

Hands-Free Music Tablet

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Introduction and Motivation

- Musicians handle a great deal of sheet music, and currently have to turn pages by hand. This is difficult to achieve without pausing.
- We propose an electronic solution to this problem—a touch-screen LCD display, with a remote control that can be operated by the user's foot.

Description

- A screen that takes the place of sheet music, and allows the musician to keep track of large amounts of music easily
- A pedal for hands-free operation

Project Tasks

- Hardware component (a Tablet PC interfaced to a pedal, optionally hooked up to a scanner when loading music)
- Software component (software to group and manage music, display it, and interface to the hardware)

Hardware

- Locate vendors for tablet PCs and purchase a cheap model. We only need basic functionality so the more simplistic the hardware, the better. Ebay would probably be a good choice.

Hardware (cont.)

- Design and build a simple foot pedal interface. There are some available through various companies, but the device itself is too simple to justify the cost of buying an existing design.
- An option here would be to use the internals of a 3-button mouse
- Interface the foot pedal with the ports of the PC.

Software

- Write software to react to the interface that the foot pedal provides.
- Write a TWAIN interface to a scanner to allow the user to scan sheet music into the software.
- Write software to store these images in a convenient form, likely TIFF.

Software (cont.)

- Write a simple database to maintain the works that are available in the system and keeping pages from individual works together.
- Write the main user interface to display the images of the sheet music and provide simple interactive user controls.

Schedule and Milestones

- April 2007 – Project presentation
- Summer 2007 – Obtain required hardware to start building the project
- August - September 2007 – Build the hardware and write the software
- October 2007 – Debug and polish the project
- November 2007 – Completed project