

BIRKBECK, UNIVERSITY OF LONDON
DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS

MSc Computer Science
Project Proposal

**Game With Procedurally Generated
Content in Unity 3D**

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Declaration of Authorship

I, Christian Radev, declare that this project proposal titled, ‘Game With Procedurally Generated Content in Unity 3D’ and the work presented in it are my own. I confirm that:

- This work was done wholly or mainly while in candidature for a master degree at this University.
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work.
- I have acknowledged all main sources of help.
- Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself.

Signed: Christian Radev

Date: 08/04/2017

Abstract

This project proposal outlines my background research in the area of graphics, computer games and algorithmic generation of 3D worlds and game objects. The purpose of which is to create a game with primarily procedurally generated content such as fully featured and realistic planets, solar system, characters, textures and more. The latest developments in the field clearly showed the impressive capabilities of procedural generation and its many benefits as compared to ordinary game development. The possibilities it offers are endless and requires much less resources to produce big projects with incredible results, than any other approach. My work so far shows how efficient and productive certain algorithms can be in generating height maps which are used to deform spherical mesh to resemble planet surface. This approach has endless variations of planetary detail and can be applied to generating the rest of the game content that is upcoming. It clearly shows that with minimal resources which are myself as a programmer, game engine (Unity 3D) and algorithms one can create a lot of game content which would normally take a big team of artists and game designers. By the end of this project it is expected that a fully featured procedurally generated game will be accomplish. The game itself is first-person role-playing in a fantasy theme, with the goal of exploring planets, gaining experience and advancing your character through quests and interaction with non-player characters. The results will produce a fun playable game with the option of being constantly expanded, simply by code and minimal to none manual content creation.

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Chapter 1

Introduction

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Appendix A

An Appendix

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