**“Room Generator”**

**Room Generator Extension for Godot**

**Jevgenij Ivanov**

**20748055**

Final Year Project 2024

B.Sc. Computer Science and Software Engineering

A logo for a university

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Department of Computer Science

Maynooth University

Maynooth, Co. Kildare

Ireland

A thesis submitted in partial fulfilment of the requirements for the B.Sc. Computer Science and Software Engineering.

Supervisor: Ralf Bierig

**Declaration**

I hereby certify that this material, which I now submit for assessment as part of CS440 Final Year Project module, is entirely my own work and has not been taken from the work of others - save and to the extent that such work has been cited and acknowledged within the text of my work.

I hereby acknowledge and accept that this thesis may be distributed to future final year students, as an example of the standard expected of final year projects.

Signed: Jevgenij Ivanov Date: 15/03/2024

**Acknowledgements**

I would like to thank Ralf Bierig for giving the opportunity to work on such an interesting project, for all the support throughout the development, and for providing many suggestions and feedbacks.

**Abstract**

This thesis introduces the development of a Room Generator Extension for Godot Engine, a plugin designed to enhance the process of constructing 3D environments within the engine. Targeting to improve the efficiency and speed of creating virtual spaces, the extension offers a user-friendly interface that allows developers and designers to quickly assemble scenes from a from various rooms, dungeons and other components. Easy to install by simply adding the plugin directory to a project's "addons" folder, the tool integrates seamlessly into the Godot editor, providing immediate access to its features through a new tab in the interface. ////////////Aimed at expediting the manual creation of complex structures while ensuring adherence to high-level design principles, such as the elimination of redundant elements, this plugin stands as a testament to the potential for innovation in game development. The personal investment of the author, an aspiring video game developer, underscores the commitment to delivering a bug-free, enjoyable user experience that meets the needs of the wider game development community. This thesis not only discusses the technical development of the plugin but also reflects on its significance in streamlining the creation of aesthetically pleasing and performance-optimized 3D environments.//////////

**Introduction**

**Technical Background**

Use of Minimum Spanning Tree and Delaunay algorithms in the dungeon generator

**The Problem**

Write about how I was trying to fit functionality into plugin ui and end up rewriting game engine source code, then I learned that things are not done this way in godot.  
  
a lot of issue with moving or rename folders in the project, godot is not good for that. It was difficult to start new fresh project and have no errors when installing plugin.

**The Solution**

e, then Talk about how I’m getting minimum spanning tree and its algorithm

**Evaluation**

**Conclusions**

**References**Fascinating Blog post for creating dungeons procedurally: uses algorithms like Delaunay triangulation. <https://vazgriz.com/119/procedurally-generated-dungeons>

[**https://www.youtube.com/watch?v=rBY2Dzej03A**](https://www.youtube.com/watch?v=rBY2Dzej03A) **tilemaps:** [**https://www.youtube.com/watch?v=JxbnStn-BIY**](https://www.youtube.com/watch?v=JxbnStn-BIY)

**Appendices**

o Abstract

o Introduction

o Technical Background

o The Problem

o The Solution

o Evaluation

o Conclusions

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o Appendices

A screenshot of a computer

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A computer screen shot of a game

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A computer screen shot of a computer

Description automatically generated

A computer screen shot of a maze

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