GLICOL

Graph Oriented Live Coding Language

Making Music with Code in Your Browser

Interactive Media Research Presentation

What Is Glicol?

A music language

Type short commands and Glicol turns them into sound instantly.

Browser based

Open glicol.org in any modern browser. Nothing to download or install.

Graph oriented

Connect small sound blocks in a chain. Each block creates or changes the sound.

Source: glicol.org (Tour section), github.com/chaosprint/glicol README

Who Made Glicol, and Why

> *"We are flooded by music on apps like TikTok, yet many people don't know how music is made. I wanted to make a program that would be usable to anyone."*
>
> Qichao Lan, RITMO Centre, University of Oslo (2022)

Creator	Qichao Lan, PhD researcher, University of Oslo
Published	Web Audio Conference 2021, Barcelona
PhD	Collaboration in Computer Music Systems for Live Coding (June 2022)
Goal	Let anyone make music in a browser, alone or together, with no setup

> *"I always wanted to develop a tool where multiple people can work together."*

Sources: partner.sciencenorway.no (Sept 2022), uio.no/ritmo (2022), WAC 2021 proceedings

How the Graph Works

Connect blocks in a chain. Each block creates or shapes sound.

Each block is called a 'node.' One makes sound, the next changes it.

The >> symbol passes sound from one node to the next.

A chain starting with 'o:' sends the result to speakers. A '~' chain is a helper.

Source: github.com/chaosprint/glicol README (Basic connection section)

Hello World:

```
o: sin 440 >> mul 0.5
```

'sin 440' creates a pure tone. 440 sets the pitch.

'mul 0.5' sets volume to half.

Source: glicol.org (Tour > Hello world section)

Key Features

Each feature is a node you add to your chain.

Feature	What It Does	Why It Is Used
`seq + sp`	Plays notes in a pattern	Builds rhythm
`envperc`	Fast start, quick fade	Shapes each note
`lpf`	Removes high frequencies	Makes sound warmer
`sin ~ref`	One wave controls another	Shifting, evolving tones
`plate`	Adds reverb	Adds depth and space
`mix ~t..`	Collects chains into one output	Final mix of all layers

Source: glicol.org (Tour sections: Sequencer, Envelope, Noise/Filter, FM, Effect)

Visuals and Sound: Mix JS

Glicol lets you run Hydra visuals alongside the audio using JavaScript.

```
// Glicol audio
o: sin 440 >> mul ~amp
~amp: sin 1.0 >> mul 0.3 >> add 0.5

// Hydra visuals (from Mix JS 1 section)
osc(10, 0.1, 0.8).color(0.9, 0.3, 0.6)
  .rotate( ()=>a.value/500 ).out()
```

`osc(10, ...)`	Number of color bands. 3 = wide slow bands. 40 = dense stripes.
`.color(0.9, 0.3, 0.6)`	RGB tint. Change any value to shift the palette.
`.rotate(()=>a.value/500)`	Rotation tied to audio volume. Visuals spin with the music.

Sources: glicol.org (Mix JS 1 and Mix JS 2 sections), GitHub README, hydra.ojack.xyz

What Is Live Coding?

Artists write code on stage to create music and visuals in real time. The audience sees the code.

TOPLAP (2004)

Community formed in Hamburg. Manifesto: 'Show us your screens.'

Algorave (2012)

Coined by Alex McLean. First event London. Now held in 18+ countries.

Code is the instrument. Improvisation is the point. Every decision is visible.

Sources: toplap.org, algorave.com, en.wikipedia.org/wiki/Live_coding

Where Glicol Fits

Tool	Focus	Setup	Best For
SuperCollider	Deep synthesis	Install required	Advanced users
TidalCycles	Rhythmic patterns	Install Haskell + SC	Beat performance
Hydra	Visuals only	Browser	Visual artists
Glicol	Audio + visuals + collab	Browser (zero install)	Beginners + groups

Glicol is less powerful than SuperCollider, but far more accessible.

GitHub README: 'low entry fee and high ceilings'

Sources: github.com/chaosprint/glicol README, tidalcycles.org, supercollider.github.io, hydra.ojack.xyz

Why Glicol Matters for Interactive Media

Open access

No cost, no install. A browser is enough.

Code as art

Writing code becomes making music, live, with an audience.

Built for collaboration

Real time group creation with democratic control.

Modern web tech

Rust compiled to WebAssembly for professional audio in a browser.

Sound + visuals + code

The creative intersection Interactive Media is built around.

Live Demo

glicol.org

Link posted in blog post

Sources

1. Glicol Website and Tour: glicol.org

2. Glicol GitHub: github.com/chaosprint/glicol

3. Glicol.js Docs: glicol.js.org

4. Lan, Q. & Jensenius, A.R. (2021). Glicol. WAC 2021, Barcelona.

5. RITMO Centre, University of Oslo (2022). uio.no/ritmo

6. ScienceNorway (2022). partner.sciencenorway.no

7. Lan, Q. (2022). PhD Dissertation, University of Oslo.

8. TOPLAP: toplap.org

9. Algorave: algorave.com

10. TidalCycles: tidalcycles.org

11. Hydra by Olivia Jack: hydra.ojack.xyz

12. Wikipedia: en.wikipedia.org/wiki/Live_coding

Thank You

Try it at glicol.org

Questions?