# Title

Daniel: “Hello everyone, my name is Daniel J., I’m the team leader for design group 5. I worked mainly as a coordinator, communicating with Dr. Hayes, and did most of the code work involved with the project.

# Project Schedule

Daniel: “Just to give a quick look at what we will cover today – Our time during this course sequence was split up into three main phases, a research phase, design phase, and prototype development phase.

# Presentation Outline

Daniel: “So, we would like to give a brief overview of each of those phases, then wrap up with some concluding remarks on the overall outcome.”

# Introduction

Daniel: “Since Virtual Reality technology and tools became accessible to small teams of engineers and artists, teams now produce immersive experiences without the need to adopt implementation techniques beyond those of traditional video game design. In light of these advancements, this project aimed to give our team a unique opportunity, to work collaboratively on a creative project that spans both computer science and visual communication and design (or art). This is important to not only myself, but also to Dr. Hayes and Dr. Andres Montenegro in VCD, because projects like this are not traditionally available to department alone.”

Daniel: “To get us started, my classmate, Asad is going to give us an idea of how we spent most of our first semester. Asad?

# Research Methods

Asad: “Hello, my name is Asad Ashur – I worked mainly on collecting and organizing the VR research data on this project, and assisted with the application architecture development. In order to analyze and visualize data on current VR trends, existing applications were reviewed and findings collected into a relational database using a custom-built desktop application. This application provided basic data entry and reporting features to properly organize and present information.”

Asad: “So, Avery is going to share with you how we turned that data into information.”

# Results

Avery: “Hello, my name is Avery Eich. I contributed most to the technical design of the system based on the results of our research, and I’ve really enjoyed exploring the VR technology and software. The results effectively determined what key genres and mechanics might be combined with the goal of providing a more robust VR experience. Our team chose to utilize the following four genres in designing an experience: **Strategy, Simulation, Education,** and **Gaming**. These genres were well-placed for the VR platform, and also provided a synergy between the system mechanics we chose, which were: **360-degree View, Item Use, Static User Interface.**”

# Architecture

Daniel: “The mixture of these genres and mechanics directed the design of a real time strategy, cultural simulation experience inspired by the North American, Mississippian cultural period (“Mound Builders”). A complex system of resource gathering and asset production was defined and documented.”

# Prototype (Overview Video)

Asad: “A prototype system was developed using the Unity Game Engine, and tested on a mobile VR device (Samsung Gear VR). Focus was placed on creating a real time simulation that included turn-based, ‘seasonal’ events. Cultural details were researched and included in a tribal community, family units and economic activities, while a dynamic map structure was created to track the placement and state of game elements.”

# Progression (Family Node Placement Video)

Avery: “The system was designed to be offered as a cultural simulation that would progress without any user interaction using randomly generated events and basic AI decision-making. However, a user is given the choice of observing the community at various levels, or even participating it economic activities such as hunting, gathering, or farming.”

# Conclusion

Daniel: “Our team discovered that Virtual Reality application design and development is a new frontier that has a mysterious future. The technology holds great potential for use in entertainment, education and job training. This project granted team members valuable insight into unique system design and collaboration between software engineering and visual communication. Obviously, our team wasn’t able to develop a fully-functioning system, but we did learn a lot about the research, design, and prototyping phases of software engineering.”