ABSTRACT

Software development in Virtual Reality has experienced a huge increase in popularity thanks to the Oculus Rift Development Kit, especially for game applications. To support the implementation of making the game supported by Unity3D. Unity3D is a cross-platform based game engine and is an integrated tool for making games, building architecture and simulations mainly used to develop 2D and 3D video games. However, as an alternative to alleviate the process of realization of the game environment, a semi-auto mechanism of Procedural Content Generation (PCG) can be used.

PCG requires another algorithm as a processing base and mechanism, which in this study will use the Linear Congruential Generator (LCG) as a basis for PCG. The Linear Congruential Generator (LCG) is the most commonly used pseudo-random number generator. The characteristics of LCG that tend to provide optimal and semi-random values, make the LCG appropriate to produce a game environment that seems natural and bound to the plot. At the end of this study a mechanism will be produced that can be used to produce a Virtual Reality archery game environment.

In this Final Project, I will implement an asset environment or area of Building N of the Faculty of Electrical Engineering from every room in the N building as randomization enumeration for different areas using the Linear Congruential Network algorithm for enviorement which will later be used as a Virtual Reality game using Unity 3D Free Software Development Kit (SDK) and as learning and games to hone archery skills and as entertainment

Keywords: *Virtual Reality, Unity3D, Procedural Content Generation (PCG), Linear Congruential Generator (LCG.*