COMPUTER SCIENCE AND ENGINEERING

CSE

THE UNIVERSITY OF TEXAS AT ARLINGTON

Team oVRworked

Zachary Cross
Geetesh Kalakoti
John Livesay
Quinton Tompkins
Kevin Tung

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Vision

Cookums is a Virtual Reality video game that will provide the user an escape from reality into a virtual world, where he/she will become a chef in charge of cooking up and delivering food
orders to customers from a food truck. The gain of producing this video game is nothing more than an entertaining experience for the user.

Mission

In order to achieve our vision, we will have to balance the concepts of challenging the user interacting with the video game, as well as not challenging the user too much to where it's no longer enjoyable. To accomplish this we aim to:

- Gamify cooking in an enjoyable manner
- Adapt to limitations of virtual reality inputs
- Create a start-to-finish arcade experience

Cookums VR Video Game

Design Details

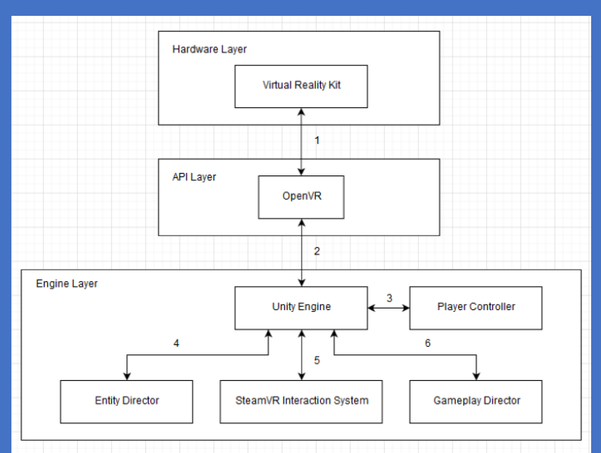
Cookums is a virtual reality game built in Unity3D for Windows centered around cooking up orders for a hungry crowd in a food truck. It utilizes Valve's OpenVR SDK and the SteamVR Interaction System to add feedback for the user and their interaction with the environment around them. Gameplay revolves around rapidly completing orders of different types of foods, with penalties for inaccurate/incomplete submissions. The user must take care in their cooking and assembly of the food.

Displayed in the system architecture, the Engine Layer contains the gameplay and aspects we built over the project's lifetime. Major components are separated into their own areas that communicate with each other through the engine. For example, the Gameplay Director dictates what orders are generated along with the timing and scoring of orders. The Entity Director manages things like a food's cooking state, or the instancing of new foods, and finally the Interaction System captures events to be used by the game.

The majority of 3D art and assets were created under CC0 by Quaternius. Additional assets were sourced from Kenney or self-produced.

Example of SteamVR Highlighting

System Architecture



Core Features

Team oVRworked was able to deliver many core features of the gameplay experience, including:

- Assemble hotdogs and hamburgers
- Grill meats without overcooking or undercooking
- Pull your ingredients from an infinite refrigerator
- Customers that react to your order and actions
- Procedurally generated customer appearances
- Highlighting and object snapping ease controls
- Realistic sizzling sounds from the grill
- Playable with all major PC VR headsets
- A naïve Bayes classifier for scoring orders
- Endless amounts of fun
- Room-scale experience or teleport at your leisure

Results

Considering circumstances surrounding COVID-19, playtesting was unable to be conducted. Originally, people on campus would have been randomly chosen to play but we did not reach that stage.

Despite this, it is relevant to say that during development, the developers would progressively become more distracted when testing a feature. That is, some time would be spent not testing the feature and instead just experiencing the game mechanics. This observation suggests the game has seen success in becoming fun.

Future Work

- Improving real-world physics imitation
- Polishing all features
- Adding professional 3D art and assets
- Creating a lobby scene before gameplay

Pictured is one of the aspects of the game physics. Things can fall apart when tilted excessively or when excessive force is applied. There are problems when trying to play that can cause falling apart to trigger when it should not, frustrating the gameplay.