COMP 3450
Team Project Phase 2

THOMPSON RIVERS UNIVERSITY

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Problem Space

Are there problems with an existing product or user experience?

Subtractive synthesizers are very difficult for new users to understand, despite the fact they are conceptually simple. Teaching someone to use a subtractive synthesizer is not a hard task, but learning yourself through experimentation can be a struggle. Hence, many people who want to make music with synthesizers are turned off by the initially steep learning curve.

Why do you think there are problems?

Based on the data gathered, we ascertained the main issue with novice producers getting into audio synthesis is the initial learning curve. This issue is heightened by the intimidating nature of current physical and virtual interfaces. We believe there are problems because most product companies presume their target audience has some familiarity with music production and thus presumes there would be little to no learning curve for many of their synthesizers.

How do you think your proposed design ideas might overcome these?

Our design implementation revolves around limiting the options available to the user and gamifying the initial learning curve. Our target audience is one that has little to no experience in producing music. We believe it only takes one experimentation session for a novice producer to realize the potential in audio synthesizers. Through our proposed progressive learning experience, novice producers will be able to gain the skills necessary to progress further within our software program and their music production career.

How do you think your proposed design ideas support, change, or extend current ways of doing things?

Our proposed design changes the way synthesis is shown to a newcomer. Most synthesizer interfaces assume that the user knows the components of a synthesizer. Even if components are clearly labeled, there are no affordances given to a person unfamiliar with what to do. By limiting the user's options and gamifying the interface, we are encouraging the user to work with small sections of the overall synthesizer and discover how they function. By maintaining the same labeling as is standard on other synthesizers, users will also be able to apply their knowledge learned from using our product to any other subtractive synthesizer.

What are the assumptions and claims made about your project?

1) We are assuming that people want to learn through experimentation

2) We are claiming that synthesizers are difficult to learn through experimentation.

3) We are claiming that subtractive synthesizers are not difficult to understand if the learner is taught well.

4) We are assuming that people wanting to learn about audio synthesizers WANT an easier synthesizer interface.

Describe the components of the conceptual model underlying your project.

The conceptual model underlying the project is that of a hardware analogue control panel. We will have knobs and sliders for continuous control, and buttons and switches for discrete control. These controls are standard on most synthesizers. Depending on future developments, we may also incorporate oscilloscopes and/or spectrum analyzers, which will model their hardware counterparts.

What are the interface metaphors and interaction types of your project product?

The primary interface metaphor is that of a physical synthesizer, ie. Knobs, buttons, sliders. Our software will also use different tabs that can be seen as a metaphor for pages. If the software is ported to a device such as an iPad that will need on screen note input we will likely use a standard piano layout.

Our project will have an emphasis on the manipulation interaction type but with exploring as an underlying interaction type. The main premise of the software is the manipulation of the components in a way where the user can explore what each of the components do.

Establishing Requirements for Data Gathering

Goals

- To understand what makes an interface more approachable and not intimidating to users
- To discover sources of confusion when users are confronted with a synthesizer

Target users

- People who are beginning to explore using synthesis as a means of musical expression
- People who want to learn subtractive synthesis through experimentation and discovery, rather than tutorials and documentation

Example Persona One

Name: Mary
Age: 25
Background:

Mary is an arts student at her local university. She is quite resourceful, creative, and does well in school. She is competent with using computers for tasks such as browsing the web, streaming video, writing documents, and using online applications. She has an interest in music and plays guitar and piano as a hobby. She enjoys listening to pop music, some types of hip-hop, and some types of electronic music.
Mary has a friend named Jasmine who writes electronic music on a computer. She has always wanted to try writing electronic music herself, but when she researches on the subject, the software programs she download are confusing to use, noisy, and difficult to learn through experimentation. When she looks up tutorials, they are full of jargon and are generally hard to understand. She is frustrated that her musical knowledge is seemingly not applicable to electronic music.

Example Persona Two

Name: Tavito
Age: 22
Background:

Tavito starts his day with a smoothie at 6 am to go and train as he is part of the university's swimming team. He studies computer science and usually goes to work at “The chopped leaf” closing shifts. In his free time, he enjoys spending time with friends doing things like partying, eating or just staying home eating pizza and watching “The Office”. He loves to be busy and having something to do, especially because he is someone who gets bored and frustrated very easily. He also loves splurging on Lululemon's clothing and gadgets.

Example Persona Three

Name: Micheal
Age: 18
Background:

Micheal is a full-time student at his local university. He received a “full-ride” scholarship out of highschool and plans on getting his Bachelor of Science with a major in Chemistry. He spends his free time listening to music, working out at the gym, playing video games, and working as a waiter at a local diner. Micheal has a full scholarship and does not have to worry about tuition, so his job is used for spending money, car insurance, and saves some towards music festivals. Micheal tries to go to a music festival twice a year, one in the summer and one in the winter. Micheal tries to go to the gym 4 times a week but sometimes can’t due to work and school. He enjoys music a lot and wants to find a creative output but doesn’t think he has time to learn how to play an instrument.

Chosen data gathering technique(s) and scripts/questions

We gathered our data through an online survey and an in-person interview.

For our survey, we collected basic demographic data (age and gender), and asked if they had a musical background and/or a background with synthesizers. We then asked for first impressions on three synthesizer interfaces. The three synthesizers we picked were Ichiro Toda's Synth1, BlauKraut Charlatan, and Vember Audio Surge. These synthesizers are freeware synthesizers that are popular, well regarded, and often recommended, and could all be someone's first experience with a synthesizer. They also represent three levels of complexity, with Charlatan being simple, Synth1 being more complicated, and Surge being very feature filled and complicated. We asked for first impressions to gauge initial reactions when people who are unfamiliar with synthesizers are presented with one.

For our interview, we had a similar approach, using the same synthesizers and asking for first impressions. However, we went somewhat more in-depth by asking the users which parameter they would go for if they wanted to change a specific quality of the synthesizer (master volume, master pitch, and filter frequency). By asking this, we could see how accurate people's natural intuition was for each synthesizer, and identify points of confusion.

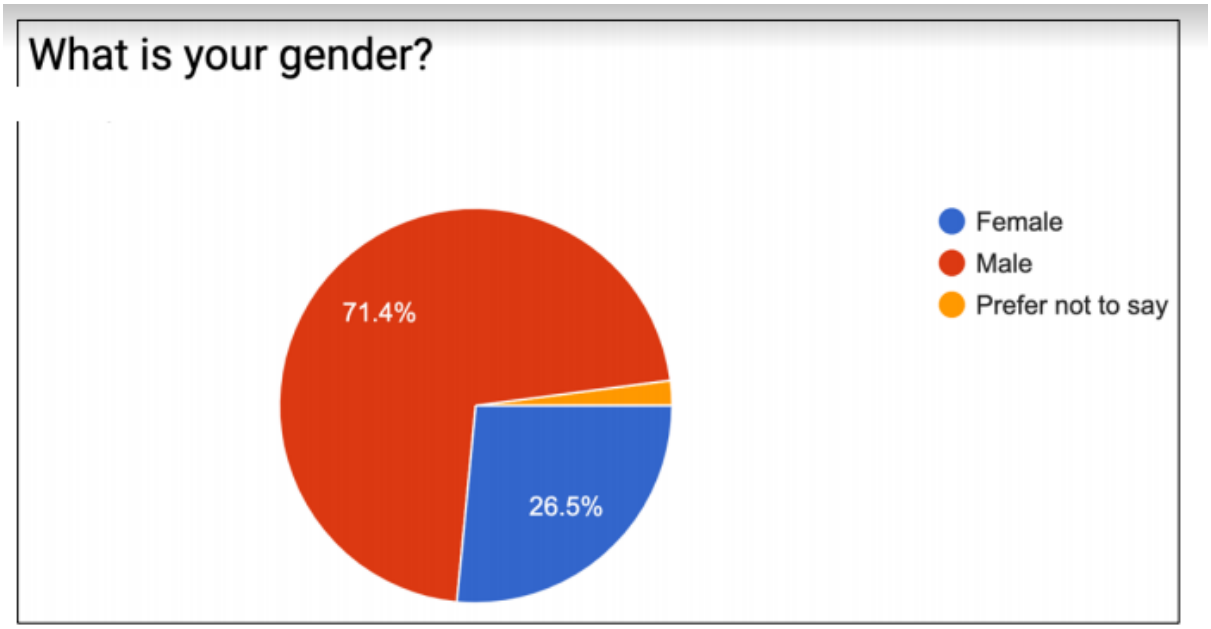
Pilot studies

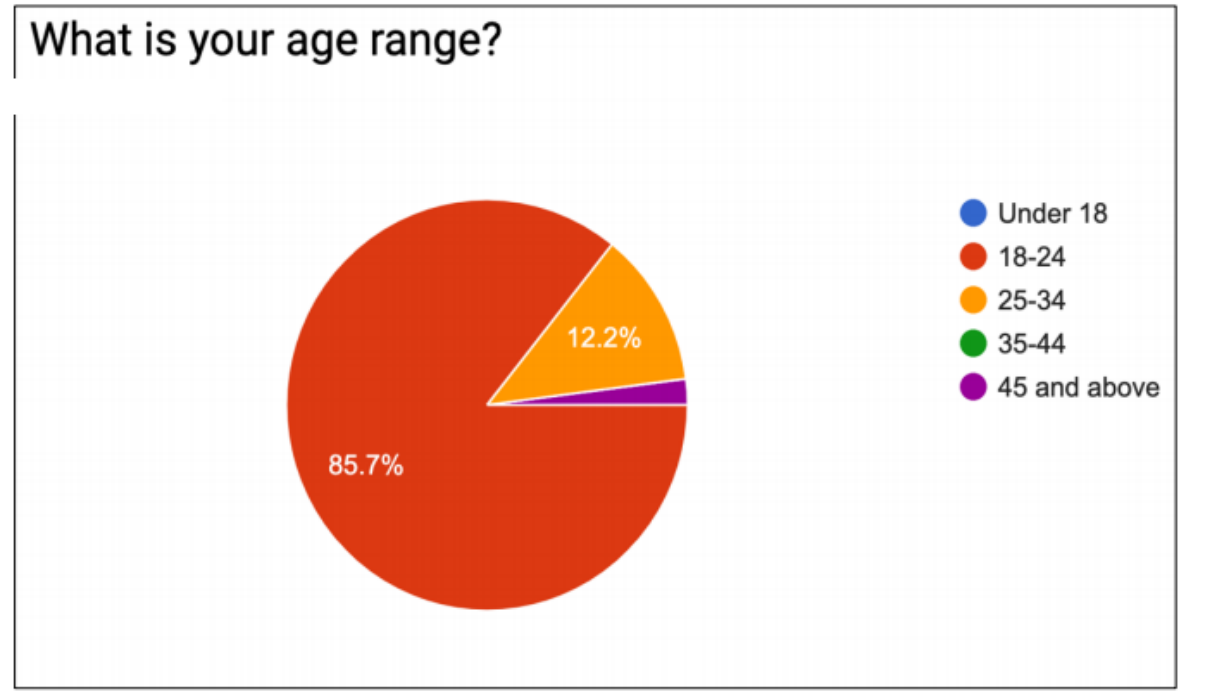
Our preliminary data collection methods involved testing our questionnaire and interviews with a small sample group to ensure flow. We had to change the structure of some of our questions based on the sample group responses.

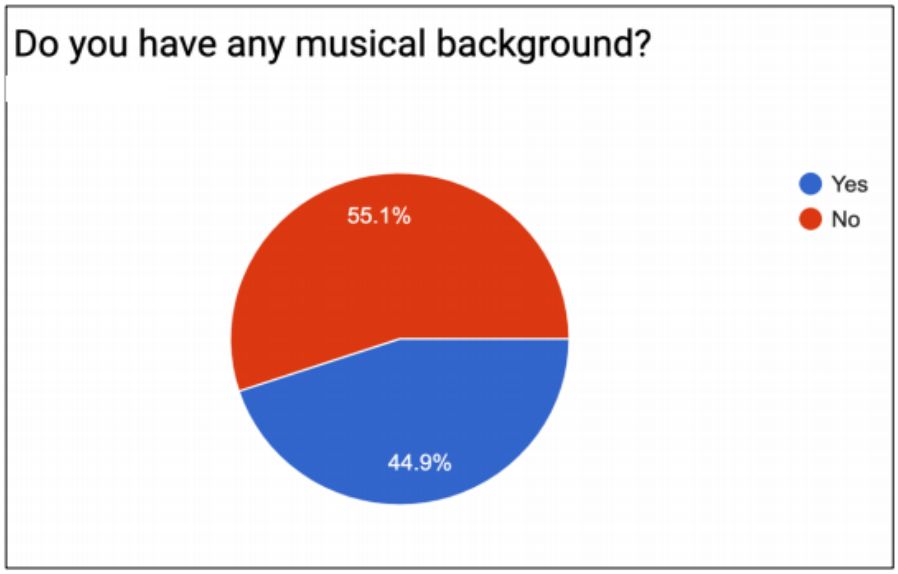
Based on the results of our pilot studies we deduced that the questionnaire needed to be shortened and the interview questions needed to be more open ended.

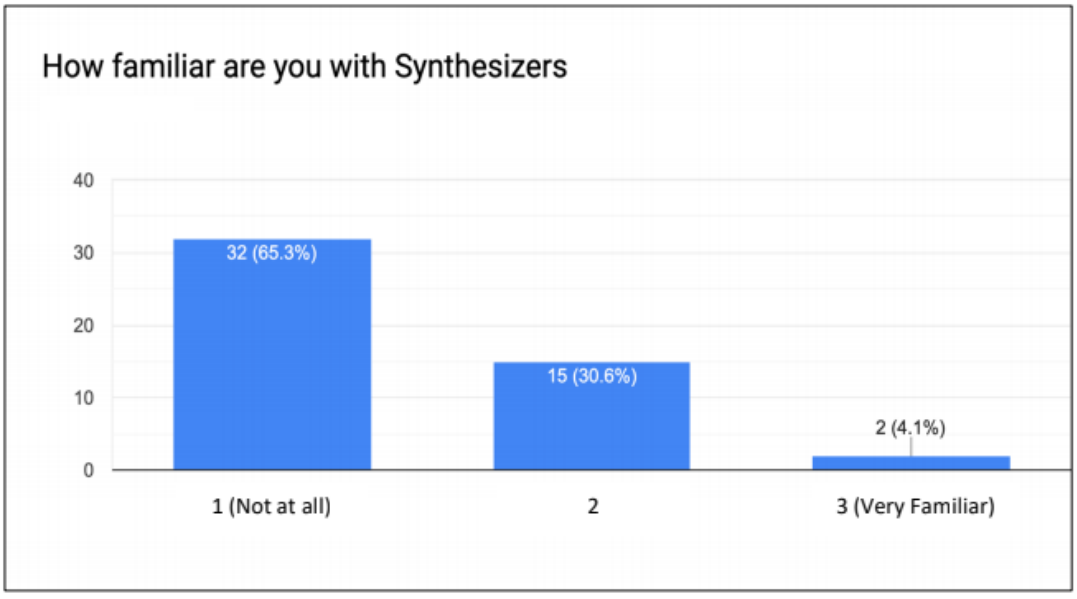
Demographic data and targeting data

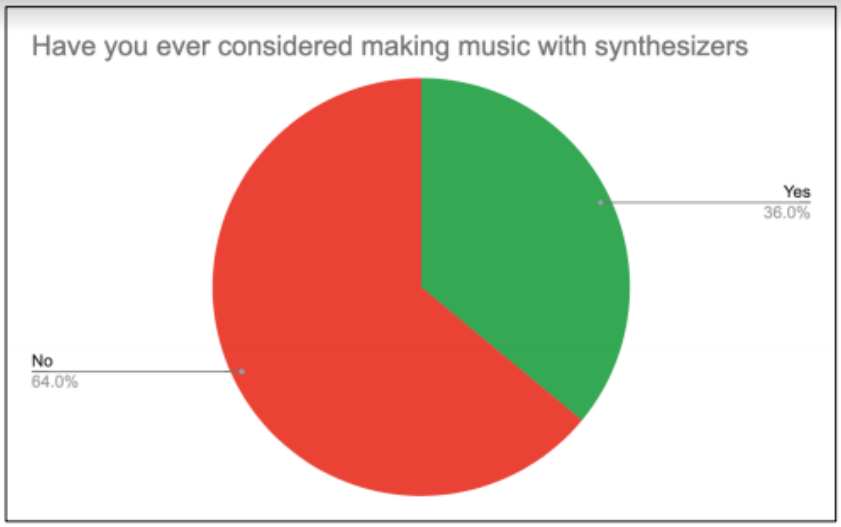
Quantitative/qualitative analyses (tables, graphs, charts, and/or diagrams)

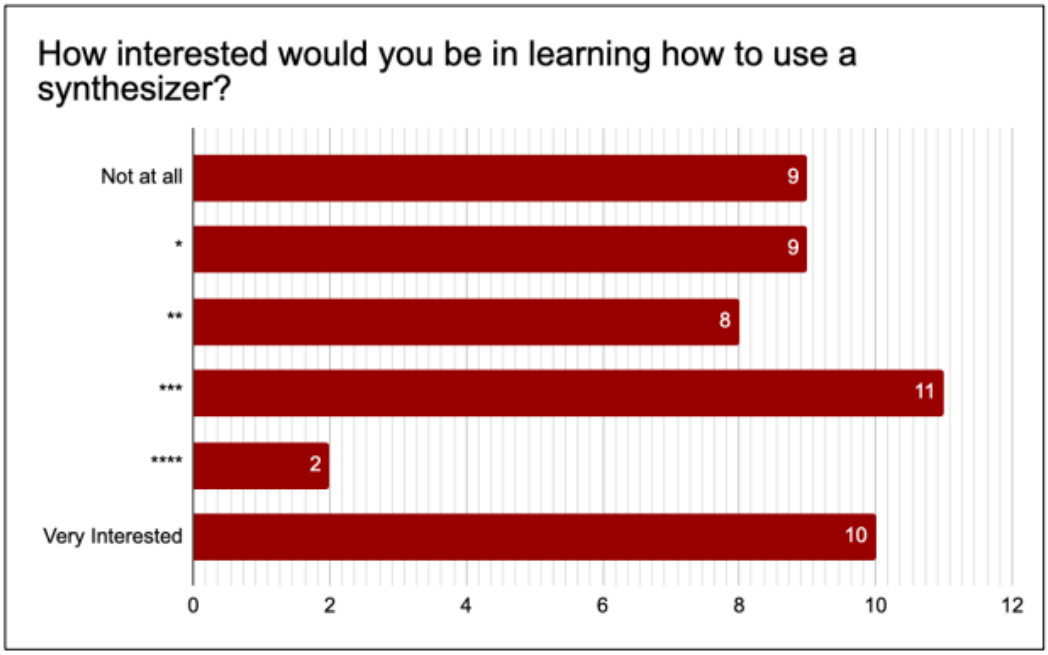




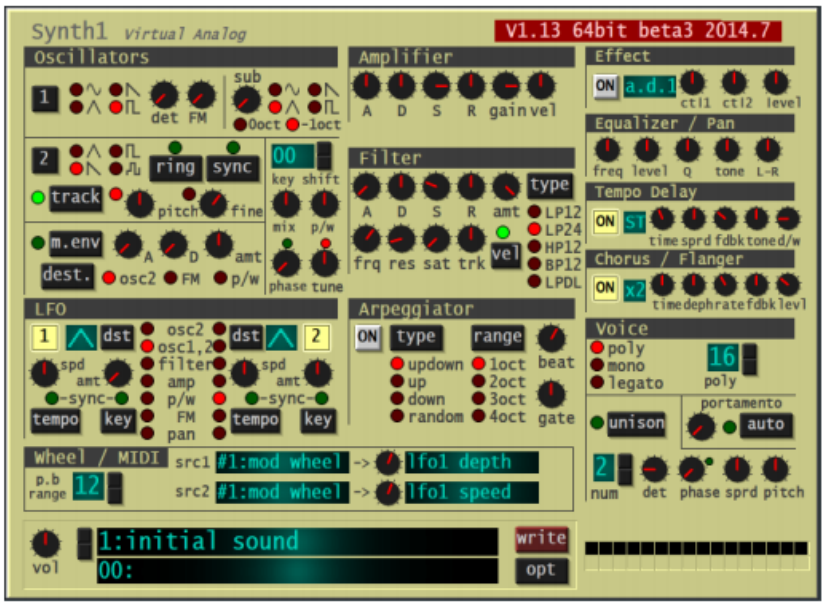

Do you have any musical background?
55.1%
44.9%
Yes
No

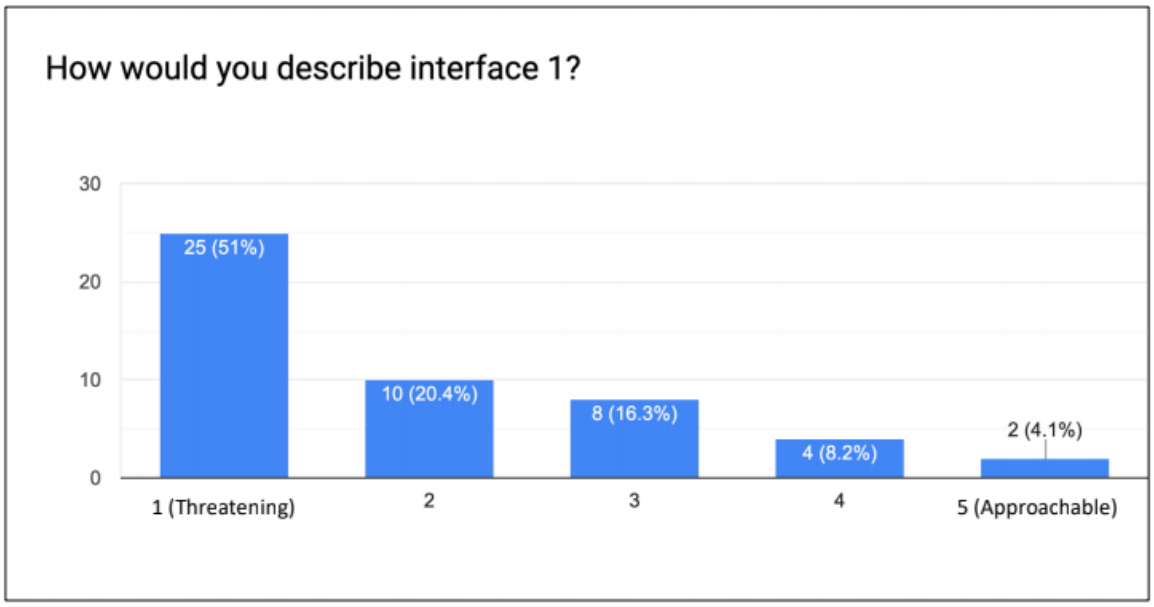

How familiar are you with Synthesizers
40
30
20
10
0
32 (65.3%)
15 (30.6%)
2 (4.1%)
1 (Not at all)
2
3 (Very Familiar)

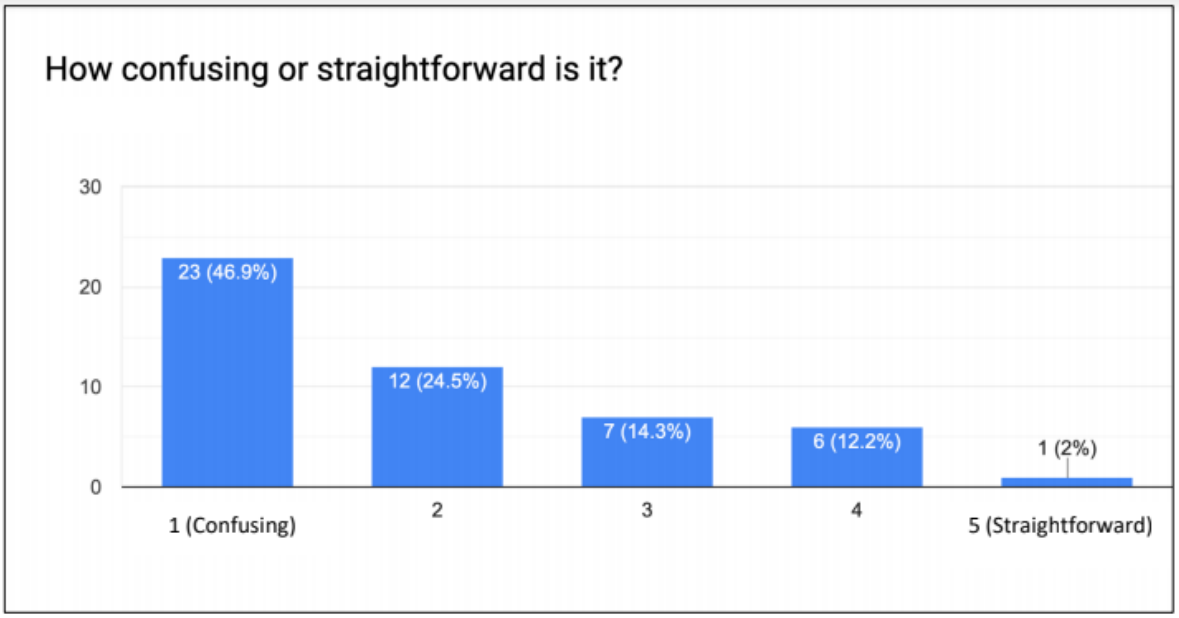

Have you ever considered making music with synthesizers
Yes
36.0%
No
64.0%

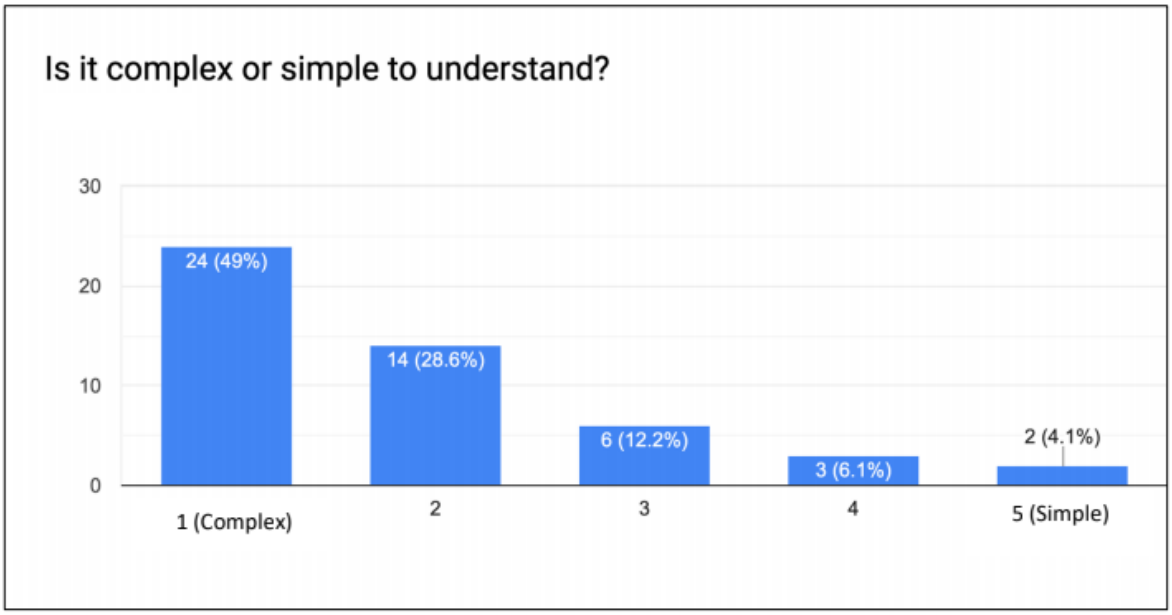

How interested would you be in learning how to use a synthesizer?
Not at all
9
*
9
**
8
***
11
****
2
Very Interested
10
0
2
4
6
8
10
12

Interface 1


Synth1 Virtual Analog
V1.13 64bit beta3 2014.7
Oscillators
Amplifier
Effect
Filter
Equalizer / Pan
Tempo Delay
Chorus / Flanger
LFO
Arpeggiator
Voice
Wheel / MIDI
1:initial sound
00:
write
opt

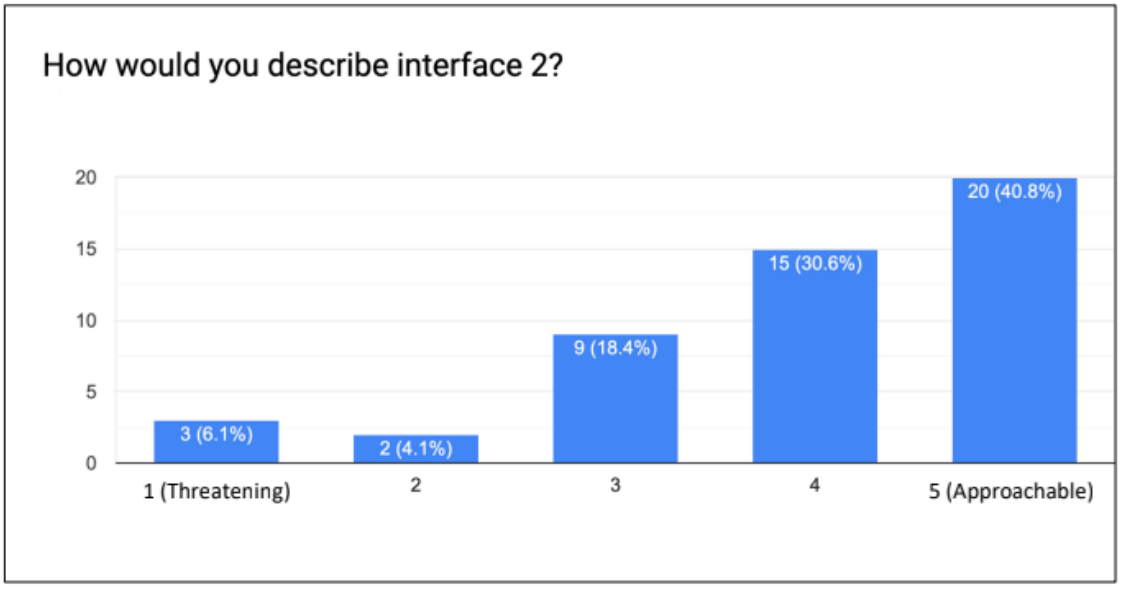

How would you describe interface 1?
30
20
10
0
25 (51%)
10 (20.4%)
8 (16.3%)
4 (8.2%)
2 (4.1%)
1 (Threatening)
2
3
4
5 (Approachable)


How confusing or straightforward is it?
30
20
10
0
23 (46.9%)
12 (24.5%)
7 (14.3%)
6 (12.2%)
1 (2%)
1 (Confusing)
2
3
4
5 (Straightforward)

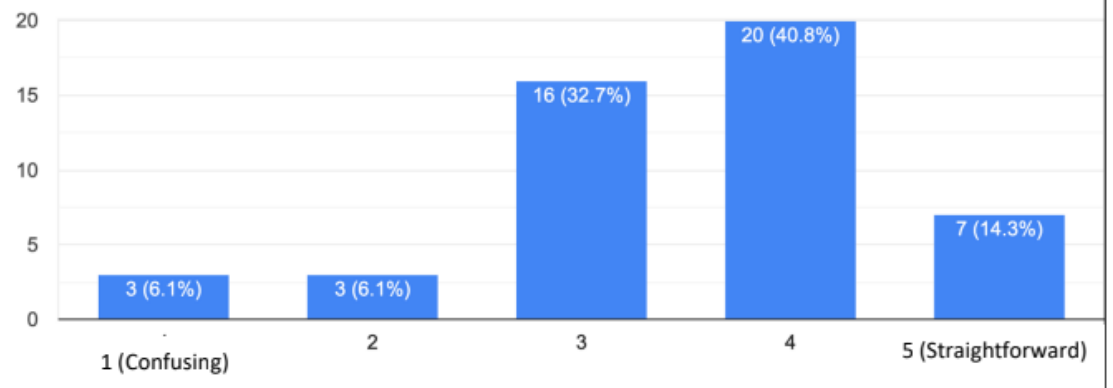

Is it complex or simple to understand?
30
20
10
0
24 (49%)
14 (28.6%)
6 (12.2%)
3 (6.1%)
2 (4.1%)
1 (Complex)
2
3
4
5 (Simple)

Interface 2

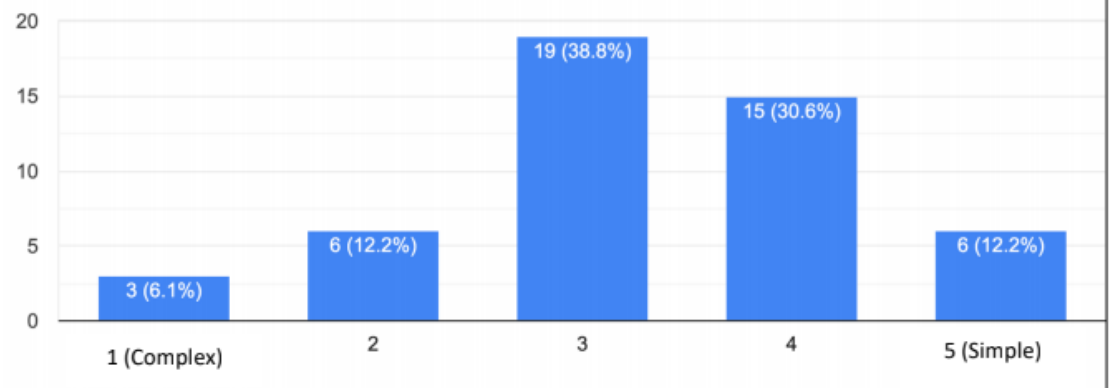

CHARLATAN
Version 2.0
OSC 1
VOLUME
MAN
ENV
LFO
MOD
SHAPE
OSC 2
VOLUME
RING
SYNC
0
OCTAVE
TUNE
PITCH
ENV
LFO
INV
TUNE
MOD
DETUNE
OSC1
OSC2
PWHEEL
NOISE
SHAPE
VOLUME
FILTER
CUTOFF
ENV
LFO
INV
Q
MOD
KBD
UNISON
1
VOICES
DETUNE
LFO
MWHL
DELAY
0°
Off
SYNC
RATE
GLOBAL
RTRG
LEGA
POLY
DCO
GLIDE
MASTER
AMP ENV
A
D
S
R
VEL
MOD ENV
A
D
S
R
VEL


How would you describe interface 2?
20
15
10
5
0
3 (6.1%)
2 (4.1%)
9 (18.4%)
15 (30.6%)
20 (40.8%)
1 (Threatening)
2
3
4
5 (Approachable)

How confusing or straightforward is it?

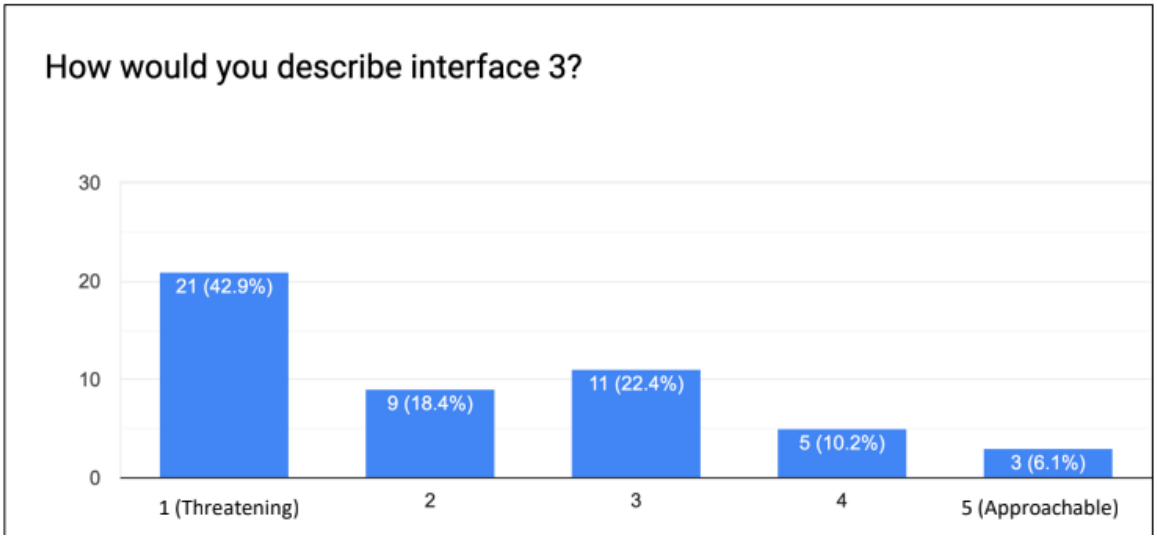


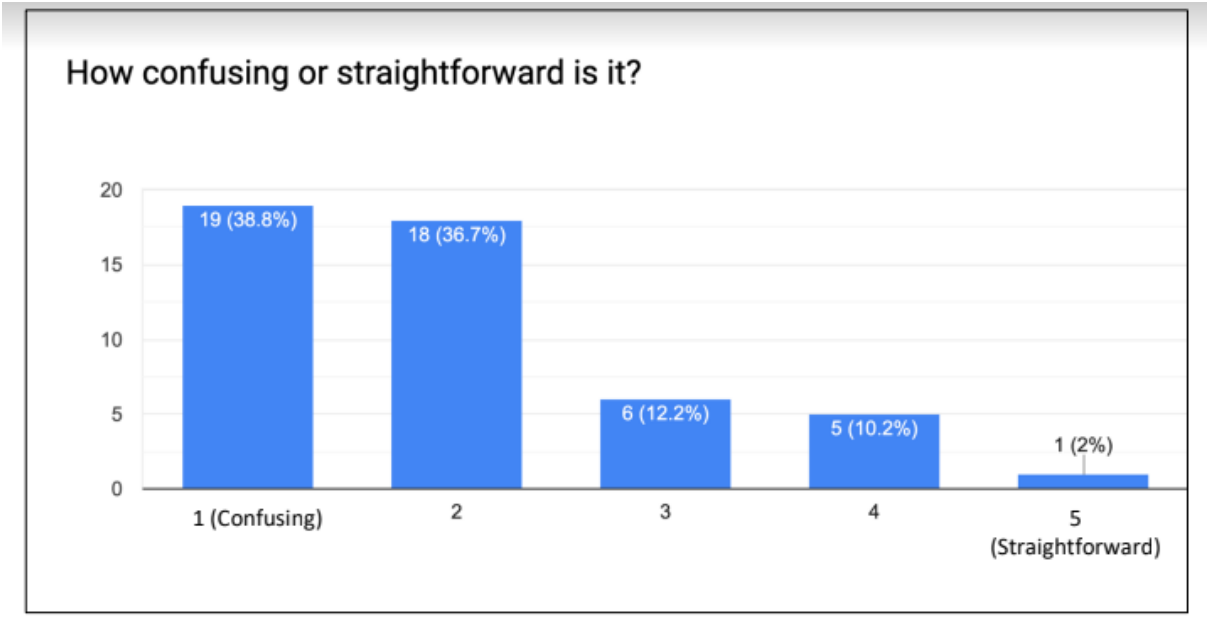
Is it complex or simple to understand?

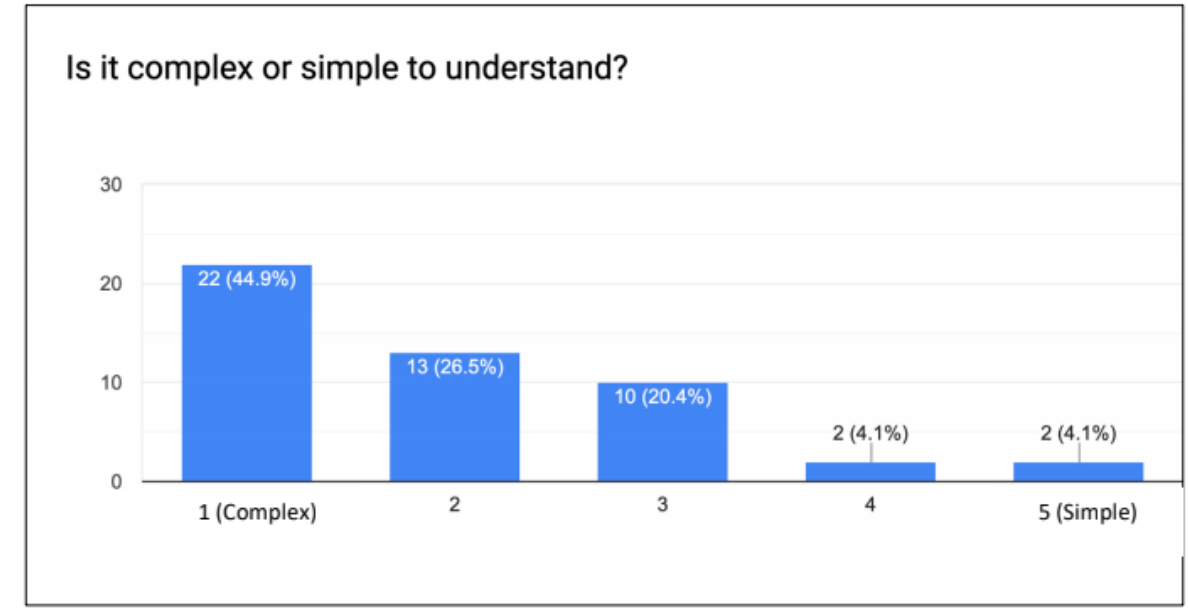


Interface 3


Scene
Split Key
A
B
Select
Mode
Poly
Patchbrowser
Category: Monosynth
Creator: Claes
Cell
Category
Patch
Store
FX Bypass / Character
Off
Send
Send+ Master
All
Warm
Neutral
Bright
Output
Master Volume
Oscillator
Bend Depth
Polymode
Down
Up
Osc Drift
Noise Color
Oscillator FM Routing
Filter Configuration
Depth
Feedback
Output
Volume
Pan
FX1 Send
FX2 Send
FX1 Return
FX2 Return
(Patch Wavetable)
Pitch
Shape
Skew V
Saturate
Formant
Skew H
Uni Spread
Uni Count
Scene
Pitch
Portamento
Filter 1
Filter 2
Cutoff
Resonance
F1
F2
Keytrack
Waveshaper
Filter EG
Amp EG
Gain Vel
A Insert 1
EQ
Band 1
L Gain
L Freq
L BW
Band 2
M Gain
M Freq
M BW
Band 3
H Gain
H Freq
H BW
Output
Gain
About
Velocity
Keytrack
Poly AT
Chan. AT
Pitchbend
Modwheel
Amp EG
LFO 1
LFO 2
LFO 3
LFO 4
LFO 5
LFO 6
Filter EG
SLFO 1
SLFO 2
SLFO 3
SLFO 4
SLFO 5
SLFO 6
Timbre
Rate
Phase / Shuffle
Magnitude
Deform
Freerun
Keytrigger
Random
Bipolar
Sine
Triangle
Square
Ramp
Noise
S&H
Envelope
Stepseq
LFO EG
D A H D S R


How would you describe interface 3?
30
20
10
0
21 (42.9%)
9 (18.4%)
11 (22.4%)
5 (10.2%)
3 (6.1%)
1 (Threatening)
2
3
4
5 (Approachable)





Survey Analysis

Interface 1

- 6% said they liked absolutely nothing about interface 1. However, 14% said they liked the sober/neutral color-scheme.
- 18% said they liked the many options available and 20% said they liked all the labels in the interface even though it looked confusing.
- On the other hand, 35% said they did not like how “crowded” “cluttered” and “crammed” it looked. 14% said they did not really understand what was going on causing stress.
- It is important to note that 51% said the interface looked threatening and only 2% thought it was straightforward.

Interface 2

- 39% of the answers said they liked how simple and easy it looked. Also, 20% said they liked how organized and less cluttered or “cleaned” it looked. However, 14% said they didn’t like the lack of options or that they felt it was missing functionalities.
- Important to note that 16% didn’t like the labels and abbreviations used in this interface
- 41% thought this interface was approachable and pretty straightforward.

Interface 3

- 23% said they liked the overall look and how “modern”,”cool”, ”detailed” and “complete”.
- 25% said they really liked the screen.
- Nevertheless, 39% said there was “a lot” or “too much” going on making it “confusing”.
- 15% said they didn’t like the sliders and lack of buttons/knobs.

Conclusions

Visual Interface Conclusion

From these results we have determined that our interface should be simple, and avoid visual noise and clutter. Parameters should have clear labelling, with no acronyms or otherwise shortened names. Our interface should combine sliders, knobs, and buttons in such a way that parameters are easy to distinguish from each other. We will endeavour to make our interface modern yet sleek.

User Experience Conclusion

From the data gathered, we have concluded that standard synthesizer products provide a negative user experience, if that user is a novice or complete newcomer. Our interface needs to be enjoyable to use, maximizing learning whilst minimizing frustration. We should aim for our interface to be perceived as friendly, and work very hard on good first impressions with the user.

Prototyping Conclusion

The results of the data conclude that a progressively built interface program will achieve the highest degree of success. A successful prototyped interface specified to the vectors provided by our data would be able to provide users with a learning experience curved more naturally to a beginner. We will need to iterate parameter placement, size, labeling, and visual feedback to achieve this.

Key requirements

After gathering and analyzing the data and pairing that data with our design concept, we have come up with a list of key requirements:

Functional requirements

- The program must implement a basic subtractive synthesizer structure (Single oscillator into single filter into single amplifier, one envelope for filter, one envelope for amplifier, and a low frequency oscillator that can be assigned to the amplifier or the filter)
- The program should introduce new elements in a gradual manner
- The program should be able to save and recall preset settings

Environment requirements

- The program should run as a Virtual Studio Technology Instrument plugin (VSTi), and as a standalone application for macOS and Windows platforms
- The program should function on a macOS or Windows 10 computer with minimum 4gb of RAM and an Intel Core 2 Duo processor, as this is approximately the minimum specifications for many digital audio workstations
- The program should be designed in such a way that it is effective with a mouse/cursor interface and a touchscreen interface

User characteristics

- Target users may be of diverse background
- As this is a software program for a specific, uncommon purpose (producing music on a computer) we can expect target users to have basic computer literacy
- As this program is targeted at novice users, we presuppose no knowledge of synthesizer beforehand, other than a general sense that they create musical sounds

Usability goals

- The program should be easy to learn
- The program's functions should be memorable
- The program should introduce transferable concepts that the user can apply to other synthesizers

Experience goals

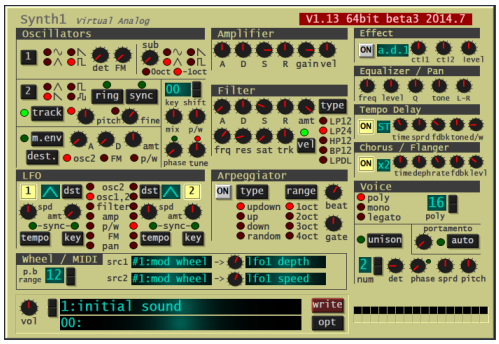
- The program should be satisfying and rewarding to use
- The program should be helpful
- The program should support creativity
- The program should be simple and nonthreatening
- The program should avoid being frustrating or patronizing
- The program should avoid being confusing

APPENDIX A

In-person Interview Data Gathering Sheet

General Questions

1. Do you have a musical background?
   Yes No
2. Do you have any experience with audio synthesizers?
   Yes No



Interface 1

Interface 2

Interface 3

Interface Specific Questions

3. What is your first impression of this interface?
   Interface 1:

   _____

   Interface 2:

   _____

   Interface 3:

   _____

4. If you wanted to change the master volume which knob would you use?
   Interface 1:

   _____

   Interface 2:

   _____

   Interface 3:

   _____

5. If you wanted to change the pitch which knob would you use?
   Interface 1:

   _____

   Interface 2:

   _____

   Interface 3:

   _____

6. If you wanted to change the filter which knob would you use?
   Interface 1:

   Interface 2:

   Interface 3:

   ---

7. If you could change some aspect of these interfaces, what would it be?
   Interface 1:

   Interface 2:

   Interface 3:

   ---

8. Do you have any feedback?

APPENDIX B

Survey Preparation Draft

What is your gender? M/F/X [radio button]

What is your age range? >16, 16-20, 21-26, 27-32,33-38, 39> M/F/X [radio button]

Do you have any musical background? Y/N [radio button]

How familiar are you with synthesizers? Not at all familiar -------Very familiar

Have you ever considered making music with synthesizers? Y/N

Interface Questions: (Per interface)

Threatening - - - - - Approachable
Confusing - - - - - Straightforward
Simple - - - - - Complex
Off-putting - - - - - Engaging

What did you like about the interface?

What didn't you like about the interface?

APPENDIX C

Survey results

To see the spreadsheet with our complete dataset, go to this link:
https://docs.google.com/spreadsheets/d/1szWsBIMOzv5n9k302xRCcyISql3W9EwMJ54H5pCDpjc/edit?usp=sharing

Raw data of survey for written parts:

What do you like about interface 1?

1. Nothing
2. The color palette
3. Music
4. I like the Retro style
5. tuns of options
6. Lots of options
7. All parts are named and what each button does
8. Design
9. Yo have all you need in simple way
10. The big labels above the buttons
11. arrangement of parts
12. it looks like R2-D2s pleasure center
13. Looks detailed and professional.
14. The colours
15. Literally nothing
16. Big meme
17. Yellow ish background
18. Looks like a challenge.
19. The buttons
20. Goes into every possible detail
21. Easy to understand labels
22. Looks neat
23. Most things are labeled
24. Looks like it has a lot of functionality
25. Looks like it would be fun to learn
26. Layout
27. Lots of words to describe what is going on
28. Grouped by usage
29. Gives u a lot of potions
30. Not much
31. Muted color scheme
32. the font is cute hehe
33. The turquoise stands out
34. Many options. Can do more with it.
35. Dial interface looks pretty straightforward, categories are well out together
36. The labels
37. Amount of options
38. How simple each aspect of the interface is to understand.

39. It’s straightforward for the most part.
40. I like the amount of available settings.
41. Has labels, but I don't know what they mean
42. Clearly labelled
43. All info immediately visible
44. Once I understood how it worked, I like that everything was on one screen
45. The wave shape icons
46. Peaceful colors
47. It uses the metaphor of knobs and displays which is convenient for professionals in the sound engineering field

What DON'T you like about interface 1?

1. Nothing
2. Modules are too closely spaced together
3. The font
4. color, position of he buttons etc
5. GUI
6. A bit complex
7. The colours
8. Looks are ugly
9. how messy and crowded it looks
10. colour, looks outdated
11. is SCARY
12. too crowded!
13. Everything else
14. Everything
15. Smol pp
16. The cluttered feeling
17. Have no idea what it is.
18. Don't really understand it
19. Too much stuff to consider
20. Very cluttered
21. I don’t understand it
22. It’s way too complex
23. Looks out dated and hard to use
24. Probably is super complex
25. N/A
26. Too many buttons and knobs
27. Colours scheme and visual appeal look off
28. Too much going on, not clear enough
29. Too much going on
30. Crowded
31. Congested
32. almost everything LOL. it seems way too cluttered and advanced? like the learning curve is steep
33. The puke colour
34. Not very linear. Very crammed together. Confusing to look at.
35. Color scheme isn't eye catching, looks more analog and dated

36. All the buttons
37. Messy interface
38. It has a retro feel to it which is appealing but not so at the same time.
39. Simply that I'm unfamiliar with it and that it looks old.
40. Far too many controls for a beginner
41. Confusing
42. Color scheme
43. Abbreviations
44. It has already consumed upwards of 20 hours of my life.
45. Too dense; confusing abbreviations
46. Too crowded
47. Everything
48. It relies on a conceptual model that is uninviting for people without a sound engineering background

What do you like about interface 2?

1. More space between buttons
2. Clearance
3. The red color
4. the look, color, buttons position, grouping, the space between the buttons
5. Simple
6. Not that many buttons make it look simple and less confusing
7. Colours
8. Filters
9. The space between the buttons make it seem more organized
10. Nothing
11. colour
12. its red
13. Sliders are better than knobs
14. Looks easy to use
15. It's more sexy
16. Bigger meme
17. The layout is much nicer and the overall colourway is much nicer
18. Looks challenging.
19. Easier to look at
20. It's straightforward where everything is.
21. Easy to understand
22. Looks organized
23. It appears to be simpler
24. Looks sleek and easy to use
25. Seems simple
26. Simplicity
27. Looks easier to understand
28. Looks simple and visually appealing
29. Its simple and clear
30. Better overlook
31. Less cluttered
32. Simple design

33. its a lot neater and eloquent in a way, like everything has its own space and isnt crowded.
34. Less buttons than 1
35. Functions are displayed in a very compartmentalized and spaced out fashion
36. Categories are way more simplistic, seems more understandable from someone with not much knowledge of synth boards
37. Less clutter
38. Simple use of real estate
39. It’s easy on the eyes and simple to read.
40. I like how modern and well categorized it is.
41. Less busy, but still pretty complicated looking
42. Cleaner, less stuff going on
43. Less is more
44. A little bit nicer design.
45. It's obvious how to touch different pieces but not so much what they do
46. Not a ton to dig through; very approachable
47. Conciseness
48. Something
49. The labels are clearer than the previous alternative

What DON'T you like about interface 2?

1. Nothing
2. Nothing
3. N/A
4. No visual aids
5. labels are confusing
6. -
7. I'm not a musician to say something bad about it
8. I like everything.
9. Does not has any effects
10. The abreviations
11. nothing
12. its not blue
13. Seems like it would require lots of plugins for full professional functionality
14. Too red
15. Smol pp but less smol
16. No idea what it is.
17. Not sure
18. Probably missing some features I'll need.
19. Confusing
20. It’s still fairly complex
21. Less features then other two
22. Might still be hard to learn
23. A lot of knobs
24. Seems a little small
25. N/a
26. Not a fan of knobs, prefer sliders

27. ..
28. everythings abbreviated so there could bw some confusion when learning with it.
29. Not as many options as the first
30. Seems a little uninspired and a little bland
31. Don’t know how to use it
32. Less options
33. Too many abbreviations. Can be difficult for someone with a lack of knowledge in jargon.
34. It seems to lack as many settings.
35. Uses three letter acronym labels, still not friendly to a beginner
36. Still complex
37. What the hecc arethose things i need more labelss
38. Still some abbreviations. Hard to tell at a glance what some knobs are set to.
39. Not always obvious how pieces are related (mods to lfos to oscs)
40. All controls look the same
41. Color
42. Something
43. too many options makes for a less approachable interface than I'd like

What do you like about interface 3?

1. Nothing
2. Everything is labelled well
3. Specification
4. The graphic area
5. the wave screens
6. Functionality
7. The visual representation of the waves or whatever that is
8. Colours.
9. Complete synth with FX filters and oscillators
10. The screens and all the options
11. its a very visual representation
12. it reminds me of my hamster Algernon
13. Waaaaaàay too busy
14. Looks cool
15. Organized
16. Big meme but smol
17. Colour scheme is inviting
18. Challenging.
19. The sliders
20. It's simpler than the first one, and has more variables to consider than the second one.
21. Very nice sleek look
22. Looks detailed
23. The adjustments make more sense visually
24. Looks advanced but not overwhelming
25. This looks like it has more advance settings
26. N/A
27. Digital

28. Lots of detail
29. Has more options, simple
30. Shows u a graph of the sound itself - easier to asses
31. Sliders rather than knobs, different colored sections
32. ..
33. yikes can i say none
34. Lots of options
35. Seems way more customizable and intricate than the other options available.
36. The slide buttons
37. Good use of screen space
38. Bars make it easy to understand how much difference there is between each aspect.
39. I like the balance between how streamlined it looks and the available settings.
40. More visuals
41. The color scheme
42. It looks more like a computer application. The least abbreviations of all.
43. Seeing the waveform
44. Sliders make it easy to get info at a glance; cool color scheme; nice visuals
45. Esthetic
46. Something
47. Nothing jumps out, it just seems messy and hard to decipher

What DON'T you like about interface 3?

1. Nothing
2. Complex
3. There is a LOT going on
4. The colors and too many bars
5. very few button, the color, crowded
6. -
7. Complexity
8. Too many things. Looks complex.
9. Looks
10. That there are only sliders
11. colour, arrangement of parts
12. it reminds me of my incubation chamber
13. WAAAAAAAY too busy
14. Looks a little complicated
15. To many buttons
16. Smollest pp
17. The cluttered feeling
18. No clue what it is.
19. Not sure what's going on
20. Still too much information interface 2 is the best option for beginners.
21. Nothing
22. It’s very confusing, a lot going on
23. It appears to be more complicated than the second
24. Lots of sliders
25. Seems like you would need computer skills to accomplish anything on this one

26. Too much going on
27. Hard to understand
28. Very busy
29. Way to many options
30. A bit cluttered
31. Sliders on sliders on sliders.
32. this looks way too much-- the sliders essentially ruin the feel and make everything seen a lot more compacted.
33. Very small bars and the abbreviated labels are intimidating to a beginner
34. Extremely daunting at first sight, hard to understand categories without looking heavily into them
35. Looks confusing
36. Some parts are harder to read
37. Too busy. Can’t really read anything.
38. The blue portion 2/3s down is hard to read
39. Some of the labels seem to be gone now, less indication what does what
40. What are theeese
41. To be honest I have no idea what I’m looking at with any of these interfaces.
42. I don't really get how to use the sliders as opposed to knobs.. I know it's the same but it looks weird with those ghost triangles beside them?
43. A little dense
44. Crowded
45. Something
46. Messy, hard to decipher, hard to read, too many options

APPENDIX D

Sample of Interview Transcripts

Interview 1:

Do you have a musical background: Yes
Do you have any experience with audio synthesizers: No

What is your first impression of this interface

1. Looks retro
2. Very clean/attractive
3. Very technical, complicated, maybe overly complex

If you wanted to change the master volume, which knob would you use?

1. Volume - bottom corner (Correct)
2. Don't know
3. Output > volume (Correct)

If you wanted to change the pitch, which knob would you use

1. Pitch - bottom right
2. Pitch > tune (Correct)
3. Pitch slider under oscillator section

If you wanted to change the filter, which knob would you use

1. A knob in the filter section
2. Filter > cutoff (correct)
3. Don't know

If you could change some aspect of these interfaces, what would it be

1. Make it less ugly
2. Needs better labeling
3. Too confusing

Do you have any feedback:

Second interface - favourite
Third one needs less confusing labeling system, and the sliders are not good

Interview 2:

Do you have a musical background: No
Do you have any experience with audio synthesizers: No

What is your first impression of this interface

4. Confusing
5. Looks good
6. Looks like an aeroplane console

If you wanted to change the master volume, which knob would you use?

4. Don’t know
5. Don’t know
6. Output > volume (Correct)

If you wanted to change the pitch, which knob would you use

4. Don’t know
5. Pitch > tune (Correct)
6. Don’t know

If you wanted to change the filter, which knob would you use

4. Filter > Amt (unsure)
5. Something in filter section
6. Don’t know

If you could change some aspect of these interfaces, what would it be

4. Less ugly
5. Remove abbreviations
6. Less ugly, less confusing

Do you have any feedback:

No

Interview 3:

Do you have a musical background: Yes
Do you have any experience with audio synthesizers: Yes

What is your first impression of this interface

7. Looks like an old 90s computer program
8. Simple - likes the colour
9. Confusing - dislikes horizontal sliders

If you wanted to change the master volume, which knob would you use?

7. Vol - bottom left (Correct)
8. Global > master (Correct)
9. Output > master volume (Correct)

If you wanted to change the pitch, which knob would you use

7. Tune - bottom right corner of Oscillators section (Correct)
8. Pitch > tune (Correct)
9. Pitch above Portamento slider (Correct)

If you wanted to change the filter, which knob would you use

7. Filter > Frq (Correct)
8. Filter > Cutoff (Correct)
9. Cutoff (Correct)

If you could change some aspect of these interfaces, what would it be

7. Likes it - no change
8. Likes it - no change
9. Complete redesign - difficult to find essential features

Do you have any feedback:

Third interface - hard to distinguish controls
Second interface is the best

Interview 4:

Do you have a musical background: Yes
Do you have any experience with audio synthesizers: No

What is your first impression of this interface

10. Ugly
11. Pretty, but confusing
12. Complicated and threatening

If you wanted to change the master volume, which knob would you use?

10. Don't know
11. Don't know
12. Output > volume (Correct)

If you wanted to change the pitch, which knob would you use

10. Don't know
11. Pitch > tune (Correct)
12. Don't know

If you wanted to change the filter, which knob would you use

10. Something in filter section
11. Something in filter section
12. Don't know

If you could change some aspect of these interfaces, what would it be

10. Doesn't really know what the knobs mean - needs better labeling
11. Clearer labeling
12. Dislikes interface on principle

Do you have any feedback:

No

Interview 5:

Do you have a musical background: No
Do you have any experience with audio synthesizers: No

What is your first impression of this interface

13. Complicated
14. Simplified
15. Very Complicated

If you wanted to change the master volume, which knob would you use?

13. Far Bottom left knob
14. Master knob under [Global]
15. Master Volume slider under [Output] (far top right)

If you wanted to change anything about the knob what would it be? (Size, position, colour, etc)

1. Make the knob bigger
2. Change the knob's colour
3. Change the slider's colour

If you wanted to change the pitch, which knob would you use

13. Pitch knob under [Oscillators]
14. PWheel knob under [Pitch]
15. Pitch slider under [Oscillators]

If you wanted to change anything about the knob what would it be? (Size, position, colour, etc)

1. Change knob colour
2. Change knob label to "Master Pitch"
3. Distinguish between Pitch under [Oscillators] and Pitch under [Scene]

If you wanted to change the filter, which knob would you use

13. Amt knob under [Filter]
14. Cutoff knob under [Filter]
15. Cutoff sliders under [Filter1] and [Filter2] as well as the F1 - F2 slider

If you wanted to change anything about the knob what would it be? (Size, position, colour, etc)

1. Change Amt label to Master
2. Change Cutoff label to Master
3. Simplify Filter control selection and distinguish labels

If you could change some aspect of these interfaces, what would it be

13. Increase the knob/ slider size of key controls and apply a distinguishing colour
14. Change control labels to be more simplified and specific

15. Simplify overall synthesizer display by removing unnecessary/ redundant controls or reorganize the overall structure of the synthesizer by modifying the appearance of the more fundamental controls to have more prominence

Do you have any feedback:

No Feedback