Virtual Reality Systems - Programming Assignment Project 2

Group project (3-4 members only), how you divide up the tasks is up to the members of the group, however all group members should contribute equally. One option is to assign 1, 3, 4, and 5 to each individual member and do 2 together. Only one project should be submitted on wyocourses by one of the group members. Make sure to include the list of your group members.

Lab access EN 3026 by student office hours only.

Due April 14 by 11:59pm

1. ENVIRONMENT: Use Unity to define four walls and a floor that reaches beyond the spatial dimensions of the tracking area. Create or download models to make a grocery store environment. Populate the environment with a variety of 3D objects on the shelves that you should be able to select and manipulate. The detail of the environment is less concerning in this project- make sure you have 3,4, and 5 done well.

2. TRACKING: Set up SteamVR plug-in in your unity project so that the camera rig is attached with the tracking of the VIVE HMD. You will also see the controllers (scripts and models) in the camera rig. You should be able to move around in the tracked space 'naturally walking' once tracking is set-up. This step does not take much time but you will need to test this in the lab.

3. SELECTION: Implement ONE selection technique using the VIVE controllers (ie ray-casting, scaled-world grab, etc. to name a few but not limited to these). See slides or readings in book for options. Keep in mind the components needed that we discussed. There should be feedback, indication to select, controlling selection, etc. See interaction slides for more details.

4. MANIPULATION: Implement ONE manipulation technique using the using the VIVE controllers (ie World-in-Miniature, Virtual Hand, etc. to name a few but not limited to these). See slides or readings in book for options. With your manipulation technique you should be able to translate, rotate, and scale objects.

5. TRAVEL: In addition to being able to naturally walk in the tracking areas, please implement ONE choice of navigation technique that we discussed in class (ie World in Miniature, teleporting, gaze-based, pointing-based, etc. to name a few but not limited to these). Keep in mind the components needed that we discussed. There should be feedback, indication to start/stop, controlling speed, etc. See interaction slides for more details. Be sure not to disable natural walking tracking position and orientation by the HMD tracking.

Submit all Unity files and project, all textures and object files, exe, etc.