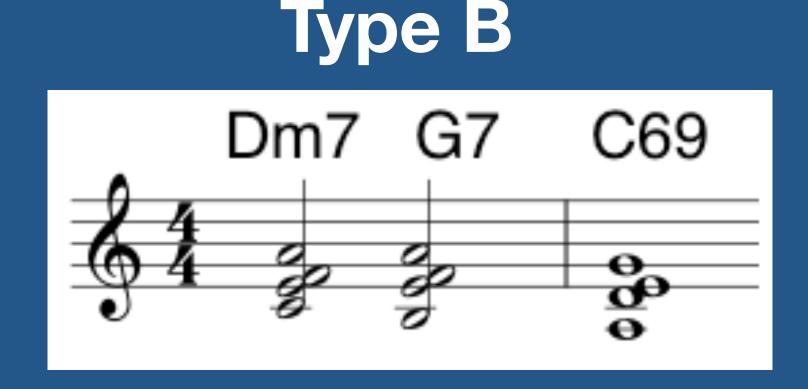
### Rootless voicings

these chord voicings exclude the root note. Instead of the root (and sometimes the 5th), chord tensions are played.

Type A

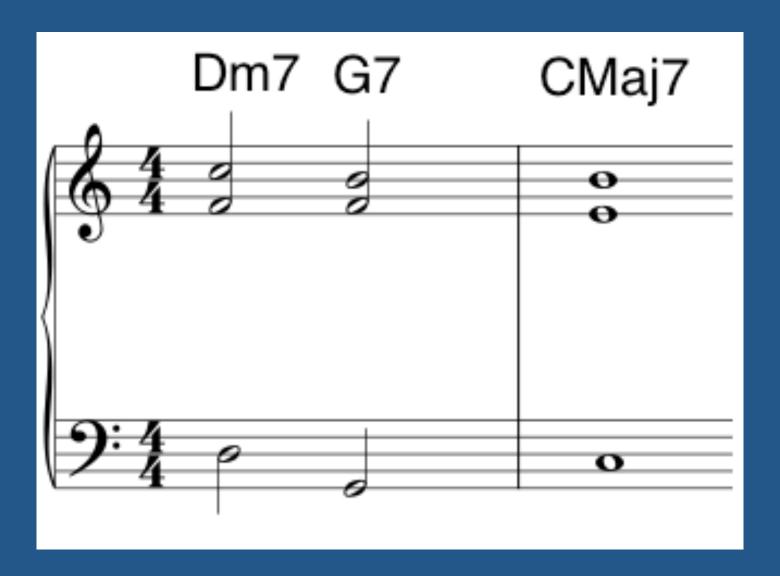
9:4

Dm9 G13 CMaj7



### Three Note voicings

If we take the basic Shell Chord (3rd and 7th) and play it with our right hand and then add a root note in our left hand, we have a Three Note Voicing.



## Many More voicings!

The world of Jazz voicings is vast and diverse

- Rootless
- Monk
- Powell
- Three Note

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## How are they implemented?

### Factory Pattern

#### RootlessChord

- + calculateVoicings(): void
- + drawScore(divs): array
- + outOfBounds(): boolean

#### PowellChord

- + calculateVoicings(): void
- + drawScore(divs): array
- + outOfBounds(): boolean

#### OpenChord

- + calculateVoicings(): void
- + drawScore(divs): array
- + outOfBounds(): boolean

#### MonkChord

- + calculateVoicings(): void
- + drawScore(divs): array
- + outOfBounds(): boolean

#### FourNoteChord

- + calculateVoicings(): void
- + drawScore(divs): array
- + outOfBounds(): boolean

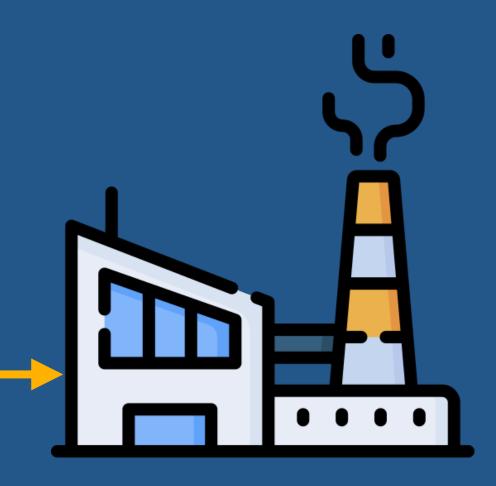
#### ThreeNoteChord

- + calculateVoicings(): void
- + drawScore(divs): array
- + outOfBounds(): boolean

#### ChordSuper

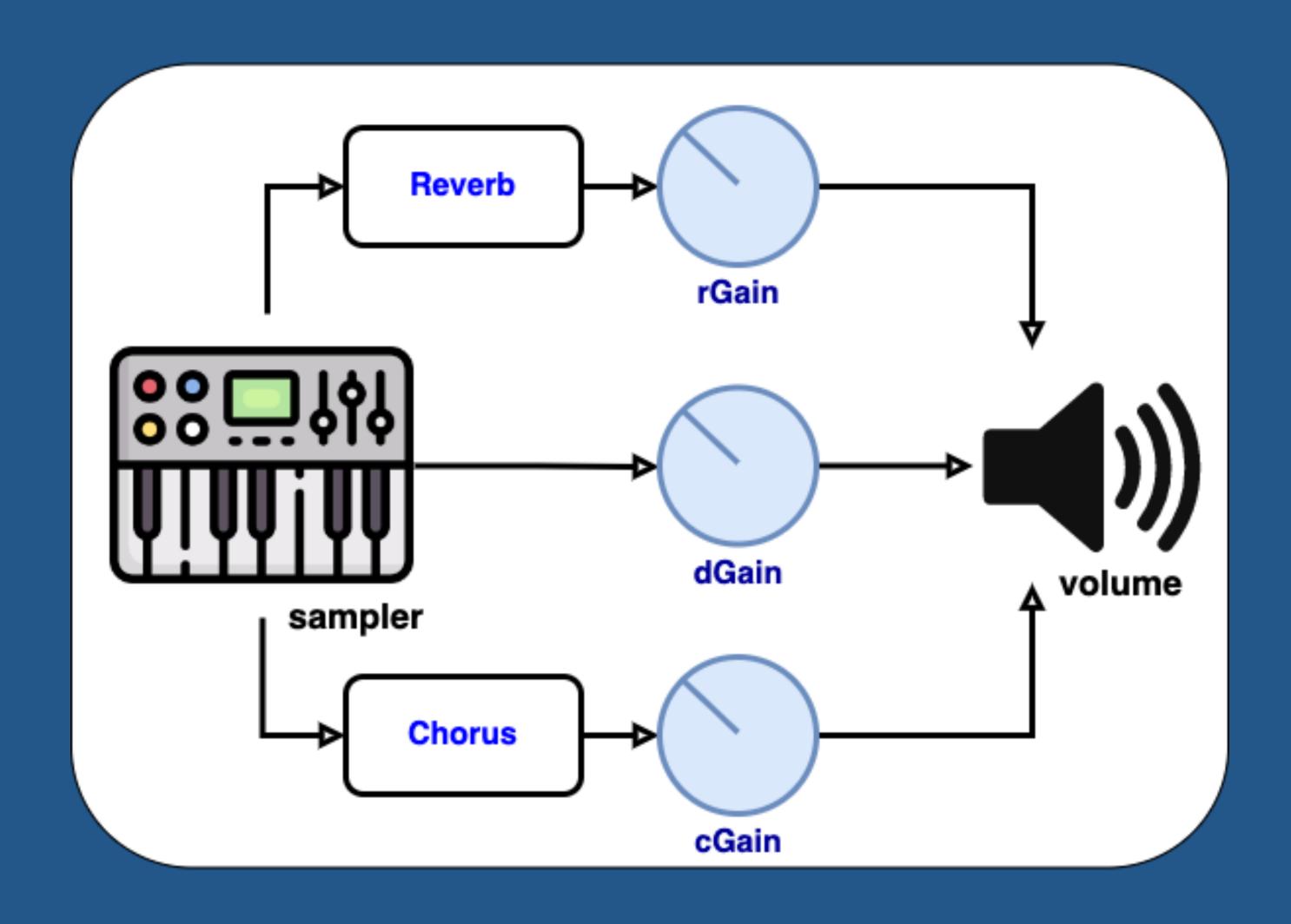
static intervalsPerGrade: array

- + constructor(symbol, duration)
- + clickedOnMode
- + renderChord( ... ): void
- + calculateVoicings(): void
- + drawScore(divs): array
- + outOfBounds(): boolean



easy to add new voicing types

### The Instrument



### Main Loop

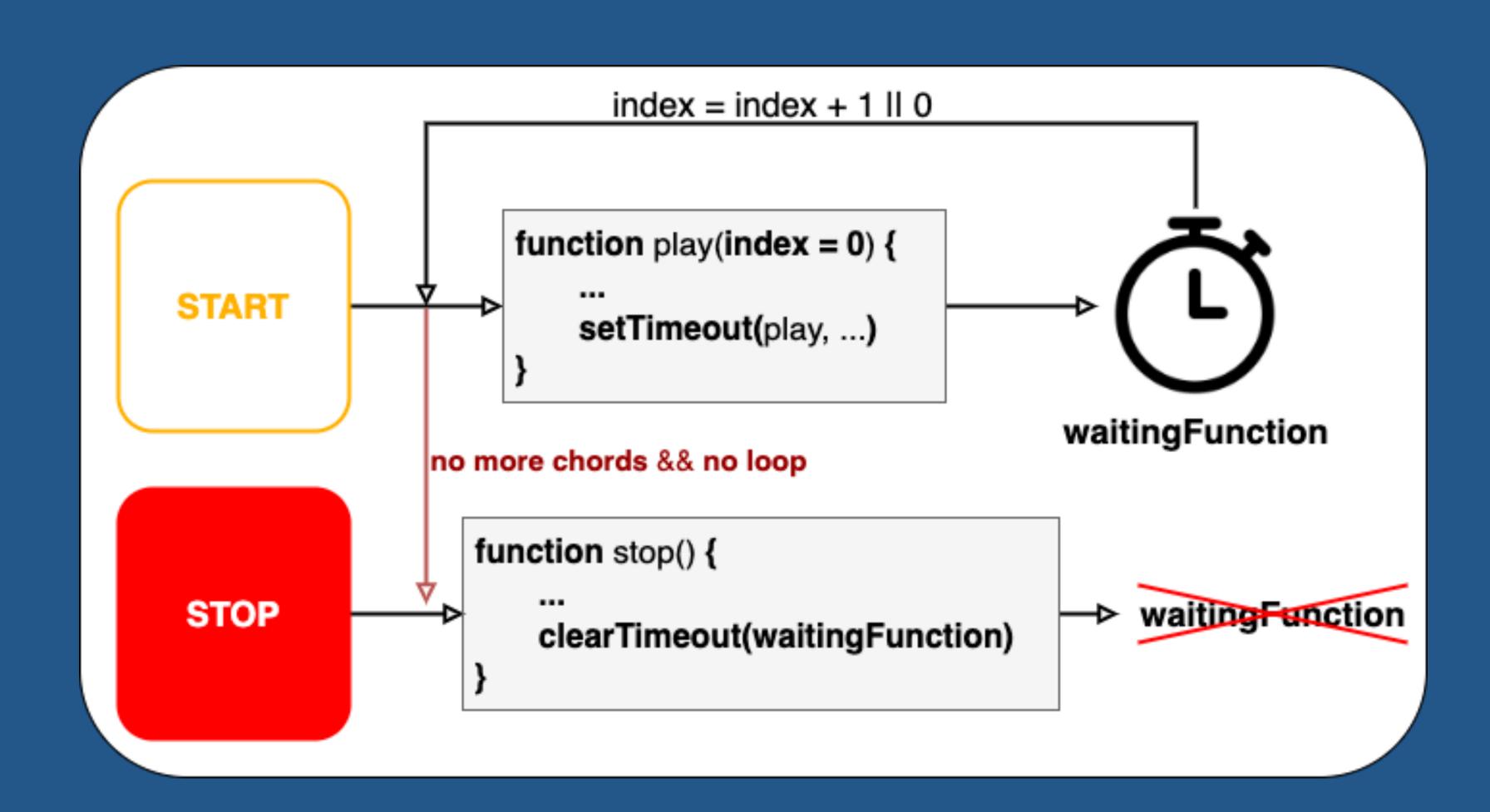
### Each chord corresponds to a loop iteration

- 1. START
- 2. Play first chord
- 3. Wait some time (depends on bpm)
- 4. Play second chord
- 5. Wait...

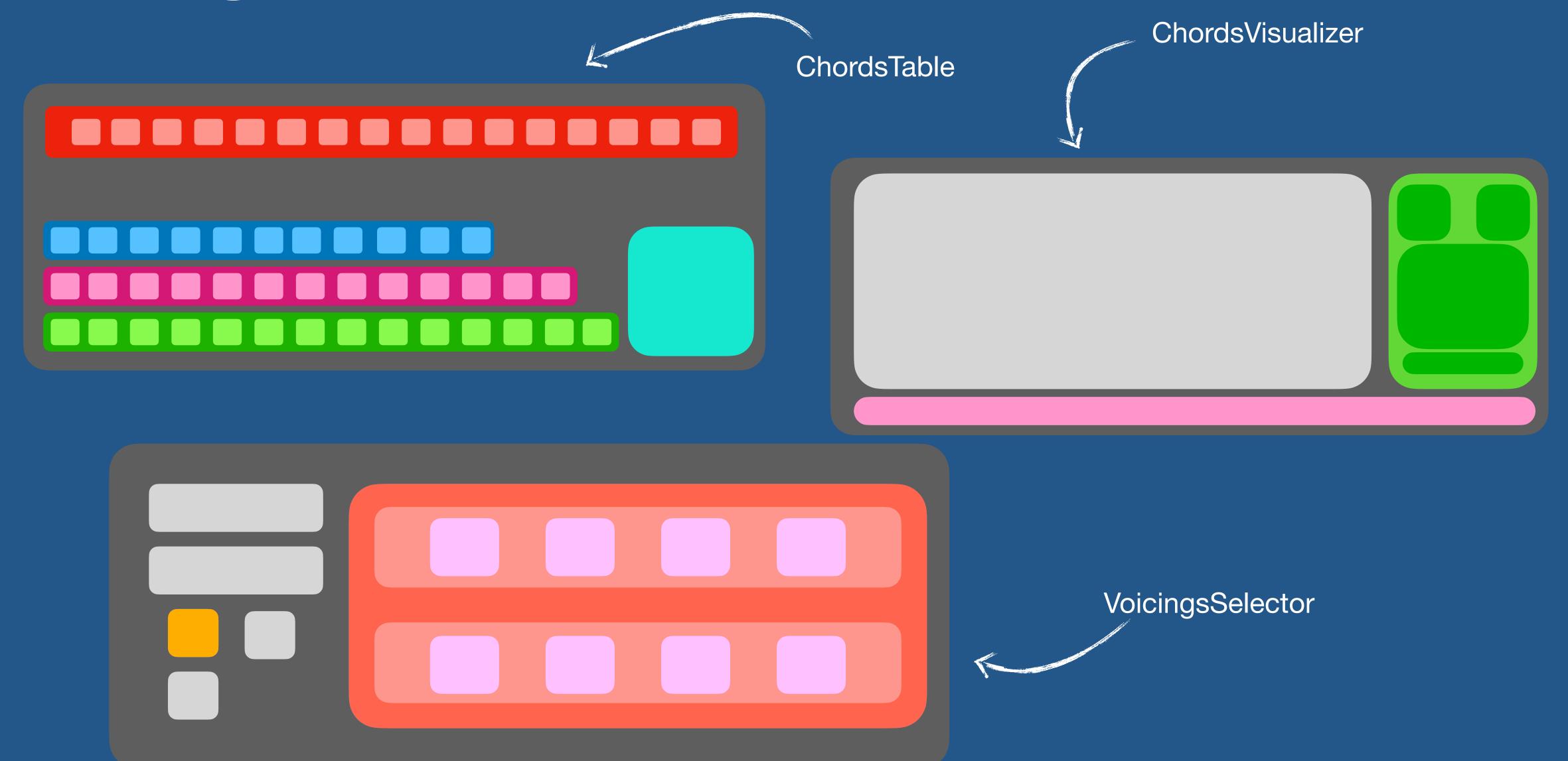


6. Play...

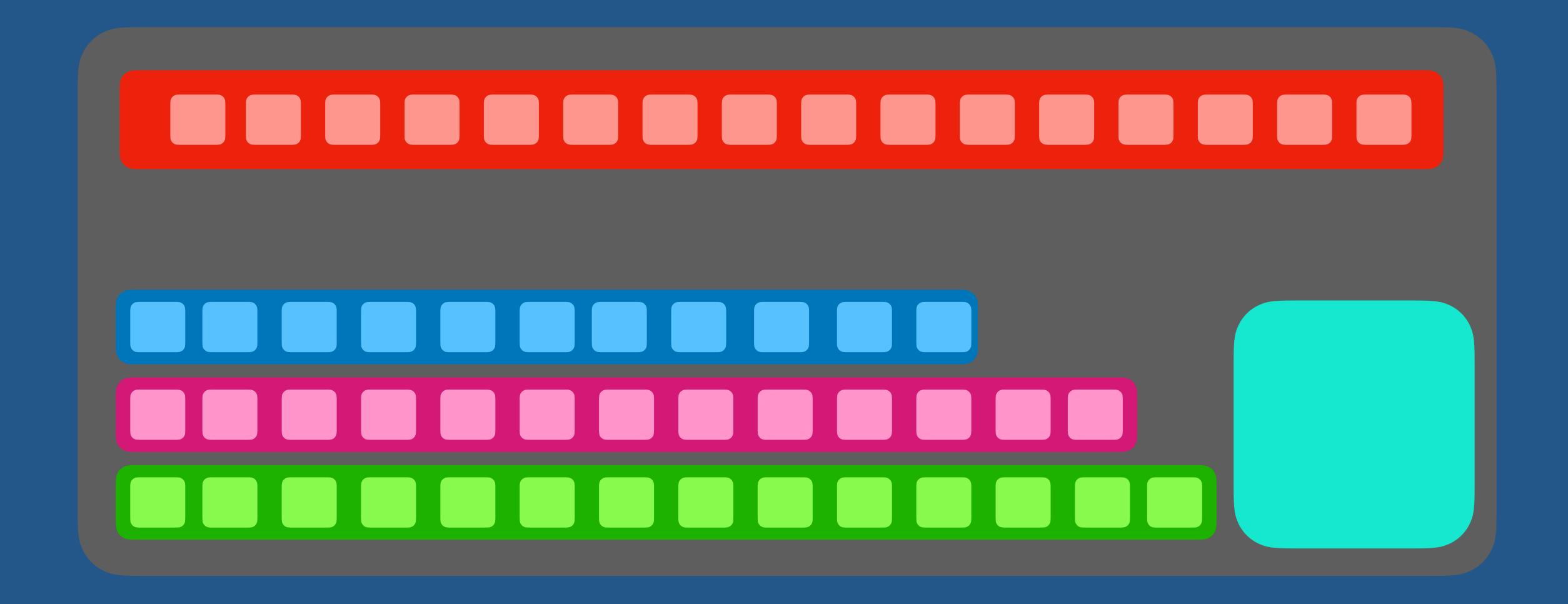
## Main Loop



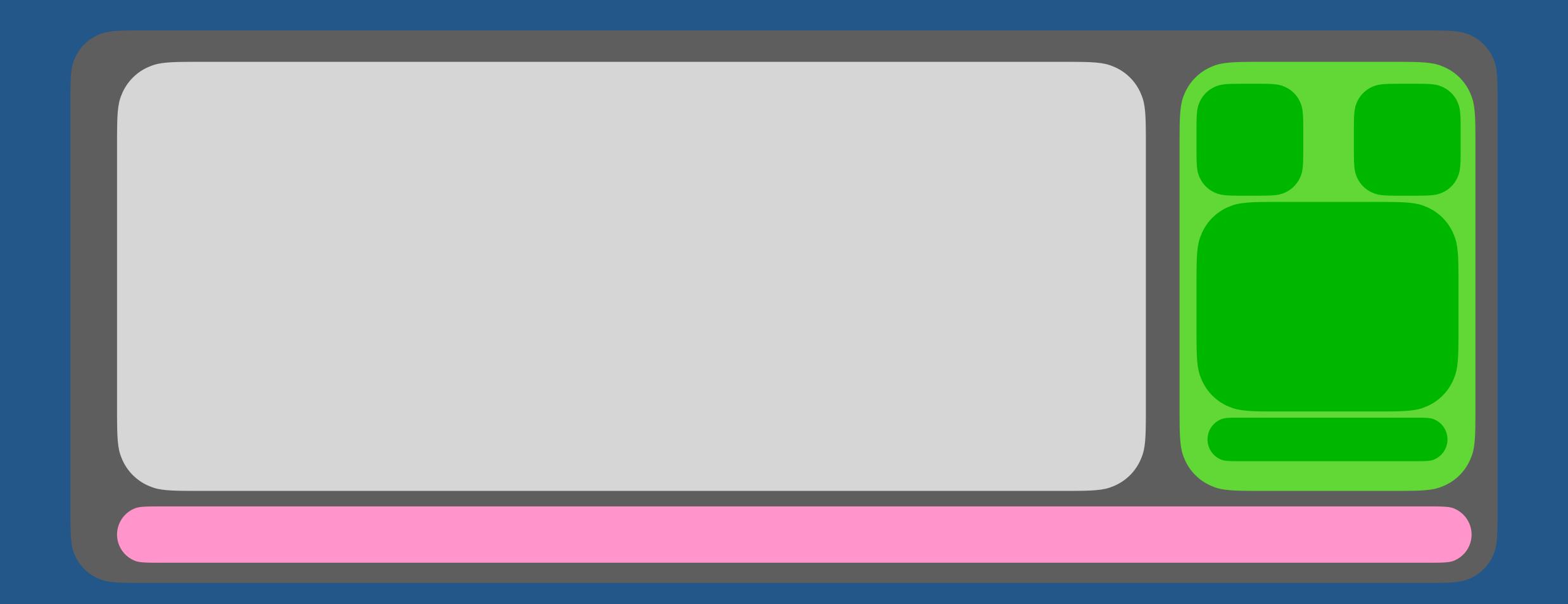
### Voicings Generator front-end



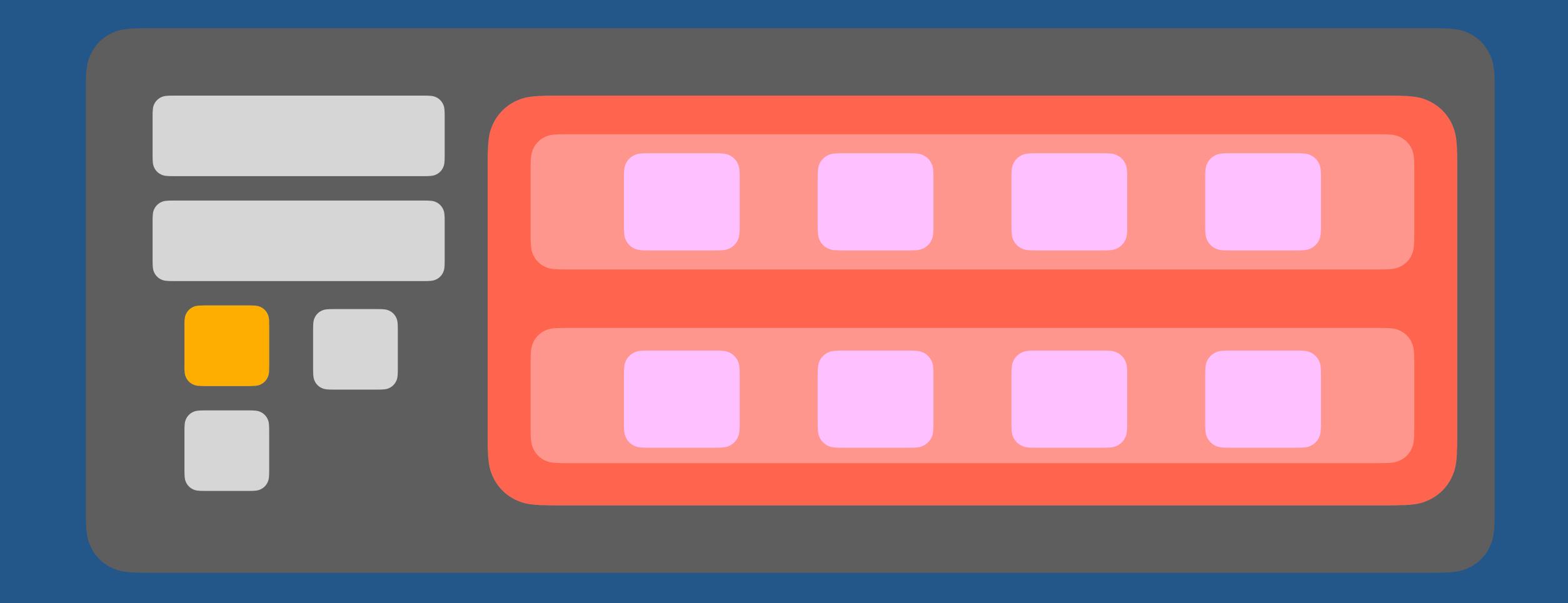
### ChordsTable



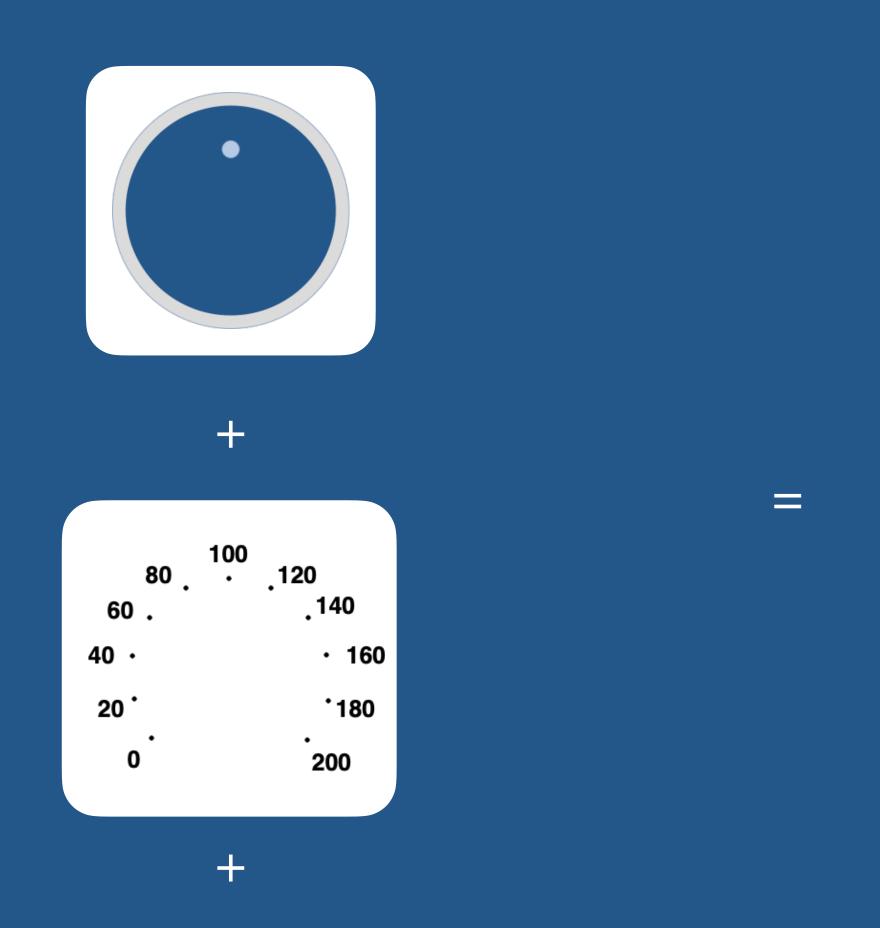
### ChordsVisualizer

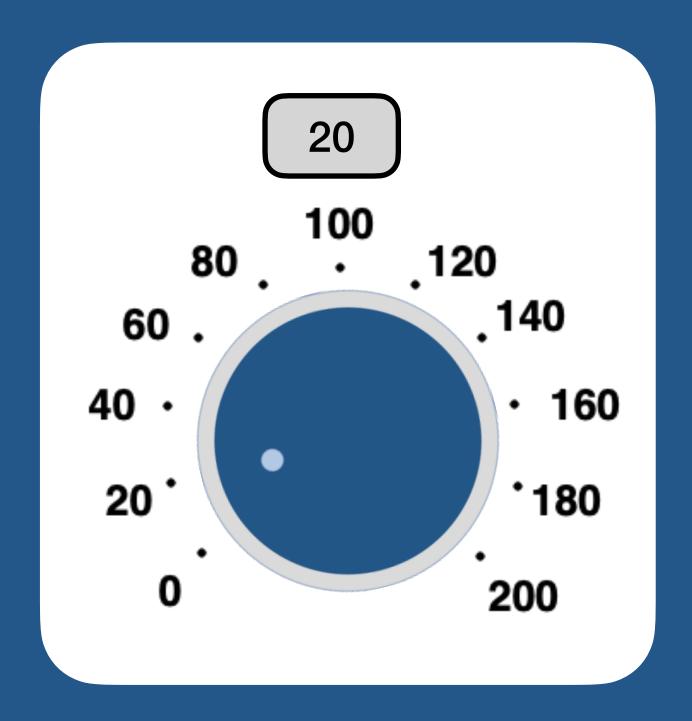


### VoicingsSelector



## A tricky component





knob.style.transform = "translate(50%, -160%) rotate(" + initialDeg + "deg)";

# Thank you for your attention





