

# AI-Capella

AI-Capella gives a-capella singers real-time, personalized vocal feedback that help improve their skills faster than traditional instruction. Unlike other singing apps we listen, analyze, and coach singers live so they can build the confidence, consistency, and connection their groups every day.

Team Members:

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### 3 Distinct Realizations

#### ① Live feedback feature realization

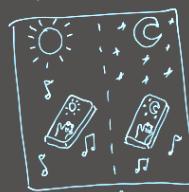
MOBILE PHONE



- Wave graph tracks vocal exercises. Live AI voice persona gives emotional response.



- live progress meter: treble clef fills up as user sings.



- Genie live feedback background changes dependent on: time of day, weather, & location.



- Swipe up to show my lyrics. Swipe down to hide lyrics

#### ② Haptic feedback for voice training

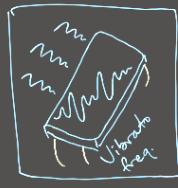
WATCH



- Phone vibrates when you are singing on pitch!



- Watch gives off beat-signals when to breathe, how long to hold breath and song tempo.



- Phone emits different vibration frequencies dependent on vibration levels.



- Watch begins to vibrate if it senses you are straining your voice.

#### ③ App/feedback personalization

MOBILE PHONE



- Adjust the personality of your AI-genie based on your mood.



- AI-genie adjusts instruction based on your needs.

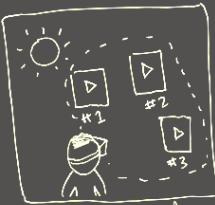


- Tailored progress reports and trajectory.

#### ④ VR/AR Realization



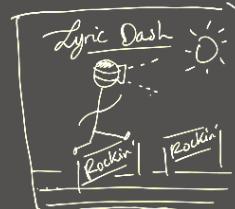
- Genie follows user around as user practices.



- Walk around and physically interact with songs during selection.



- Ride the music coaster.
  - Singing with more quality and confidence makes the coaster go faster!



- Hurdle over lyrics to memorize them actively!

**SIMPLE TASK**

(1) Choose a song

WELCOME TO AI-CAPPELLA

START

Your Home

CHOOSE YOUR SONG PROGRESS

CURRENT SONG: \_\_\_\_\_

BEGIN LIVE SESSION

SONG #1 SONG #2 SONG #3

Press here  
of the play  
buttons to  
select a song.  
~ swipe to filter  
through songs

SWIPE  
Use finger to  
swipe

DAILY | WEEKLY

NOTES:

AFTER FIRST LIVE SESSION

Live! SING!

Lyrics

TIME: 0.0

BEFORE FIRST LIVE SESSION

DAILY | WEEKLY

NOTES:

Not Enough Data... Keep on Practicing!

STARTING IN...

3...  
2...  
1...  
BREATHE!

Live!

AMAZING!  
But you're flat on "me"

Lyrics

TIME: 52.7

Great session!

FINISH!

Go to Progress

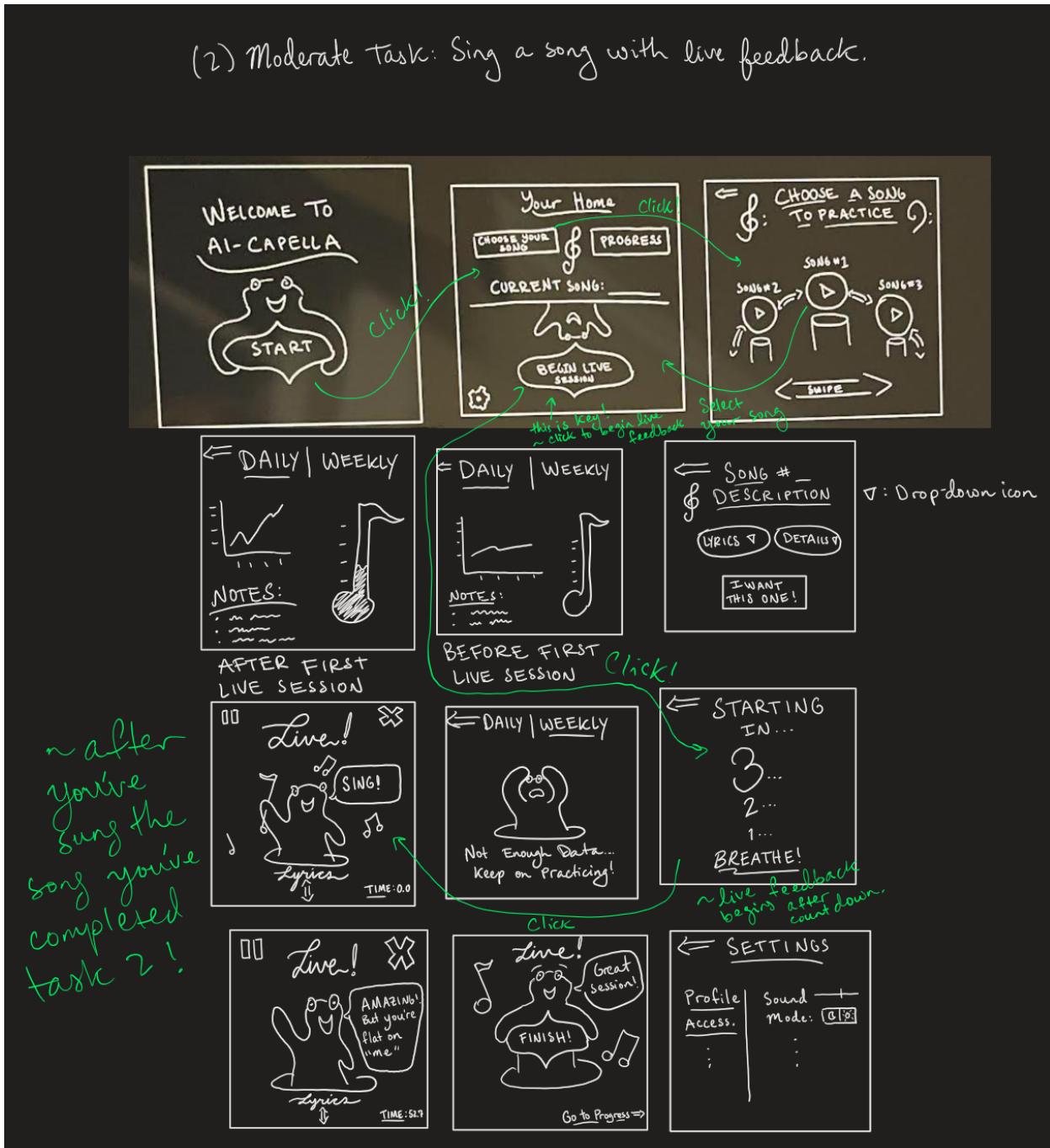
SETTINGS

Profile Access.

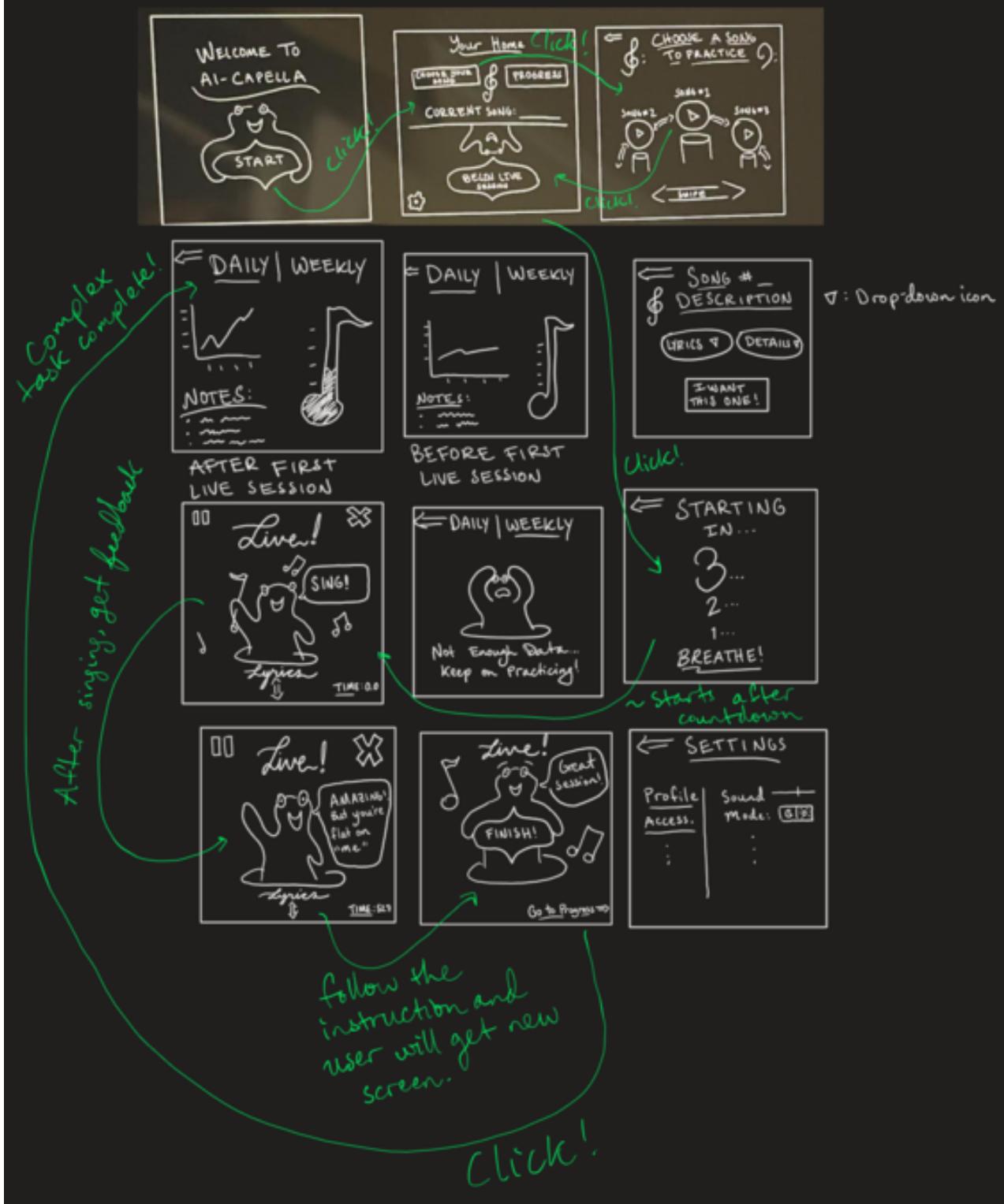
Sound Mode: (310)

△: Drop-down icon

(2) Moderate Task: Sing a song with live feedback.



### (3) Complex Task: Check updated progress

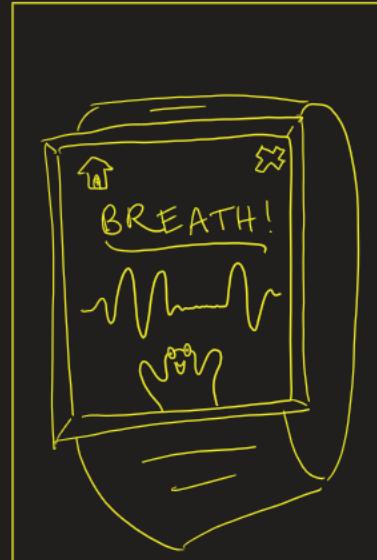


## SCREENS FOR HAPTIC-WATCH REALIZATION

~ Buzzes to the beat  
of your song.



~ Personalized tempo.



~ Personalized breathing guidance



~ Pi-Chart Menu selection  
for small interface.

# Opening screen

AI-CAPELLA! //



go to  
# 8

HOME

CHOOSE SONG

PROGRESS

DAILY DRILLS

not until  
1st practice  
is done, then  
#18

can't  
until  
generated

↳ go to #9

(Once

done  
go to  
# 17)

CURRENT SONG: \_\_\_\_\_

BEGIN LIVE FEEDBACK

button

+ to start

↓  
won't  
do until  
song  
chosen

I  
need to  
choose  
a song  
first

# ← SONG SELECTION

↳ #8

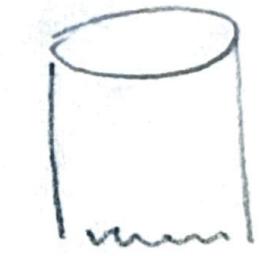
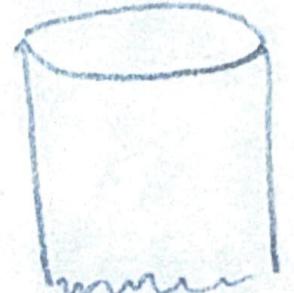
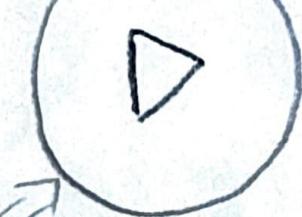
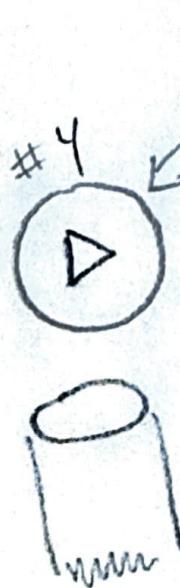
9:



SONG #1

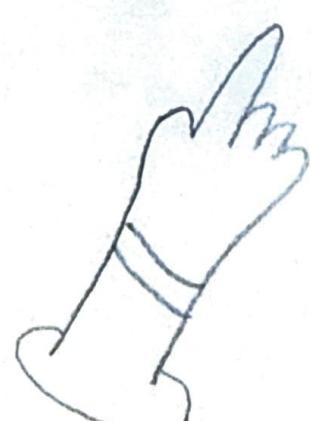
↗ 90 + 0  
# 10

SONG #2



#4

SWIPE!



Swipe to  
choose  
then Click

← SONG # 1

↙ back to ~~#9~~ DESCRIPTION



## LYRICS ▾

WE WERE BOTH  
YOUNG,  
WHEN I FIRST  
SAW YOU  
I CLOSED MY  
EYES AND  
MY FLASHBACK  
STARS WERE  
STANDING THERE

## DETAILS ▾

by Maria Cohen  
Ptx Chorus Cut

Level: Intermediate  
Sp/T/B: 1.1.1/n/pd

Tempo Map:

fast fast fast fast fast

Range Fit: "Good fit"



↳ go to  
~~#~~ 11

HOME

not until  
1st practice  
is done, then  
# 18

CHOOSE SONG

PROGRESS

DAILY DRILLS

can't  
until  
generated

↳ go to # 9

Conce

done  
go to  
# 17)

CURRENT SONG:

HALLELUJAH

BEGIN LIVE FEEDBACK

press and  
go to  
# 12

00

↳  
90 fo #  
20

# Live!

X

↳  
90 to  
# 11



A LITTLE  
FLAT ON  
THE "YOU".  
LET'S TRY  
THIS LINE  
AGAIN!

Once done  
with first  
time 90 to  
# 13, if  
not first  
time, then  
90 to  
# 14

## Lyrics

HALLELUYAH, YOU ARE  
THE ANGEL IN THE

TIME: 3:10



↑

go to

# 11

Live!



TIME: : 16 min

go to  
→ # 15

REVIEW  
FEEDBACK

before generating  
drills



↓  
so to  
# 11



after drills are generated

→ go to #18

**VIEW  
PROGRESS**

**GO TO  
DRILLS**

↳ go to #17

# SESSION FEEDBACK

X

↑

90+0

# 11

## Summary

Overall Score: 9/10

Pitch Accuracy:  $\pm 15\text{¢}$

Timing:  $\pm 2\text{ms}$

Diction: 6 syllables flagged.

### Insights

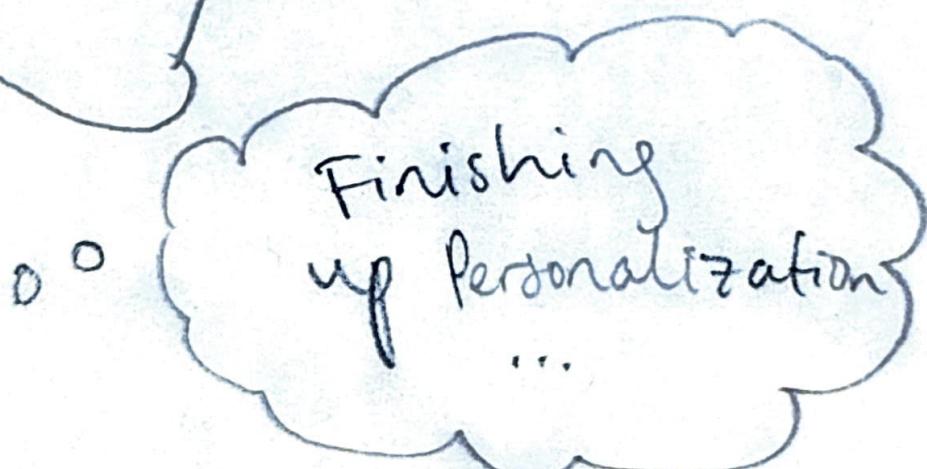
- late on beat 3, anticipate slightly
- Overpowering blend  $\rightarrow$  soften sustain notes
- Biggest gain at bar 9

GENERATE  
DAILY DRILLS

↳ goto  
# 16

# Generating Daily Drills...

(supposed to  
be  
animated)



button  
↓ This  
was an  
issue

GO TO DRILLS

↳ GO TO #17

# ← ↳ go to #11 Daily Drills

1 Diction mistakes  
from Hallelujah  
(6 min practice)

TO LIVE  
FEEDBACK

2 General vocal pitch  
training  
(8 mins)

TO LIVE  
FEEDBACK

3 Working - - - - -  
timing - hallelujah  
(12 mins)

TO LIVE  
FEEDBACK



go to  
12

~~DAILY~~

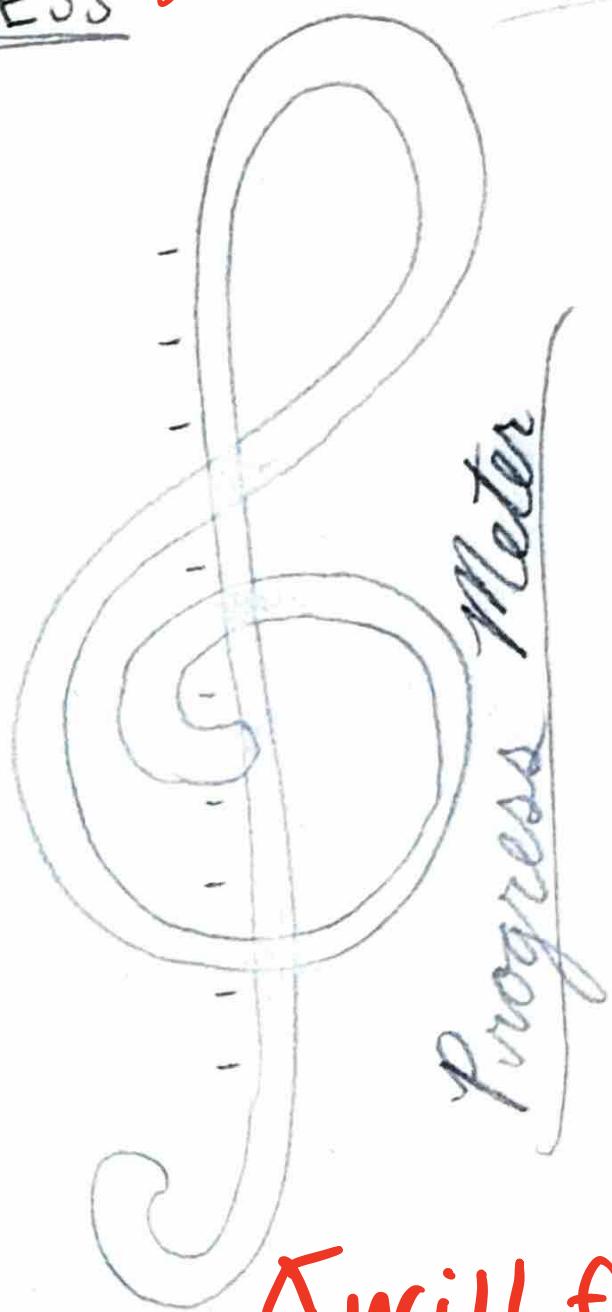
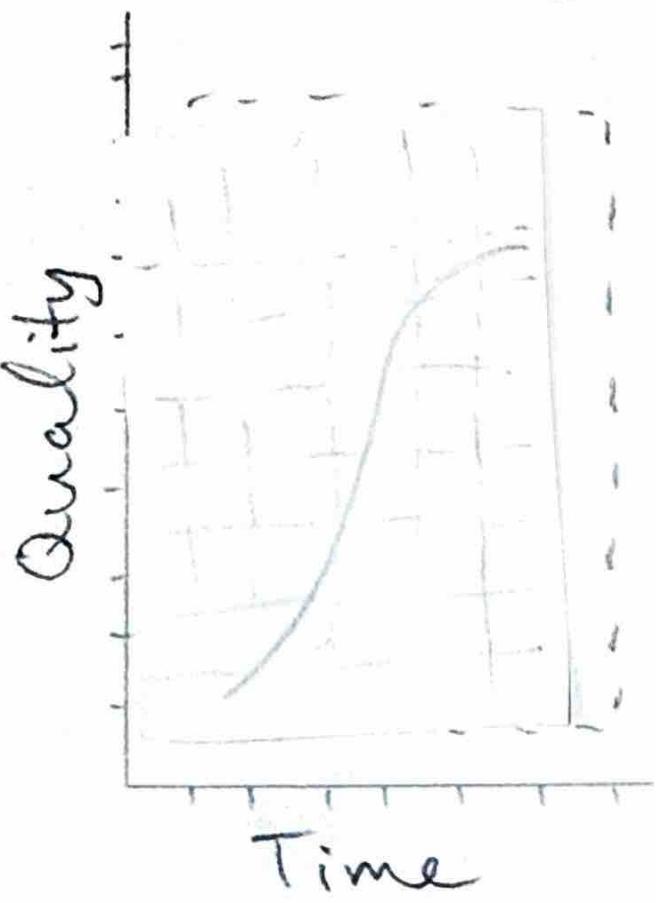
WEEKLY



go to #<sup>11</sup> PROGRESS

↙ go to 19

5



□ SUMMARY

- Overall: 82/100  
(+5 from last week)
- ' Streak: 87 in a row
- Pitch - 75%.
- Tone Quality - 9/10
- Breath control - 68%
- Consistency - 86%

K will fill up



← DAILY | WEEKLY

↙ go to

# //



Not Enough Data...

Keep On Practicing!



↳ #12



↙ #11

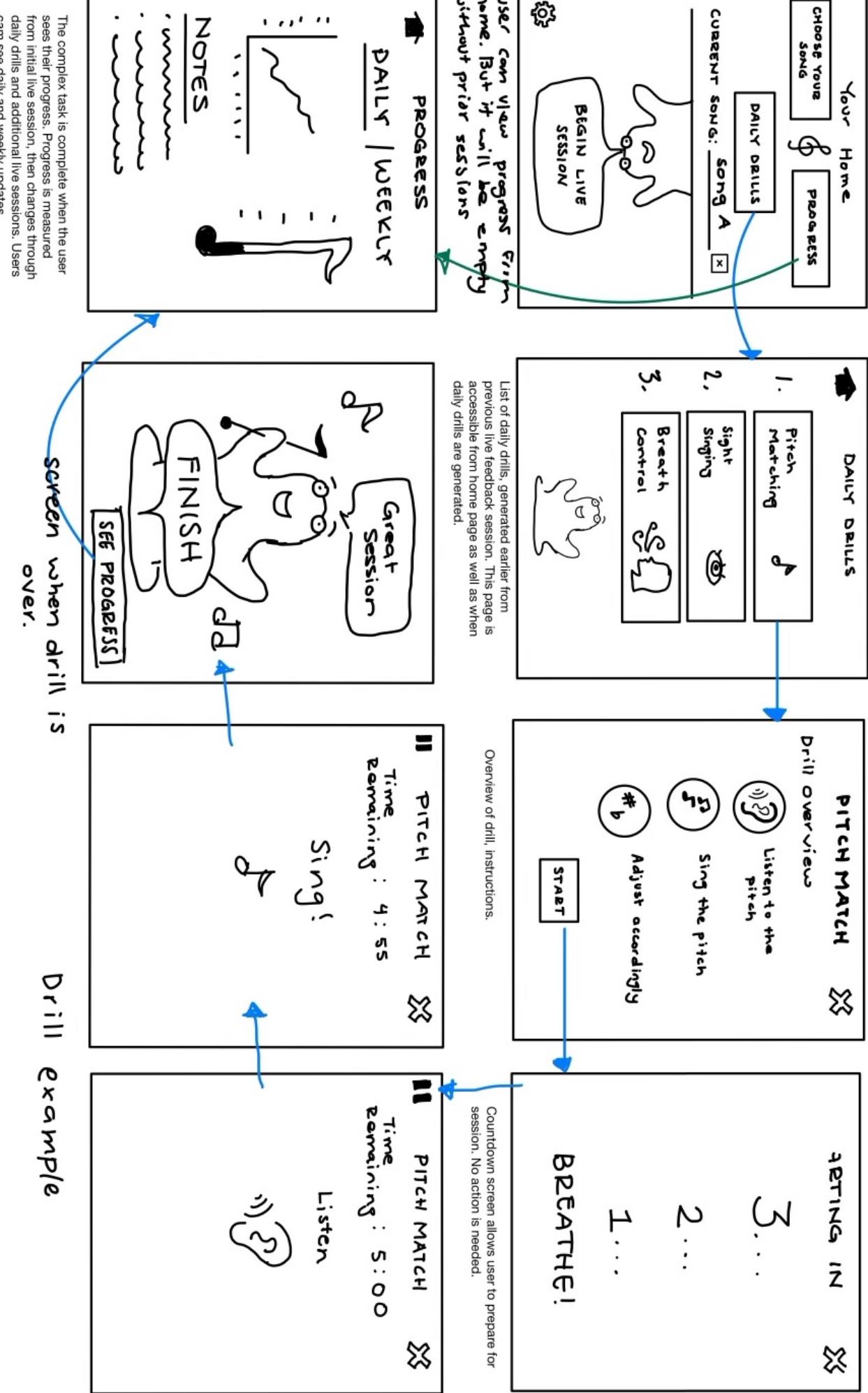


Lyrics

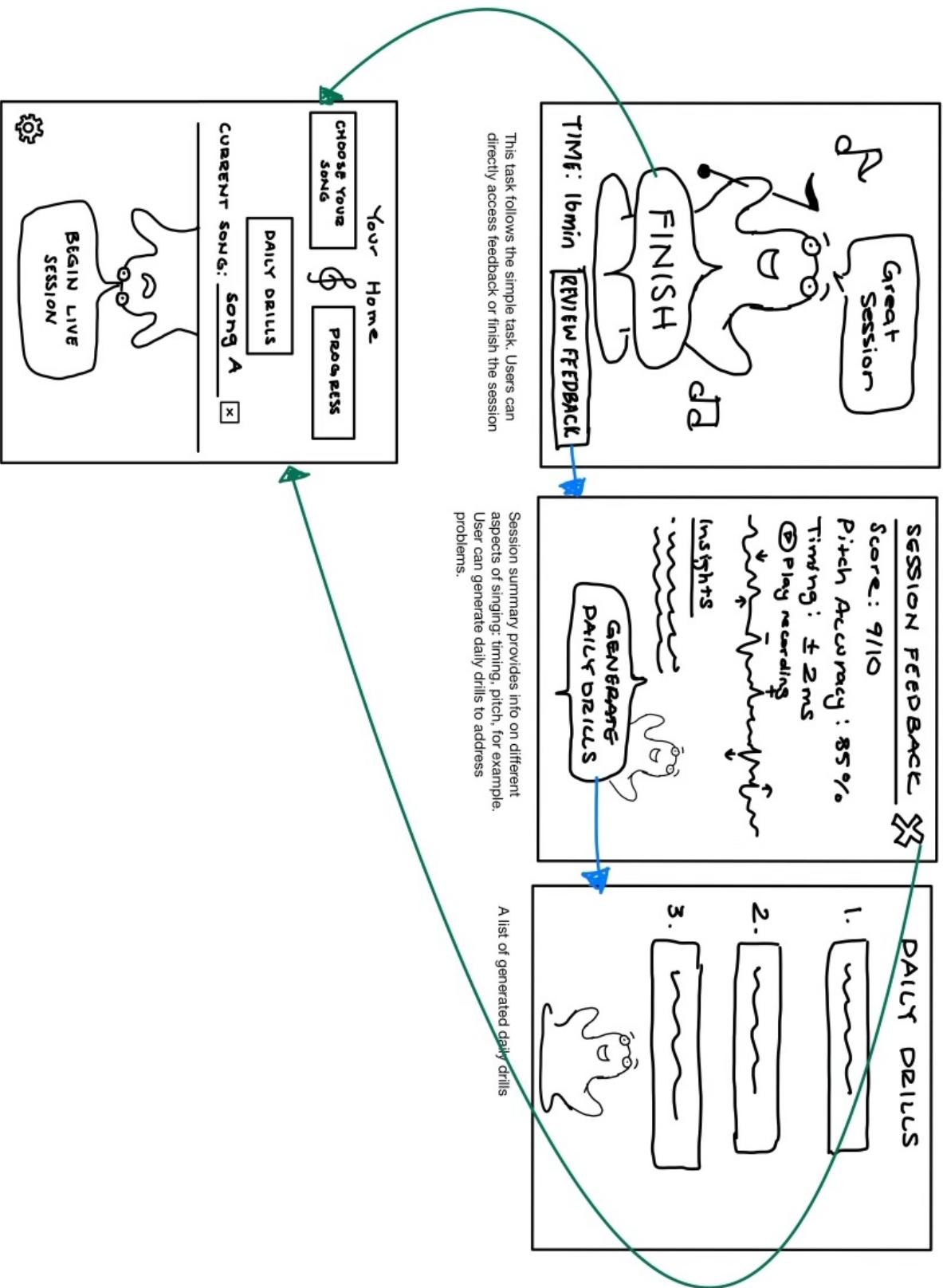


TIME ::::

# COMPLEX TASK: PRACTICE DAILY DRILLS & SEE PROGRESS UPDATE



Moderate Task: Review Feedback & Generate Daily Drills



## SIMPLE TASK: SELECT A SONG & RECEIVE LIVE FEEDBACK

