CS591 S1
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## Final project proposal

**We are picking topic #7:**
**Pitch or tempo Modification:**

**Subject:**

interp1d from the scipy.interpolate library and Fourier Interpolation for pitch changing application. We will try to stretch the wave and change its pitch. In this way we may be able to disguise the original sound

**Basic Implementations from the last homework**
time Stretch: changes the time but also changes the pitch.
Phase Vocoder: stretches a signal without changing the pitch.

1.Use time stretch change the pitch and the time by some factor.
2.Use Phase Vocoder change the time back to the original one with inverse factor

**In advance, we are going to implement:**
**Possible methods:**
For Frequency domain:
- Phase vocoder
- Sinusoidal spectral modeling: PSOLA

Time domain:
- Pitch Scaling
- SOLA

**// this is the original proposal, after some meetings and discussions, we have further develop our plan for this project.**

## In advance, we want to pick another method to implement another version of python program that can stretch the pitch.

**We looked into the blog of Stephan Bernsee and figure out that we want to use Time Domain Harmonic Scaling as our second method to implement the program. The problem is that we can't find a algorithm online to do that. However we will keep on researching on this topic.**

**So far we have found some useful sources for this mission:**
**fft-extreme time stractching**
**Numerical Recipes in C**

**We want to look into the details of this method.**