TileMap World Maker

Philip Widmann | GPR 0919

16.07.2021

TileMap World Maker

Table of contents

1. **Overview**

Unity's Tilemap system makes it easy to create and iterate level design cycles within Unity. It allows artists and designers to rapidly prototype when building 2D game worlds.
The Tilemap component is a system to store and handle Tile assets for creating 2D levels. It transfers the required information from the Tiles placed on it to other related components such as the Tilemap Renderer and the Tilemap Collider 2D

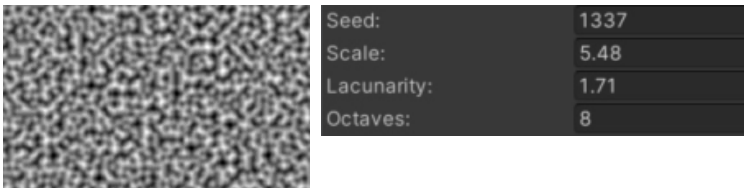
The TileMap World Maker is a tool which makes this process even easier with procedurally generated and ready to use world maps with a user friendly interface.

Load in your tile sprites and create a complete 2D TileMap world with a few clicks. No need to draw TileMaps by hand anymore.

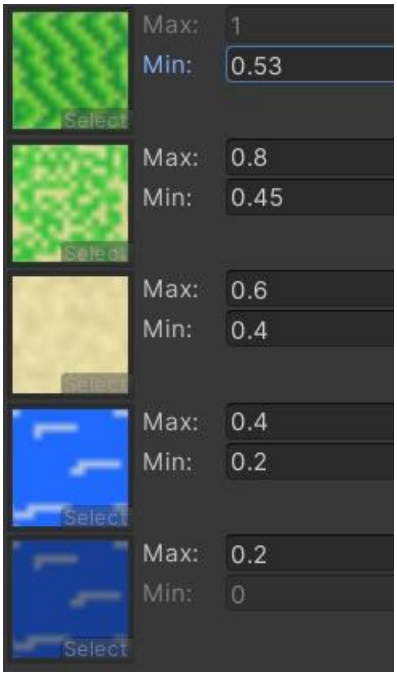
Tool shortcut: **Ctrl + T**

2. Features

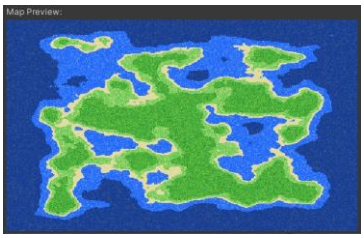
- Create Tilemap-Maps based on Perlin noise values



- Set height values for different tiles



- Map preview for tweaking the generation values

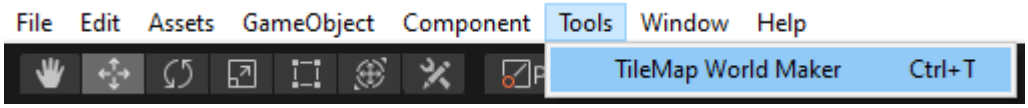


- Save the heightmap and the preview texture to your Assets folder

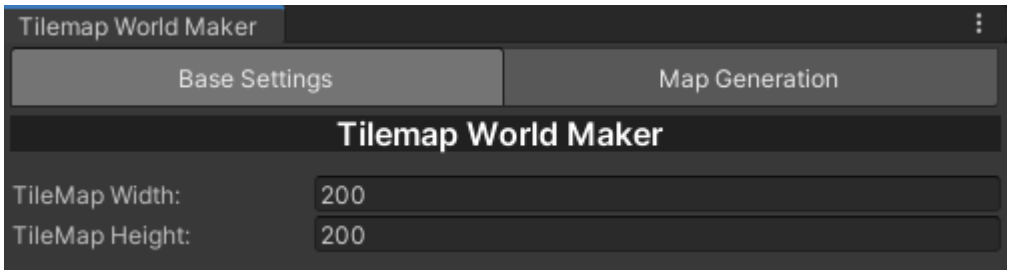
- Reference sprites for tiles and create Unity Tiles automatically

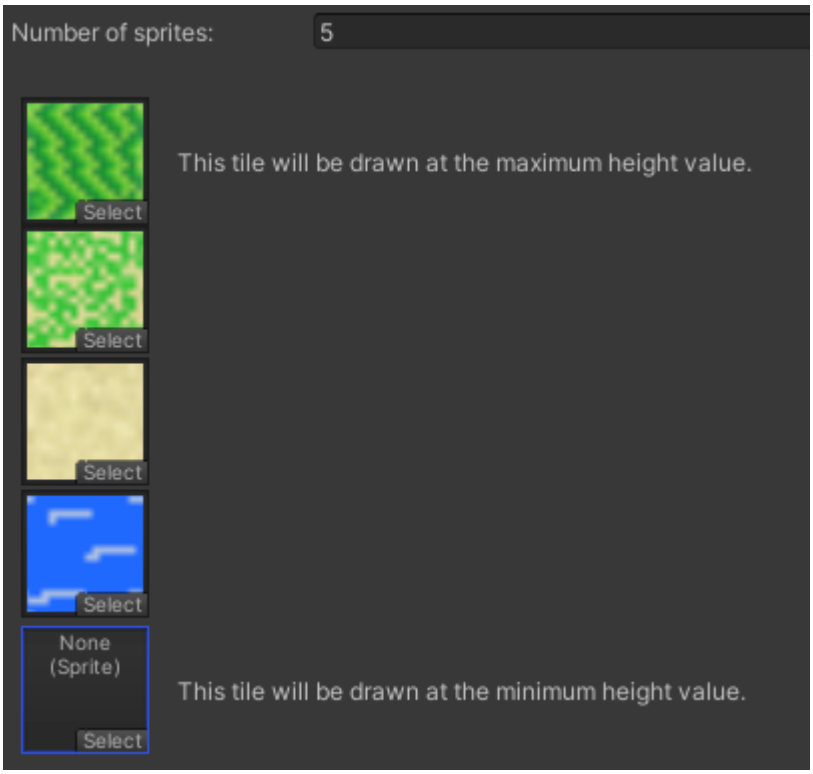
3. Demonstration

1. Open the Tilemap Creator through the menu under Window/2D/TileMap Creator.



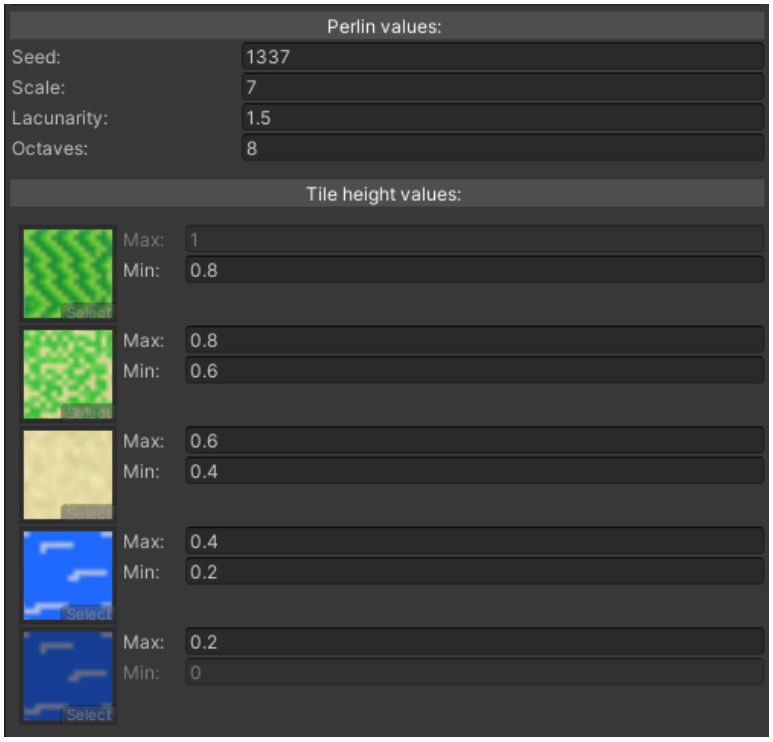
2. In the Base Settings tab, set width and height for the map.





3. Set the number of different tiles you want to use and drag the PNG/JPG images into the corresponding slots. Top sprite will be placed for upper Perlin noise height values, bottom sprite will be placed for lower noise values.

4. In the Map Generation tab, adjust the values to your likings (see Map preview at the bottom).



5. If you want to generate islands instead of endless terrain, check the box and tweak the values to your likings.

6. Press Generate Map or save your current map as heightmap or save the preview texture.

4. Preconditions and Limit

There are no additional packages needed to operate the Tilemap World Maker. If you want to use your own textures, make sure to set pixels per unit to the texture size and check the box for Read/Write Enabled in the inspector of your texture.

5. Planning

Task	Est. Time	Eff. Time
Sprite Converter	2h	2.5h
Implement Perlin noise creator	2h	3h
Create user interface/tabs/sprite initialization	3h	4h
Input Validation	2h	1h
Create perlin noise preview	1h	2h
Height setting for each tile	2h	3h
Create collision setting per Tile	1h	axed
Create tooltips	1h	1h
Create Heightmap/Preview texture save feature	2h	1h
Create Falloff map feature	1h	1h
Implement tile height setting interface element	1h	2h
Finalize tool interface	2h	3h

6. Testing

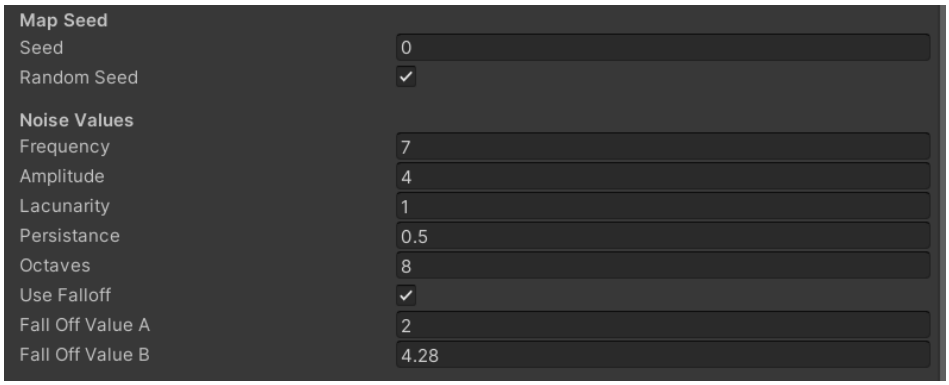
-Fixed tab switching value copying error

-Added clamps to value inputs

-Added error and info messages

-Multiple error testing sessions with my colleagues

7. UI Mockup



8. Links

Example sprites dirt & sand:

Extracted from Minecraft: https://www.minecraft.net/de-de

Project Link: https://github.com/PWidmann/TileMapWorldCreator