

Проект	Guitar Tuner
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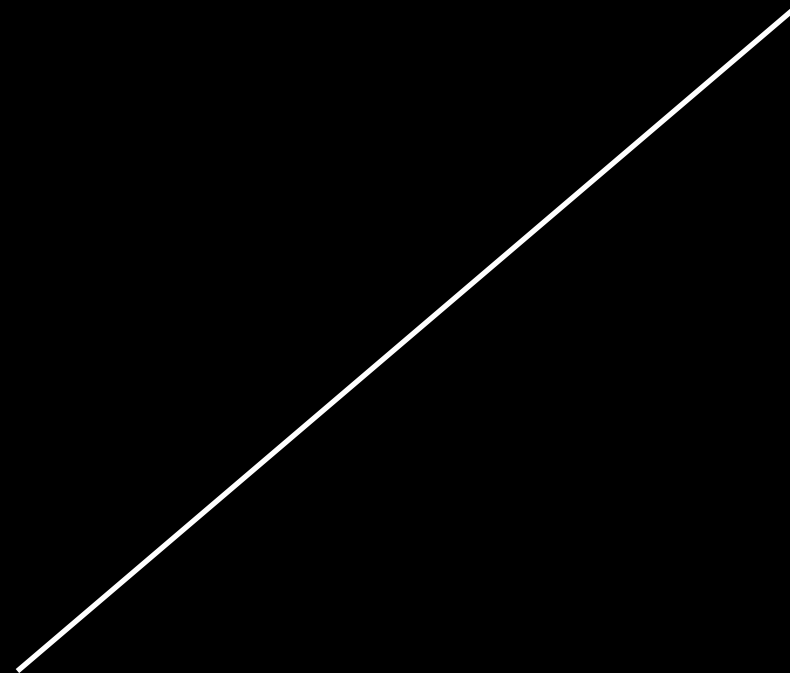
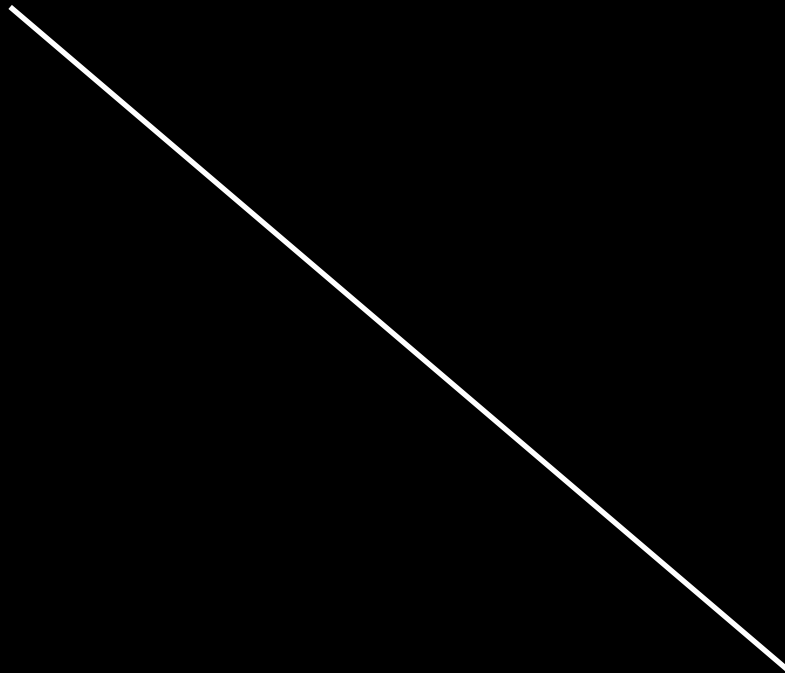


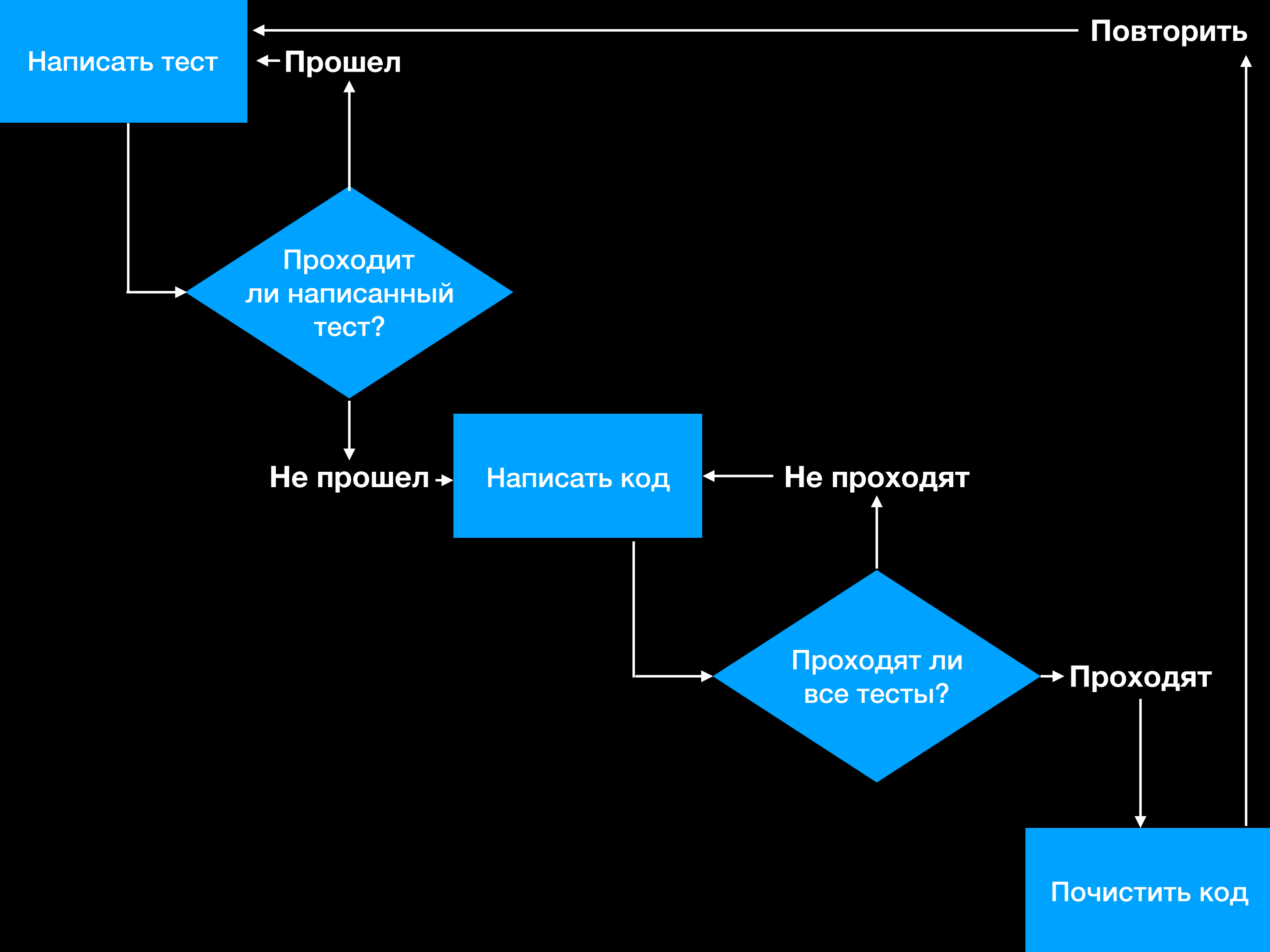
Guitar Tuner

View

Model

Controller

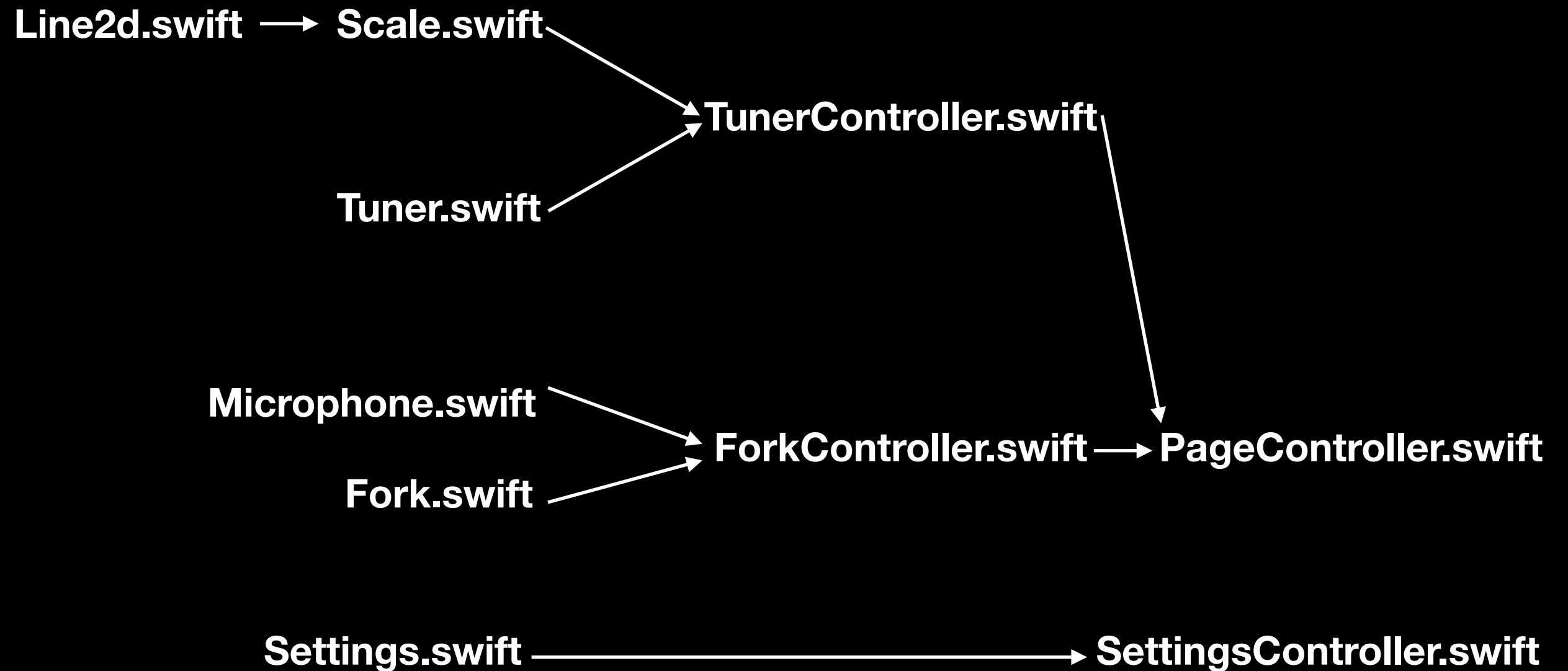


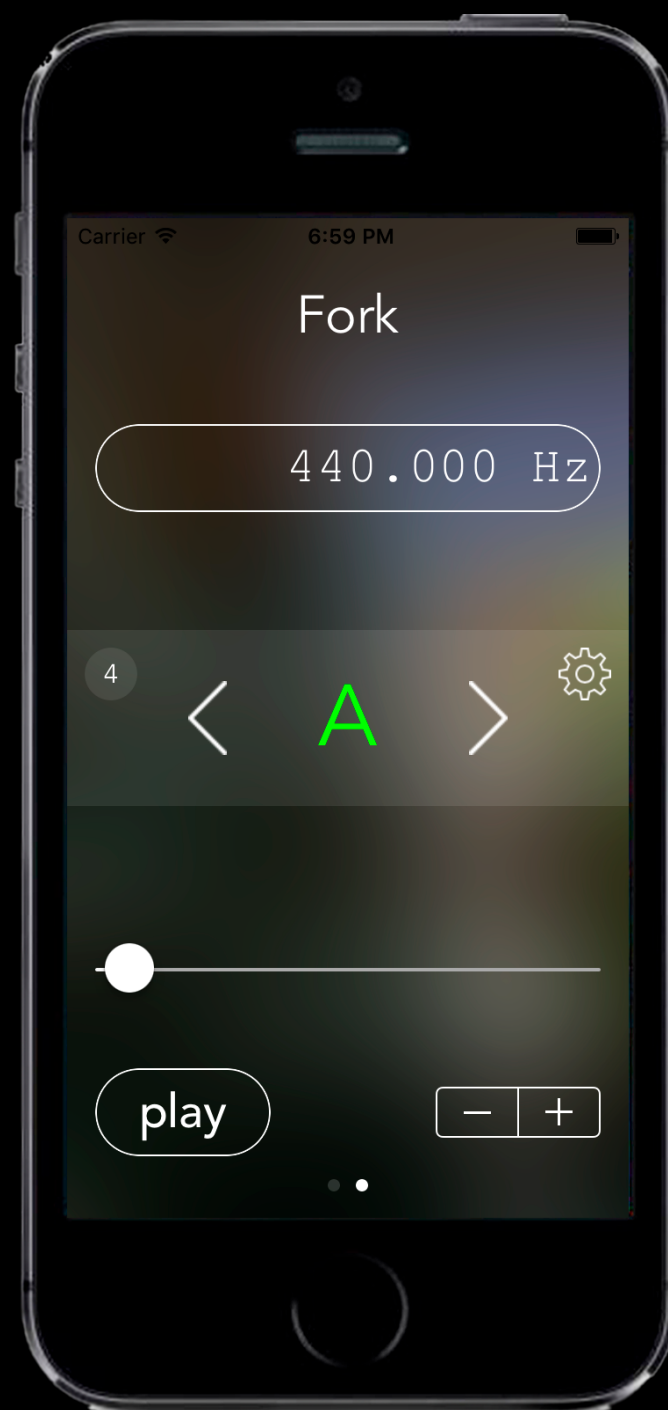
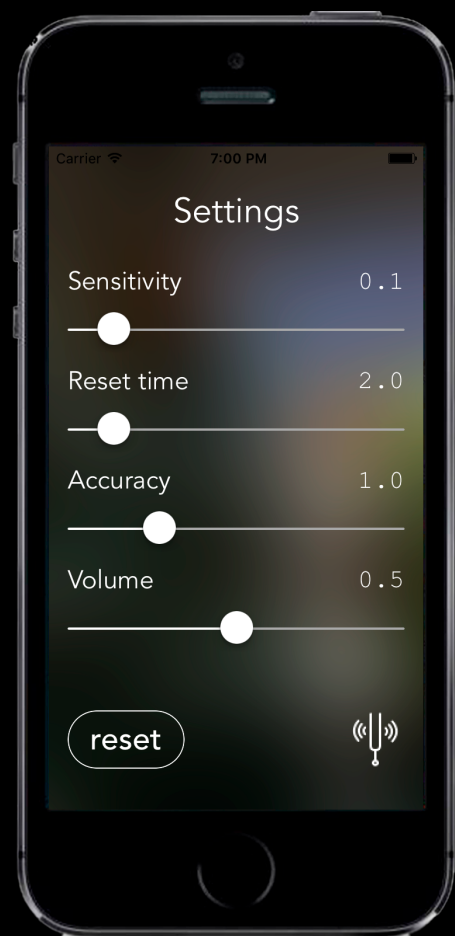


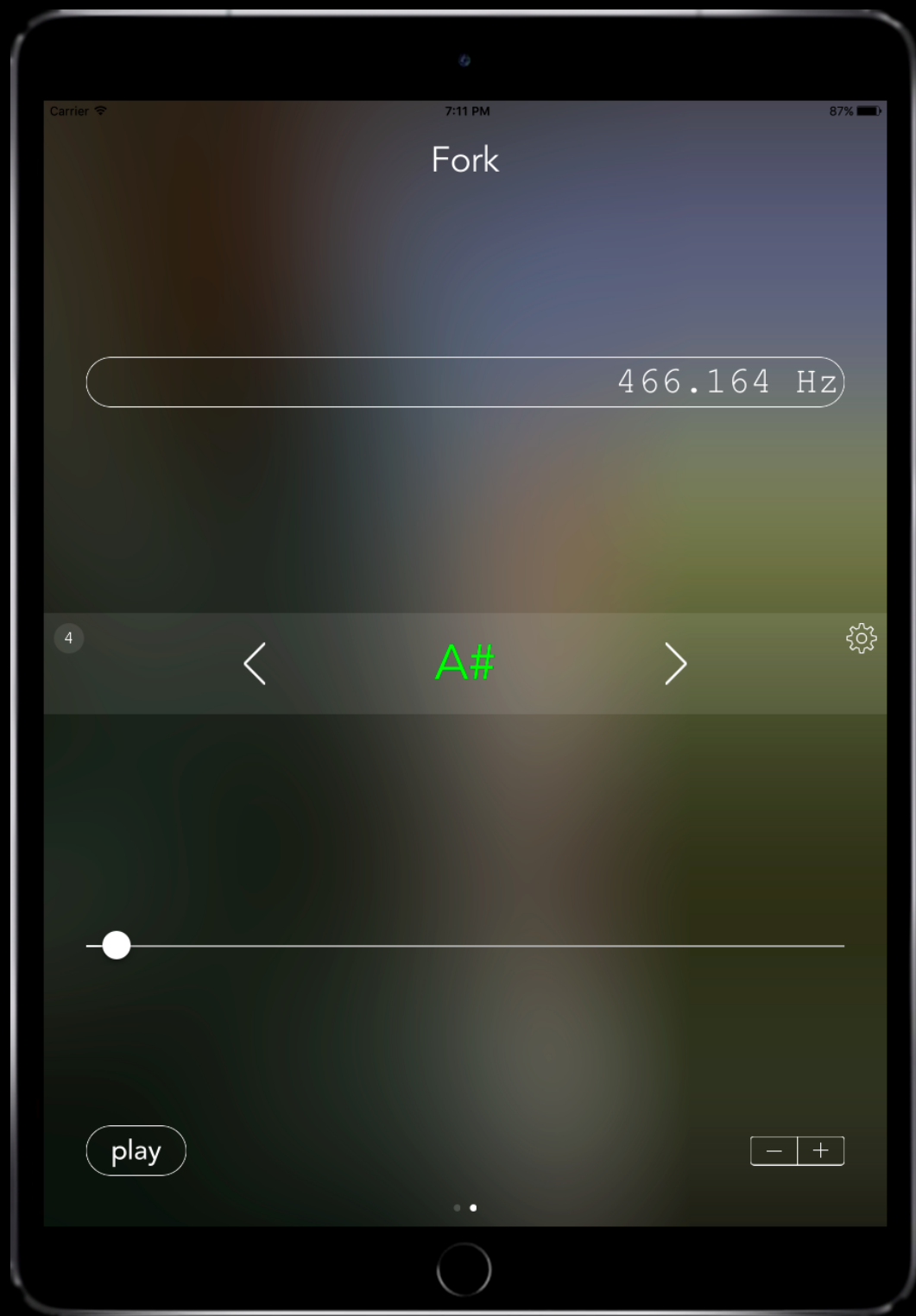
Tuner

Fork

Settings







- Swift 3
- Xcode 8
- AudioKit
- UIKit
- OOP
- TDD

ОСНОВНОЙ ЦИКЛ ТЮНЕРА

```
override func viewDidLoad() {  
    super.viewDidLoad()  
  
    microphone.start()  
  
    Timer.scheduledTimer(timeInterval: updateInterval,  
                          target: self,  
                          selector: #selector(TunerController.listen),  
                          userInfo: nil,  
                          repeats: true)  
  
    resetUI()  
}
```


Инициализация массива частот

```
class var noteFrequencies: [Double] {  
    //  $f[i] = f_0 * 2^{(i/12)}$   
    //  $f_0$  is note A frequency (base note)  
    var noteFrequenciesArray = [Double]()  
  
    let firstNoteFromBase = -57  
    let lastNoteFromBase = 62  
    let notesInOctave = 12.0  
  
    for i in firstNoteFromBase ... lastNoteFromBase {  
        noteFrequenciesArray.append( baseFrequency * pow(2, Double(i) / notesInOctave) )  
    }  
  
    return noteFrequenciesArray  
}
```

ПОИСК НОТЫ

```
private func updateNoteNumber() {
    var nextElement = Tuner.maxNoteNumber
    var prevElement = Tuner.minNoteNumber
    var currElement = nextElement / 2

    if frequency < Tuner.noteFrequencies[Tuner.minNoteNumber] {
        noteNumber = Tuner.minNoteNumber
    }

    if frequency > Tuner.noteFrequencies[nextElement] {
        noteNumber = nextElement
    }

    while ( nextElement - prevElement > 1 ) {
        if frequency > Tuner.noteFrequencies[currElement] {
            prevElement = currElement
        } else {
            nextElement = currElement
        }

        currElement = prevElement + (nextElement - prevElement) / 2
    }

    let prevElementInterval = -Tuner.noteFrequencies[prevElement] + frequency
    let nextElementInterval = Tuner.noteFrequencies[nextElement] - frequency

    noteNumber = prevElementInterval > nextElementInterval ? nextElement : prevElement
}
```


Вопросы

