Proglets: An iOS app for collaborative music

INTRODUCTION

Network Music is an important field in the world of Music Technology, especially as our world becomes increasingly connected. The paradigm of Pervasive/Ubiquitous Computing has brought about revolutionary changes in traditional devices. Starting from phones becoming smart-phones to smart-watches controlling smart-homes has woven the fabric of Internet and connectivity all around. Interesting innovations in Music Technology have been a result of bending rules in particular technological avenue/s with respect to traditional practices or instrument/device usage to suit musical ideas. Being able to use handheld devices as mere musical instruments in a socially connected environment was the primary goal of this application. Furthermore using the raw sounds of respective environments straight into the app and using them with musically tailored processing, ready to be shared, is another important motivation. This project has been completed as a part of requirement for the Master's program at the Georgia Tech Center for Music Technology.

INSPIRATION

The inspiration for this piece of software lies in many areas and multiples sources. The iPhone and similar such devices have permeated into a large part of society

today. Similarly, popular iPhone apps have become part of users' lives. For instance, Instagram (an app for photography) has inspired users to capture interesting pictures coupled with simple effects and thus has motivated them to look closely around them, and possibly, be more aware of visual aesthetics. Similarly, there could be an app that allows users to take note of the huge variety of sound/timbres we come across in our everyday lives and gives them enough reason or creative opportunity to share it with their friends. This would lead to a mutual sharing of interest in sonic elements like class of timbres, types of sounds or sources etc. making a language out of raw sounds and medium of conversing online with a whole new semantics.

CONCEPT

The concept behind Proglets is paying heed to the following two quotes

"The whole is greater than the sum of its parts."

- Kurt Koffka

"The whole is other than the sum of its parts."

- Gestalt Theory

The basic principle of simple things aggregating up to create compound and eventually complex entities is the backbone of this idea. The whole formed from simple parts turns out to have a bigger meaning than the expected sum all those simpler parts, and moreover it comes about as a completely different organism with traits never imagined earlier.

MOTIVATION

Based on the above-mentioned philosophy, this iOS app deals with loops. It is basically a set of posts that users share online with friends in their network. Each post is a set of 4 different audio tracks looping at their respective lengths. Each track is an audio recording from the microphone or a loaded sample. Each of these tracks has their own identities sustained, even though they are part of and posted as a single entity. The interaction apart from sharing posts among friend circles is the option to “suggest edits” and “borrow” from other posts. This creates a web of interactions among the user base to revisit each other’s posts and create an everlasting composition from each post’s evolution over time.

To build a system that allows collaborative musical interactions amongst friends by sharing, borrowing, contributing sounds that give rise to interesting ways of real-time composing and performing.

ELEMENTS OF DESIGN

- Accessibility: Mobile phone app
- Musicality: Polyrhythm, Polyphony
- Interface: Multi-track, Mini-DAW
- Networking: Edit each other's posts via Web

MUSICALITY

The musicality of the output from the posts relies on the fact that it's a combination of multiple sound files each having their own identity in terms of the following parameters - pitch, rhythm, timbre, loudness, melody, harmony, attack, decay, sustain and release. Thus a combination of 4 multiple parameters creates interesting polyphony and polyrhythm. Due to the fact that it has all 4 tracks looping, the macro structure is essentially periodic and has an essence of overall rhythm to every post. This happens via the lowest common multiple principle as explained below

$$\mathrm{LCM}(2, 3, 4) = 12$$

$$\mathrm{LCM}(2, 3, 4.5) = 18$$

$$\mathrm{LCM}(2.5, 3, 4.5) = 45$$

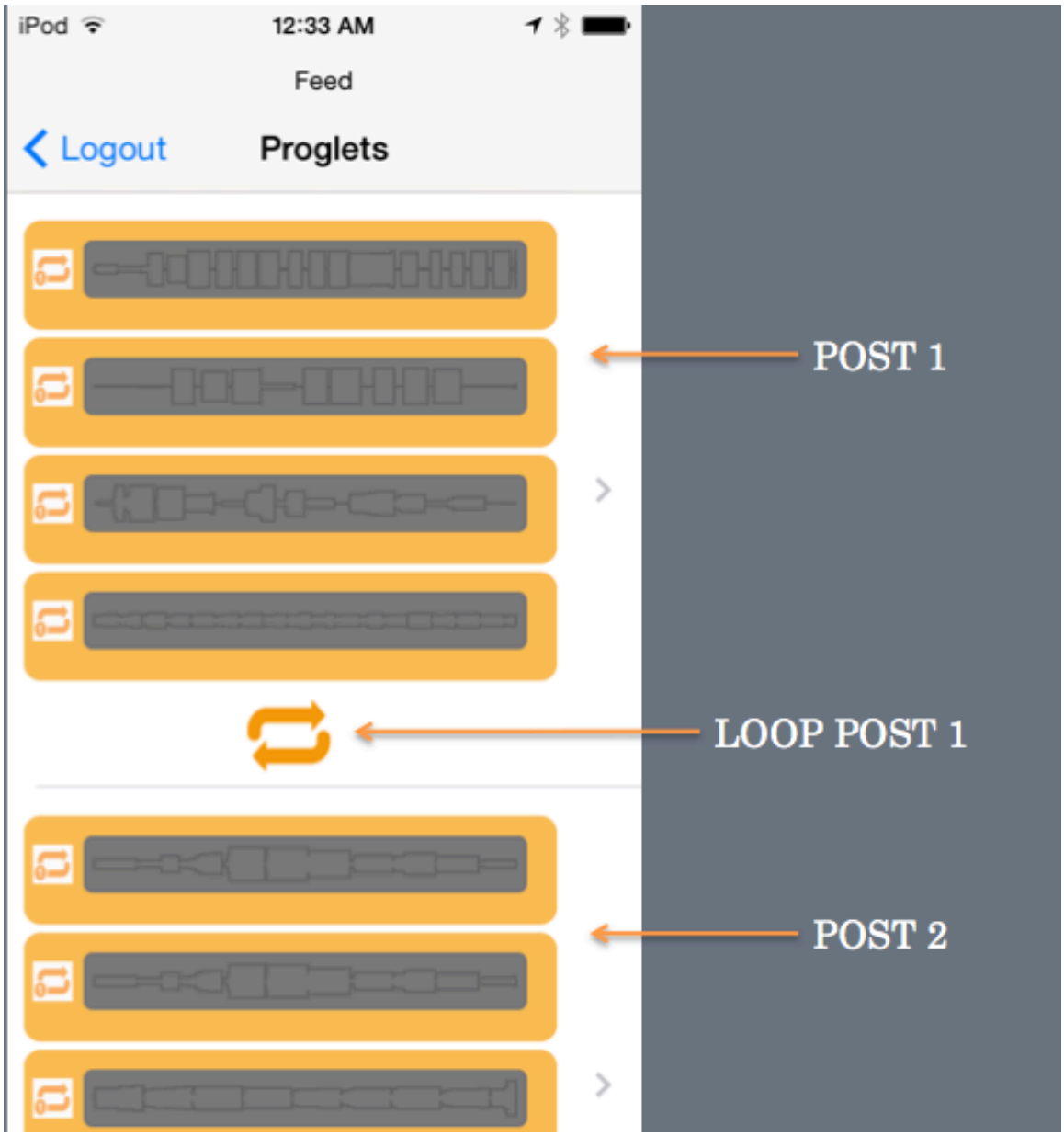
IMPLEMENTATION

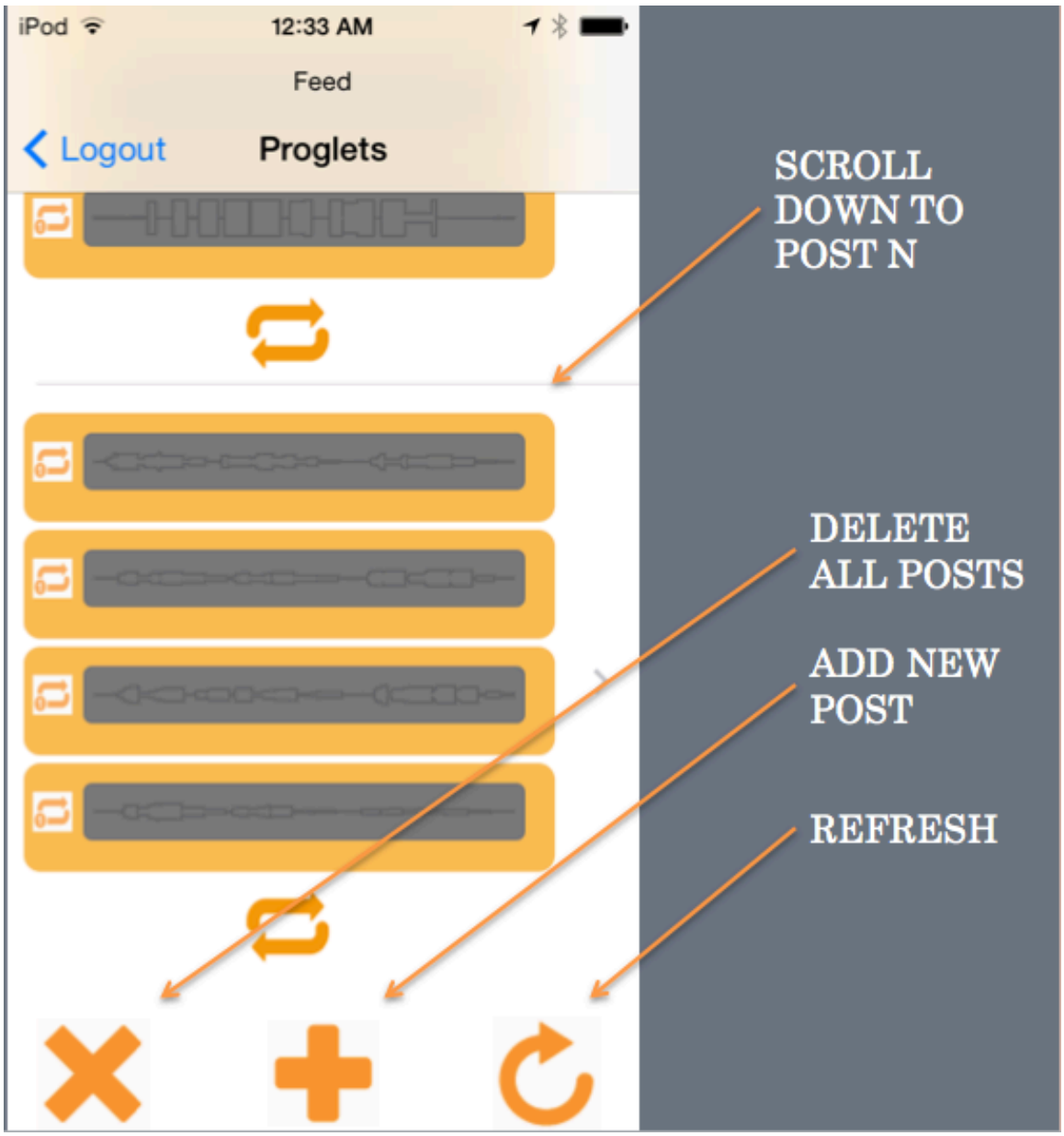
The app is essentially built up of the following two core libraries that provide functionalities for the audio handling and file-transfer over the web.

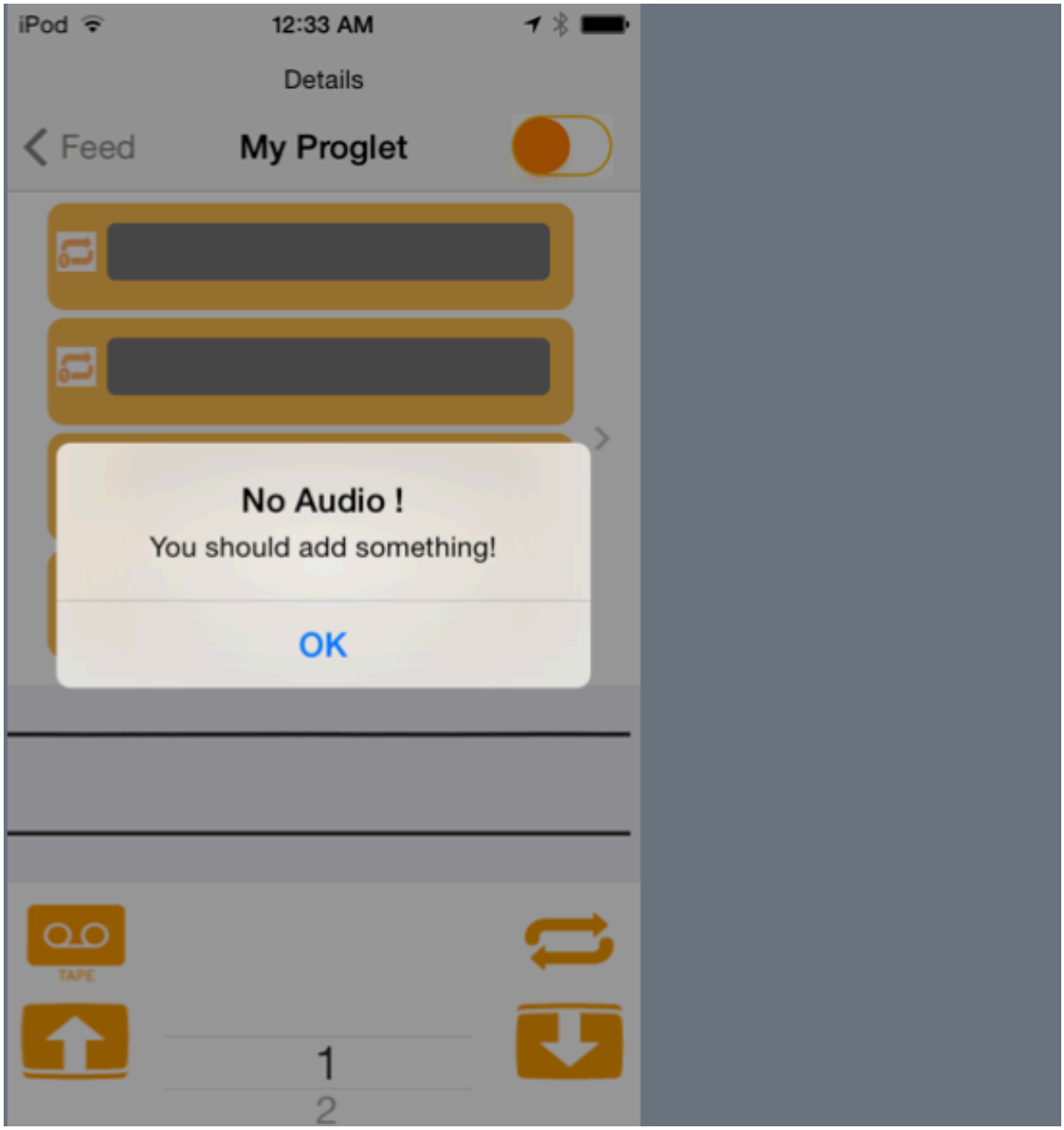
WORK FLOW

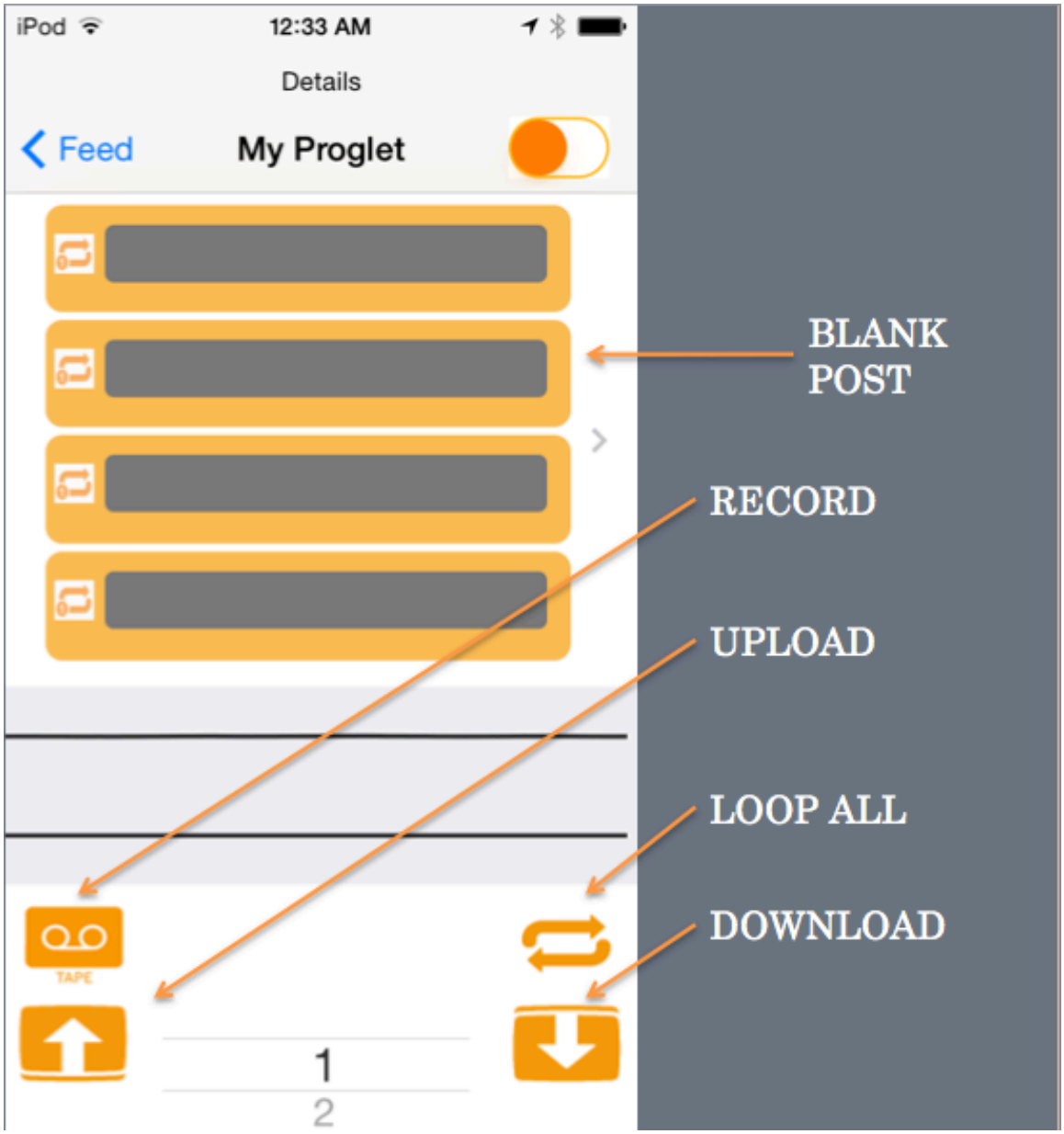
The following screenshots highlight the various use cases in the app and a basic low for the usage.


iPod
12:32 AM
Log in
Welcome
Username
imonymous
Password
*****
LOG IN
Proglets


iPod
12:33 AM
Feed
Logout
Proglets
POST 1
LOOP POST 1
POST 2

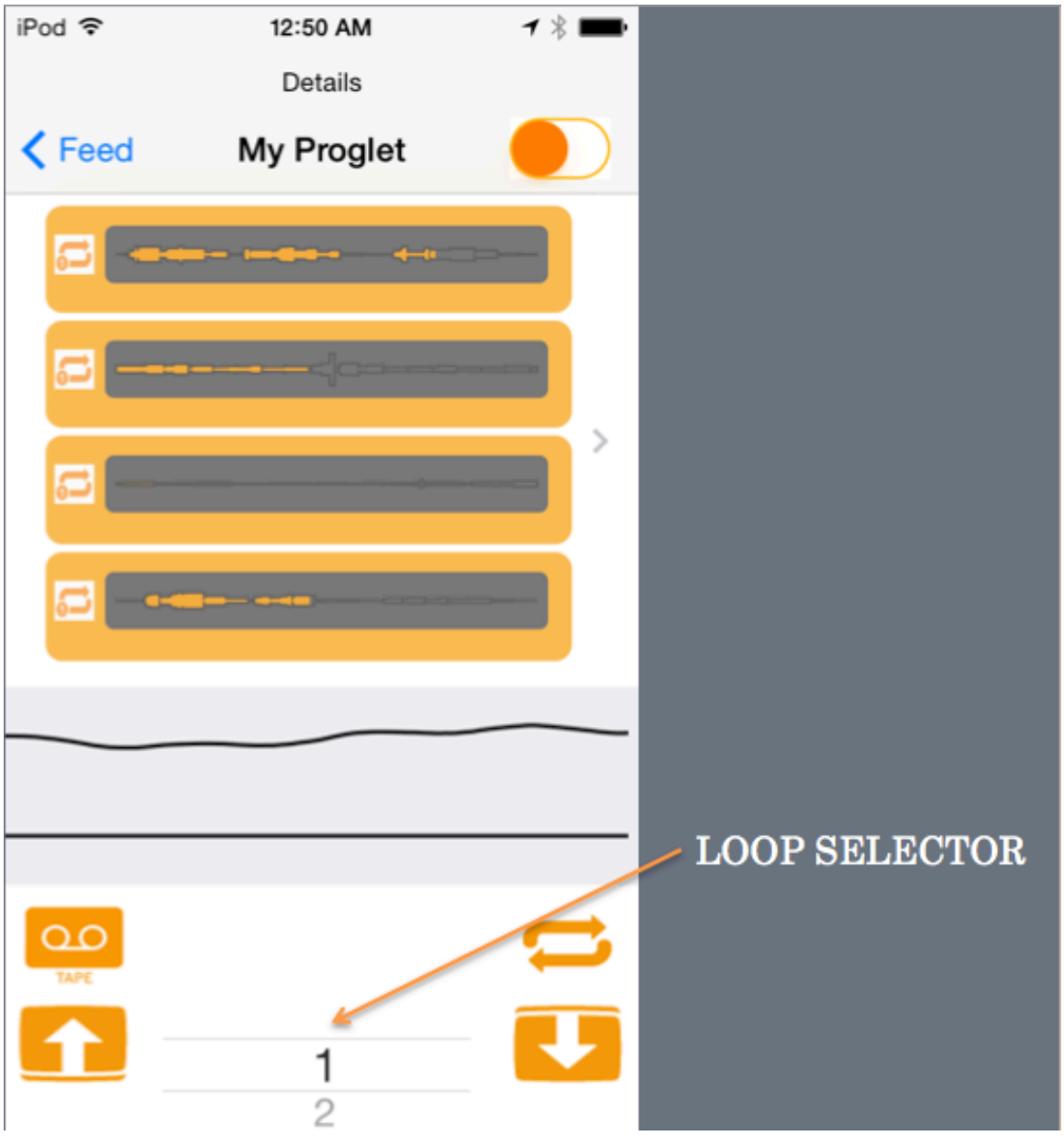

iPod
12:33 AM
Feed
Logout
Proglets
SCROLL DOWN TO POST N
DELETE ALL POSTS
ADD NEW POST
REFRESH

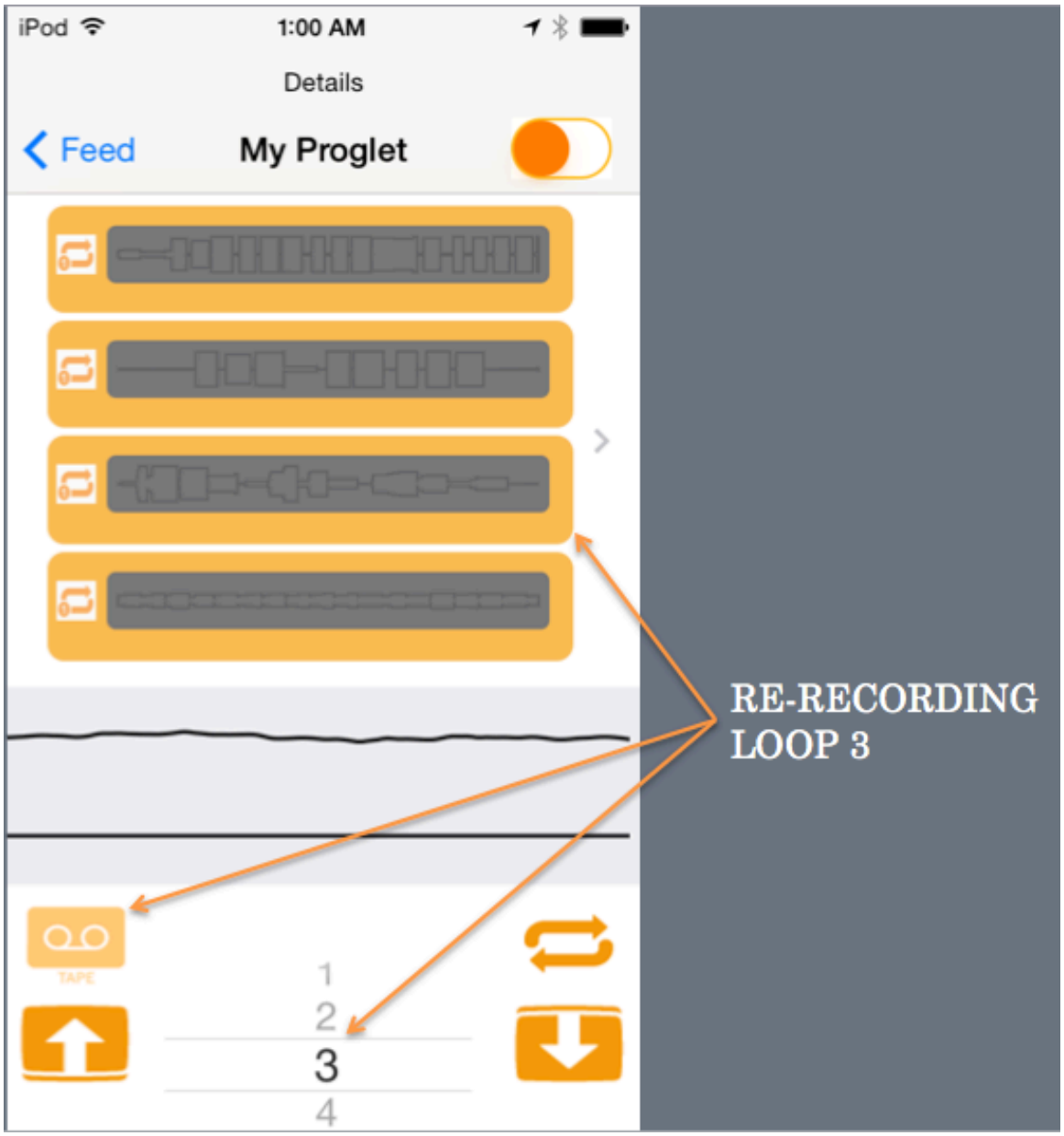

iPod
12:33 AM
Details
Feed
My Proglet
No Audio !
You should add something!
OK
TAPE
1
2

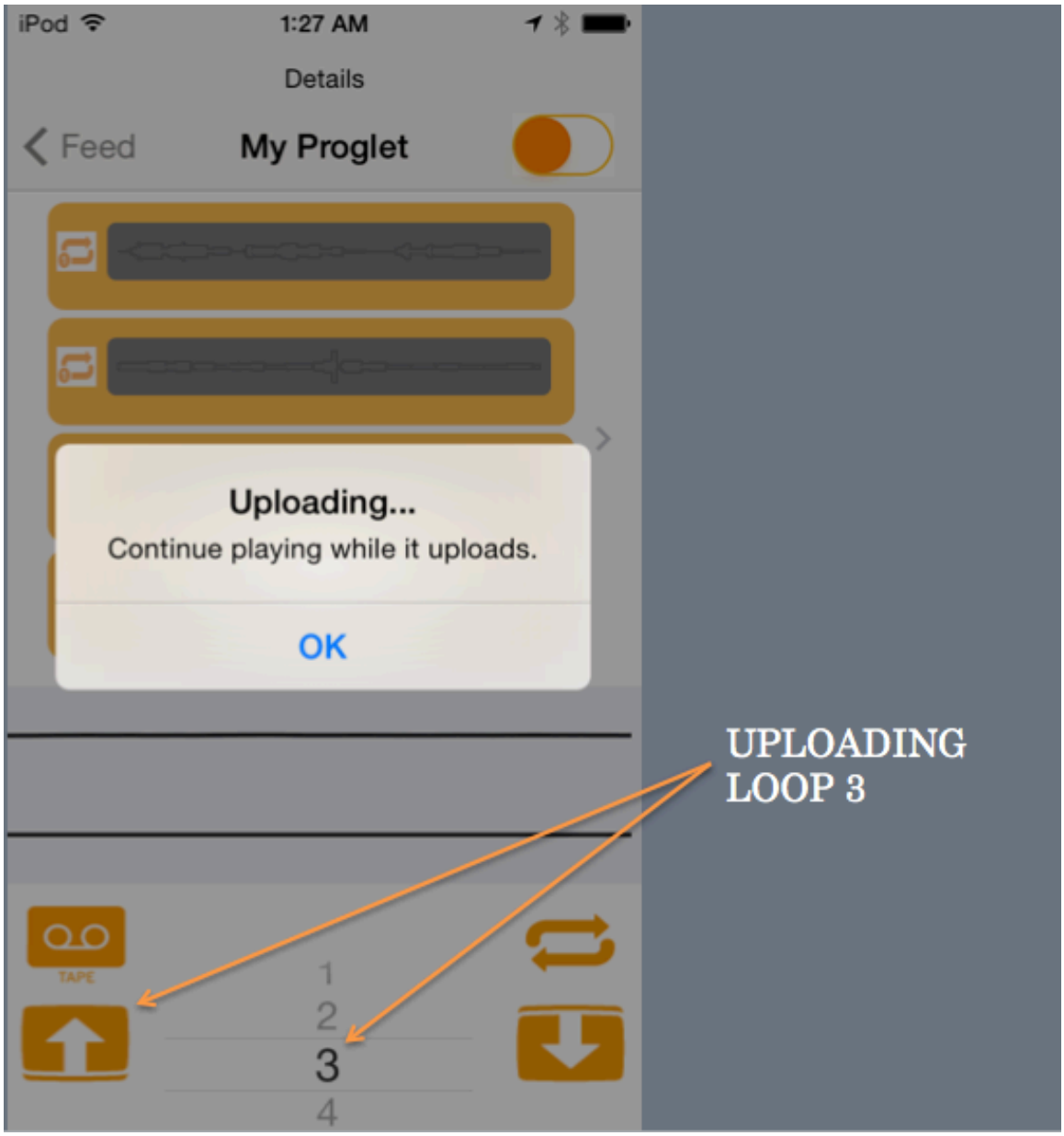

iPod
12:33 AM
Details
Feed
My Proglet
BLANK POST
RECORD
UPLOAD
LOOP ALL
DOWNLOAD
TAPE
1
2


iPod
12:48 AM
Details
Feed
My Proglet
I/P
OSCILLOSCOPE
O/P
OSCILLOSCOPE
TAPE
1
2


iPod
12:34 AM
Details
Feed
My Proglet
FX: REVERB
PLAY ONE
TAPE
1
2
3


iPod
12:50 AM
Details
Feed
My Proglet
LOOP SELECTOR
TAPE
1
2


iPod
1:00 AM
Details
Feed
My Proglet
TAPE
1
2
3
4
RE-RECORDING
LOOP 3


iPod
1:27 AM
Details
Feed
My Proglet
Uploading...
Continue playing while it uploads.
OK
UPLOADING
LOOP 3
TAPE
1
2
3
4


iPod
1:28 AM
Details
Feed
My Proglet
Download Complete!
Saved and updated post.
OK
TAPE
1
2
DOWNLOAD LOOP 3 IN P LACE OF LOOP 1

CONCLUSION AND FUTURE WORK

The current implementation allows users to share tracks by uploading to and downloading from a server. It currently does not have the back end to integrate with Facebook friend lists, and hence broadcasts the posts to all users of the app. Also, only last uploaded track by any user is available for users to be included in their post. In future, it would have to run using sessions particular to users and have their own custom feed like in any other social network.

In future, it would allow users to create previews for “suggested edits” or requests to “borrow” tracks from friends and followers.

It has opened up many possibilities for users to portray their creativity with sound and composing short pieces of compositions called Proglets. It has stayed true to the origin of the name i.e. short clips of progressive music due to inherent cross-rhythms. However, the loops need to be tailored to stay in time and remove silences at the start/end.

It needs to be implanted with a set of filters to make the sounds on each track interesting and surprising enough for catching the users’ attention. It has quite a few challenges in the future work to smoothen the user experience and make the app more intuitive while giving the users more to do with fewer interactions.