SoundCanvas – Collaborative SoundShapes

“My job is to make images and leave the decision-making and conclusion-drawing to other people” Laurie Anderson

Sound canvas is an interactive collaborative web-based ensemble environment for creating sound. The vision for this project is to offer anyone with a computer or mobile device that has internet access, the opportunity to create, perform and experience sound. Users are presented with a *blank* canvas on which, with simple shapes, sound is created, manipulated and performed.

In a landscape format, a menu of ellipses can be selected. Each ellipse plays a different pure tone. Changing the shape and size of the chosen ellipse will change the frequency and amplitude. Moving the ellipse to specific constrained areas on the canvas will manipulate the sound, screen left pans sound left, screen up increases overall volume and vice versa.

Selecting and adding more ellipses to the canvas enables the user to further manipulate the sound output. When ellipses are joined one tone is modulated by another, a process of additive synthesis is performed giving the user a richer soundscape.

Along with the simple pure tones, Sine, Triangle, Sawtooth and Square waves, users will have access to short pre-recorded audio files. Simple percussive sounds that are also available to be modulated and changed. The user will also have the option to record their own short sound samples to be manipulated.

Final enhanced usability will be in the form of connecting and therefore collaborating with others. An option to invite other users to join their screen, the shapes of joined user able to be modulated and effected to create a collaborative ensemble soundscape.

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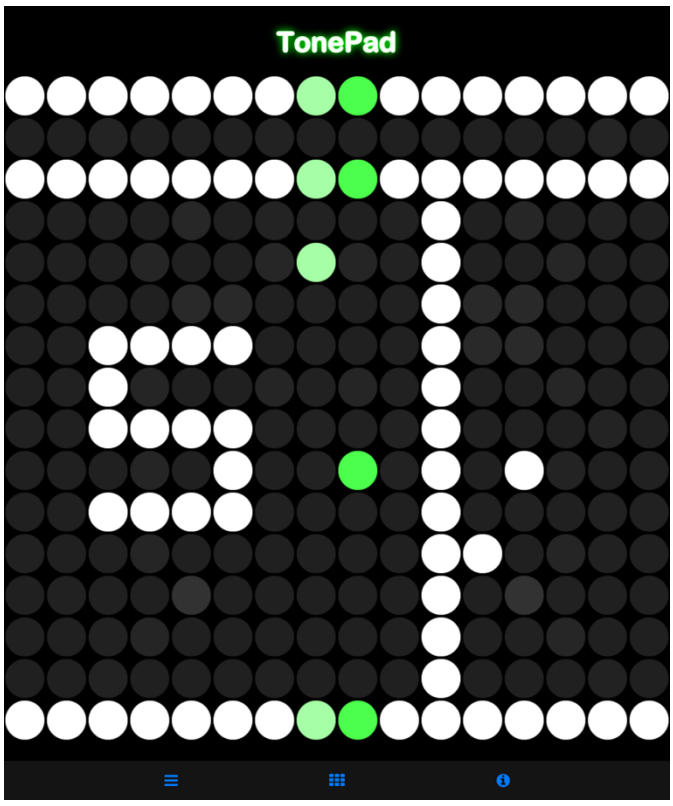
The design will be simple and accessible with a consistency of colour and aesthetic. User interface being mouse and keyboard modifiers for computer users and touch for mobile devices. Implementation could vary from single user application to multiuser installation or performance.

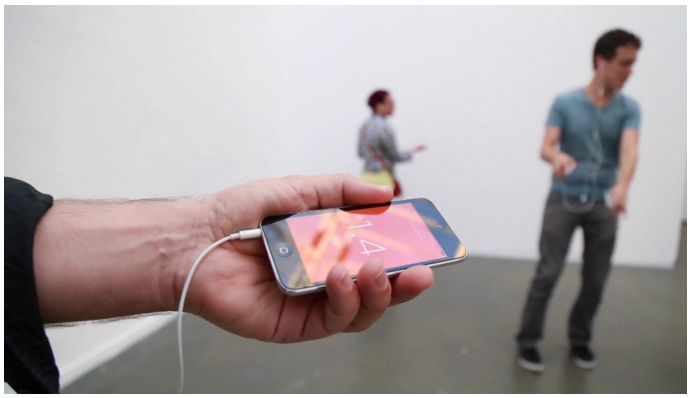
Influence and inspiration for SoundCanvas have come from many and varied artists and instruments. From analogue modular synthesizers, EMS Synthi, through sound artists, Laurie Anderson, to creative coders, Lauren McCarthy. In particular, in no order of importance, are specific examples.

iOS app – TonePad. (iOS App Store)



A very simple app developed by LoftLab. Screen is a 16X16 matrix of small circles. The 16 lines down the screen produce tones of pitched intervals. Time and light move across the screen from left to right at a fixed tempo of 16ths. If a circle has been touched by the user it turns white, tone is *played* and the circle flashes green as time passes. The user can clear, shuffle, flip or rotate the matrix screen to change the soundscape.

Interactive Installation - ProXoMix @ ESBA Le Mans



A CoSiMa project, developed by Norbert Schnell, David Poirier-Quinot and Benjamin Matuszewski (from IRCAM).

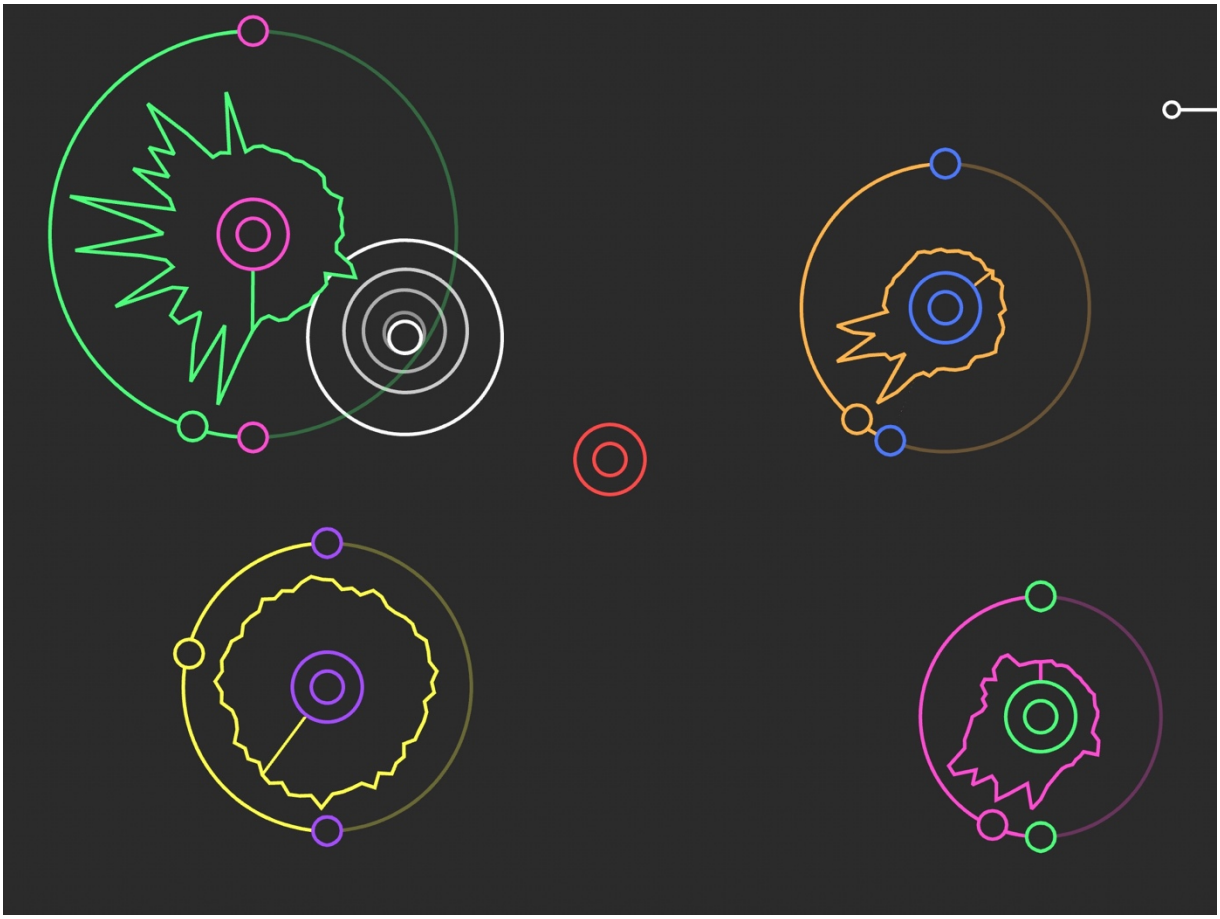
(http://cosima.ircam.fr/2016/09/22/proxomix-esba-le-mans/)

This is a web page that can be accessed by users mobile devices.

In gallery instillation context up to 24 users collaborate to mix and remix a set of loops. Each user has a different piece of audio, they can modulate its sound by tilting their devices. When 2 or more users come close to on another their tracks are heard on those devices. For use with headphones.


BOMBER
MAN

iOS App - pyka_loop (iOS App Store)



A

powerful yet simple app for recording and looping sounds from user input.

A pair of small concentric red circles in the middle of the screen, when touched, records a timed section of audio. This is represented in a new, slightly larger circle shape. This shape can be moved around the screen. Manipulating the circle through touch gestures, a user can modulate the sound of the loop. Simple pitch shift, dynamics, panning and delay effects. These gestural movements can be recorded in real-time so as to create a saved track.

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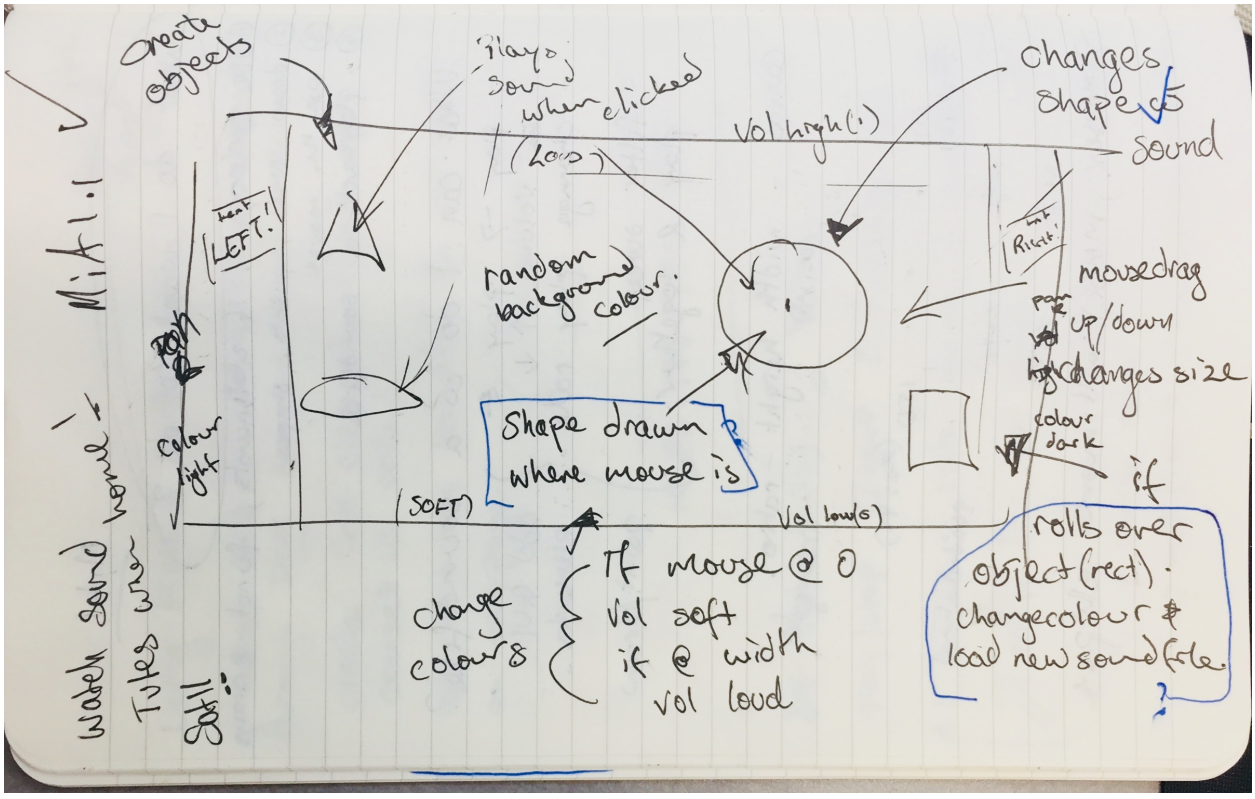
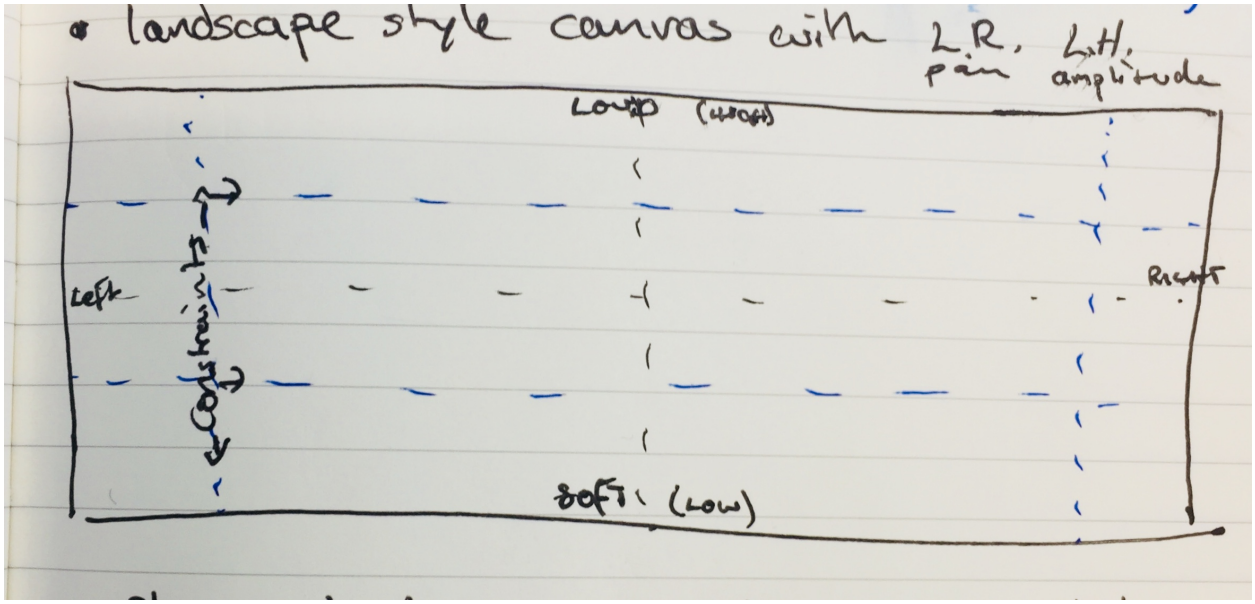
My initial idea can be seen in the following simple sketched wireframes.





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Further thought on the projects development, I have moved away from different shapes to a clean aesthetic of ellipses. The use of classes within the code will be heavily relied upon. A methodical object orientated approach to the use of the mouseX & Y, touch events, the constraint function to delineate areas of the canvas, and the p5.Audio methods for sound creation and manipulation. Realising the project in full I feel requires a lot more knowledge of coding than I currently have. For example I hope to learn more about connectability with other devices to add collaboration functionality.

This project requires a timeline that begins with the small and simple elements then builds on it's functionality.

- wk1 – design shapes, colours, icons.
  - test and determine starting simple tones (frequency, amplitude)
  - record simple percussive sounds
  - gather all assets for project
  - test/debug
- wk2 – code basic canvas frame
  - set constraints
  - code 'menu' sections
  - begin ellipse class
  - test/debug
- wk3 – develop ellipse class object further
  - research connectivity
  - research multiple sketches on screen
  - test/debug
- wk4 – refine format clean code
  - test/debug on other machines
  - test//debug on other devices