Final Project Proposal

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1 Introduction

VR Technology has been developing rapidly in the 21st century. Current solutions such as Unity attempt to use old programming languages and paradigms to implement VR environments and thus limit developers' abilities to create new and unique environments. With every cutting edge technology, new paradigms and design patterns must be invented. This project intends to explore and implement these paradigms and design patterns.

2 Objectives

The goal of this project is to experiment with a variety of paradigms and design patterns to see which work best for implementing VR environments. To do this, we will implement four different VR environments where users can move around and interact with a variety of virtual objects. Each team member will build one environment individually and the fourth will be built by the whole team and will connect the individually-built environments.

2.1 Environments and Interactions

These are the concepts for our four environments and the interactions that can occur in each environment:

Sumner "Snowflakes" — a winter-themed environment where users can create their own structures by manipulating snow blocks.

Robbie "Lets get Physical" — an environment where you can throw lots of objects around and see them interact in a physically-accurate manner.

Sam "Workbench" — a workbench where you can construct your own virtual objects from a variety of parts.

Team "VRsh" — a VR shell where users can interact with a variety of widgets as well as open other programs (environments).

2.2 C-MAPP Event Readiness

Our goal is to have this project ready for the C-MAPP event in January. To do this, we must have a finished product and report by the end of this semester.

3 Plan of Action

This project will have four main stages that correlate with the due dates for the individual assignments and the final project milestones.

10/03 **Individual Assignments** — Building the individual environments

11/03 **Milestone I** — Building the VRsh environment

11/17 **Milestone II** — Integrating the VRsh and individual environments

12/08 **Final Code Submission** — Final touches to the VRsh environment.

In addition to the above code submissions, we will also produce a final report along with the Final Code Submission describing the work that we did and the lessons we learned while implementing the project.

4   References and Dependencies