How to use, VR data loader and explorer

Loading Data:

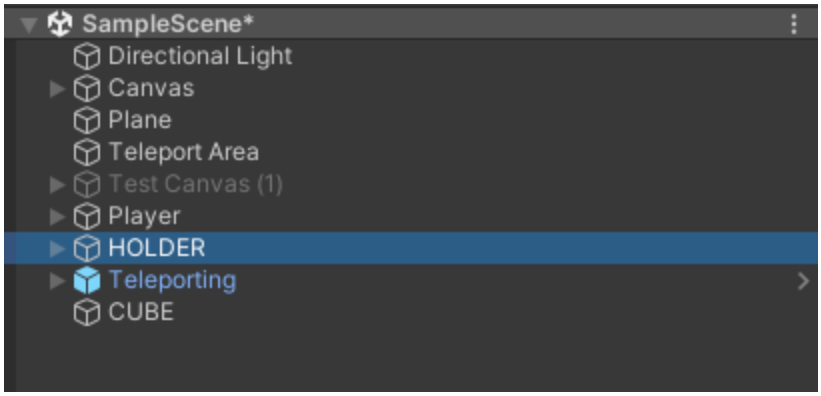
Video Documentation Here

This tool offers a robust way of loading in data to be viewed in the VR environment, but it must be done inside of unity.

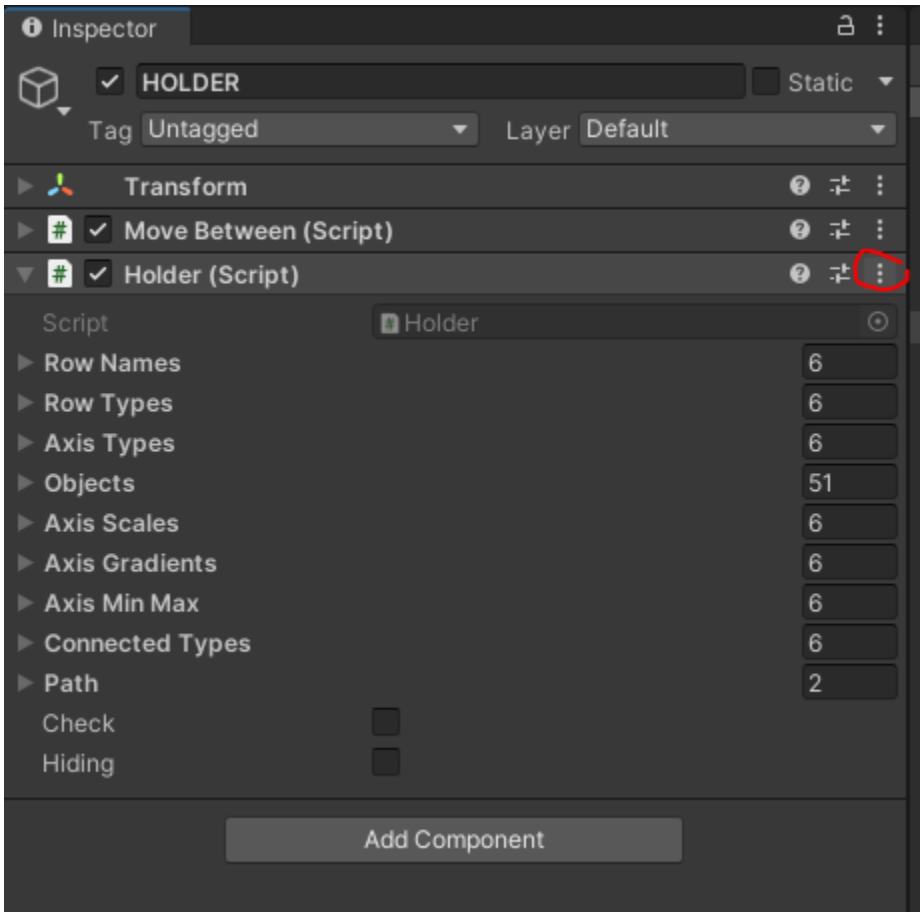
Cleaning the Scene

You must clean the scene before adding new data points

1. Open the provided unity project (Download Unity)
2. find the "Holder" object in the hierarchy



3. Navigate to the Inspector window and find the row labeled “Holder (script)”
4. Press the 3 dots on top of eachother, and select the first option (“Reset”)



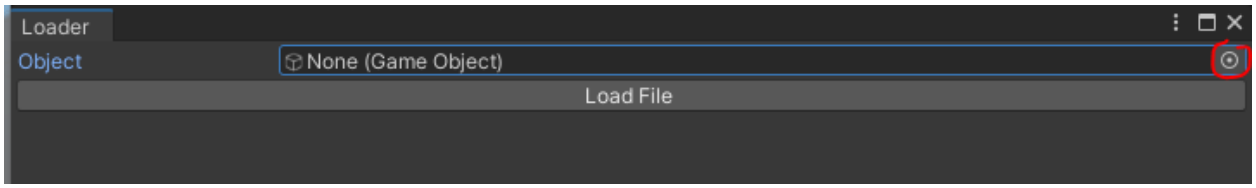
5. The scene is now clean

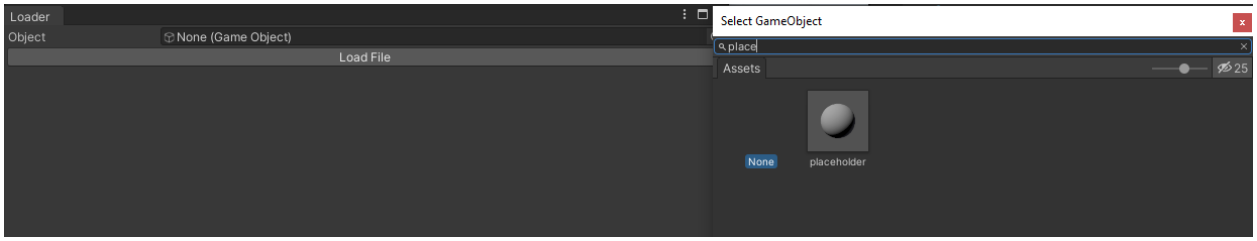
Adding Data

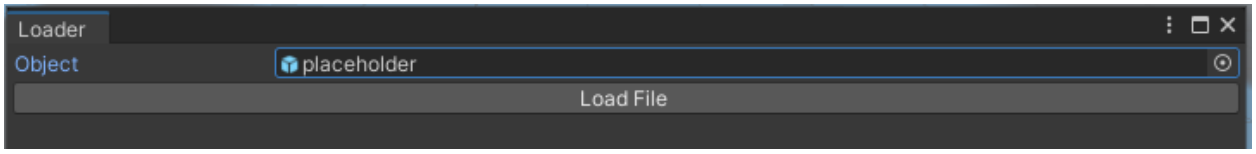
Data is added using .csv
These csv’s should have a first row of labels, and from there on, only pure data
You can have multiple csv’s representing many years

1. Open the provided unity project (Download Unity)

2. Navigate to Tools -> Loader
3. Use the target shape next to the Object field to find the “Placeholder Object”

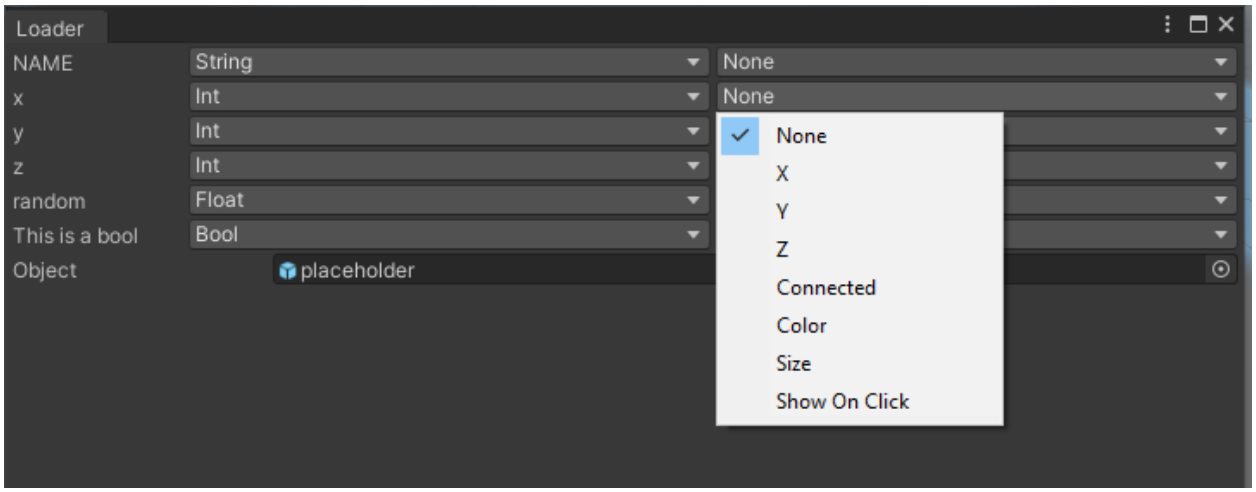






4. Press the “Load File” Button
    4a. This should open a file navigation view, use this to open the desired data file
    4b. The tool will automatically assign variables and types to each column

6. Use the “None” drop down menu to pick the axis type of each variable



X: will represent the numbers along the x axis, by placing the data points there

Y: will represent the numbers along the y axis, by placing the data points there
Z: will represent the numbers along the z axis, by placing the data points there
Color: Will allow you to choose a gradient of colors the data points will appear as
This used the min and max value of that variable to determine the appropriate color
Size: Will represent the numbers in the size of the data point
Show on Click: Depreciated
Connected: Used for connecting multiple csvs
Will use that column to determine connected data for each data point

7. Use the sliders or gradient pickers to change the scale and look of the data points
8. Once it looks how you would like, press the x in the top right corner to close the tool
   8a. You can reopen it any time to change these values

Multiple CSV's over time

One feature of this tool is the ability to display time through the use of multiple sheets of data, say the google trends for the search term "Virtual Reality" from 2012-2022

1. Make sure one axis is marked as "Connected"
   a. This will be the column the tool uses to connect the sheets to existing data points
2. Press the "Add File" button at the bottom of the window
   a. This will open a file navigation view, use this to open the desired data file
   b. Make sure to add the files in chronological order
3. Repeat for all desired sets
4. Your user will now be able to use the sliders to navigate through the different CSVs

Viewing Data

[Video Documentation Here]

This tool creates 3D graphs, that can be seen in either 3D on a regular monitor (limited functionality) or in a VR space

Viewing In 3D

1. Open the provided unity project (Download Unity)
2. Navigate to the top center of the unity screen
3. Press play
4. Use WASD to navigate the world
5. Use your mouse to control the sliders in the top left

Steam VR is required for the project, however most market headsets are compatible with it

Getting the project open in VR

1. Open Steam VR and make sure your headset is connected (Steam VR)
2. Open the provided unity project (Download Unity)
3. Navigate to Window > Steam VR Input
    a. In the bottom right of the window, press the button “Open binding UI”
    b. This should open up a steam VR page that will allow you to bind all the controls to your specific controller scheme
    c. Video Tutorial
4. Go to the top center of the unity project screen, press the play button
5. Put on your headset, and you should be good

Interacting with Objects

To interact with the objects and UI, you will be using the right hand

1. Press the grip button 1 time, this should turn on a line coming out of the controller
2. Use this to point and objects, and use the pinch/interactUI button to control ui and interact with objects

There are two tools to interact with objects

You can see what tool you are using by the number on top of the right controller
Swap between these by swiping on the dpad in your right hand (or whatever is set up as “trackPadMove”)

Tool 0: When clicking on an object, this will show the data about it
Tool 1: Hide all objects except the pressed one (or show all objects)

UI

UI is interacted with in the same way as objects, point the line from the right controller at it, and press the “pinch” interaction button

On your left hand there is a scroll box with two different UIs. You can move between these views either by using the left hand trackpad, and swiping your finger left and right, or pointing the right controller and dragging.
Each section of the scroll view has sliders and buttons

These sliders are used to display time, as it is related to the different imported CSVs
The smooth sliders moves the data points between their different locations smoothly and linearly
The step slider moves the objects in discrete intervals, each relating to a csv
You can move both sliders manually, or control them with the buttons

Both sliders have control buttons on their page

> : play or pause the slider
0.5x - 2x: Change the speed that the slider plays at

Loop: Play to the end of the slider, and then start again
Bounce: Play to an extreme of the slider, and then continue going the other direction

Screen Shots

There are many times where you may want to save what you are looking at while exploring the data

To do so, use the “GrabPinch” button on the left controller to take a screenshot of what you are currently seeing through the headset

This is not a perfect match of the headset view, so I suggest taking a couple at a few different angles

Once you exit out of the project, the screenshots will be saved inside the project folder
Go under Assets>Resources>screenshots

They will be named based on the time at which you took them

Known Limitations And FAQ

All columns with data need to be labeled

For example, the csvs created from insight data have one column labeled “examples” but then will have multiple columns worth of examples in each row. Instead you should label these columns “example1” , “example2” etc..

Only one object appears when I load data

This happens sometimes, to fix it: close the loader window, reset the HOLDER script, re-open the window (these steps)

The color “axis” is not working

Yep :)

Null reference errors

If these happen while the project is running, they can be ignored. Most of these errors will be caused by the pointer in the right hand, and unless something looks like it is not working, these are okay

I can’t use the UI/ I can’t click on objects

First, make sure you can see the white line coming out of the right controller, if not, press the “grip” button to make it appear

If it is there and you can’t click, or you can not get it to appear, make sure you have all buttons on the controller set up correctly (Instructions).