Development of an iOS App for Learning Intonation of Wind Instruments

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Publication Date
2018

Document Type
Thesis

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Degree Name
Master of Science (MS)

Abstract
Learning music instrument is a challenging task for a beginner without constant guidance from an instructor. The primary objective of this thesis research is to design and develop an iOS mobile / iPad learning app that helps users to learn and practice intonation for a suite of wind instruments by themselves with comfort and ease through app-provided tuning and charting guidance and app-assisted self-assessment. Particularly, our successfully-implemented app provides the following features to enhance the user’s learning experience: 1) Provides learners easy-to-access information for the fingering and tuning techniques of wind instruments by converting Dr. Shelley Jagow's book - "Tuning for Wind Instruments: A Roadmap to Successful Intonation" to an iOS app. 2) Provides instant feedback on learner’s technique and performance by assessing the intonation of individual note being played, while the fingering and tuning chart is presented simultaneously for the early practices. 3) provides instant feedback on learner’s technique and performance by identifying the sequence of notes being played for subsequent practices. The app is implemented using Xcode and Swift 4.0 and will be distributed through Apple App Store

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Department or Program
Department of Computer Science and Engineering

Year Degree Awarded
2018

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Learning Instruments; iOS Performance 1, 2, 3; Improving You App With Instruments; Advanced Graphics & Animations for iOS Apps; Profiling In-Depth; Cocoa Touch Best Practices; iOS Performance and Power Optimization with Instruments; Polishing Your App. Responsiveness. Next important thing to measure is responsiveness of the UI. Touch handling happens in the main thread. There is the startup sequence of an iOS app. The Application Startup Phases (from the documentation). 1. Measure the total time spent on startup. We should measure the time spent between the beginning of main() to the end of applicationDidBecomeActive. Watch that this time doesn't get worse as you introduce new features. Try to keep the cold startup time under 1 sec. Ok, a trumpet has three valves, so of necessity that will be confusing. (But note that many people have learned the trumpet, so do you think you're so much less smart than thousands of perfectly ordinary people who have picked up this instrument?) The 8 finger and 8 notes per scale is nicely matched up in the fingerings of old instruments which didn't have keys. For instance the recorder you may have learned in school has you lifting one finger for each scale degree. Easy! If you like the sound of a flute, why not try one? You can probably rent one cheap from a band store; take lessons for a month or two, and re-evaluate your opinion. 2.6k Views - View 1 Upvoter.