

BI-Weekly Report - HoloLens project

Client: Microsoft HoloLens Gaming (Group 11)

Team: Miron Zelina (Leader), Mehul Modha, Tilman Schmidt

Internal Supervisor: Dr Dean Mohamedally TA: Aron Monzpart

Report Number: 8

Introduction:

Team 11 is working on the Microsoft HoloLens with the objective of delivering a Game or API highlighting the capabilities of what the HoloLens can do. The idea being that the API can be used as a building block for other applications that will be designed in the future of this product.

Discussed tasks and challenges:

Work on the Puzzle game has begun with an initial level for testing being completed. Game objects are being made and now the team will develop game elements which will be used with the marker tracking to complete the game level. One example of such is a “boost” pad which can be used to speed up the ball in a direction. Other elements that could be developed are portals, or walls that slow down objects. Furthermore, testing has been conducted with the HoloLens for the marker tracking and is showing promising results. Tweaking is required which will hopefully allow the integration of marker tracking into the game.

During our meeting with Dr Dean Mohamedally, we discussed our plans and game design. He was pleased with the work and concepts, and has suggested a development path and offered advice to further our project. In order to show the true potential, he suggested looking into various physics variations. One of which is the idea of virtual surface to distort and add to the game complexity. We hope to look further into this and find what else we can try to provide a unique gaming experience on the HoloLens.

Plan of action: The plan is to continue working on the game and set up a blogging website where we log our progress so far, and in the future. Now we will focus on gaming design, levels and game objects to be manipulated by the marker tracking. The goal is to have a few well-designed levels to demonstrate at the end of this project – each highlighting a feature which could be carried forward in other games. We will also be working on refining the marker tracking to work optimally for the game.

Individual Bi-Weekly feedback

Mehul Modha: This week I have been working on finishing the chess game, although there isn't not much time left so focus has been diverted to the puzzle game, I will be working on designing game object such as the Portal for this week and the next. After completing this I will work on the next game object and so on. I will also work alongside the team to design game levels. I will also be working on the blog, which will provide an insight into the work we are doing, challenges and solutions.

Tilman Schmidt: I have continued to focus mainly on the marker tracking library, which has been refactored extensively to allow for easier integration into other projects. I also did more testing on the HoloLens to validate performance and the placement of virtual objects based on the detected markers. While I have managed to get the placement very close to correct, it still requires some additional investigation and calibration.

Miron Zelina: In the past two weeks, I have mainly added some game objects, like walls and speed boosts, as well as experimented with the physics in the game engine, to make the playthrough feel more natural and smooth. In the future, I want to add a "virtual surface" as a game element that could manifest on real-world objects and modify their physical properties in the augmented reality: for example, an icy surface could have low friction and be overlaid on top of a table. Apart from that, I will also be working on the blog documenting our progress.