



CAMPUS SEOUL

Musicking on the Web

Workshop Day 1 / Lecture 1



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Web Audio API + Music Apps



hoch.io

Let's sign you up!

<https://www.campus.co/seoul/ko/sign-up>

"This workshop is..."

"This workshop is NOT..."

Timetable

Workshop Day 1 - 09/10/2015 (Thu)

Workshop Day 2 - 09/11/2015 (Fri)

09:30-10:30	Lecture 1: Musicking on the Web (60m)	Lecture 3: Programming Web MIDI API (60m)
10:45-12:00	Lecture 2: Programming Web Audio API (75m)	Lecture 4: UI and Integration (75m)
13:00-14:30	Code Lab 1: Setup and Tooling (90m)	Code Lab 3: MIDI and UI (90m)
14:45-16:15	Code Lab 2: Subtractive Synthesizer/Sampler (90m)	Code Lab 4: Hackathon (90m)
16:15-17:00	Review and Discussion (45m)	Final Presentation + Social (45m)

Web and Music

1990 ~ 2015

World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative.

Everything there is online about W3 is linked directly or indirectly to this document.

[What's out there?](#)

Pointers to the world's online information, [subjects](#), [W3 servers](#), etc.

[Help](#)

on the browser you are using

[Software Products](#)

A list of W3 project components and their current state. (e.g. [Line Mode](#)

[Technical](#)

Details of protocols, formats, program internals etc

[Bibliography](#)

Paper documentation on W3 and references.

[People](#)

A list of some people involved in the project.

[History](#)

A summary of the history of the project.

[How can I help ?](#)

If you would like to support the web..

[Getting code](#)

Getting the code by [anonymous FTP](#), etc.

● The first website

1985

1990

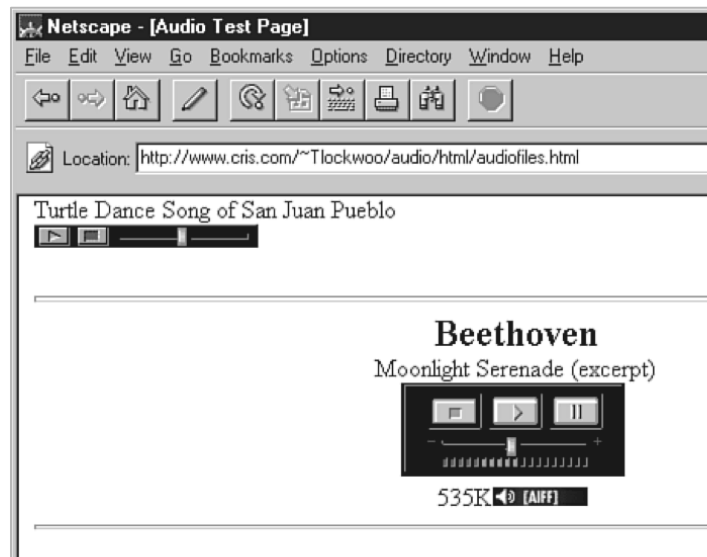
1995

2000

2005

2010

2015



LiveAudio & QuickTime Plug-in

1985

1990

1995

2000

2005

2010

2015



Flash: ActionScript

1985

1990

1995

2000

2005

2010

2015



HTML5 & Chrome

1985

1990

1995

2000

2005

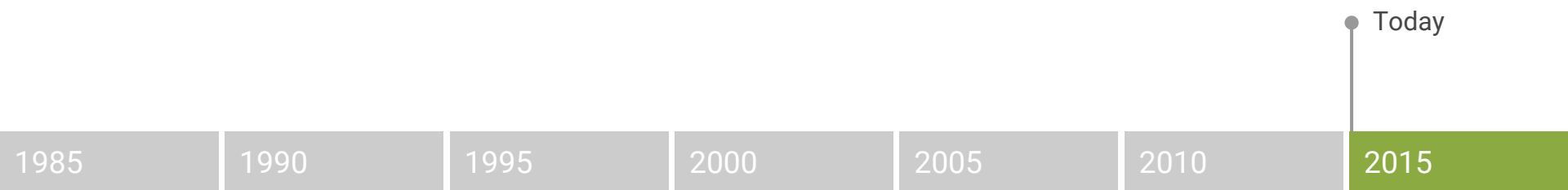
2010

2015



Web Audio API





“Musicking”

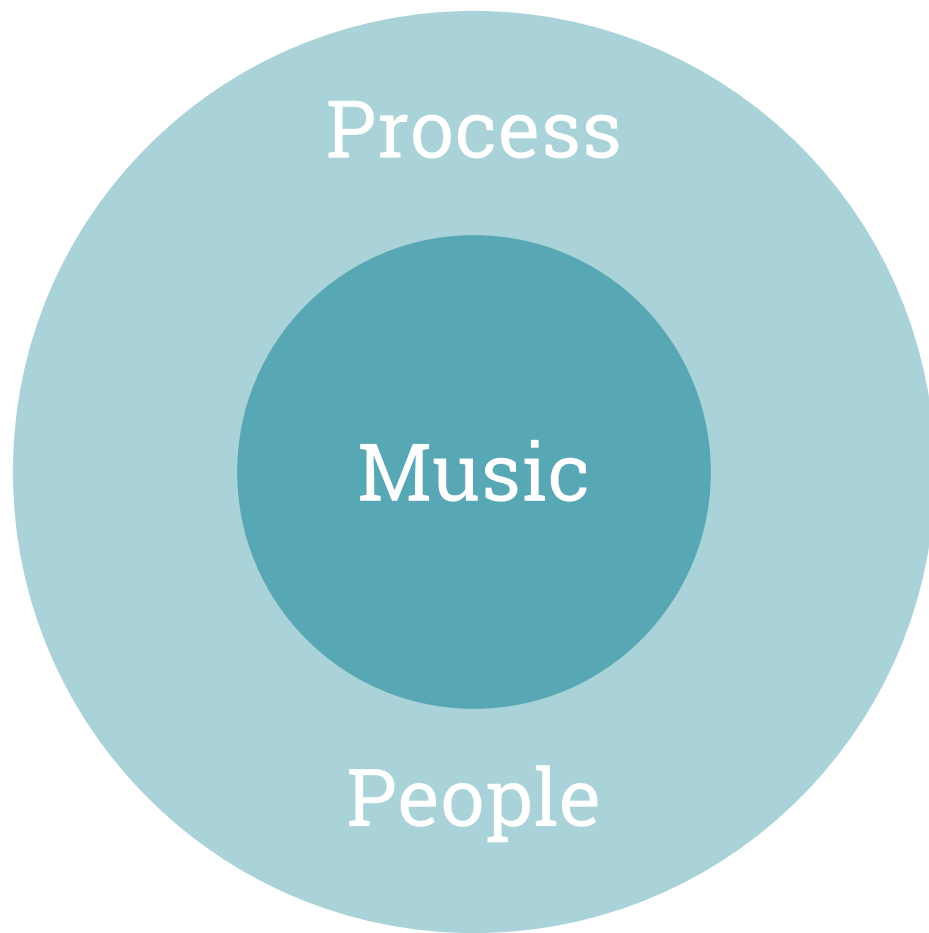
“

“To music is to **take part**, in any capacity,
in a musical performance, whether by performing,
by listening, by rehearsing or practicing,
by providing material for performance
or by dancing.”

- Christopher Small, *Musicking*, 1998



Music



“Musicking”

Computer-mediated

Network Performance



Live Electronics



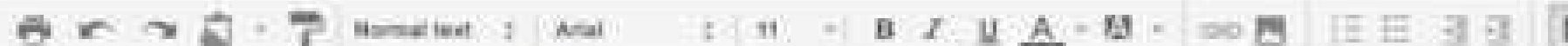
Laptop Orchestra



Musicking on the Web?

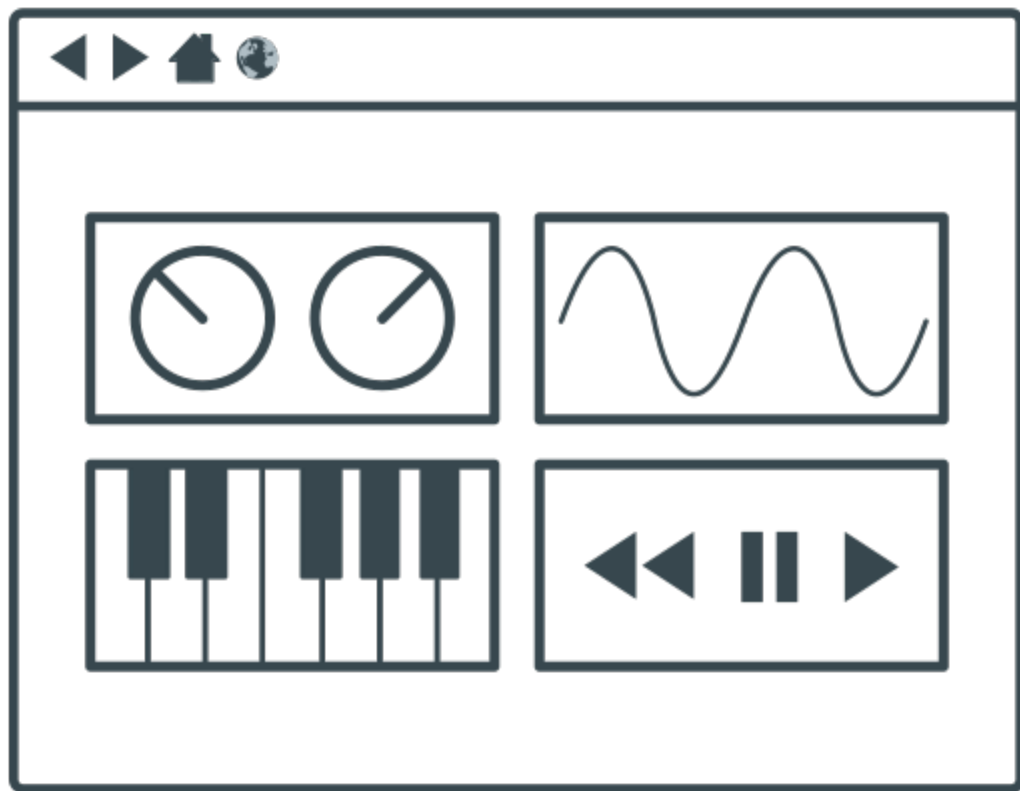
New Song ☆

File Edit View Insert Format Tools Table Help

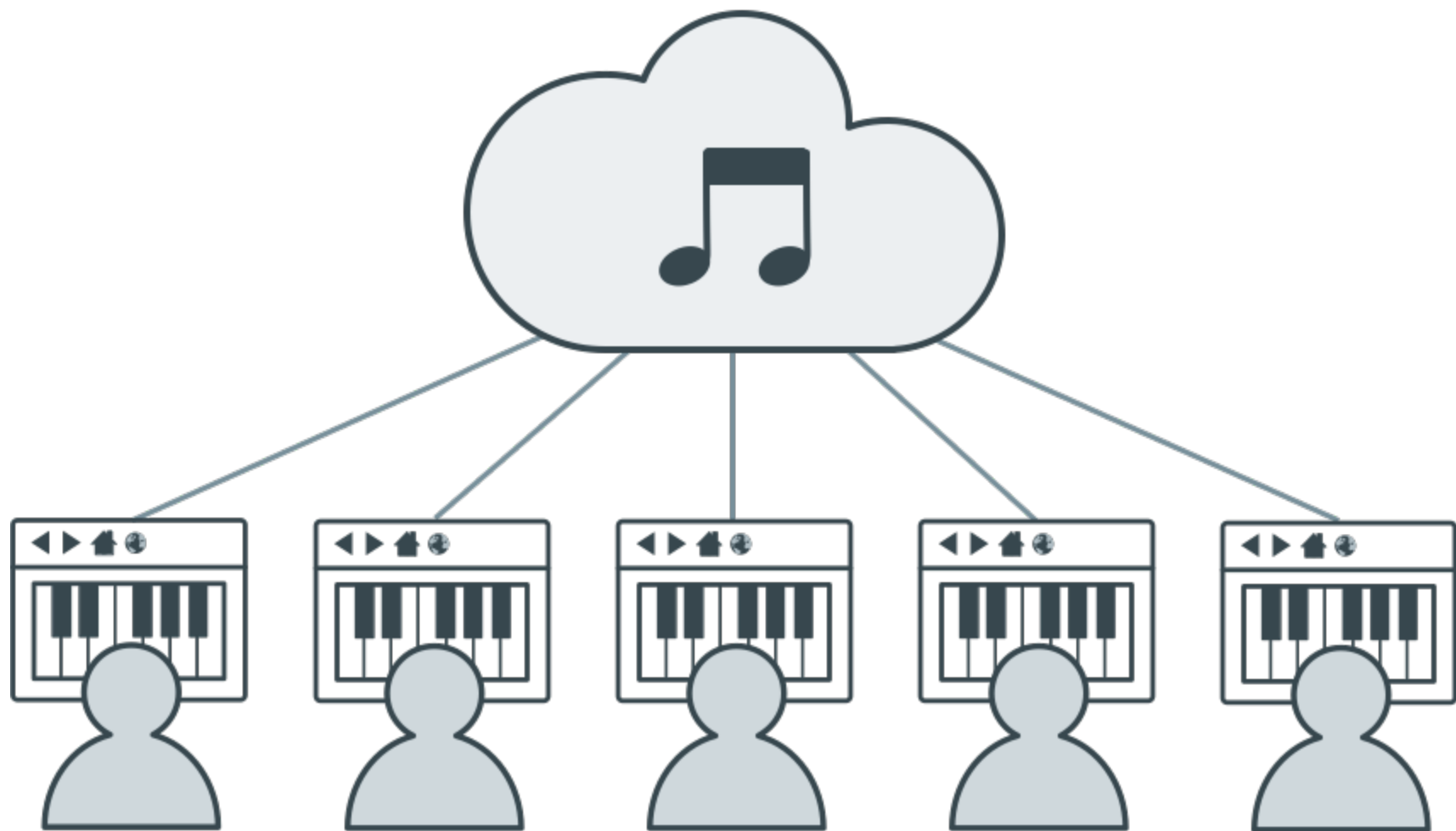
 Normal text Arial 11 B I U A M

Oh oh h

Add







CSCW

Computer-Supported Collaborative Work

Time and Space Matrix

	Different space	Same space
Same time	Video Conferencing	Face-to-face Meeting
Different time	E-mail	Bulletin Board

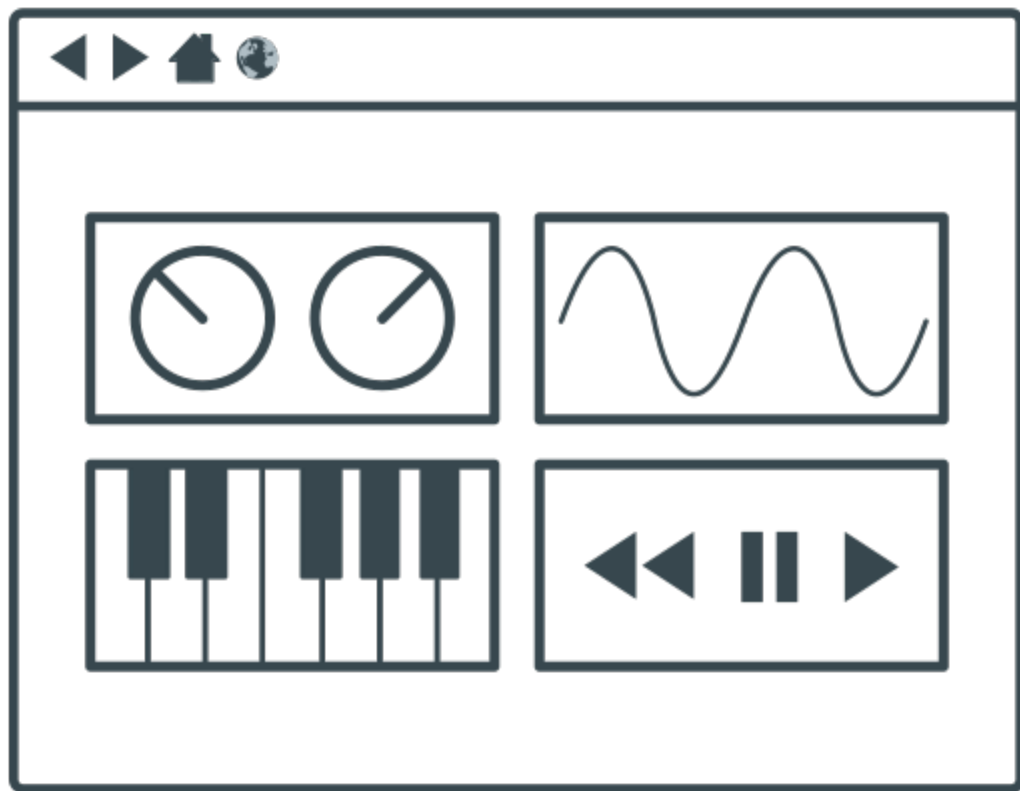
Time and Space Matrix

: computer-mediated musicking

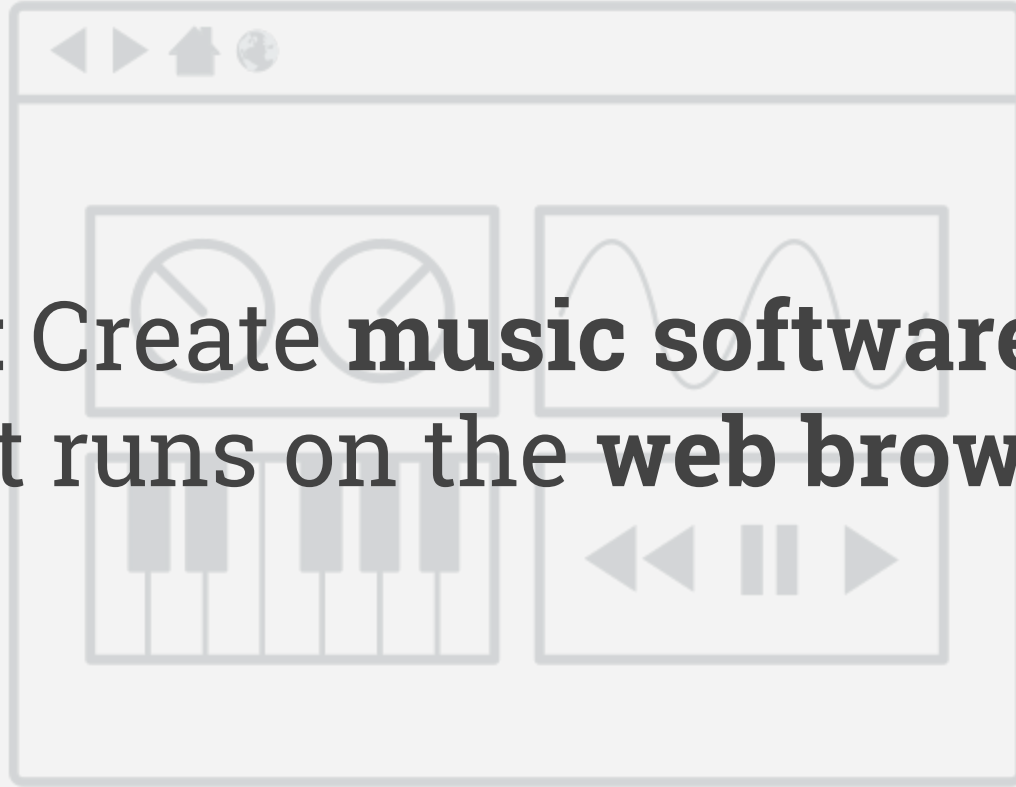
	Different space	Same space
Same time	Network Performance	Laptop Orchestra Live Electronics
Different time	File Sharing	Studio-based Production

"but... let us focus on the first step."

The Goal



: Create **music software**
that runs on the **web browser**.



Demo time!

Grid Flux

Envvy

"okay, but how?"



Web Audio API

Digital audio

Sound synthesis

Workflow automation

Web MIDI API

General MIDI

GUI for music apps

Polymer



Teardown

Bird's-eye view of music app

SAMPLER

SAMPLE

Sample
ASR-X Crash 1

Tune
0.00

ENVELOPE

Attack
0.01

Hold
0.01

Release
1.00

2-BAND EQ

L Freq
250.00

L Gain
0.00

H Freq
5000.00

H Gain
0.00

OUTPUT

Send 1
0.00

Send 2
0.00

Send 3
0.00

Pan
0.00

Volume
0.75

Track Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0 ASR-X Crash 1															
1 ASR-X Hat 02															
2 ASR-X Hat 03															
3 ASR-X Hat 06															
4 ASR-X Hat 07															
5 ASR-X Kick 03															
6 ASR-X Kick 11															
7 ASR-X Kick 12															
8 ASR-X Snare 40															
9 ASR-X Snare 03															
10 ASR-X Snare 15															
11 ASR-X Snare 23															
12 ASR-X Kick 25															
13 ASR-X Kick 12															
14 ASR-X Kick 11															
15 ASR-X Kick 03															

Quantize
0.91

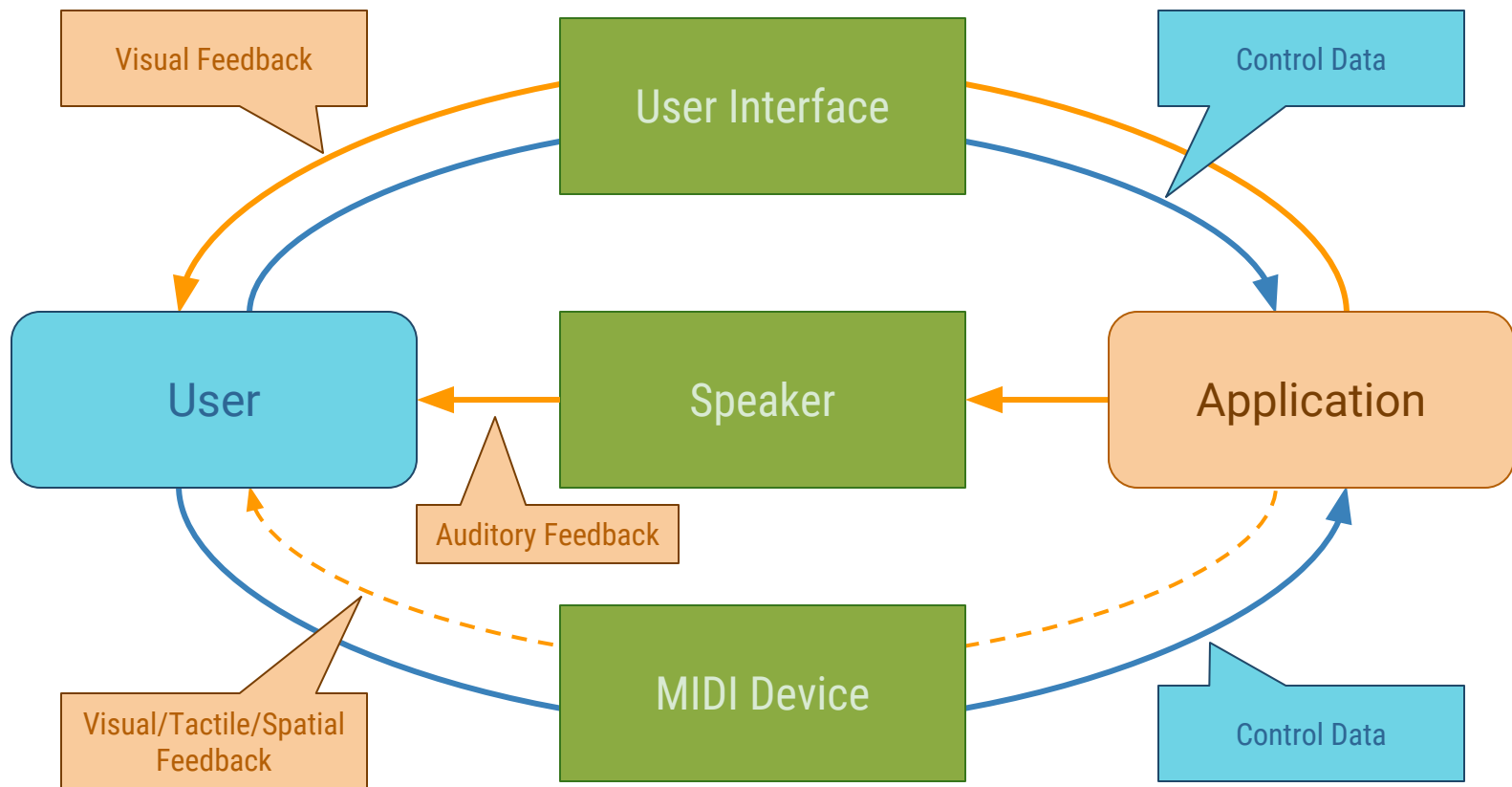
Swing
0.70

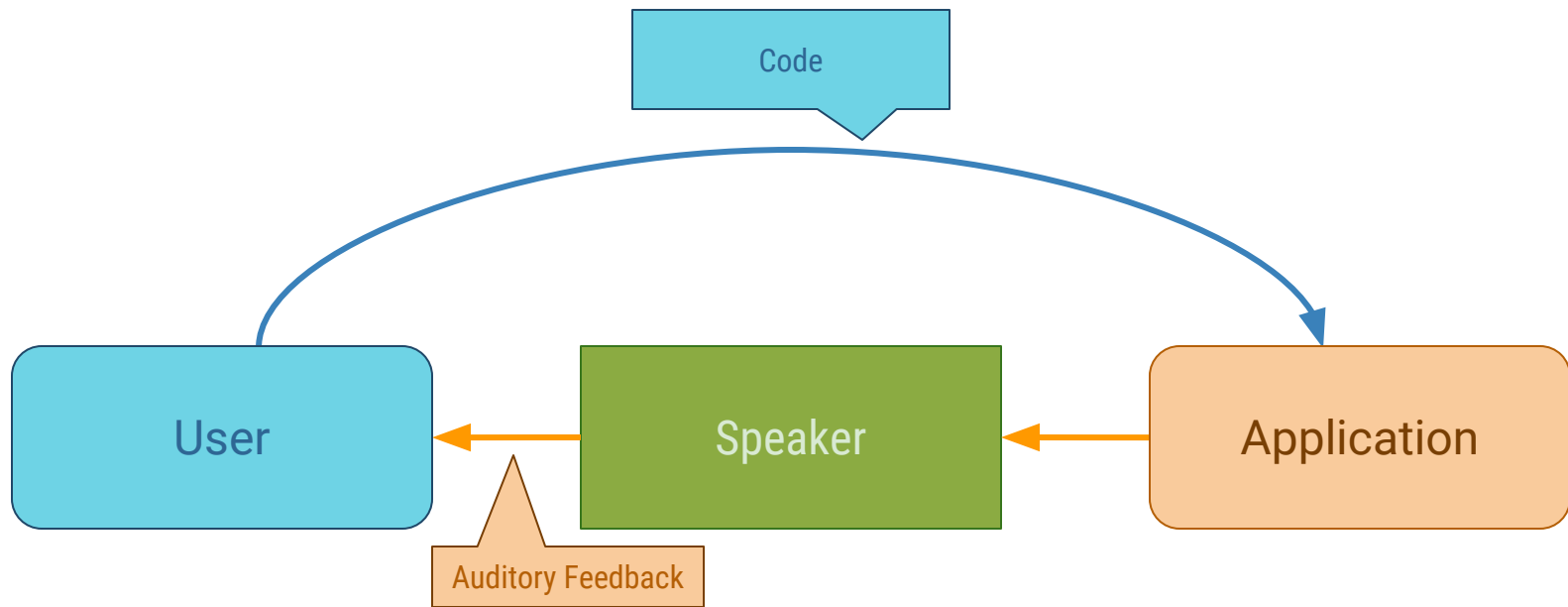
Tempo
133.20

Bundles
Bundle 1

The 'SEND' section contains several effect send controls:

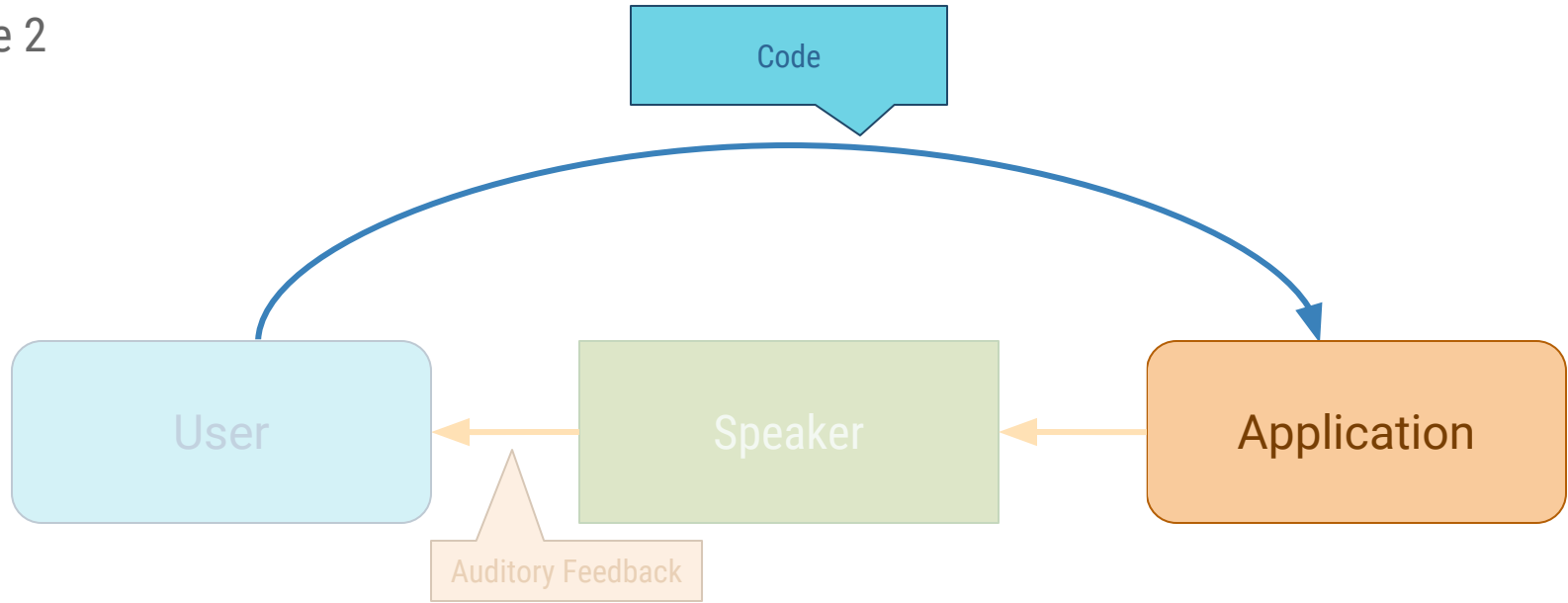
- CHORUS - SEND 1:** Rate (0.10), Intensity (0.10).
- DELAY - SEND 2:** Delay (0.25), Feedback (0.25).
- REVERB - SEND 3:** Preset dropdown (960 Big Empty), Mix knob (0.12).
- SATURATOR:** Quality knob (0.39), Drive knob (1.12), and an ON/OFF toggle (currently ON).
- COMP:** Threshold knob (-2.40), Ratio knob (1.80), Attack knob (0.07), Release knob (0.43), and Makeup knob (7.80). It also has an ON/OFF toggle (currently ON).
- MASTER:** Out knob (0.00).





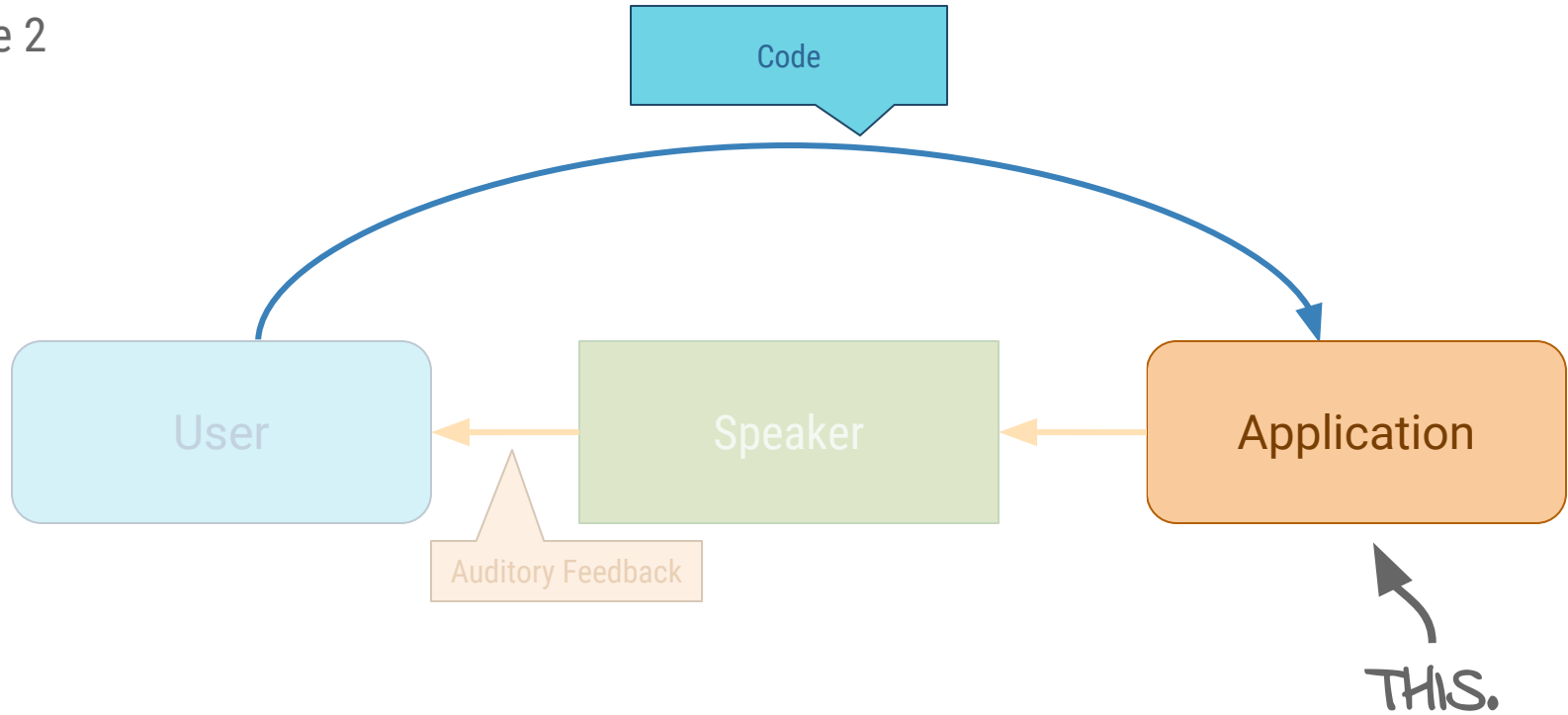
Day 1:

Lecture 2



Day 1:

Lecture 2



enjoy your coffee!

Let's chat!

Workshop Day 1 / Lecture 1