



Synth Trainer

Jeremy Goldberg, Alvin Lai, David
Sackler, Andrey Varakin

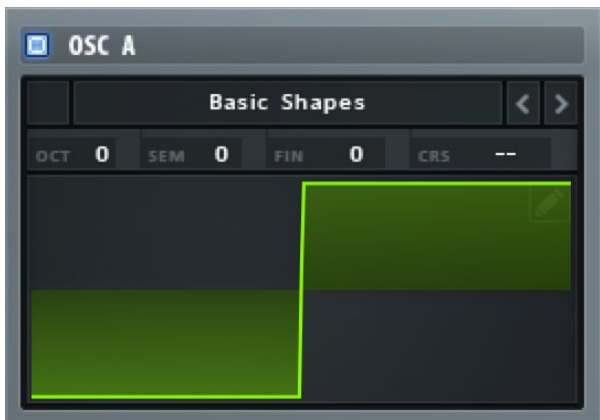
What is a Music Synthesizer?



Screenshots of Logic Pro X's Retro Synth

Synth Components: Waveforms

SQUARE



SAWTOOTH



Synth Components: Amplitude Envelope (ADSR)



Screenshots of Steve Duda's Xfer Serum

Problems For Musicians

- Unable to pinpoint sound characteristics
- Unfamiliar with components that make a sound
- Lack proper knowledge to communicate ideas

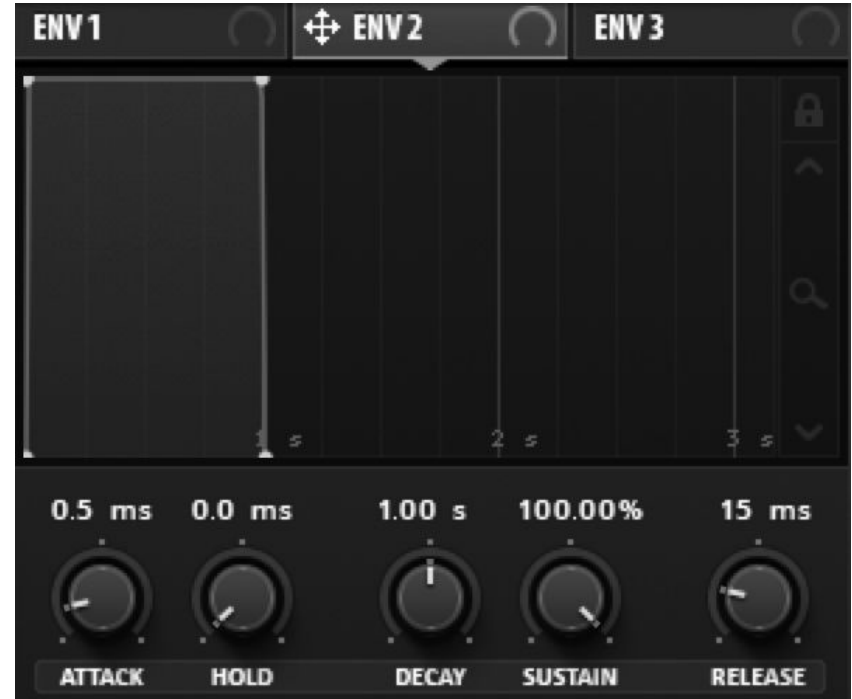
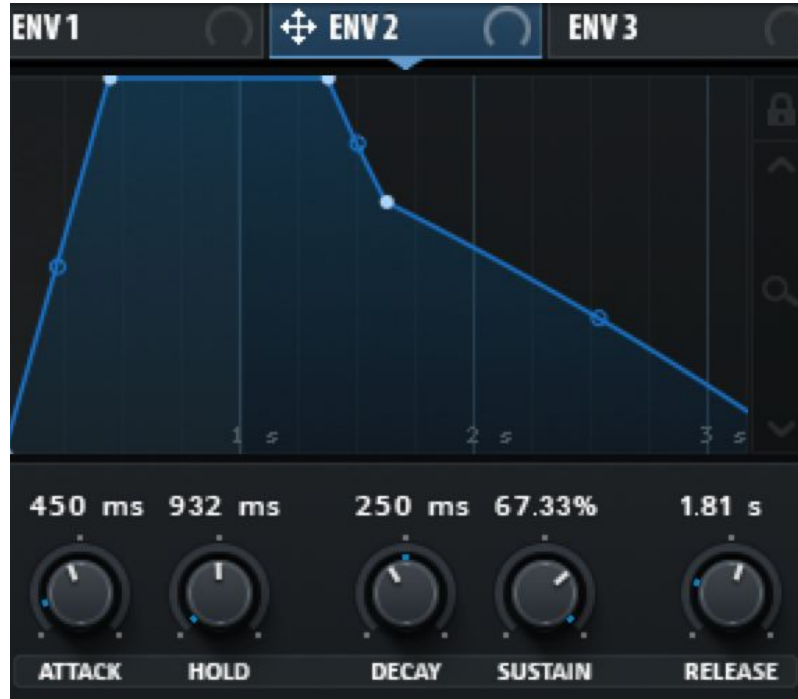


Solution: Ear Training

Beginners in sound synthesis will use Synth Trainer to learn to speak the language of sound design



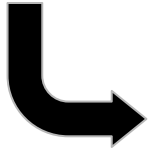
How Synth Trainer Works



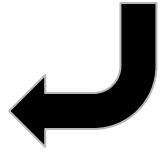
Screenshots of Steve Duda's Xfer Serum

How Synth Trainer Works

User
Generated
Wave



Synth
Generated
Wave



Screenshots of Steve Duda's Xfer Serum













“Gamifying” the Process

- Scoring Player Performance
- Tracking Progress
- Adding Goals/Achievements
- Different Levels of Difficulty



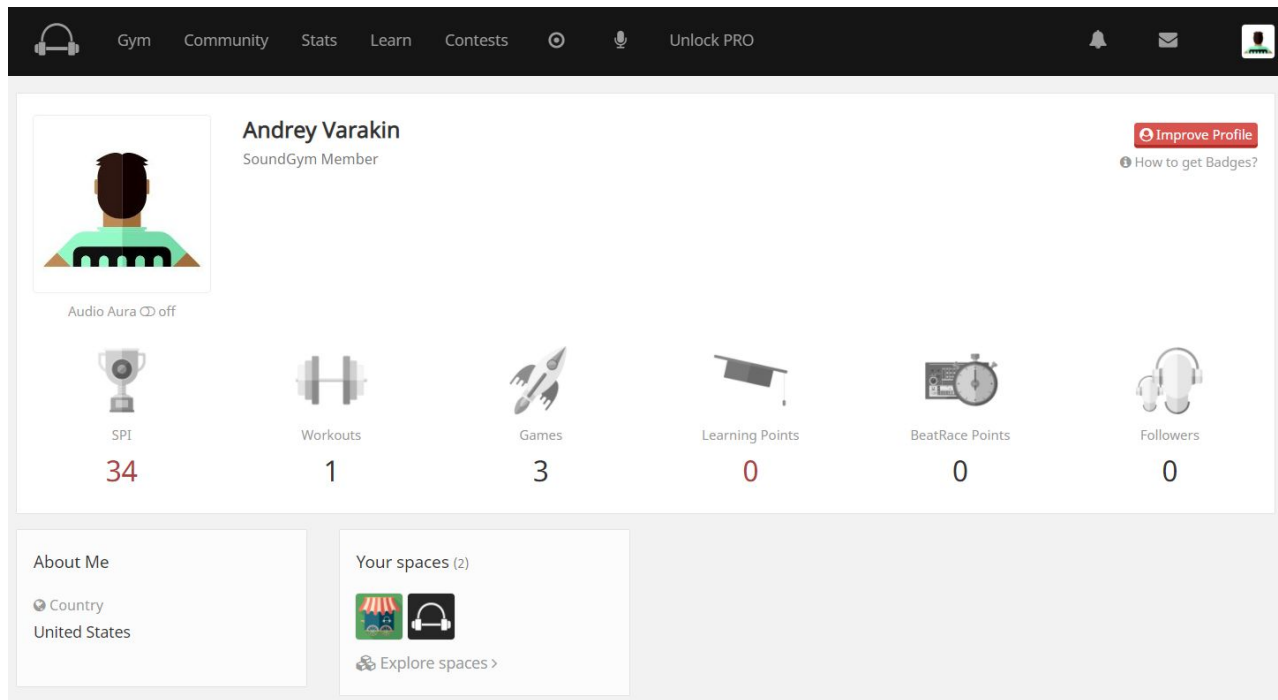
Moon badges are uncommon and represent an investment in learning.

Possible Badges

 Going Transonic 500 <i>Quickly & correctly answer 10 skill problems in a row (time limit depends on skill difficulty)</i>	 Going Supersonic 750 <i>Quickly & correctly answer 20 skill problems in a row (time limit depends on skill difficulty)</i>	 Good Inspiration 1000 <i>Other users created 10 programs based on one of yours</i>
 1000 Kelvin 1000 <i>Have a red-hot program at the top of the Community Programs list</i>	 Productive 2000 <i>Achieve mastery in 15 unique skills</i>	 Hard at Work 6000 <i>Achieve mastery in 25 unique skills</i>
 Geek of the week: practice <i>Finish 5 practice tasks in a week</i>	 Geek of the week: mastery <i>Finish 5 mastery challenges in a week</i>	 Like Clockwork <i>Watch part of any video or work on any skill each day for 15 consecutive days</i>
 Atomic Clockwork <i>Watch part of any video or work on any skill each day for 30 consecutive days</i>	 Good Answer <i>Post an answer that earns 10+ votes</i>	 Good Question <i>Ask a question that earns 10+ votes</i>

Other Features:

- “Sandbox Mode”
- Login
- Home
- Profile
- Navigation Tutorial
- And hopefully more!



Synth Interface

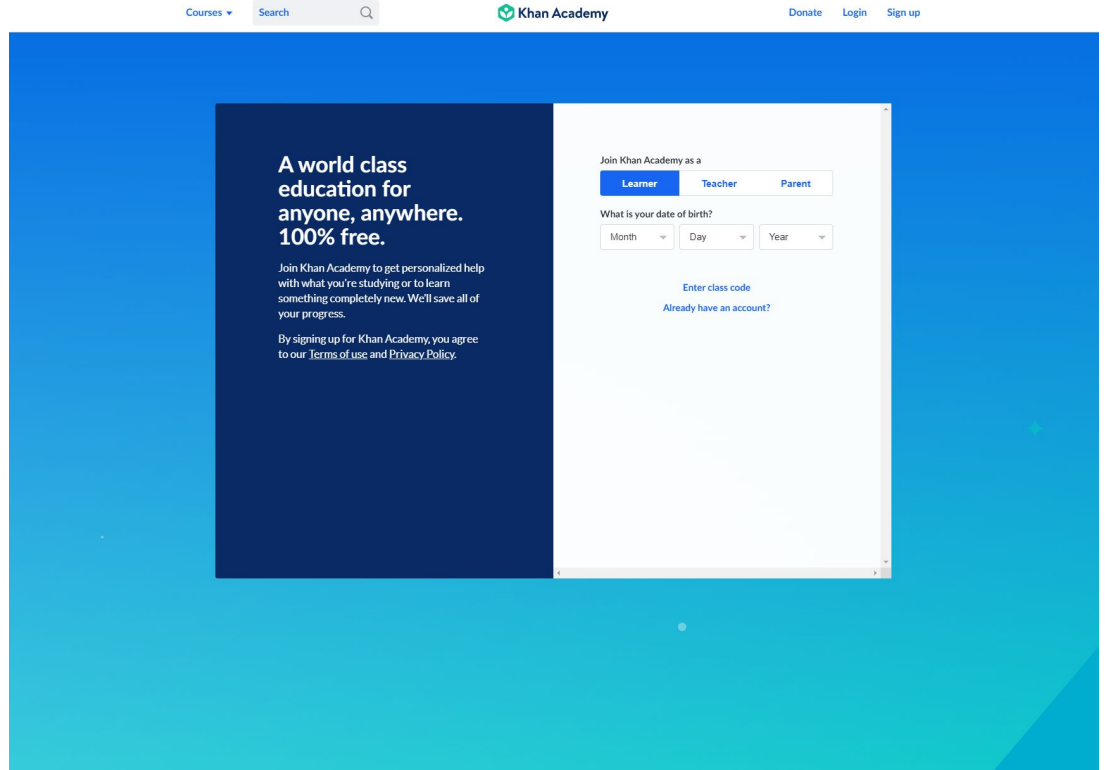
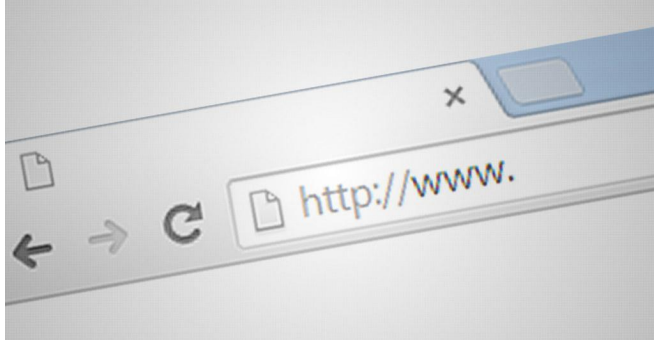
- Minimal
- Focused
- Effective



Web App Features

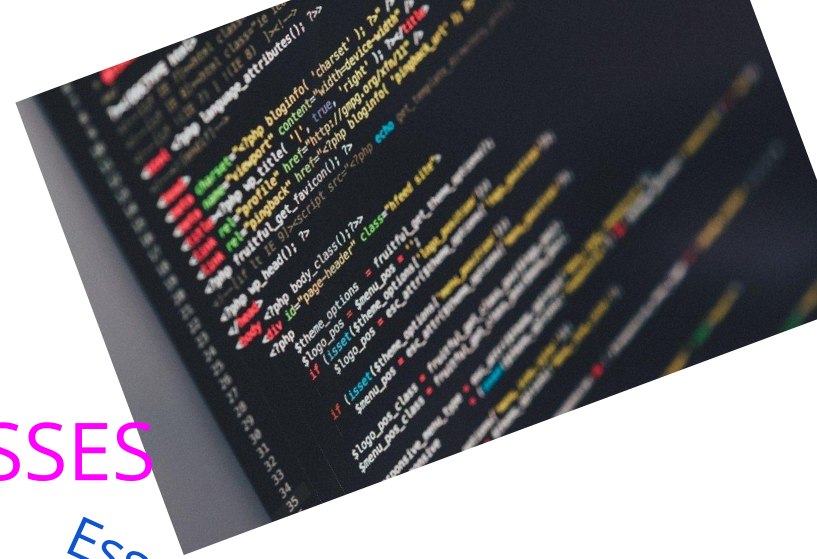
- Difficulty levels
- Scores
- Sandbox mode

Implementation



Experience

Interaction Design



Essential Programming
Classes

Databases



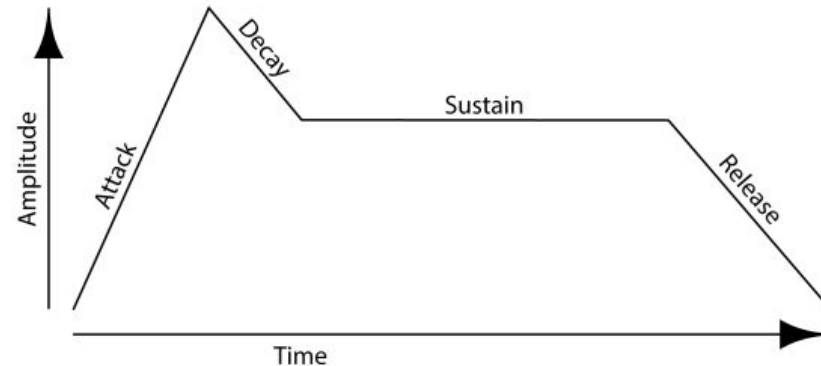
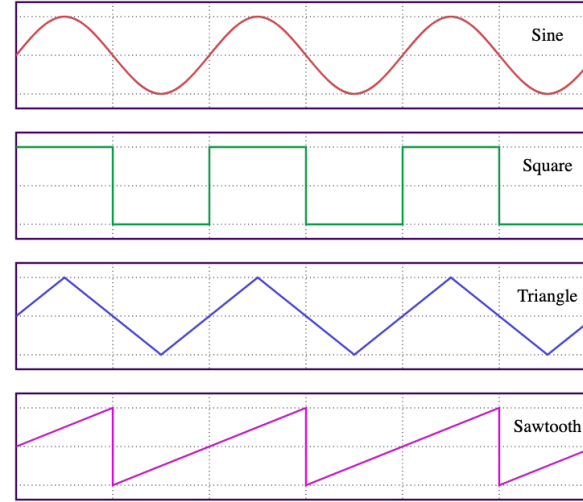
Extra Features

- Find friends
- User submitted levels/tutorials
- Discussion board
- Optimization for mobile



Anticipated Results

- Waveform Recognition
 - Sine
 - Square
 - Sawtooth
 - Triangle
- ADSR Envelope Recognition
 - Attack
 - Decay
 - Sustain
 - Release





Thank You!

