Design Document  
Work In Progress

# Project Overview

We are creating an interactive art installation for a high traffic, public area that allows for both passive and active interaction. We want to use the people passing through the space to create pseudo-random content within the installation. Active users can then interact with this content in real-time.

The experience will be centered on a large projection screen. It will cycle through various graphics simulated in real-time. The displayed content will be similar to an audio visualizer in that it will take data from multiple sources (ex. User interactions) and display them graphically in an artistic way. In its rest state the system will play back previous interactions to create interesting images which should entice new users.

We will use cameras to detect people entering the space and each person will generate a unique item in the simulation, such as a particle, that will appear on the screen. These items will be much more identifiable than any system controlled graphics. They will move across the screen based on the person’s direction of movement through the space and drive user interaction by affecting the simulation in interesting ways, such as sound or graphics, whenever they are interacted with.

The interaction will come from active users in front of the screen using their body movement to influence the simulation.

# Technical Requirements

## Software and Technology

* OpenFrameworks with OpenCV and Kinect
* Visual Studio 2012
* Adobe Photoshop and Illustrator

## Hardware

* 1 Kinect for Windows
* One computer with 4 USB connections and output for two monitors/projectors
* 2 web cameras
* 1 projector
* 2 50ft. USB extension cables
* 2 speakers
* Sound mixer and appropriate cables

## Materials and Tools

* One large projection screen
* Tape

# Feature List

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| Interactive Features | Description |
| Use body movement to influence graphics | User will stand in front of the screen and use their limbs to manipulate the simulation |
| Use body movement to manipulate of sound | The sounds in the simulation will change depending on users manipulations of the graphics |
| Entering the space generates simulation items | When users walk in through the space a new graphics item is generated |
| Moving through the space affects the simulation | The movement in the space affects the items in the simulation that were generated upon entry |

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| Technical Features | Description |
| Capture skeletal movement data for up to two primary users | Ability to have 1-2 primary users that interact with the screen |
| Detect secondary users’ movement through installation space through the web cameras | This gives us the ability to generate items and movement in the simulation |
| 4-6 unique graphic simulations that incorporate primary and secondary user data | Multiple representations of interaction data to provide a varying experience |
| Unique set of sounds for each simulation | These sounds will be non-intrusive to the space. Similar to the “21 Swings” project in Montreal |
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# Milestones

# Team Members & Roles

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| --- | --- |
| Ryan Bottriell | Lead Developer |
| Zara Tooth | Developer, Manager |
| Marco Brito | Lead Designer |
| Matthew Fournier | Designer, Developer |