

# MusicJOT: Case Study

## *MyScript Partners with Advanced and Innovative Music Notation App for iPad®*

### **Synopsis**

A professional musician/self-taught programmer and an amateur musician/professional programmer sought to ease the composing process by creating a music notation app with advanced handwriting capabilities. Using MyScript's Music [software development kit](#) to provide music recognition and functionality, they successfully built and launched an app exclusively for the iPad® called [MusicJOT](#), providing the fastest way to notate music since paper and pencil.

### **The Vision**

John Reed is a member of the [Hampton String Quartet](#), a group that specializes in string quartet arrangements of classic rock music. The group's debut album from 1986 was called 'What if Mozart Wrote Have Yourself a Merry Little Christmas.' It sold over 1 million copies. Since then, they have played with Jimmy Page and Robert Plant, Sting, Paul Simon and Aerosmith, to name just a few. Reed even has a framed letter from the Rolling Stones' Keith Richards praising his arrangement of "Sympathy for the Devil." Tens of thousands of schools, colleges and universities have bought their arrangements from his publishing company, [Mona Lisa Sound](#). His partner, Mark Dalrymple, has been programming since 1979, and professionally since 1990. He has had software running on Wall Street trading desks and in space (literally). NASA was running a trial program for an electronic help desk using Visix Galaxy™. Mark wrote some of that code. His code can also be found on millions of Mac desktops.

Over the years, Reed has authored hundreds of arrangements, and ran up against pretty much every possible difficulty a composer can in creating, editing and playing back compositions. His mission as a programmer was to ease the process for others in the future by creating a sophisticated and ground-breaking music notation app. The app needed to allow composers to write directly on the staff with digital ink, move notes around easily by dragging them to change pitch or duration, access advanced musical features, and easily render and save compositions. It also needed full audio playback capabilities. This is a daunting undertaking that John and Mark have successfully delivered to the community.

The market for MusicJOT is any musician who reads and writes music. Its unique advantage is power, speed, and flexibility. "The natural and quickest way to write is with paper and pencil. But that can't auto format, play back, or allow printing," Reed explains. "MusicJOT marries those two disparate worlds." Harnessing the power of digital computing with digital ink handwriting brings the best of both worlds together.

### **The Challenges**

The biggest challenge for Reed and Dalrymple was tackling the tremendous amount of time required to successfully create the app. They had planned to program everything from scratch, and initially hoped to be finished in a matter of months. But as time wore on, they found that the app's construction was taking longer than they had anticipated. They needed to find help with some of the building blocks of the application so that the development team could focus on other intricacies of the user experience.

## The Success

Researching the industry, Reed discovered MyScript, and learned that the company has a software development kit called [MyScript Music](#) built especially for musical application developers. MyScript Music recognizes handwritten notes, rests, clefs, bars, time signatures, accidentals, and many other symbols. This was exactly what was needed, a set of capabilities already developed that could be incorporated into the application to shorten the development time.

MyScript's music SDK uses neural network machine learning to do the magic of converting handwritten digital ink music input into a digital typeset form. This shortened the total development time required to create the application. Still, there was a tremendous amount of work to do to. [Interactive Ink technologies](#) was a welcome assist with the editing and gesture recognition. Using the MyScript SDK allows MusicJOT to recognize music symbols without the need to "teach" the software to recognize a user's own handwriting.

With all this functionality already built-in, the team was able to focus its own programming efforts on the primary music engine, and shorten the development time. There was still a daunting amount of programming involved to build the final music notation engine - difficulties which in the software business are legion. "The MyScript SDK allowed us to incorporate excellent handwriting recognition into the application but still left us with a large amount of work to complete to achieve the final product", Reed stated. "We were able to provide an excellent recognition capability within a very short time, allowing us to focus on the remaining development tasks."

Because MyScript had provided such a solid foundation for musical notation, they were able to finish constructing a sophisticated, feature-rich, and vastly capable music notation app for the iPad more quickly than would have otherwise been possible. The robustness of the handwriting recognition is fundamental to a great user experience.

Read more about MusicJOT's features [here](#), watch it in action in [this](#) video demo and [order](#) it at the iTunes App Store.