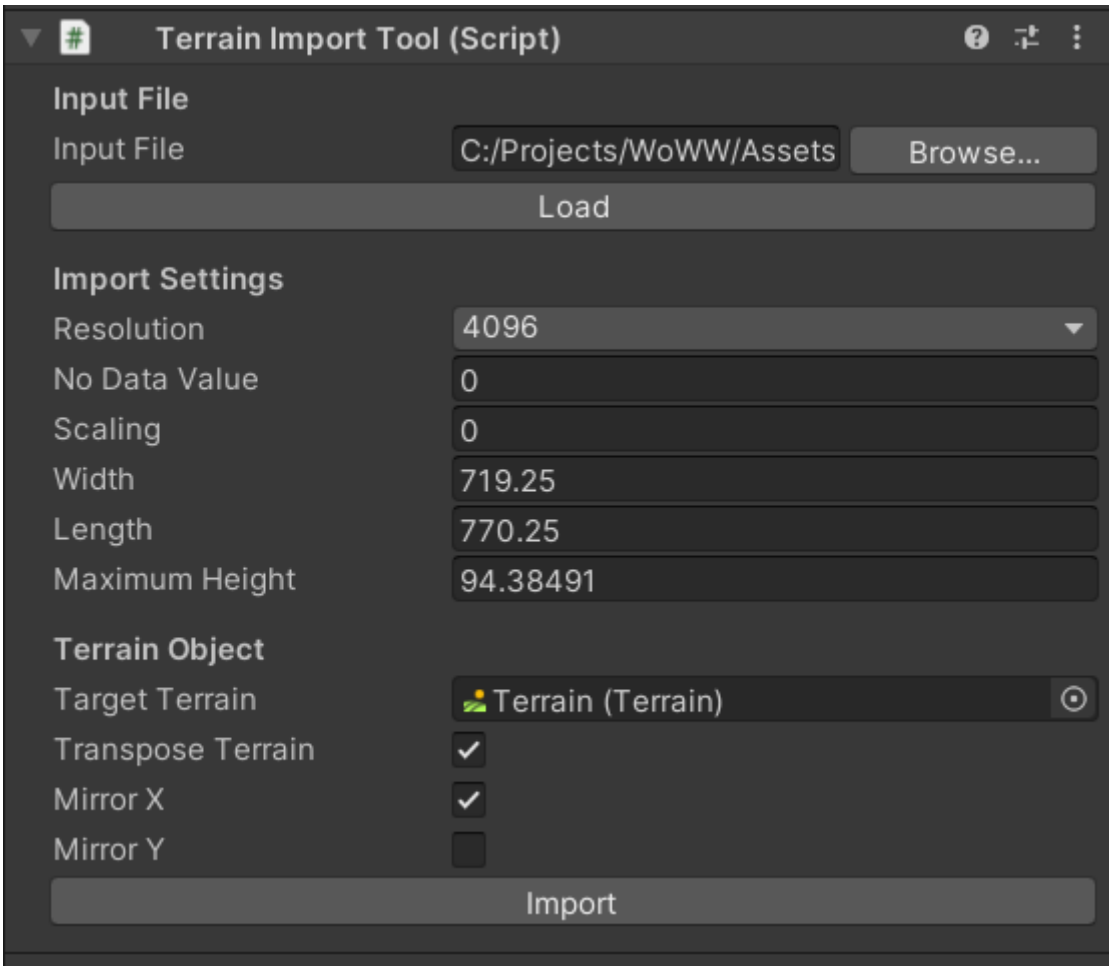
Data Import

This outlines the procedures to import new datasets into the project. There's two main parts, terrain import and flow data import.

Creating the Scene

Refer to New Scene Tutorial on how to create a new scene. The name of the scene will be important later on, so choose one carefully.

Terrain Import



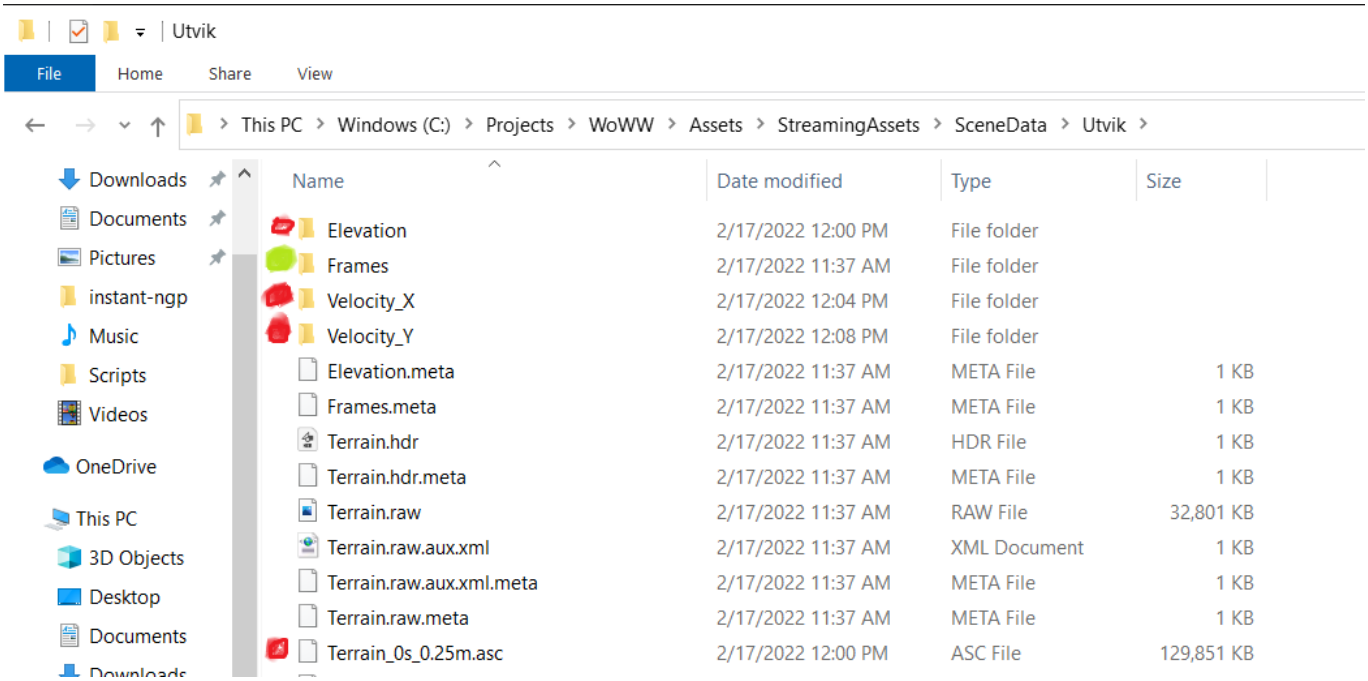
- To start, create an empty game object. Add the `Terrain Import Tool` component.
- Next, click on `Browse`, and navigate to the terrain file. Note that currently only `.asc` files are supported.
- Click on `Load` to load the terrain data. This can take some time.
- The fields below, such as `Width`, `Length`, and `Maximum Height` will get populated automatically depending on the terrain data. Only change these if you know what you are doing.
- You may decrease the `Resolution` if you wish to decrease the accuracy while improving performance.
- Select the `Target Terrain` to import data into.
- If necessary, enable mirroring along diagonal (`Transpose`) or either of the axes (`Mirror X`, `Mirror Y`)
- Click `Import`. If the result is incorrect (e.g. flipped along the diagonal) modify the import setting above and try again.

Flow Data Import

To start with, we need to organize the data into a format that the flow import tool can work with. There are 4 required components that need to be in the same parent folder:

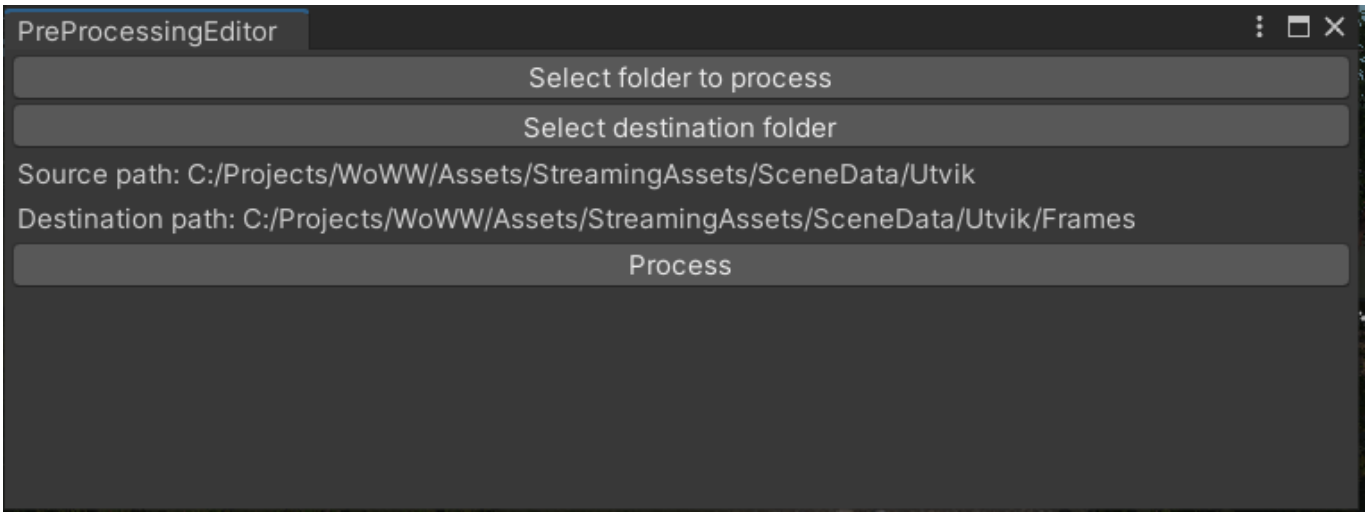
- `Elevation` Directory
  - Elevation `.asc` files of the surface, as it changes in time
- `Velocity_X` Directory
  - Velocity along X axis `.asc` files of the surface, as it changes in time
- `Veloity_Y` Directory
  - Velocity along Y axis `.asc` files of the surface, as it changes in time
- `Terrain.asc` File
  - The underlying terrain. This is required due to some preprocessing of the flow surface that happens
  - This is a file that is found by having `.asc` extention and the keyword `terrain` in it's name. Make sure there is *exactly one* such file in the folder.

Below is an example of a directory setup for being preprocessed. The required items are marked with a red mark:



Once you have the required structure, you can now navigate in the Unity project to `Window -> Breach -> Pre-processing`.

- `Select folder to process`
  - Select the parent folder of the 4 components, as explained above.
- `Select destination folder`
  - Select the folder where pre-processed data should be stored. Use `<Project>/Assets/StreamingAssets/SceneData/<Scene>/Frames`.
  - The `<Scene>` has to be the name of the scene you plan to use this data in, as created in the first step of this document.



- Click `Process`, and wait. Note that this operation can take some time depending on the size and amount of data, and will use all your available CPU resources.
    - A dataset as large as `Utvik` can take between 10 and 25 minutes on a decent system.