

# Terrain Renderer Class

The TerrainRenderer class is a component in Unity that creates a terrain mesh from a heightmap texture. It sets the mesh filter and mesh renderer components and applies a custom shader material to the terrain.

## Class Members

private MeshRenderer meshRenderer: A reference to the mesh renderer component.

private MeshFilter meshFilter: A reference to the mesh filter component.

private Mesh mesh: The terrain mesh generated from the heightmap texture.

public float \_terrainHeight: The height multiplier for the terrain.

public Texture2D \_heightMap: The heightmap texture used to generate the terrain.

public Shader shader: The custom shader material applied to the terrain.

## Methods

void Start(): Called once at the beginning of the script's execution. Initializes the mesh renderer and mesh filter components, generates the terrain mesh, and sets the terrain's height multiplier.

void Update(): Called once per frame. Calls the updateMeshData() method to update the mesh normals.

void updateMeshData(): Updates the mesh normals.

void getMeshData(out Vector3[] vertices, out Color[] colors, out int[] triangles): Generates the terrain mesh data from the heightmap texture. Returns an array of vertices, colors, and triangles.

## Example Usage

Attach the TerrainRenderer component to a game object in Unity. Assign a heightmap texture and shader material to the public variables in the inspector. The terrain mesh will be generated at runtime with the specified height multiplier and shader material applied.