# LOVESTEP

*Mobile Music Collaboration*

## The Team

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## Our Mission

*Make love by creating digital jazz.* Lovestep aims to create a new place to jam in the digital age, where the computer is the main instrument. Friends (and even strangers) can create loops using Lovestep's step sequencer, and send those loops back and forth whilst the loops play ontop of eachother. This provides a fun and easy way to jam with your friends when you aren't looking to produce anything serious, but want to spark ideas for potential songs (or just have fun). With an easy to learn and intuitive user interface, Lovestep makes digital jamming not just a possibility, but a reality.

## Prototype

Our prototype consisted of what we believe is the full version of the app. The actual images of our prototype are below, and are the images that we are handing out to our participants. There are **three** stages to our prototype, which the participant will hopefully complete with minimal guidance. Before we get into the stages, it is important to recognize the **two** main pages to our application. The first is the **composition** page -- this page includes a step sequencer with which the participant will create a unique pattern, and the instrument with which this pattern will be played. The speed the pattern is played is determined by us, which for now is 120 bpm. There are also a handful of options on the left side, such as "solo", "mute", "clear", and "add". The solo button plays only the current pattern on the step sequencer, instead of the current pattern and any other loops playing in the background. The mute button plays only the loops in the background, and not the current pattern in the step sequencer. The clear button resets the step sequencer pattern to be empty. The add button adds the step sequencer pattern as a loop on the main page -- the **loop** page. The loop page consists of a circle shaped loop visualizer, where one can see the current loops being played. Beneath the visualizer we have a list of the current loops, which we can toggle on or off by simple clicking on them. Sliding a loop item to the left will present the option to delete the loop, which is common in iOS table views. Furthermore, we added the ability to invite friends to join your current collaboration, which is a simple alert view that is presented when and invite has been received. So although the prototype seems simple

because there are only two pages, each page contains complex information that allows for the raddest possible jams to be created.

**Method**

We asked three unique individuals to participate in testing out the Low-fidelity prototype we designed. Each participant had a different level of knowledge about musical composition, which we thought was important**.** Our first participant, Zach Saraf, was a senior at Stanford majoring in computer science. Our second participant, Adi, was 26 year old doctor in residency from Israel who had no musical education. Our final participant was Joanie Brown, another 26 year old grad student studying design at Stanford University. We presented each participant with a little summary of what Lovestep is capable of, along with the background of why we think this is a cool tool that doesn't currently exist. We hosted these chats in CoHo on campus with people of our choosing who arrived on-site. The environment we conducted our experiment in was very casual, as if it were a real conversation about "some app I just found". The only difference was this conversation was more guided; to see if the participant hit the checkpoints we thought they would and see if they stuck to the procedure we intended. This procedure consisted of three tasks. The first task was to see if they could figure out how to create a loop on their own. The way this is done is by hitting the add button in the top left corner (fairly obvious). Once they tapped the add button, we handed them a separate step sequencer app we found for iOS (or Android), and watched them play with it to see if they could grasp the concept. When they eventually did grasp the concept, we presented them with our composition scene and told them to act as if the step sequencer were built into this scene. Eventually, we hoped they would click "add" -- and once they did, we handed them a new loop page, except this time it was filled out with a single loop (instead of being empty). The second task was to encourage them to compose another loop on top of their first loop, to see if they understood Lovestep's capabilities (by repeating the first task). Once they had two loops going, we intended for them to reach the third task, namely hit the invite button, and try to jam with another user. We then presented them with the invite screens and explained how another user could create loops that would show up on the loop page. We wanted to process to feel as natural as possible so the only real test measures we provided were to insure we could handle the situation when they invited an outside user to join them. Luckily we created a prototype for this situation that we could hand to them when necessary.

**Results**

The results we received were fantastic. Especially with the step sequencer, it seems musicians and non-musicians alike had a ton of fun with it, even though the non-musicians had a bit more trouble with it than we would have liked. Another really positive result we got was that inviting users was relatively intuitive for each participant. It seemed as if it were an obvious step for each of them that they could have their friends (or strangers) play loops with them. One thing that wasn't super intuitive was how many beats your loop was going to play for, since we forgot to really cover that in the prototype. We will discuss below how we should fix that.

**Discussion**

Although we were super satisfied with our results, we also saw much room to improve. One area where Lovestep could really be unique from other step sequencers on the market is making the step sequencer much more visual than it currently is. Adi, one of our participants, had the idea of color-coding higher notes a certain color so you have some idea of what each square in the step sequencer grid is going to sound like before it is played. On that note, although some of the expert musicians wouldn't like this as much as the amateurs, we could alter the step sequencer to only contain notes on a pentatonic scale, that way any combination of notes would sound at the very least decent. Another thing that one of our participants requested was the ability to control loop length, which we'd thought of prior to the conversation, but forgot to add in the prototypes. This is definitely something that could improve the uniqueness of songs produced in Lovestep. Additionally, there were a couple of user interface design changes that participant recommended, namely that the "add" button in the lower left of the composition page be different than "mute", "solo", or "clear", since the latter three provide functionality to the step sequencer, whereas the "add" button does an entirely different operation. It was also recommended we make the "ADD" and "Invite+" buttons on the loop page consistent with one another (all caps vs non-caps etc...). And finally, the "7.22" in the center of the circle visualizer on the loop page confused most of our participants, even the musical prodigy Zach Saraf. This number was meant to indicate the current beat, but we think it might be a better idea to have a pointer that rotates clockwise with the circle. This was definitely a constructive activity for our group, as we learned a lot about how other people would use Lovestep.

**Appendix**

*Demo Script*

"Hello! My name is <name of interviewer> and I'm conducting an informal study for a Stanford computer science class on human-computer interaction. Can we have 5 minutes of your time?"

<Go off script as the potential interviewee agrees to the interview. Get them to sign the consent form.>

"Great! So we are trying to build an iPhone application called "lovestep," where you can use your phone to make music and can also invite friends to make music collaboratively! Before we actually build this app, we drew up a few drafts of what we want it to look like, and we're trying to get opinions from potential customers on how easy our app is to use."

"Here is a stack of cards that are screenshots of the app. We want you to accomplish some tasks on this fake paper app. Touch the screen wherever you think you need to touch it, and we'll tell you if that's actually the right place. If it is, move on to the next card for the next screen!"

"Your first task is to navigate past the homescreen and play some music with an instrument. We won't be telling you how to do this, see if you can figure it out!"

<Give off-script feedback as they try things>

"Your next task is to layer another instrument track over the music you just played."

<Give off-script feedback as they try things>

"Your final task is to invite a friend to make some music!"

<Give off-script feedback until they finish>

"Thank you for going through this whole task! Before you go, can you tell us a bit about what you think?"

<Finish the interview with the master-apprentice model>

# Participant Data:
## Handling Initial Loop Screen:
### Zach Saraf:
Zach handled the initial loop screen well, hit the add button quickly, moved onto the step sequencer fast.

### Joanie Brown:
Joanie immediately asked about what she was seeing. Upon us answering her questions, she became ready to attempt the first task. She pressed the "add" button on first try.

### Adi:
Said "MakeLove" and "ShareLove" are great button captions and pretty obvious to anyone who uses mobile Apps. "OldLove" seemed unintuitive and kind of creepy.

## Handling Step Sequencer (app):
### Zach Saraf:
Zach told me as he was playing with the step sequencer that he'd used one before, this wasn't a new concept to him. He played the step sequencer app for quite some time before he looked up at me and said "Now what?". I gave him the next screen and he figured out pretty quickly what was going on.

### Joanie Brown:
Joanie had trouble actually selecting the cells that she meant to select. She spent a decent amount of time undoing what she had just done and making stray "marks" around the sequencer. However, she did not have a bad time doing this, and seemed to enjoy the whole development process.

### Adi:
Had fun using the Android sequencer but she wished there was a way to tell the user how the cell would sound like (high/low…) before pressing it. Maybe a color gradient?

## Handing Composition Screen:
### Zach Saraf:
Because Zach has had experience with DAW's (Digital Audio Workstations) before, he knew right off the bat what solo, mute, and clear meant. No hesitation there.

### Joanie Brown:

Joanie, having seen the actual step sequencer, played a bit with ours. She liked the look, but did not know what "solo" meant.

**Adi:**
It's unclear when the decision to make a loop out of 4 sequences mades.
Doesn't understand the point of the number in the loop, seems redundant. Other than that, ADD button is clearly marked and understandable.

## Handling Second Loop:
### Zach Saraf:
After he hit "add" on the composition page I handed him the page with the loop page with a single loop on it, and he understood that it was time to make a second loop. He repeated the first process fairly similarly, this time spending less time in the step sequencer.

### Joanie Brown:
When we told Joanie to layer a second loop on top of her first, she simply repeated the process she just went through. No confusion, this step was quick.

## Handling Invitation Process:
### Zach Saraf:
Knowing where this was going, he said "Alright -- this is where I invite someone isn't it." I present him with the appropriate screens and explained that other users would be able to add to his loop page to which he replied - "awesome."

### Joanie Brown:
When instructed to add a friend, Joanie expertly navigated our menus, selected a friend, and waited through the appropriate "wait" screens. Success!

**Adi**
Understood immediately that what "Invite+" meant, but noted how it's different from the "ADD" button (Caps, + sign). Asked - can you add another sequence while waiting for your friend to join?

**Images:**

Because there are so many images, they can be found here:

Download: http://cl.ly/YCJf

Direct: http://f.cl.ly/items/2D280h130U2a0H0l2O0d/lovestep.pdf