

Project Outline

I will be creating an interactive art piece that will be the first of a series of interactive art pieces that falls under a body of work that I am currently titling *Physical Presence in Digital Nature*. The piece's working title is *Fireflies*. *Fireflies* touches on the idea of creating electricity through human power. More so, *Fireflies* aims to help sink in the message of "the greater your effort, the greater the reward." I will embed the later content into the project by creating code that rewards a faster (more effort) interaction and prolonged interaction.

The presentation, or installation part of this project will be small, but has the potential of scaling up in a projection or larger screen. The main element in this piece will be an interactive mason jar—like one you typically see used for catching fireflies. The jar will be modified to have a crank on the lid, similar to what can be found on some traditional style ice-cream makers. The crank, or handle will be connected to a sensor that will detect speed and the total number of revolutions. The jar & handle combination will be secured to a presentation surface at around the height of a standard table.

The interactive jar will then be connected to the computer that will contain the software necessary to display the output. The computer will display the output result via a full screen display on a screen—the specific size will be determined later. Depending on the results of prototype testing, the sensor being used may or may not be required to connect to an Arduino before it can interact with Max. In an ideal situation, a bluetooth enabled sensor will be connected directly to Max and output the data necessary ([bluetooth enabled bicycle cadence sensor](#)). Alternatively, a wired sensor will be used.

The visual reward for the viewers will be the output on the screen. The output will be a static photographic background that is initially hidden, with the exception of the light from a single firefly. Once the hand crank is turned, the firefly will begin to move relative the speed the crank is being turned. Every three (or so) revolutions, an additional firefly will be generated into the scene to illuminate more of the environment. The idea is to encourage users to continue to turn the crank to add hundreds, even thousands of fireflies to the scene; which will light up the entire *Digital Environment*.

I initially came across this idea while searching for a means to use a cadence sensor; which I am planning to use for a future project. As I began sketching different uses for *cranks*, I stumbled across an image of an old

fashioned peanut-butter mixing jar which got me on the tracks of a mason jar. My future BFA project deals with *Digital Nature*, which brought me to the idea of encapsulating both pieces in a body of work. Recently (the last year) I've been interested in generative art and the *Fireflies* project seemed to be the embodiment of all of my ideas.

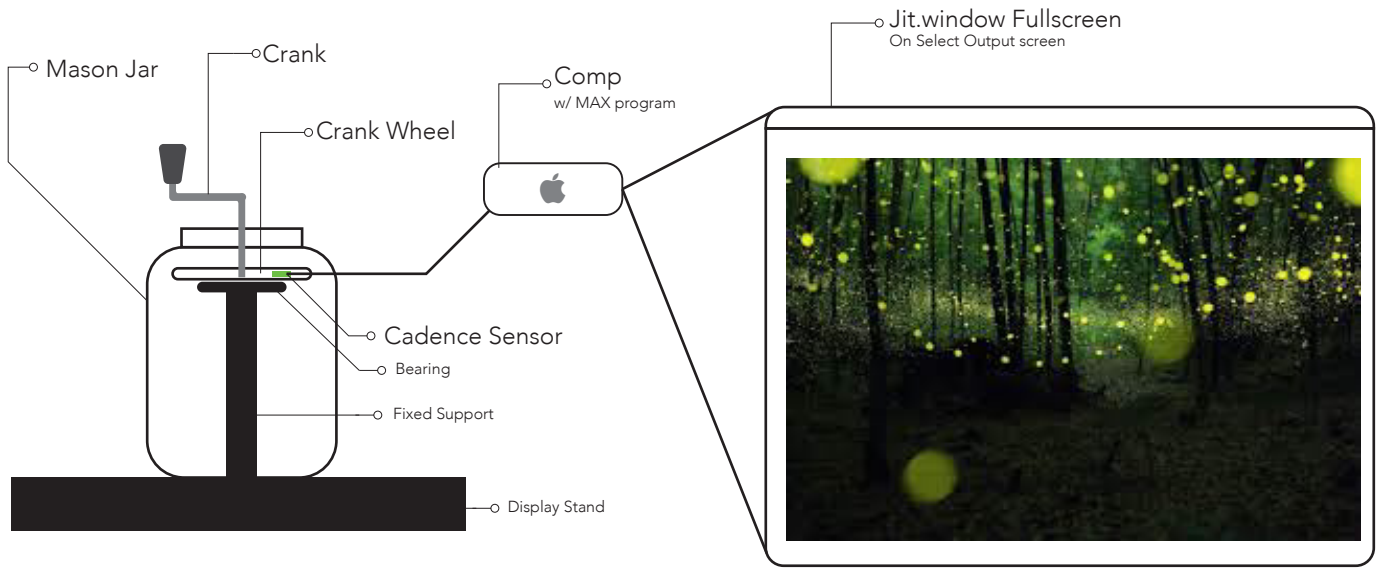
Technical Details

The project seems a little complex, but definitely within reach. I have identified a few technical hurdles and am confident I can overcome them within the time allotted. The First hurdle will be finding the right sensor that can be integrated with the crank and Max. Next, is generating a *Phys.World* that can generate the beautiful fireflies I envision. The Third challenge will be being able to integrate a static photo and the *Phys.World* in a way that satisfactorily fulfills the aesthetic needs of this project.

I have worked with the jit.phys components, specifically the Lava tutorial, of the Delicious Max Tutorials that I have manipulated in ways that will help the production of this project. I plan to use the *Phys.world* to generate the fireflies within the scene and a few more options, like logic statements, jit.videoplane, and jit.alphablend to complete the overall aesthetic I am looking to achieve.

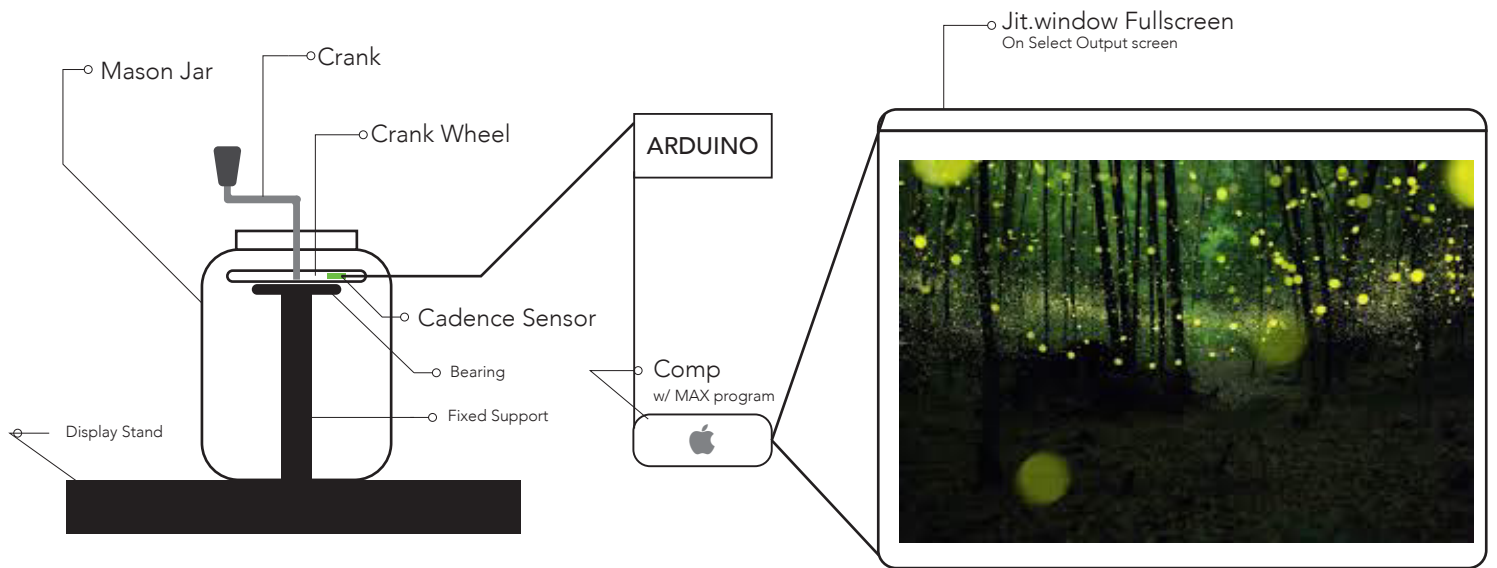
I have outlined 2 scenarios for this project. Scenario 1, which only uses Max to complete the sensor integration and visuals, and Scenario 2 which will require the addition of an Arduino as a communication bridge between the chosen sensor and Max to get the data I need to drive the art piece.

SCENARIO 1



SCENARIO 2

Same as Scenario 1, only with the additional step of integrating an Arduino to communicate between the sensor and Max.



INSTALLATION SKETCH



Fireflies

Printed from Asana

WEEK 1:

- ☐ Research necessary components
 - ☐ Cadence sensor
 - ☐ Alternative to cadence sensor
 - ☐ Crank
 - ☐ secure mounting hardware
 - ☐ Mason Jar for display
- ☐ Order components
- ☐ Begin testing tough sketches in MAX
- ☐ Research & test necessary MAX objects
 - object layering <http://bit.ly/Oa6lqq>
 - ☐ Generative art
 - ☐ Alphablend
 - ☐ "Light emission"
 - ☐ Phys.World

WEEK 2:

- ☐ Prototype v.1
 - Test Functions without sensor integration
 - ☐ Phys world generates objects
 - ☐ layer Phys world on JPG
 - ☐ test performance issues at high phys object count
 - ☐ fireflies move on their own
- ☐ Prototype Successful
- ☐ Prototype v.2
 - Proto v.2 contains variables for sensor integration, random (emergent) flight patterns
 - ☐ Use Sliders in place of sensors
 - ☐ Generative fireflies Finalized
 - ☐ All sensor variables added. Speed, total Revs.
 - ☐ Number of FF's = Brightness of BG image
 - ☐ After x seconds of inactivity, remove 1 FF
- ☐ Receive Sensors
- ☐ Plugin Test Sensor(s)
- ☐ Successful sensor integration with Proto v.2
- ☐ Capture "Nature" photo for background

WEEK 3:

- ☐ Begin Constructing Install Piece
- ☐ Test and work out bugs in Proto
- ☐ Proto v.2 → Production ready version
- ☐ Stand-Alone Display Check
 - The display should be sturdy enough to exert near 100% effort and not break anything.
 - ☐ Max-effort Test Pass

BONUS:

If everything else is completed early

- ☐ Always have 1 firefly on screen to entice users
- ☐ Fireflies only light up a radius around them
- ☐ Sudo 3D environment for more depth
- ☐ Real Emergent Behavior