



Procedural Terrain Generation UE4

Oriol Marc Clariana Justes
Teesside University, Computer Games Programming



Introduction

The purpose of this project is to create a Procedural Terrain Generator with the focus on a tool or plugin for UE4.
The study will involve research into the implementation and organisation of algorithms for a procedural terrain with high level of customization. I intend to also create Biomes generated procedurally that should be scalable and flexible and to customize assets and textures for each biome.

Aims and Objectives

Design and create a customizable procedural terrain tool that can:

- Option between pre-bake the terrain or at runtime.
- Variety of algorithms for the generation of the terrain.
- Customize the material for the terrain and the scale.
- Level of the water.
- Customizable Biomes.
- Assets and the probability to populate the terrain.

I plan to explore the easiest way to facilitate the personalization of all the terrain generation options. The end goal should show a realistic terrain generated procedurally selected, with the differentiation of each biome as the assets for each one. With the pre-bake option or with the runtime generation for an infinite terrain.
I will demonstrate both a pre-bake and runtime terrain and it should look high quality and professional and the easy and understood customization for the generation.

Software Used

- Unreal Engine 4
- Plugin URuntimeMeshComponent (URMC)
- Github
- Assets used for decoration of the Terrain

Project Progress

Jobs Finished	Description
Research and Planning	Studied the algorithms and the correct way to implement this project.
UE4 Terrain vs URMC	Efficiency comparison between the UE4 options and the URMC plugin.
Create a custom Quad	Create a quad using the URMC with custom vertices value.
Perlin Noise	Implement Perlin Noise as one of the algorithms.
Tiled Terrain	Using Perlin Noise create a tiled terrain and the customizable options.

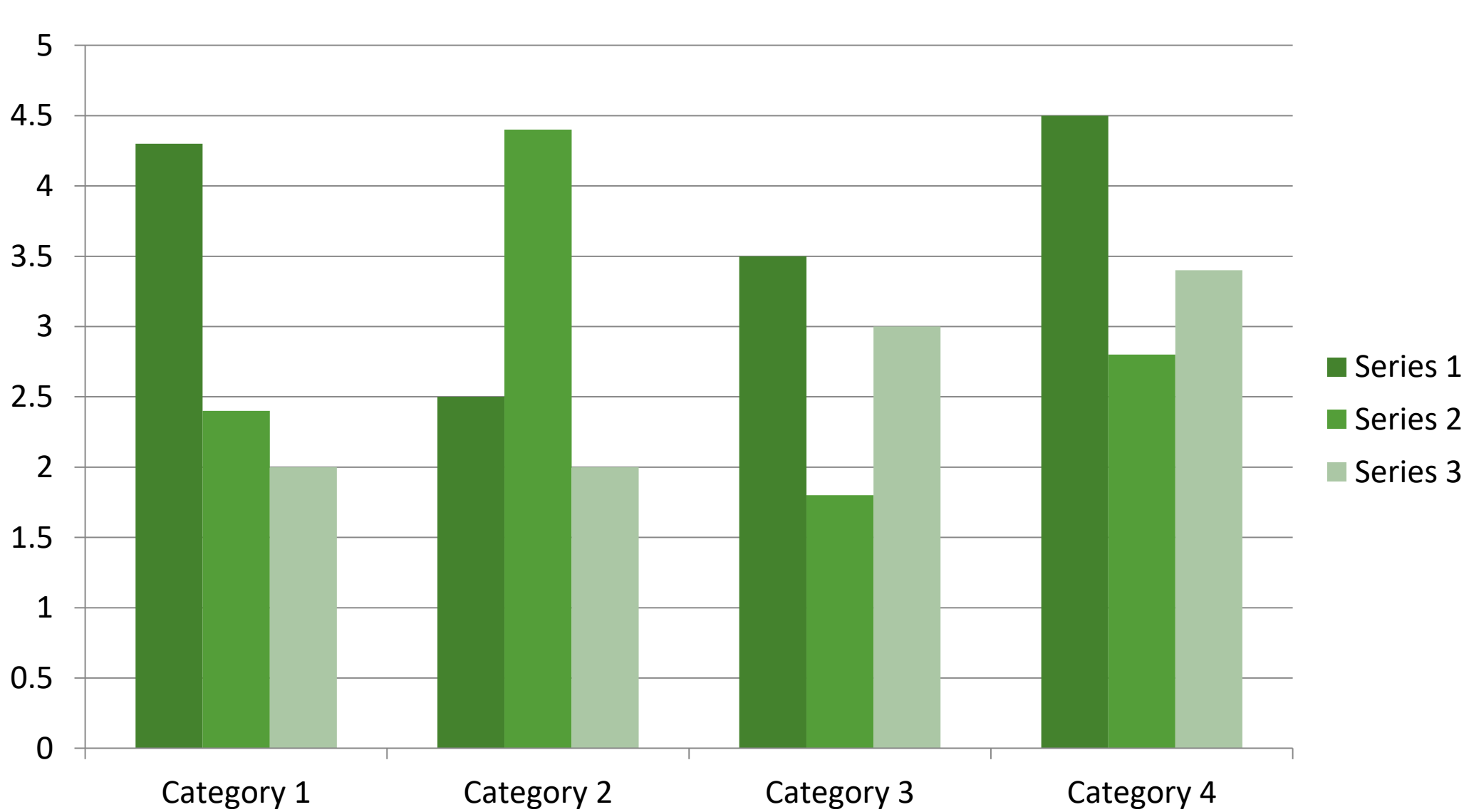
Current Project Review

PHOTO HERE

Table 1. Label in 24pt Calibri.

	Heading	Heading	Heading
Item	800	790	4001
Item	356	856	290
Item	228	134	238
Item	954	875	976
Item	324	325	301
Item	199	137	186

Chart 1. Label in 24pt Calibri.



Discussion

Click here to insert your Discussion text. Type it in or copy and paste from your Word document or other source.

This text box will automatically re-size to your text. To turn off that feature, right click inside this box and go to **Format Shape, Text Box, Autofit**, and select the “Do Not Autofit” radio button.

To change the font style of this text box: Click on the border once to highlight the entire text box, then select a different font or font size that suits you. This text is Calibri 32pt and is easily read up to 5 feet away on a 36x48 poster.

Conclusions

Click here to insert your Conclusions text. Type it in or copy and paste from your Word document or other source.

This text box will automatically re-size to your text. To turn off that feature, right click inside this box and go to **Format Shape, Text Box, Autofit**, and select the “Do Not Autofit” radio button.

To change the font style of this text box: Click on the border once to highlight the entire text box, then select a different font or font size that suits you. This text is Calibri 32pt and is easily read up to 5 feet away on a 36x48 poster.

Zoom out to 100% to preview what this will look like on your printed poster.

Future Directions

Click here to insert your Future Directions text. Type it in or copy and paste from your Word document or other source.

This text is Calibri 32pt and is easily read up to 5 feet away on a 36x48 poster.

Contact Information

Oriol Marc Clariana Justes

Email: oriolcj@gmail.com
Website: <https://oriolclariana.com>
Phone: +34 689384449

References

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

Acknowledgements

Acknowledgements text goes here.