

The background of the entire slide is a light pink color with a pattern of horizontal lines and small, scattered hearts in various shades of pink. A large, rounded rectangular frame in a slightly darker pink shade is centered on the page.A circular logo with a double-lined border. Inside, there is a large heart made of horizontal lines, surrounded by several smaller hearts.A large heart shape on the right side of the frame. It has a halo above it and is filled with a pattern of small flowers.A heart shape in the bottom left corner, surrounded by several small, teardrop-shaped petals.

# **Live Vocal Processor**

By Annie Schenkman

# What is my Project?

**01**

## **Live playback from mic**

Application can take in  
audio signal and play it back

**02**

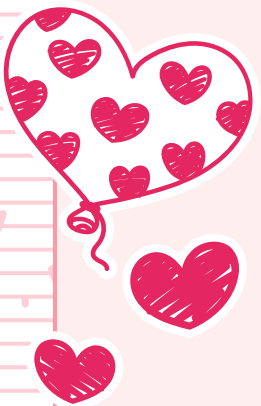
## **Reverb with tap feature**

Add a plate reverb

**03**

## **Harmonies**

Features live harmonies  
with an octave up, down a  
5th and maj 3rd



# Three ideas



## Motivation

I'm a sound engineer and I love vocal processing and have always wanted to learn more about DSPs!



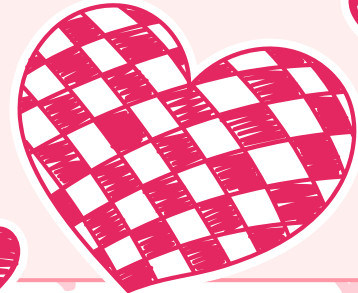
## Motivation

Eventually I hope to make this an easy to use application with a fun girly design



## Philosophy

I think digital signal processing is where the industry is/ is heading (digital over analog)



# Breakdown!



## Python

Originally coded in Python 3 (tried Pyo, ended with Pyaudio)



## Reverb

Python works using Pyaudio



## Harmonies

Harmonies Work using Scipy



## High Latency

The reverb and Python had too much latency for live playback



## Switch to C++

Switch to compiler language for faster processing using RTaudio and Rubberband



## Monitoring Screen

Lastly added a monitoring screen using SFML

# Product demo



Let's Demo!