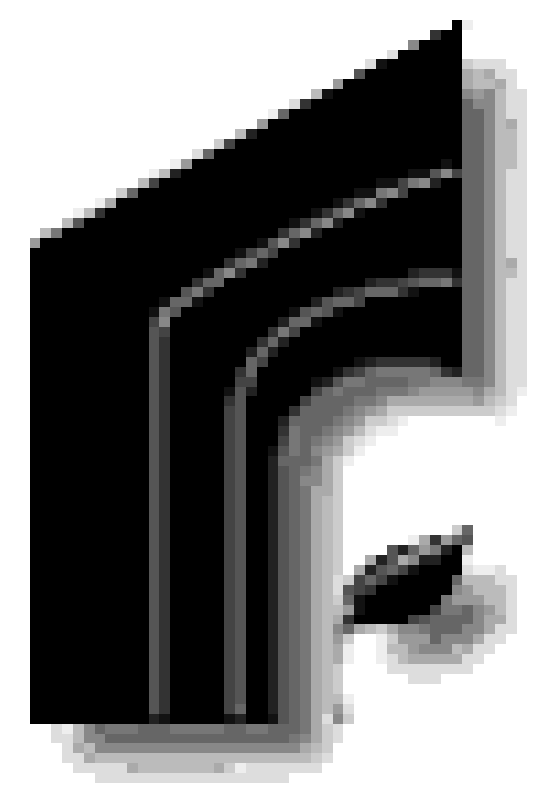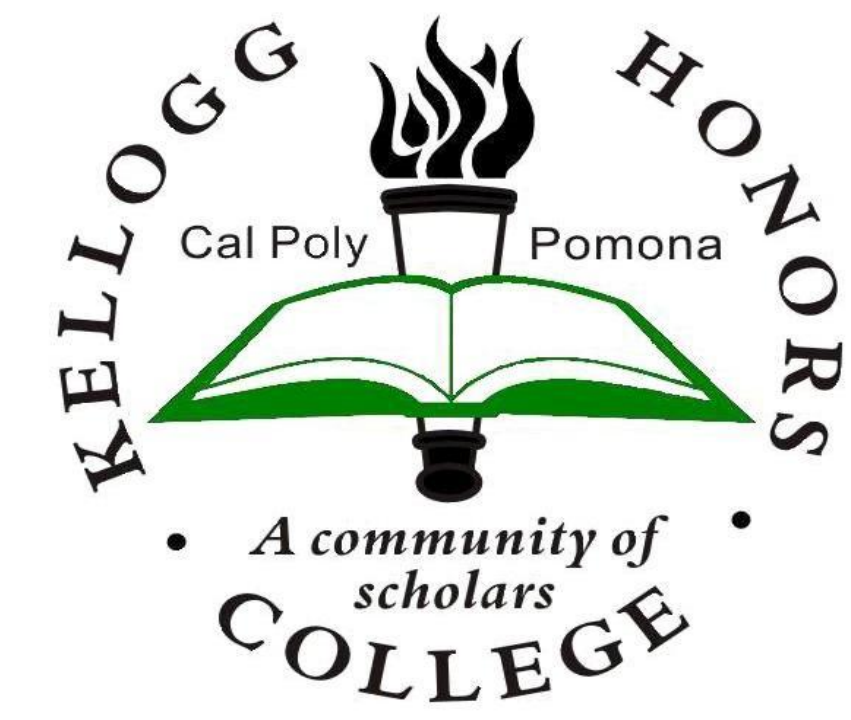# Hall of Doors: A Virtual Reality Game

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Abstract

This Capstone Project examines the technical aspect of virtual reality technology as well as the methodology used to develop it. Virtual reality is one of the fastest growing technological trends. Numerous technology companies such as Facebook and Google have invested heavily into the field. Specifically, we examine the development of a simple virtual reality video game using the HTC Vive and Agile Software Development methodologies. HTC, commonly known for their development in mobile devices, created a virtual reality headset and controllers that allow a user to interact with the virtual world in all three dimension. We also use open-source tools such as Unity, a game-oriented integrated development environment, and Audactiy, a free audio-editing tool. To develop this software, we use a methodology known as the Agile Software Development process. This methodology is a replacement for the traditional or "waterfall" process. By using these technologies and methodology, a simple virtual reality game can be made.

Design
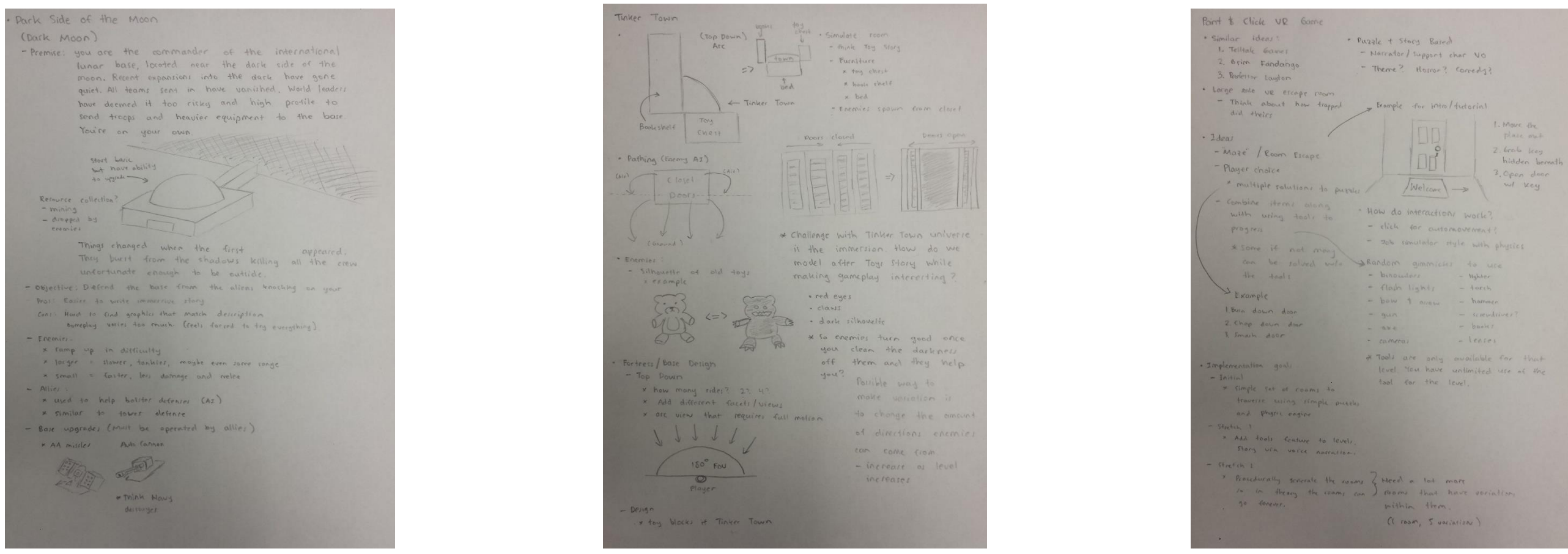
Hall of Doors has seen a large number of changes since its conception. Initially, the game was designed with a very specific theme and gameplay style. Some were shooting games, other were story based. In the end, the game developed into a demonstration of the capabilities of virtual reality.
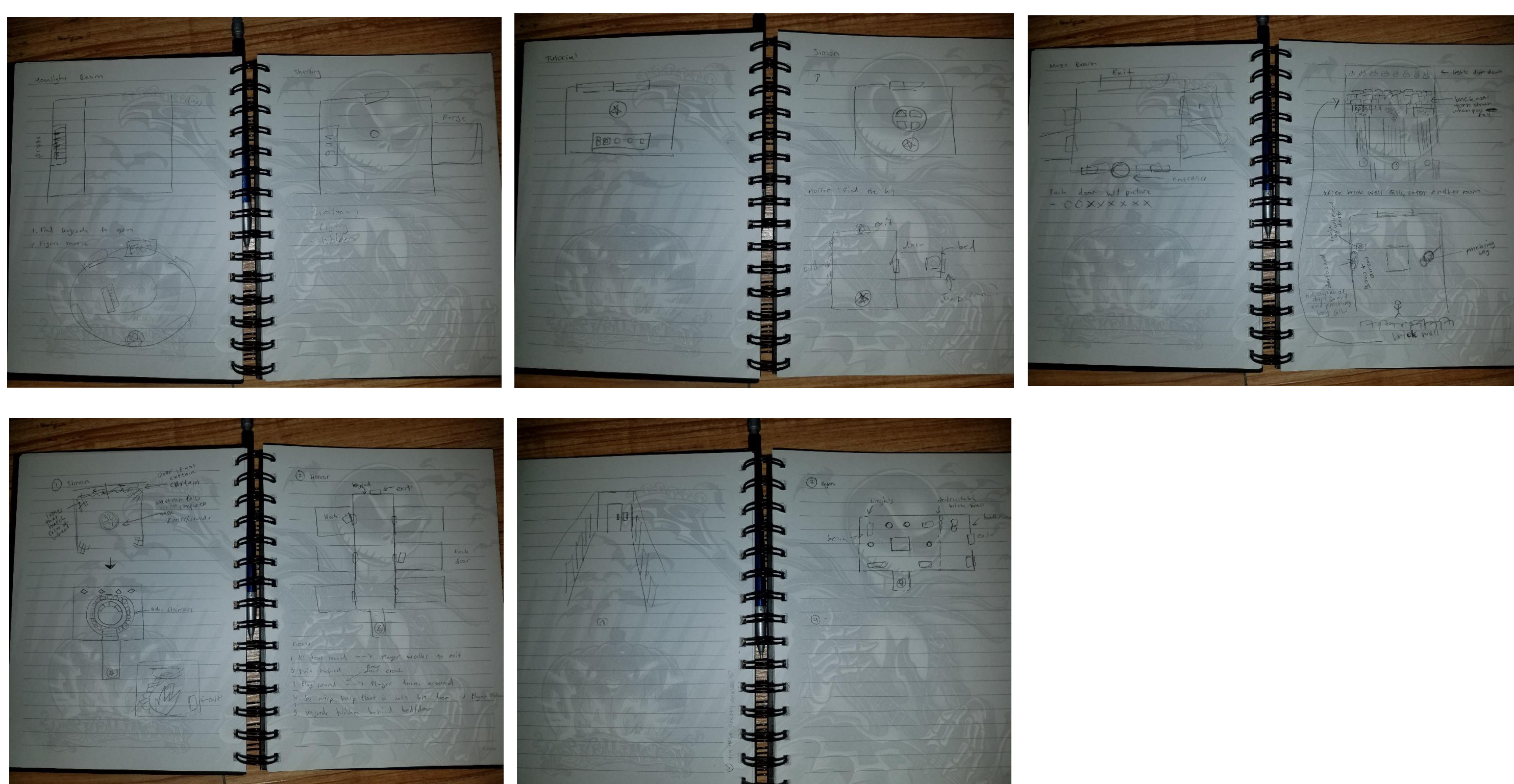
The results of the focus changed removed a lot of elements. Originally, the game was much smaller and less intricate so that story could be fleshed out. The problem was that I underestimated the number of delays during development.

Future Endeavors

Virtual reality software development has unearthed a ton of challenges. At the same time, it opens up a whole new world of possibilities. There is always room for improvement. This means new levels and new interactions to improve the immersive nature of the game.

Tools

One of the key elements of development is the toolset available. All of the software tools utilized are open-source. This means that it is a community based software where individual programmers come together to improve the software.

Result