

Episode 01

Subtractive Synth in SuperCollider



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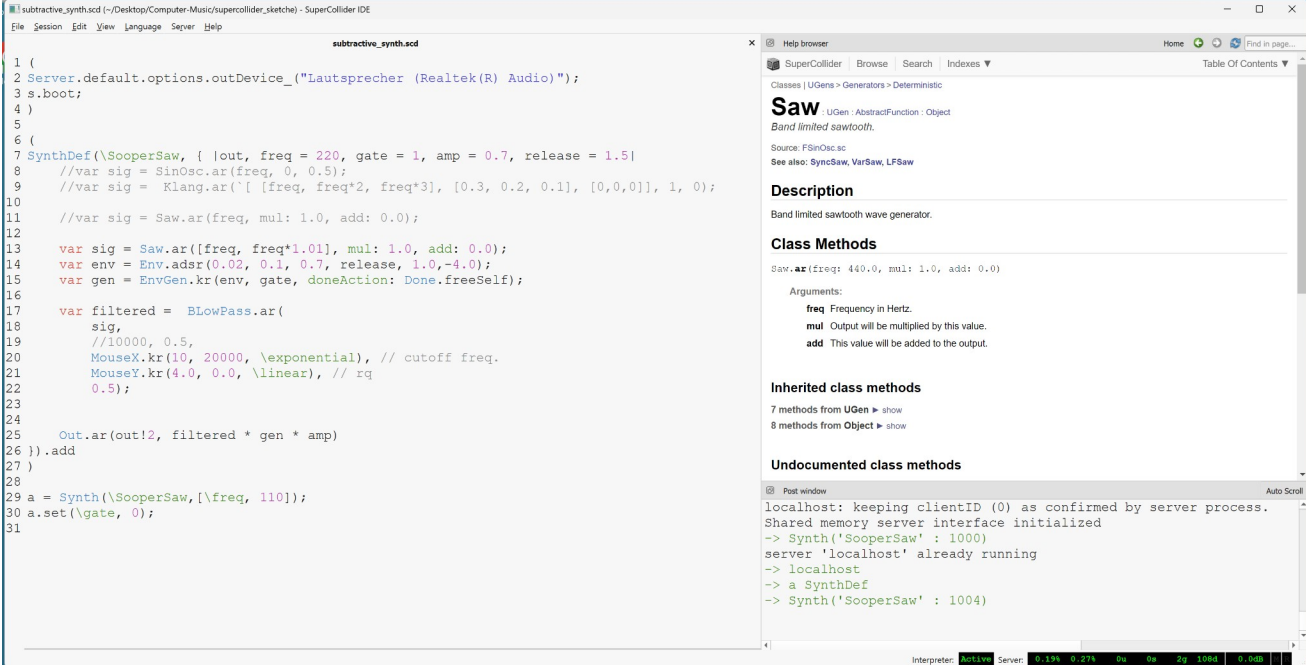
Subtractive Synth in SuperCollider

Demonstration



SuperCollider

Editor →



The screenshot displays the SuperCollider IDE interface. The left pane, titled 'subtractive_synth.scd', contains a Pure Data patch for a sawtooth oscillator. The code defines a 'Saw' class with parameters for frequency, gate, amplitude, and release. It uses 'SinOsc' for the signal, 'Klang' for the envelope, and 'BLowPass' for filtering. The right pane, titled 'Help browser', shows the documentation for the 'Saw' class, including its description, class methods, and inherited methods. A blue arrow points from the 'Editor' label to the code editor. Another blue arrow points from the 'Help-System' label to the help browser. A third blue arrow points from the 'Output' label to the bottom status bar.

Help-System →

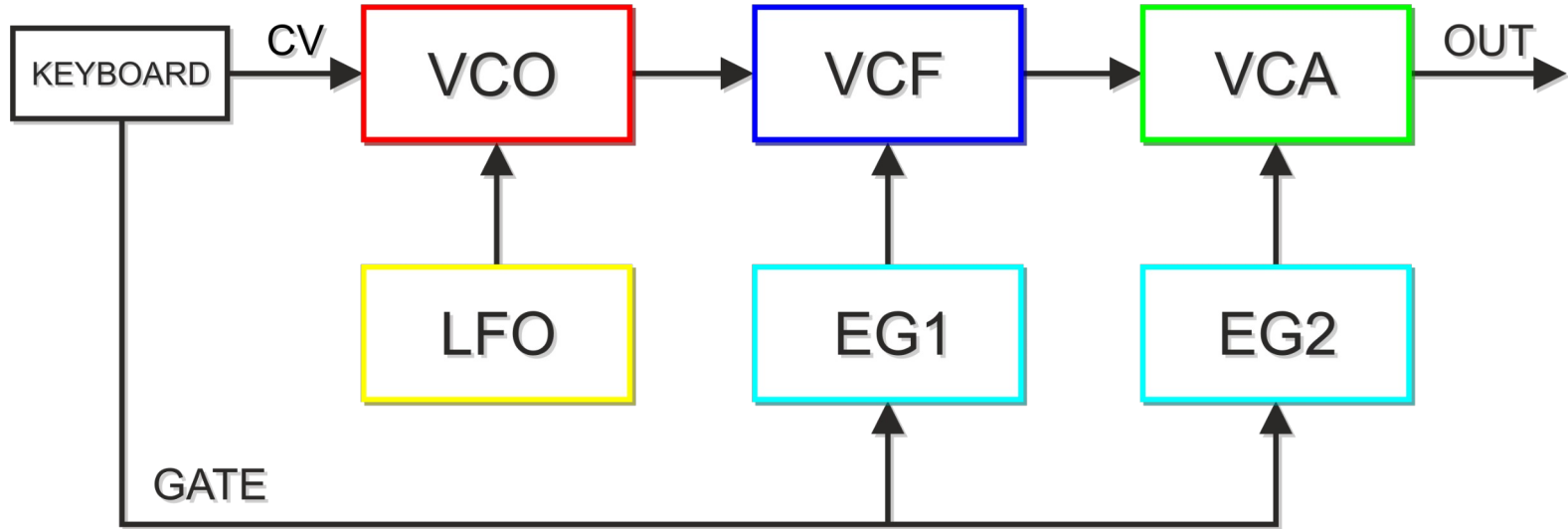
Output →



<https://en.wikipedia.org/wiki/SuperCollider>

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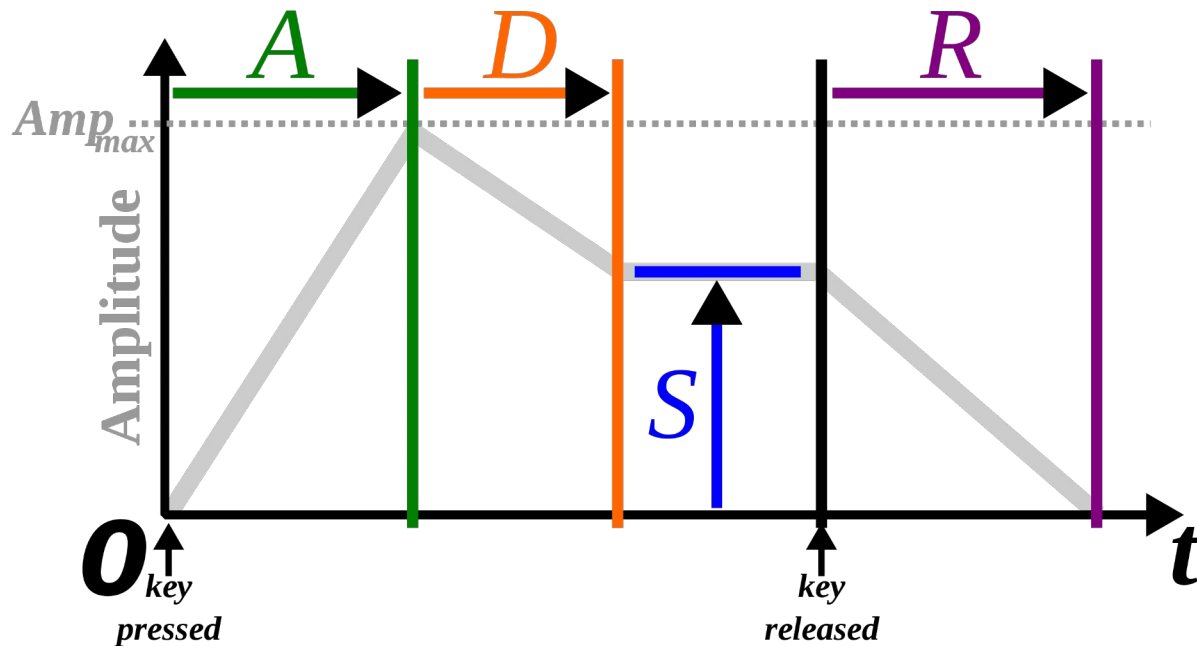
Subtractive Synth: Base



<https://en.wikipedia.org/wiki/Synthesizer#Theory>



Subtractive Synth: Envelope Generator



<https://de.wikipedia.org/wiki/ADSR>



Conclusions

- *Oscillators* generate a continuous cyclic signal
 - the signal (should) contain harmonics/partials
- *Filters* control the frequencies of a signal
 - if *resonant*, the filter emphasizes frequencies (e.g. *cutoff*)
- *Envelope Generators* can be used to control parameters of other modules



Final Thoughts

- SuperCollider is a powerful computer music system
 - it needs some experience, though
- Creating a simple *subtractive* synth in SuperCollider is straightforward and simple
- Turning it into a versatile musical instrument requires some design and thinking

