Inspiration:

The idea for my project was inspired by guitar hero. In guitar hero, players press buttons in time with a visual display of corresponding buttons and an audio track. Correctly pressing buttons scores you points, and you hear the guitar portion of the audio track. As someone who can actually read music, guitar hero always seemed too easy to me. Obviously the game is designed so that anyone can play it; even if they’ve never before seen written music. I was thinking about how Guitar Hero was eventually expanded to make Rock Band. I thought of how revolutionary those games have been. And my idea then occurred to me.

Idea:

When people learn to sight-sing music, the only feedback they have is their own ear. If you sing the wrong note, it sounds wrong. With the voice, there is no integral number of notes: no fingerings like on a trumpet, no frets like on a guitar. With voice, as with fretless string instruments such as violin or cello, you could be missing the note by only a quarter-step or less. To a trained ear, this makes a big difference. So I thought, why not add visual feedback? A microphone could be connected to a computer measuring frequency data in real time. The frequency or pitch of the note played or sung could move a cursor on the screen up or down. The cursor could sit atop musical staff, and point to the current note being played. Then, just like guitar hero, you could auto scroll the musical staff to a beat played. The user would attempt to sight-sing the music. This way they can visually see how long they played the note with respect to how long it should be played. They can see how far away from the current note they hit, and whether they were too high or too low. But best of all, they can adjust in real time to move the pitch cursor where it should be! If you hit the correct pitch within some margin of allowed error, you would see that.

Audience / Applications:

This idea could be used as a tool to help teach sight-reading music. It could be used as a tool to fine tune or train the voice (or violin, or cello, or other non-integral note instrument). But it could also be combined with karaoke to create a game similar to guitar hero. Imagine this karaoke machine: Rather than just words shown in time to a familiar music track without a singer, you would also see notes and your pitch-cursor. Since the song is one you already know, reading notes themselves is of little consequence. But lining up the pitch cursor with the notes correctly scores you points. You could then have some objective judge for a karaoke competition. Best of all, since people already karaoke without this tool, a game where they were singing to songs they already know would be playable even by people who have never seen written music before. People would end up reading music without ever knowing it. If you knew most of the song, and had kind of forgot one part, the notes would give people an idea of what they were! The pitch cursor would give them an idea of how close they are. It wouldn’t be any harder than guitar hero is!