Pocket Module

Team Medley
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Introduction

Problem:

- Modular Synthesizers cost a lot of money, but sound cool
- Modular Synthesizers aren’t very mobile

Solution:

- Create a mobile modular synthesizer

Motivation:

- The sound designers in our group wanted a cheap simple alternative

Goals

What we wanted to achieve:

- Learn Pure Data, JUCE, Android Studio
- Create an Oscillator
- Create an Envelope editor
- Create a wave table
- Create a sequencer
- Create a sampler
- Midi Implementation
- Modify ASDR
- Extra Effects

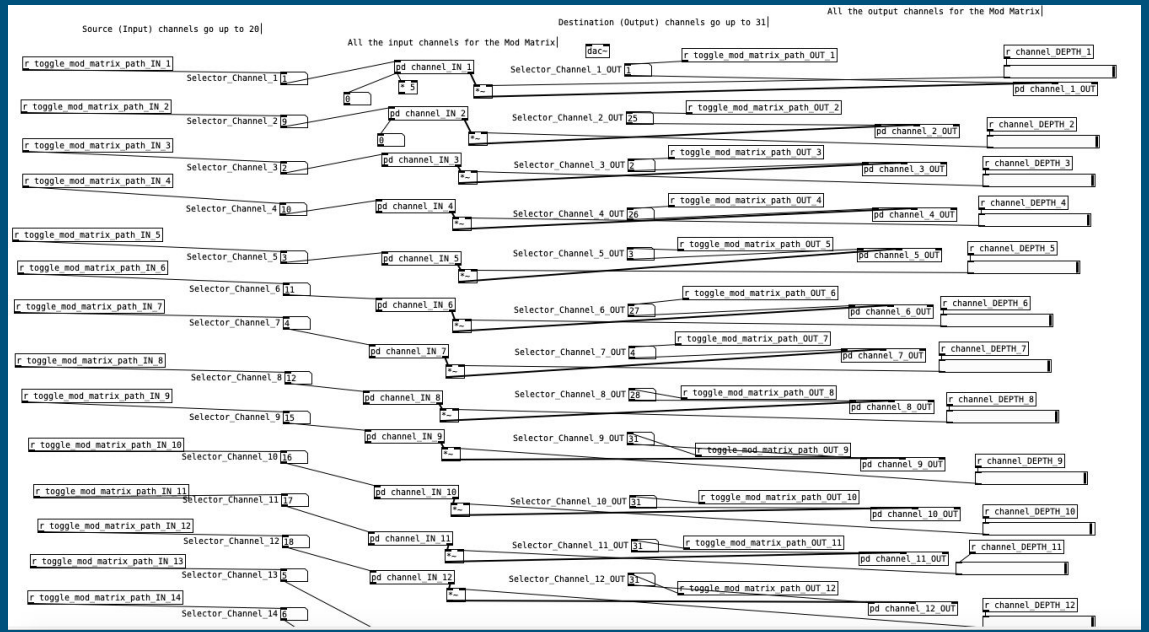
What we have achieved:

- Learn Pure Data, Android Studio
- Create an Oscillator
- Create an Envelope editor
- MIDI Implementation
- Modify AD
- Polyphonic Capabilities
- Modulation Matrix

Biggest Challenges

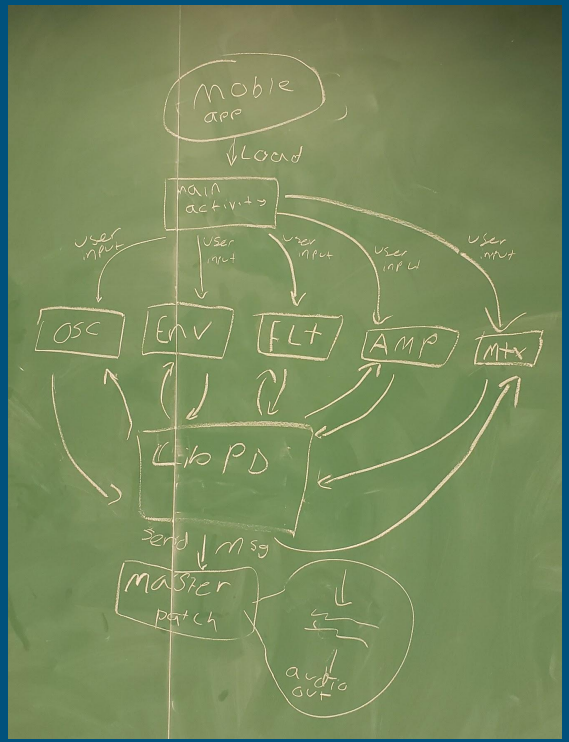
- Learning a new programming language (Pure Data)
- Developing for Android
- Getting libpd to interact with all of our Pure Data patches
- Building the Modulation Matrix

Screenshots/Video



Back-end Modulation Matrix Pure Data Patch

System Overview/Diagram



Technology

Android Studio
App development
Front end

GitHub
Version Control

Pure Data
Sound creation
Back end

Trello
Scrum Board

Project Management Techniques

- Direct communication through Discord
  - Quick responses
  - East to reach everyone
- Meet 3 times a week
  - In person coding sessions
- Scrum Master assigned tasks
  - Tasks were shown on trello as a way to see progress

The Good and The Bad

The Good:

- Working on the project was a blast
- Created a new product with a decent level of modularity
- Creating something from the bottom up
- Brainstorming with a team and creating a physical product

The Bad:

- Bugs
- Time Conflicts

Lessons Learned

What Worked

- Meeting in person
- Frequent online communication
- Group programming sessions

What Didn’t Work

- Time conflicts
- Not prototyping sooner

What We Wished

- More time for debugging