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Interacting with augmented reality objects using kinect and unity

Description:

The purpose of this project is to be able to use the data from Kinect in order to interact with augmented reality objects that are projected by the Unity3D framework. An example scenario would be is if you're sitting at a table and the camera is pointed from the top. Using the data from the camera, we would project augmented reality objects using Unity3D. An example object that we might interact with is a coffee cup.

Objectives:

- Given the camera, use Unity3D to insert objects into the video
- Learn how to use Kinect for depth, joint, and other forms of tracking in video
- Use the motions generated by our body to interact with the objects that Unity3D inserts into the video
- Use case 1: pick up a coffee cup, set it down, etc.
- Use case 2: project a list of news items onto our palms or a flat surface and be able to scroll through.

Ambition:

- Let's say we get the above objectives working. Our final demo aims to be able to use Unity3D to insert a globe onto a surface. We can then interact with the globe by spinning it around, and hopefully switching back and forth between streetview and satellite view projections within the video. We would insert Google streetview images into the video once we've pinpointed a location to zoom in on and we would use Google Earth as the globe that we would interact with.

Schedule:

- Collect and analyze kinect data (Environment changes, range of movement etc.)
- Perform specific gestures and recognize them properly
- Map specific gestures to key bindings and test in game

Date	**Activities**	**Deliverables**
Nov 3	Hook Kinect up and preliminary experiments	Produce simple prototype
Nov 10	Create unity objects and plan implementation	Interact with cup in unity
Nov 17	Create globe and Google maps API interaction	Be able to interact with globe
Nov 24	Testing, Demo rehearsal	Be able to run the demo flawlessly
Dec 2	Demo	**Kill it!**