Terrain Engine 2D
A 2D Block Engine for Unity
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Terrain Engine 2D - V1.10

Contents

Here is a list and explanation of all the contents of Terrain Engine 2D.

Table of Contents

Assets

Graphics **Contains all the textures and materials for the engine**

Materials **Contains all the materials for the engine**

- FluidMesh The material used for the Mesh generated by the Fluid Chunks
- FluidTexturedThe material used for the FluidRenderer to render the fluid texture
- Grid-Selector The material used for the Grid Selector
- Sprite The material used for the Sprites that use Z-ordered layering
- **Lighting** **Contains all the materials for the lighting**
  - AmbientLight The material used for the ambient light mesh
  - BasicLight The material used for basic lighting
  - LargeLight The material used for large light sources
  - SmallLight The material used for small light sources

Shaders **Contains all the shaders for the engine**

- Fluid Shader used for rendering the fluid texture
- Sprite Replacement for the Default Sprite shader with ZWrite enabled
- Terrain Shader used for terrain textures
- **Lighting** **Contains all the shaders for the lighting**
  - AmbientLight Shader used for rendering the ambient lighting mesh
  - LightSource Shader used on all light sources

Sprites **Contains all the sprites for the engine**

- Overlap_Block_Template Template used for creating Overlap Blocks
- **Lighting** **Contains all the Sprites for the lighting**
  - Large_Light_Radial Sprite used for large radial lights
  - Small_Light_Radial Sprite used for small radial lights

Prefabs **All the Prefabs used in the engine**

- **Lighting** **Prefabs of light sources**
  - AdvancedRaycastLight An advanced Raycast light which shoots raycasts to the edges of the terrain to generate shadows
  - FlashLight An advanced dynamic raycast light which rotates to face the cursor
  - FloodLight A light source which floods the general area with light
  - RaycastLight A light source which shoots Raycasts in a circular manor around the light to generate shadows
- **Single Instance** **Prefabs of GameObjects which should only contain one instance per scene**
  - Tools The OSD and Grid Selector tools for modifying the generated world
  - World The World which controls all components of the engine
  - WorldCamera The main Camera which displays the terrain, lighting and UI on the screen
- LayerOption A potential layer option for the OSD

Scripts **All the source scripts used in the engine**

Editor **Custom Editor scripts**

- WorldCustomInspector This script controls the custom inspector for the World

Extras **Custom Editor scripts**

- CursorFollower This class causes its GameObject to follow the cursor
- FaceCursor This class causes a 2D GameObject to rotate to face the cursor
- MonoBehaviourSingleton This abstract class is used as a base for all scripts that should act as Singletons

Fluid Dynamics **The scripts used to simulate the Fluid Dynamics System**

- FluidBlock This class stores the information of a single block of fluid
- FluidChunk This class generates the fluid mesh for a single chunk
- FluidDynamics This class simulates the fluid physics
- FluidRenderer This class renders the fluid simulation in a texture

Lighting **The scripts used for the Lighting**

- **Advanced Lighting** **The scripts used for the Advanced Lighting system**
  - AdvancedLightSystem This class controls the advanced 2d lighting system
  - AmbientLight This class controls the ambient lighting
  - **Light Sources** **The scripts used for the light sources**
    - AdvancedRaycastLight The script that controls the AdvancedRaycastLight light source
    - FloodLight The script that controls the FloodLight light source
    - LightSource The base light source script
    - RaycastLight The script that controls the RaycastLight light source
- LightSystem This class controls the basic world lighting

Serialization **The scripts used for file I/O and serialization of data**

- BlockData Serializable script for saving block data
- Serialization Static class for saving and loading data
- WorldData Serializable script for saving info about the World

Terrain **The scripts responsible for generating, modifying and controlling the terrain**

- BlockGridMesh The class is used to create a 2D mesh made up of blocks
- BlockInfo This class stores information of a single block type
- BlockLayer This class holds block layer data and information
- Chunk The class controls a single chunk
- ChunkLoader This class controls loading and unloading of chunks
- ColliderGenerator The class generates the colliders for a chunk
- FallingBlockSimulation The class controls the Falling Block Simulation
- TerrainData This class is meant to be expanded upon, it contains helper functions for generating the terrain
- TerrainDataTemplate This is a template for creating TerrainData classes
- World This is the main World class which holds all block layers and other important information for controlling the terrain

Tools **The tool scripts**

- CameraController This class handles input and controls the camera
- ChildCameraController This class maintains the orthographic size of a child camera with the parent
- GridSelectorImageSetter This class changes the image of the Grid Selector
- OSDController This class controls the OSD
- WorldInputHandler This class handles user input
- WorldModifier This class contains functions for modifying the terrain

Resources/TerrainEngine2D

Prefabs **The Prefabs accessed through the Resources folder**

- Chunk A Prefab of a Chunk which holds a portion of the terrain

Shaders **The Shaders accessed through the Resources folder**

- FastBlur Shader used by the Advanced Light System for blurring the light sources
- Particle Multiply Shader used by the Advanced Light System for blending the lighting with the rest of the graphics
- UI-Default Shader used by the Advanced Light System for blending the overlaying graphics with the rest of the graphics

TopDownExample

Graphics **Contains all the textures and materials used in the Top Down Example**

Materials **Contains all the block tileset materials for building the terrain mesh**

- Background-Tiles The material used for the Background layer
- Main-Tiles The material used for the Main layer
- Mountain-Tiles The material used for the Mountain layer
- Nature-Tiles The material used for the Nature layer

Sprites **Collection of example tileset textures**

- Backkground_Tiles Example Background tileset texture - consists of 2 Overlap blocks (Sand and Dirt) to make up part of the terrain background, each with 4 variations
- Camp_Fire Campfire sprite used with the example CampFire light source
- Main_Tiles Example Main tileset texture - consists of 3 Overlap blocks (Sand, Grass and Dirt) to make up the main terrain block types, each with 4 variations
- Mountain_Tiles Example Mountain tileset texture - consists of 2 Overlap blocks (Dark Rock and Rock) for adding mountains to the terrain each with 4 variations
- Nature_Tiles Example Nature tileset texture - consists of 2 default blocks (Flower and Rock) for adding some nature items, each with 4 variations
- Player Simple sprite used with the example Player prefab

Prefabs **All the Prefabs used for the Top Down Example**

- CampFire An example LightSource
- Player An example Player for testing

Scenes **Collection of scenes for the Top Down Example**

- TopDownExample An example scene to use for reference

Scripts **All the extra scripts used in the Top Down Example**

- PlayerController This is a player controller class which controls the example Player GameObject
- TerrainDataExample This is an example TerrainData class which procedurally generates all the terrain data