Informatics Institute of Technology

In Collaboration with

University of Westminster, UK

A Dynamic World Generation System Based on Player Decision & Storyline

A dissertation by

Manul R. Singhe

Supervised by

Mr. Saman Hettiarachchi

Submitted in partial fulfillment of the requirements for the

BSc (Hons) in Computer Science

Department of Computing

April 2019

Abstract

This research addresses the problem of single player games having low replay value. An in-depth analysis and review of the problem is discussed. This system suggest the possible method of overcoming this problem by combing already existing technologies and techniques to add high replay value to single player games by trying to eradicate the problem. By utilizing procedural generation and AI to work in real-time, the research propose the solution of developing a system that generates the game environment, inclusive of non-player characters, collectables, pick-ups and other game related content to be generated based on the player character's attributes and the game state.

The literature reviews shows in depth the literature that was used and the knowledge gained from them to be incorporated in development of this system. The testing and evaluation shows what was achieved through this project and the implementation discusses in-depth how it was achieved.

Keywords: Computer Game, Procedural Generation, Artificial Intelligence, Story Driven Games, Dynamic Games, Single Player Games.

Manul R. Singhe - 2014254