DECO1013: Sound Design & Sonification
2010 Assignment 2:
Audio Signal Processing for Data Sonification

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MSP is an addition to Max that provides signal generation and processing objects. In this assignment I will select a source of data suitable for sonification by using Max/MSP. I searched the data source from "World databank". The World Bank is a vital source of financial and technical assistance to developing countries around the world. So, I decided to use Goods imports data compare between United States and Australia from 1970 to 2008. Chart 1 is United States, and chart 2 is Australia.
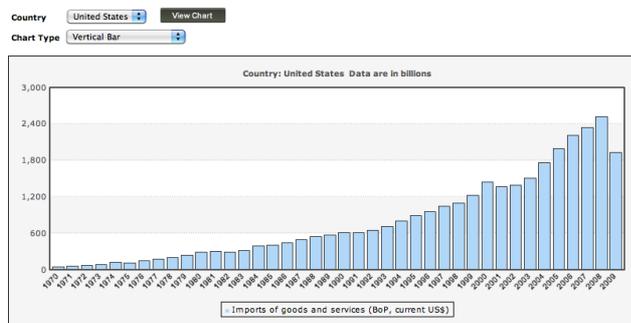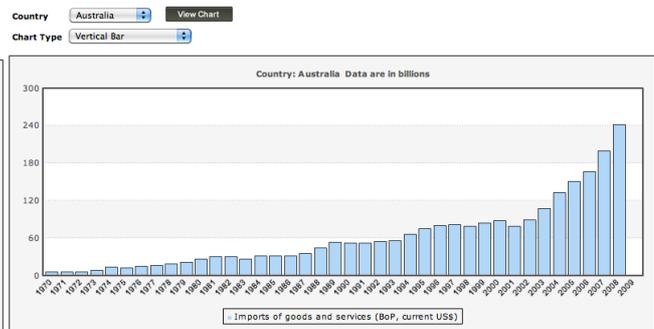

Figure 1.   Figure 2.

I selected these data to do my realtime audio signal processing onto Max patch. And I used "coll"-"unpack" function to import the data and analyze it. At the beginning, the data is presenting a rhythmed sound but not a nice sound in a simple Max patch. However, it should be an interesting sound and a good sonification in the end. Hence, I started to develop my patch be more specific to produce a nice sound. Firstly, I was thinking use "matrixctrl" to control with my data. "Matrixctrl" was originally constructed to control the MSP object matrix~, but it was hard to modify and the sound be produced was not I want.

To create a nice sound, I tried "makenote" to be output, and data would be input. Then, the data would be converted to a sound that relate to piano. There were a "noteout" have been made, we could see the value of pitch and velocity currently changing.
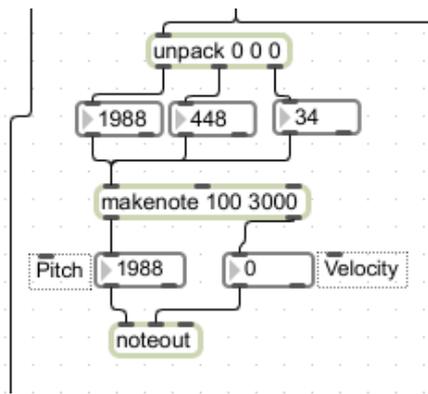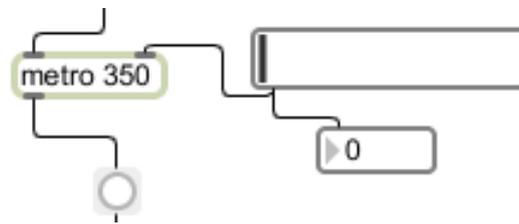
Figure 3.

Figure 4.

The product of sound is like a Japanese scare movie's background music. The pitch of the sound could be changed when I modify the value of "metor" function. At this moment I have created a basis sound that I want.

In this step, I just wanted to build up some features as user interface into my patch. MSP objects for audio signal display include an oscilloscope, spectral display, level meters, waveform display, and a sonogram. I was using spectroscope~ and scope~ to a visual interface for the analysis of signals and simply allows you to monitor the visual progression of an input signal's waveform. Below:
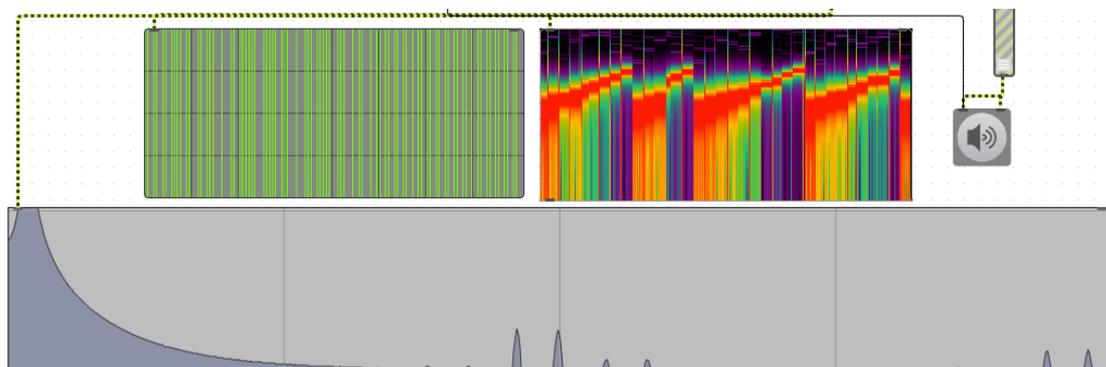

Figure 5.

Finally, it is interesting to see the patch that can be used to produce a particular sounds. Just by simply using Goods imports data from "World databank". I have enjoyed with modify a data sonification and created my style sounds.

Refernce:
http://www.worldbank.org/   (Data scoures)
http://cycling74.com/