

SE 491-sdmay19-27

Smartphone Tracking App for Microsoft HoloLens

Week 4

02/04/19 - 02/10/19

Client: Optical Operations

Faculty Advisor: Daji Qiao

Team Members:

Ben Holmes - *Android Development*

Anthony House - *Website Development/Security*

Ryan Quigley - *Database Admin*

Jose Lopez - *Website Development*

Travis Harbaugh - *Hololens Development*

Cory Johannes - *Report Management*

Summary:

The goal this week was to create a concrete test plan for when we get all of our components implemented. Our team continues to work on implementing each module. We are hoping that we can get our rethinkDB database up and running very soon.

Pending Issues:

Some issues that our team is still facing include not having rethinkDB working, not being able to display multiple paths on our canvas display, and the Bluetooth sound recalibration still not being able to send any sound. This is making it harder to test because we can not use our visualization software to see if the location is updating in Realtime.

Past Week accomplishments

- Travis Harbaugh
 - Worked on scripts to allow gesture to control functionality on the HoloLens
 - Worked on the UI menu that will be displayed when the application is launched. This will allow the user to select the construction the client wants to track
 - Created a world cursor that will allow the use to interact with the 3D surroundings. This will allow them to perform actions and gather information about the user
- Ben Homes
 - I have three phones set up which can all connect, and are able to send a single tone
 - The client phone is still unable to reconnect to the Bluetooth servers after the connection is severed

- The tone also still needs to be modified to a series of four distinct frequencies as opposed to just a single constant tone
- Anthony House
 - Didn't have a ton of time to work on stuff. Assigned database learning to Cory to try to make up for lost time
- Ryan Quigley
 - Tested the current accuracy of the step tracking algorithm without any re-calibration
- Jose Lopez
 - Worked on the Test Plan, specifically on the Introduction, materials, objectives, setup, and the actual testing procedure
- Cory Johannes
 - Started creating a blender object for durham to use in the hololens (very little progress)
 - Have been familiarizing myself with rethinkDB and node.js to assist Anthony

Individual Contributions:

Team Member	Contribution	Weekly Hours	Total Hours
Ben Holmes	Setup the Bluetooth code between our three test phones. All devices run the same program, but depending on which device the program is running on, they behave differently.	5	17
Anthony House	Coordination with Cory.	1	5
Ryan Quigley	Ran tests on current step tracking without recalibration.	4	8
Jose Lopez	Test plan for replicating tests, and for final demo.	4	6
Travis Harbaugh	Create Gesture commands. Create World to interact with the environment.	6	25

	Worked on Finishing HoloLens Menu UI.		
Cory Johannes	RethinkDB, nodejs, Durham in Blender.	6	8

Plans for Next Week:

- Travis Harbaugh
 - Finish up the Gesture Input and test it on the HoloLens
 - Work on creating Xbox controller input and Voice commands
 - Start to create multiple zones in the Durham building. Continue to work on the HoloLens UI Menu that will allow to navigate to the correct work site and adjust the control and sound setting
 - Load 3D avatars into the map and have them move around in the map. Try to solve the building scaling issue
- Ben Holmes
 - Adjust the sound frequency from just a single tone to a series of four tones
 - Work on reconnecting to Bluetooth servers after the connection is severed
- Ryan
 - Use GPS to find the user's starting location outside of the building
- Jose
 - Greatly improve the test plan, create new routes and some diagrams for visualization. Show how each part works together