Michelle Samson

27037600

CART 353

Due March 6, 2018

Initial Prototype Presentation

CODE?! ---

foreseeable or unforeseeable events?! ---

new decisions!! ---

new Questions! ---

Foreword

I feel as though I really tried to make it work with the kinect V1, and was being really stubborn about its functionality, and so there was a sense of letting go after the prototype due to its outcome, but crack on! the show must go on!! Although it was a fun experimentation process, frustrating but very informative and fun as well! That is why it is only after the prototype that I have decided to turn to using the kinect V2 instead for the remainder of this project, and thus the reason behind the current status of my project.

The Prototype And Its Setup:

Kinect V1 had limited and deprecated functionalities, due to unfortunate events and updates in software and hardware which were out of my control, and not to my knowledge on certain aspects when starting the project.
For example, the library Box2D. which had great examples and functions, was unable to be implemented as it required processing version 2, SimpleOpenNI windows 32bit, and other formats, and bringing it all together with the kinect, it simply did not work, therefore I was unable to experiment with the great source of examples and code from the Box2D library.

Turning to Kinect V2, for which I decided after this prototype was completed that I would continue the project with the new version of the kinect instead, the possibilities are now greatly achievable and realistic, due to the device already having implemented libraries that address the needs of this project. Such as skeleton tracking, background removal, silhouette masking, and many more functions that were not achievable within the confines of the kinect V1 model 1414.

Code:

Code wise, turning over the page and onto a new chapter, I have learned the possibilities from researching and trial and errors with Kinect V1 showing the potential to be achieved. Going to the next version of the kinect, I will be working with its core

libraries, libfreenect freenect V2, examples from shiffman's books and codes, and more coding resources from forums.

The code will apply the action reaction experience from the concept statement, by working with the skeleton tracking, which has various body parts and limbs coded as seperate areas of detection and modifications, each will be able to produce a unique reaction with the surrounding entities in the environment of the experience. Therefore, when the user moves a certain area of their own body to collide or "touch" an entity, it will react in a way that is mysterious and unique, as well as the intensity of such movements, the reaction can then become amplified or simply executed as a distant whisper.

The Prototype:

The drive behind the prototype for this project had various angles to it. Setting up the kinect to the computer and getting a visual response from it was the first goal, after some downloading and installing of various programs following the instructions, things got going. then not so much.... more digging and solutions were found..... then the libraries arrived, and things started spiralling out of control! things crashed examples did not open or run at all, various error message, all hope was nearly sort of lost...

But in the end the basic goal of this prototype was achieved.

Create a particle system, or any form of shape moving or falling on the screen, then to have to user interact with said particles or shapes by being a repeller or a blocker. Nature of code came in handy there ha!

finding different examples and new libraries, the goal was achieved, with some outside help of course (ahem sabine!!!) anyways the functions I wanted to implicate were right it was just a matter of placing the right thing in the right place. and I did. and voila a working prototype. by achieving the prototype, I discovered the new direction of the project, upgrading to kinect V2.

Research Questions Initially:

Will it work?

If so, how will it create a raw visual representation of my goal for this project?

Can this work for my concept?

Will this project create the experience I intend to present?

How will this installation further innovate in virtual surroundings?

Can it have an effect on augmented reality or virtual reality at all?

Research Questions After Prototype:

next level kinect v2, its library and functions and abilities are heightened, they must be properly assessed and be utilized to their full potential so I can achieve my goal.

How far can the kinect V2 and its libraries take this project? can I really achieve my vision? who knows, well I know a little bit and have some insights by seeing previous

work from other coders, so there is some hopeful positivity of success in the end goal of this project.....

I know I will be using this library for the project next, from the examples and previous works I have researched.

MAIN RESOURCE FOR EXTERNAL CONTRIBUTED LIBRARY

https://github.com/ThomasLengeling/KinectPV2

the examples from this library are as following:

TestImages, Test all Frames/Images for the Kinect.

SkeletonMaskDepth, Skeleton positions are mapped to match the depth and body index frames.

SkeletonColor, Skeleton is mapped to match the color frame.

Skeleton3d, 3d Skeleton example needs love.

SimpleFaceTracking, simple face tracking with mode detection.

PointCloudOGL, Point cloud depth render using openGL and shaders.

PointCloudDepth, point cloud in a single 2d Image and threshold example.

PointCloudColor, Point cloud in color, using openGL and shaders.

MaskTest, Body Index test, and body index with depth.

Mask_findUsers, find number of users base on body index information.

MapDepthToColor, depth to color mapping, depth frame is aligned with color frame.

HDFaceVertex, Face vertices are match with the color frame.

HDColor, 1920 x 1080 RGB frame.

DepthTest, Depth test with raw depth data.

CoordinateMapperRGBDepth, example broken, check 0.7.2 version.

RecordPointCloud, simple OBJ recording of the point cloud positions.

OpenCV examples:

Live Capture App

Find Contours with depth or bodyIndex