

# Live Music Performance with Android

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# The Problem

- No music performance apps on Android
- End to end latency is typically 100-150ms
- Too slow for traditional keyboard interfaces

# The Solution

- Provide a full-featured synthesis engine
  - Oscillators, equalization, enveloping, reverb, etc.
- With a scheduling and looping interface for short passges
  - 1-4 measures at a time

# Caustic

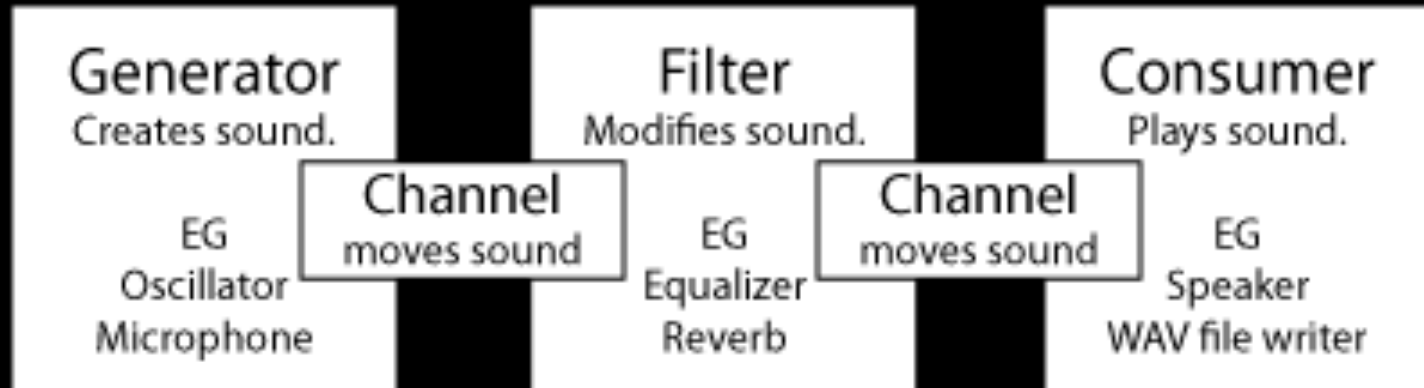


# Initial Investigation

- Real time audio is demanding
- Perform experiments to determine various latencies for touch and audio outputs

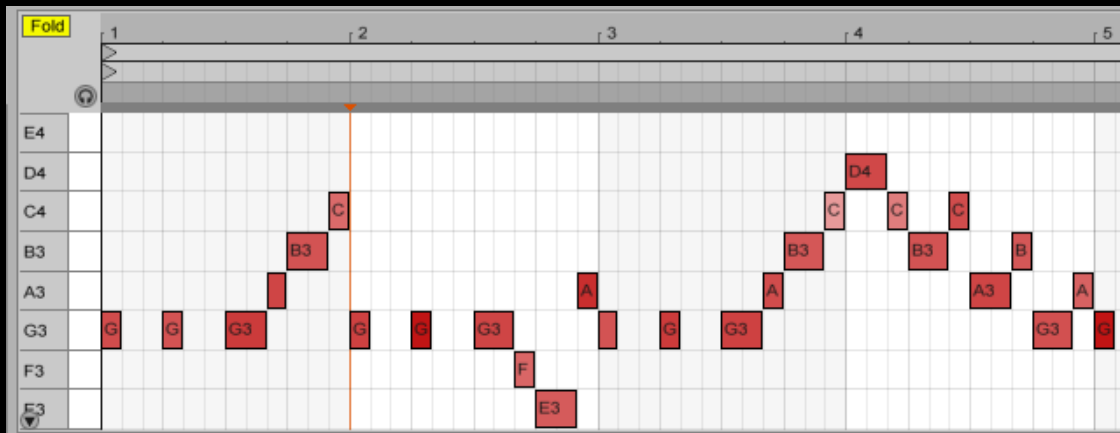
# ClickTrack

- A personal project
- C++ toolkit for audio processing
  - Provides generic interfaces for filters and instruments



# Sequencing and Looping Interface

| 1 bass    | 2 synth    | 3 drums    | 4 Audio   | 5 groove    | 6 drums    | 7 pad    | 8 guitar    | 9 noise |
|-----------|------------|------------|-----------|-------------|------------|----------|-------------|---------|
| ▶ bass_01 | ▶ synth_01 | ○          | □         | □           | □          | □        | □           | □       |
| ▶ bass_01 | ▶ synth_01 | ●          | ▶ perc_01 | □           | □          | □        | ▶ guitar_01 | □       |
| ▶ bass_02 | □          | ▶ drums_01 | ▶ perc_01 | ▶ groove_01 | ▶ drums_01 | □        | ▶ guitar_01 | ▶ noise |
| □         | ▶ synth_02 | ▶ drums_01 | ▶ perc_01 | ▶ groove_01 | ▶ drums_01 | □        | ▶ guitar_01 | ▶ noise |
| ▶ bass_02 | ▶ synth_02 | ▶ drums_01 | ▶ perc_02 | ▶ groove_01 | ▶ drums_01 | ▶ pad_01 | ▶ guitar_01 | ▶ noise |
| ▶ bass_02 | □          | ▶ drums_01 | ▶ perc_02 | ▶ groove_02 | ▶ drums_02 | ▶ pad_01 | ▶ guitar_01 | ▶ noise |
| ▶ bass_03 | ▶ synth_03 | ▶ drums_02 | ▶ perc_02 | ▶ groove_02 | ▶ drums_02 | ▶ pad_01 | ▶ guitar_01 | ▶ noise |
| ▶ bass_03 | ▶ synth_03 | ▶ drums_02 | ▶ perc_02 | ▶ groove_02 | ▶ drums_02 | □        | ▶ guitar_01 | ▶ noise |



# Questions?

