

Infohazard.Core

1.2.0

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1 Infohazard.Core Documentation

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1.2 Introduction

[Infohazard.Core](#) is a collection of systems and utilities that I've found super helpful in making many different kinds of games, so I hope you find it helpful too! This document will cover setup and basic usage of the code in [Infohazard.Core](#). You can find full API documentation here and in the code.

1.3 Documentation and Support

[API Docs](#)

[Tutorial Playlist](#)

[Discord](#)

1.4 License

If [Infohazard.Core](#) is acquired from the Unity Asset Store, you must follow the Unity Asset Store license. The open-source repository uses the [MIT license](#). You are welcome to have your own packages or assets depend on this package.

1.5 Installation

1.5.1 Method 1 - Package Manager

Using the Package Manager is the easiest way to install the package to your project. Simply install the project as a git URL. Note that if you go this route, you will not be able to make any edits to the package.

1. In Unity, open the Package Manager (Window > Package Manager).
2. Click the '+' button in the top right of the window.
3. Click "Add package from git URL...".
4. Paste in <https://github.com/infohazardgames/Infohazard.Core.git>.
5. Click Add.

1.5.2 Method 2 - Git Submodule

Using a git submodule is an option if you are using git for your project source control. This method will enable you to make changes to the package, but those changes will need to be tracked in a separate git repository.

1. Close the Unity Editor.
2. Using your preferred git client or the command line, add <https://github.com/infohazardgames/Infohazard.Core.git> as a submodule in your project's Packages folder.
3. Re-open the Unity Editor.

If you wish to make changes when you use this method, you'll need to fork the package repo. Once you've made your changes, you can submit a pull request to get those changes merged back to this repository if you wish.

1. Fork this repository. Open your newly created fork, and copy the git URL.
2. In your project's Packages folder, open the package repository.
3. Change the `origin` remote to the copied URL.
4. Make your changes, commit, and push.
5. (Optional) Open your fork again, and create a pull request.

1.5.3 Method 3 - Add To Assets

If you wish to make changes to the library without dealing with a git submodule (or you aren't using git), you can simply copy the files into your project's Assets folder.

1. In the main page for this repo, click on Code > Download Zip.
2. Extract the zip on your computer.
3. Make an [Infohazard.Core](#) folder under your project's Assets folder.
4. Copy the `Editor` and `Runtime` folders from the extracted zip to the newly created folder.

1.5.4 Method 4 - Asset Store

If you'd rather use the asset store than the package manager, you can get the project [here](#). Simply add it to the project as you would any other asset.

1.6 Setup

1.6.1 General Setup

The only setup required beyond installation is to add references to the [Infohazard.Core](#) assembly if you are using an assembly definition. If you are using the default assemblies (such as `Assembly-CSharp`), nothing is needed here. You may also wish to have your editor assembly (if you have one) reference [Infohazard.Core.Editor](#). In order to reference the generated GameTag file, you must also add a reference to `Infohazard.Core.Data`.

1.6.2 SRP Setup

If you are using a scriptable render pipeline (URP, HDRP, etc) and wish to run the demos, you will need to upgrade the materials using your render pipeline's material upgrade system. The materials you'll need to upgrade are in `Assets/Plugins/Infohazard/Demos/Infohazard.Core/Materials` and `Assets/Plugins/Infohazard/Demos/Shared Demo Assets/Materials`.

1.7 Demos

The following demo scenes are provided to cover the various features of [Infohazard.Core](#).

1.7.1 Attributes

This demo, located at `Assets/Plugins/Infohazard/Demos/Infohazard.Core/Scenes/Demo_Attributes.unity`, demonstrates how you can use the various attributes provided in [Infohazard.Core](#) to improve your parameter editing experience.

1.7.2 Pooling and Timing

This demo, located at `Assets/Plugins/Infohazard/Demos/Infohazard.Core/Scenes/Demo_PoolingAndTiming.unity`, shows how to use the object pooling system to improve performance when spawning many objects, and how to use a timer to control the timing of this spawning (as well as using the pause system).

1.7.3 Quartic Solver

This demo, located at `Assets/Plugins/Infohazard/Demos/Infohazard.Core/Scenes/Demo_QuarticSolver.unity`, demonstrates how to use the math utility to solve a quartic equation. This functionality is useful for scenarios such as aiming at an accelerating target.

1.7.4 Tags and Trigger Volume

This demo, located at `Assets/Plugins/Infohazard/Demos/Infohazard.Core/Scenes/Demo_TagsAndTriggerVolume.unity`, demonstrates how to use the `TriggerVolume` script to set up triggers in the editor, as well as how to use a tag mask to filter which objects are considered by the trigger.

1.7.5 Unique name

This demo, located at `Assets/Plugins/Infohazard/Demos/Infohazard.Core/Scenes/Demo_UniqueName.unity`, demonstrates how to use the `UniqueName` system to reference and find specific objects without having a direct reference (such as if they are in another scene).

1.8 Features Guide

1.8.1 Attributes

The package provides several `PropertyAttributes` that you can use in your scripts to customize how serialized fields are drawn in the inspector. To use any of these attributes, simply add `[AttributeName]` in front of a serialized field in a script. You can also check out the drawers for these attributes in the `Editor/Attributes` directory.

1.8.1.1 AssetDropdown The `[AssetDropdown]` attribute is used to show a dropdown menu on a field whose type is a `UnityEngine.Object` reference. It will find all assets in your project that match this type and display them as options in the dropdown. The standard drag/drop interface still works as well.

1.8.1.2 ConditionalDraw The `[ConditionalDraw]` attribute is used to conditionally hide a serialized field in the inspector depending on some other condition. The supplied condition should be the name of another serialized field in the same script. You can also optionally pass in a value to compare that condition field with, and whether they must be equal or unequal to display the field.

1.8.1.3 DrawSingleChildProperty The `[DrawSingleChildProperty]` attribute is used to render a hierarchy of fields as just a single value. Say you have a struct called `Data` with a string field called `_name`. Adding `[DrawSingleChildProperty("_name")]` to a field of type `Data` would cause just the `_name` field to be drawn in the inspector.

1.8.1.4 EditNameOnlyAttribute The `[EditNameOnly]` attribute displays a Unity Object reference field as a text entry, which is used to control the name of the referenced object. If the reference is set to null, the standard drag-drop box is used.

1.8.1.5 ExpandableAttribute The `[Expandable]` attribute is used to optionally draw the child properties of a Unity Object reference field, such that the referenced object can be edited without changing the inspector context. If the type of the field is a `ScriptableObject`, new instances can also be created from the inspector.

1.8.1.6 TypeSelectAttribute The `[TypeSelect]` attribute is used on a string field to show a dropdown where any valid C# type can be selected. The selected type is saved in the string as its full class name. This attribute is useful with the `TypeUtility` class to find the selected type.

1.8.2 Data Structures

1.8.2.1 ListQueue The `ListQueue<T>` class is an implementation of a queue data structure similar to C#'s `Queue` class. The main difference is that a `ListQueue` implements the `ICollection` interface and allows you to access any element of the queue whenever you want, while still maintaining $O(1)$ performance for normal `Enqueue` and `Dequeue` operations (as long as there is capacity available).

1.8.3 Pooling

The library provides a simple object pooling system under the `Pooling` directory. Object pooling means that instead of instantiating and destroying `GameObjects` as needed, we deactivate them and reactivate them to avoid constantly allocating and deallocating memory.

1.8.3.1 Spawnable To start working with the pooling system, simply add the Spawnable script to your prefabs and then instantiate/destroy them using `Spawnable.Spawn` and `Spawnable.Despawn`. Note that `Awake/OnDestroy` will only be called when the objects are actually created and destroyed; if you want an event when the object is spawned, use the `OnSpawned` and `OnDespawned` messages. Note that if a prefab does not contain a Spawnable script, using `Spawnable.Spawn` and `Spawnable.Despawn` is the same as `Instantiate` and `Destroy`. This allows you to spawn and despawn objects without worrying about whether they're pooled or not. All of my libraries use this system, so they are compatible with pooling.

1.8.3.2 PoolManager The pooling system needs a `PoolManager` to work. You can either place one `PoolManager` per scene, have a global instance that is never destroyed, or simply let the system create the manager itself. To create it manually, just add this script to an empty `GameObject` and you're good to go. You can use the `ClearInactiveObjects()` method on `PoolManager.Instance` to destroy any inactive pooled objects, such as when you change scenes. `PooledTrail`, `PooledParticleSystem` Attach these scripts to `TrailRenderer` and `ParticleSystem` `GameObject`s to make them play nicely with the pooling system.

1.8.4 Timing

The Timing directory contains some useful utilities to deal with in-game time.

1.8.4.1 PassiveTimer `PassiveTimer` is a serializable data type used to create timers in your scripts. You can use it to create ability cooldowns and durations, weapon reloads, and other common game functionality. Simply call `Initialize()` when your script initializes, then use the timer's various methods. See the API docs for more info.

1.8.4.2 Pause The Pause system is built to do exactly that - pause the game. Just set `Pause.IsPaused` to true and time will freeze, then set it to false to resume time at its previous speed. The game will automatically unpause if you change scenes. You should avoid running game logic if the game is paused.

1.8.4.3 TimeToLive This script destroys or despawns an object some number of seconds after it is spawned. It is compatible with the pooling system.

1.8.5 Tags

This system is meant to make working with `GameObject` tags in your scripts much easier and less error-prone.

1.8.5.1 Tag This class provides string constants for all default tags. So instead of writing `target.CompareTag("Player")` you could write `target.CompareTag(Tag.Player)`.

1.8.5.2 TagMask Using a serialized field of type `TagMask` allows users to pick tags in the editor from a dropdown instead of typing them, just like the Unity-provided `LayerMask`. It also allows selecting multiple tags without using an array. Extension methods are provided for common tag operations so that a `TagMask` can be used in place of a string tag. For example, you can say `target.CompareTag(tagMask)`, which will return true if target's tag is equal to any of the tags in `tagMask`.

1.8.5.3 GameTag This file is generated based on your custom tags, and lives in your project rather than in the package. You should be prompted to generate it if the system detects you have custom tags, or you can use the `Tools > Infohazard > Generate > Update GameTag.cs` command. Once this file is generated, your game tags will automatically be available for selection in a `TagMask`, and you can refer to them as constants in code through the generated `GameTag` class (you will need to reference the `Infohazard.Core.Data` assembly if you are using assembly definitions).

1.8.6 Unique Names

The UniqueName system enables you to assign names to objects that can be referenced across scenes and assets. You can then easily find the active object using that name (if one exists). This system uses ScriptableObjects to store the names so that you can easily see what names are available to reference, and can avoid having to type out the names and potentially make mistakes. Furthermore, these unique names can be changed without breaking references, since they are stored as object references.

1.8.6.1 UniqueNameList A UniqueNameList asset is how you start creating a list of unique names. You can have multiple UniqueNameLists in your project, or you can use just one. This is purely for organizational purposes. You can create a UniqueNameList using Assets > Create > [Infohazard](#) > Unique Name List.

1.8.6.2 UniqueNameListEntry A UniqueNameListEntry is the actual unique name, which is organized under a UniqueNameList and used both by objects with unique names and objects using the system to find named objects. UniqueNameListEntries should be created through the UniqueNameList inspector.

1.8.6.3 UniqueNamedObject Attach this script to a GameObject to assign a unique name to it, and make it findable in the system. You can find one of these objects using the static method UniqueNamedObject.TryGet↵Object, passing in either a string or a UniqueNameListEntry.

1.8.7 Utility

The Utility section contains a bunch of static methods to help with all kinds of common operations. See the API docs for each file for more info.

1.8.7.1 DebugUtility Contains methods to draw a cube using Debug.DrawLine, and to pause the editor after a certain number of frames.

1.8.7.2 EnumerableUtility Contains methods that combine common LINQ calls such as Select and Where into a single enumeration for better code optimization.

1.8.7.3 GameObjectUtility Contains various methods for working with GameObjects and Transforms, such as destroying all the children of an object, setting an object's layer recursively, and getting a path containing an object's ancestor names.

1.8.7.4 MathUtility Contains many useful math operations, such as constructing a Quaternion from any two axes, getting a vector with one component changed, solving polynomials up to degree 4 (quartic), and getting the point where two lines are closest to each other.

1.8.7.5 RandomUtility Contains extension methods to System.Random such as generating 64-bit numbers. StringUtility String processing methods such as splitting a CamelCase string to have spaces between words.

1.8.7.6 TypeUtility Provides methods to get a list of all loaded types using reflection, and to find a type based on its name.

1.8.8 Miscellaneous

The remaining functionality provided by [Infohazard.Core](#) doesn't fall nicely into one of the previous categories, but was still useful enough to include.

1.8.8.1 ProgressBar Used to create health bars and other types of progress bars without using a Slider. It supports images that fill the bar using either the "filled" image type or by manipulating the RectTransform anchors.

1.8.8.2 SceneControl Provides a static method to quit the game that works in a standalone build as well as in the editor. Also provides some methods to navigate to scenes. This is useful if you're building a super quick main menu (such as in the last half hour of a game jam) and need to hook up your buttons as fast as possible.

1.8.8.3 SceneRef A serializable type that allows you to have assignable scene references in your scripts without making the user type the scene name. Instead, they can simply drag in a scene asset. At runtime, you still access the scene by its name. Using a SceneRef also enables the reference to be maintained if a scene is renamed.

1.8.8.4 Singleton You can inherit from this script in managers or other scripts that need to exist in the scene exactly once. A static Instance accessor is automatically provided, which will do a lazy search for the correct instance the first time it is used, or if the previous instance was destroyed. After that it will just return a cached instance.

1.8.8.5 SingletonAsset Similar to Singleton, but for ScriptableObjects. You specify a path in your subclass where the instance should live (this must be under a Resources folder) and the editor will automatically handle loading and even creating this asset for you when needed.

1.8.8.6 TriggerVolume A script that makes it easy to add events to a trigger collider. Provides both UnityEvents (assignable in the inspector) and normal C# events for when an object enters or leaves the trigger, and when all objects have left the trigger.

1.9 Integrations

[Infohazard.Core](#) directly supports integration with the following assets and packages:

1.9.1 Addressables

[Infohazard.Core](#) has an extension package to support spawning Addressable prefabs through the spawn/pooling system. This extension can be very helpful when working with Addressables, even if you don't want to actually pool them.

Regardless of how you install the Addressables integration, you will need to install [UniTask](#), either via the Package Manager or importing the .unitypackage.

If you downloaded [Infohazard.Core](#) from the Unity Asset Store, you can find the Addressables integration package at `Assets/Plugins/Infohazard/Infohazard.Core/Integrations/Infohazard.Core.↔Addressables.unitypackage`. Double click that package in Unity to extract the files into your project.

If you are using [Infohazard.Core](#) as a package, you can install the Addressables integration package from [Github](#).

2 Changelog

All notable changes to this project will be documented in this file.

The format is based on [Keep a Changelog](#), and this project adheres to [Semantic Versioning](#).

2.1 [1.3.0] - 2023-6-21

2.1.1 Added

- Addressables integration package.
- Made pooling system more modular in order to support Addressables package.
- Added `PassiveTimer.TimeSinceIntervalEnded`.
- Added ability for `TriggerVolume` to enable/disable a list of colliders when it is enabled/disabled.
- `Expandable` attribute has a new `ShowChildTypes` option, which allows selecting a subclass of the given type. This means it can now be used on fields with an abstract type.
- `Expandable` attribute now supports non-ScriptableObject assets such as materials.
- Added events when a `UniqueNamedObject` is registered or deregistered.
- Added ability to include the `GameObject`'s scene in `SpawnParams.At`.

2.1.2 Changed

- `ListQueue` now implements `ReadOnlyList`.
- `Singleton.Instance` can now return a destroyed instance if there is not a new instance to replace it.
- Exposed `TriggerVolume` occupants list.

2.1.3 Fixed

- Fixed `Expandable` attribute not working when a type had a namespace.
- Fixed `ListQueue` enumerable constructor not working properly.
- Fixed `PassiveTimer.IsIntervalEnded` not respecting time mode.
- Fixed `SpawnParams.At` including global position/rotation when the parented is set to true.

2.2 [1.2.0] - 2022-11-22

2.2.1 Added

- `DebugUtility.DrawDebugCircle`.
- `MathUtility.GetPerpendicularVector`.

2.2.2 Fixed

- Fixed TagMaskEditor messing up values when editing multiple objects.

2.3 [1.1.0] - 2022-11-13

2.3.1 Changed

- Made GameTag.cs generation far more robust.
 - Handle when there are more than 64 tags.
 - Handle all invalid characters in variable names.
 - Handle variable names that are keywords.
 - Handle tag strings containing quotation marks.
- Removed the warning message when generating GameTag.cs as it's no longer relevant.

2.4 [1.0.0] - 2022-10-08

2.4.1 Added

- Initial release, all files and documentation added.

3 Hierarchical Index

3.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

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Infohazard.Core.EditNameOnlyAttribute	37
Infohazard.Core.EnumerableUtility	37
Infohazard.Core.ExpandableAttribute	39
Infohazard.Core.GameObjectUtility	41

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Infohazard.Core.Singleton< T >	90
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Infohazard.Core.SingletonAsset< T >	91
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4 Class Index

4.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Infohazard.Core.AssetDropdownAttribute		
Attribute that draws an object reference as a dropdown that searches through the project.	16	
Infohazard.Core.ComponentID		
A serializable type used to uniquely identify a component relative to a root GameObject.	16	
Infohazard.Core.ConditionalDrawAttribute		
Attribute draws a property when a given condition is true.	19	
Infohazard.Core.Editor.CoreEditorUtility		
Contains several editor-only utilities.	21	
Infohazard.Core.DebugUtility		
Contains various static methods relating to debugging and diagnostics.	29	
Infohazard.Core.DefaultPoolHandler		
An IPoolHandler that is passed a prefab directly.	32	
Infohazard.Core.DrawSingleChildPropertyAttribute		
Attribute draws only a single child property of a property.	36	
Infohazard.Core.EditNameOnlyAttribute		
Attribute that draws only the name of an Object reference field.	37	
Infohazard.Core.EnumerableUtility		
Contains various static methods for working with sequences, extending the functionality of LINQ.	37	
Infohazard.Core.ExpandableAttribute		
Attribute that enables editing properties of a referenced object.	39	
Infohazard.Core.GameObjectUtility		
Contains utility methods for dealing with GameObjects and Transforms.	41	
Infohazard.Core.IPersistedInstance		
This is a hack so that PoolManager can send messages to PersistedGameObjects.	47	
Infohazard.Core.ListQueue< T >		
A FIFO data structure similar to a Queue, except that it implements all List operations.	48	
Infohazard.Core.MathUtility		
Contains utility methods for working with mathematical types and solving math equations.	54	
Infohazard.Core.PassiveTimer		
A lightweight timer that does not need to be updated each frame.	72	

Infohazard.Core.Pause	
Manages pausing and unpausing of the game.	78
Infohazard.Core.Pool< T >	
Provides a simple pool with an interface similar to the official Unity pool added in 2021.	79
Infohazard.Core.PooledParticleEffect	
A component that can be attached to ParticleSystem GameObjects to make them work correctly with pooling.	82
Infohazard.Core.PooledTrail	
A component that can be attached to TrailRenderer GameObjects to make them work correctly with pooling.	83
Infohazard.Core.PoolManager	
The singleton manager class that handles object pooling.	83
Infohazard.Core.ProgressBar	
Used to create health bars and other types of progress bars without using a Slider.	86
Infohazard.Core.SpawnRefBase< T >.PropNames	
This is used to refer to the names of private fields in this class from a custom Editor .	88
Infohazard.Core.RandomUtility	
Contains extensions to builtin randomization functionality.	88
Infohazard.Core.SceneControl	
Provides some methods to navigate to scenes.	89
Infohazard.Core.Singleton< T >	
Base class that makes it easier to write scripts that always have exactly one instance.	90
Infohazard.Core.SingletonAsset< T >	
Base class that makes it easier to write ScriptableObjects that always have exactly one instance in your project.	91
Infohazard.Core.SingletonAssetBase	
Base class of SingletonAsset<T>. For internal use only.	92
Infohazard.Core.Spawnable	
Attach this component to a prefab to enable it to use the pooling system.	93
Infohazard.Core.SpawnParams	
Used to pass spawn parameters to various object creation/initialization methods.	99
Infohazard.Core.SpawnRef< T >	
SpawnRef for spawning a GameObject directly.	101
Infohazard.Core.SpawnRefBase< T >	
Only used internally.	103
Infohazard.Core.StringUtility	
Contains string processing utilities.	106
Infohazard.Core.Tag	
Provides string constants for builtin Unity tags.	107
Infohazard.Core.TagMask	
Used to select tags in the inspector, including the ability to select multiple tags.	109

Infohazard.Core.TagMaskUtility	
Static operations on Tag enum values.	116
Infohazard.Core.Editor.TagsGenerator	
Class used to generate the <code>GameTag.cs</code> file to use your custom tags in code.	119
Infohazard.Core.TimeToLive	
Despawns a <code>GameObject</code> after a set amount of time.	120
Infohazard.Core.TriggerVolume.TriggerEvents	
Class that stores the <code>UnityEvents</code> used by a TriggerVolume .	121
Infohazard.Core.TriggerVolume	
A script that makes it easy to add events to a trigger collider.	122
Infohazard.Core.TypeSelectAttribute	
Attribute that draws string fields as a dropdown where a <code>Type</code> can be selected.	125
Infohazard.Core.TypeUtility	
Contains utilities for working with C# reflection types and getting a type by its name.	126
Infohazard.Core.UniqueNamedObject	
This script is used to assign a unique name to an object, which can then be used to find that object.	128
Infohazard.Core.UniqueNameList	
A list used to organize unique names used by objects.	130
Infohazard.Core.UniqueNameListEntry	
A unique name asset, usable by a UniqueNamedObject .	131

5 Namespace Documentation

5.1 Infohazard Namespace Reference

5.2 Infohazard.Core Namespace Reference

Classes

- class [AssetDropdownAttribute](#)
Attribute that draws an object reference as a dropdown that searches through the project.
- struct [ComponentID](#)
A serializable type used to uniquely identify a component relative to a root `GameObject`.
- class [ConditionalDrawAttribute](#)
Attribute draws a property when a given condition is true.
- class [DebugUtility](#)
Contains various static methods relating to debugging and diagnostics.
- class [DefaultPoolHandler](#)
An `IPoolHandler` that is passed a prefab directly.
- class [DrawSingleChildPropertyAttribute](#)
Attribute draws only a single child property of a property.
- class [EditNameOnlyAttribute](#)
Attribute that draws only the name of an `Object` reference field.
- class [EnumerableUtility](#)

- Contains various static methods for working with sequences, extending the functionality of LINQ.*
- class [ExpandableAttribute](#)
Attribute that enables editing properties of a referenced object.
 - class [GameObjectUtility](#)
Contains utility methods for dealing with GameObjects and Transforms.
 - interface [IPersistedInstance](#)
This is a hack so that [PoolManager](#) can send messages to PersistedGameObjects.
 - class [ListQueue](#)
A FIFO data structure similar to a Queue, except that it implements all List operations.
 - class [MathUtility](#)
Contains utility methods for working with mathematical types and solving math equations.
 - struct [PassiveTimer](#)
A lightweight timer that does not need to be updated each frame.
 - class [Pause](#)
Manages pausing and unpausing of the game.
 - class [Pool](#)
Provides a simple pool with an interface similar to the official Unity pool added in 2021.
 - class [PooledParticleEffect](#)
A component that can be attached to ParticleSystem GameObjects to make them work correctly with pooling.
 - class [PooledTrail](#)
A component that can be attached to TrailRenderer GameObjects to make them work correctly with pooling.
 - class [PoolManager](#)
The singleton manager class that handles object pooling.
 - class [ProgressBar](#)
Used to create health bars and other types of progress bars without using a Slider.
 - class [RandomUtility](#)
Contains extensions to builtin randomization functionality.
 - class [SceneControl](#)
Provides some methods to navigate to scenes.
 - class [Singleton](#)
Base class that makes it easier to write scripts that always have exactly one instance.
 - class [SingletonAsset](#)
Base class that makes it easier to write ScriptableObject that always have exactly one instance in your project.
 - class [SingletonAssetBase](#)
Base class of SingletonAsset<T>. For internal use only.
 - class [Spawnable](#)
Attach this component to a prefab to enable it to use the pooling system.
 - struct [SpawnParams](#)
Used to pass spawn parameters to various object creation/initialization methods.
 - class [SpawnRef](#)
[SpawnRef](#) for spawning a GameObject directly.
 - class [SpawnRefBase](#)
Only used internally.
 - class [StringUtility](#)
Contains string processing utilities.
 - class [Tag](#)
Provides string constants for builtin Unity tags.
 - struct [TagMask](#)
Used to select tags in the inspector, including the ability to select multiple tags.
 - class [TagMaskUtility](#)
Static operations on [Tag](#) enum values.

- class [TimeToLive](#)
Despawns a `GameObject` after a set amount of time.
- class [TriggerVolume](#)
A script that makes it easy to add events to a trigger collider.
- class [TypeSelectAttribute](#)
Attribute that draws string fields as a dropdown where a Type can be selected.
- class [TypeUtility](#)
Contains utilities for working with C# reflection types and getting a type by its name.
- class [UniqueNamedObject](#)
This script is used to assign a unique name to an object, which can then be used to find that object.
- class [UniqueNameList](#)
A list used to organize unique names used by objects.
- class [UniqueNameListEntry](#)
A unique name asset, usable by a [UniqueNamedObject](#).

5.3 Infohazard.Core.Editor Namespace Reference

Classes

- class [CoreEditorUtility](#)
Contains several editor-only utilities.
- class [TagsGenerator](#)
Class used to generate the `GameTag.cs` file to use your custom tags in code.

6 Class Documentation

6.1 Infohazard.Core.AssetDropdownAttribute Class Reference

Attribute that draws an object reference as a dropdown that searches through the project.

6.1.1 Detailed Description

Attribute that draws an object reference as a dropdown that searches through the project.

The documentation for this class was generated from the following file:

- `Runtime/Attributes/AssetDropdownAttribute.cs`

6.2 Infohazard.Core.ComponentID Struct Reference

A serializable type used to uniquely identify a component relative to a root `GameObject`.

Public Member Functions

- [ComponentID](#) (Transform root, Component target)
Construct a [ComponentID](#) with the given root and target by calculating the path to the target.
- override string [ToString](#) ()
- T [Get< T >](#) (Transform root)
Get the referenced component.
- bool [Equals](#) ([ComponentID](#) other)
- override bool [Equals](#) (object obj)
- override int [GetHashCode](#) ()

Properties

- string [Path](#) [get]
Path from this GameObject to the GameObject that holds the referenced component.
- string [Type](#) [get]
Type name of the referenced component.

Private Attributes

- string [_path](#)
(Serialized) Path from this GameObject to the GameObject that holds the referenced component.
- string [_type](#)
(Serialized) Type name of the referenced component.

6.2.1 Detailed Description

A serializable type used to uniquely identify a component relative to a root GameObject.

The root GameObject that holds the [ComponentID](#) may not be an actual transform.root, but rather just an ancestor of the referenced component. This type is mostly used in order to persist the states of individual components, keyed by their ID.

6.2.2 Constructor & Destructor Documentation

6.2.2.1 [ComponentID\(\)](#) Infohazard.Core.ComponentID.ComponentID (
 Transform root,
 Component target)

Construct a [ComponentID](#) with the given root and target by calculating the path to the target.

Parameters

<i>root</i>	The GameObject from which the reference originates.
<i>target</i>	The component that is being referenced.

6.2.3 Member Function Documentation

6.2.3.1 Equals() [1/2] `bool Infohazard.Core.ComponentID.Equals (
 ComponentID other)`

6.2.3.2 Equals() [2/2] `override bool Infohazard.Core.ComponentID.Equals (
 object obj)`

6.2.3.3 Get< T >() `T Infohazard.Core.ComponentID.Get< T > (
 Transform root)`

Get the referenced component.

Parameters

<i>root</i>	The GameObject from which the reference originates.
-------------	---

Template Parameters

<i>T</i>	Type to cast the component to.
----------	--------------------------------

Returns

The referenced component, or null if not found.

Type Constraints

T* : *Component

6.2.3.4 GetHashCode() `override int Infohazard.Core.ComponentID.GetHashCode ()`

6.2.3.5 ToString() `override string Infohazard.Core.ComponentID.ToString ()`

6.2.4 Member Data Documentation

6.2.4.1 `_path` `string Infohazard.Core.ComponentID._path [private]`

(Serialized) Path from this GameObject to the GameObject that holds the referenced component.

6.2.4.2 `_type` `string Infohazard.Core.ComponentID._type [private]`

(Serialized) Type name of the referenced component.

6.2.5 Property Documentation

6.2.5.1 `Path` `string Infohazard.Core.ComponentID.Path [get]`

Path from this GameObject to the GameObject that holds the referenced component.

6.2.5.2 `Type` `string Infohazard.Core.ComponentID.Type [get]`

Type name of the referenced component.

The documentation for this struct was generated from the following file:

- Runtime/Misc/ComponentID.cs

6.3 Infohazard.Core.ConditionalDrawAttribute Class Reference

Attribute draws a property when a given condition is true.

Public Member Functions

- [ConditionalDrawAttribute](#) (string boolCondition)
ConditionalAttribute that requires a serialized boolean field to be true.
- [ConditionalDrawAttribute](#) (string condition, object value, bool isEqual=true)
ConditionalAttribute that requires a serialized field named condition to be equal or not equal to value.

Properties

- string [Condition](#) [get]
The serialized field to check.
- object [Value](#) [get]
The value to compare the Condition field to.
- bool [IsEqual](#) [get]
Whether the value of the condition field should be equal to the given value in order to draw.

6.3.1 Detailed Description

Attribute draws a property when a given condition is true.

6.3.2 Constructor & Destructor Documentation

6.3.2.1 ConditionalDrawAttribute() [1/2] `Infohazard.Core.ConditionalDrawAttribute.Conditional↵
DrawAttribute (`
 `string boolCondition)`

ConditionalAttribute that requires a serialized boolean field to be true.

Parameters

<i>boolCondition</i>	The name of a boolean field.
----------------------	------------------------------

6.3.2.2 ConditionalDrawAttribute() [2/2] `Infohazard.Core.ConditionalDrawAttribute.Conditional↵
DrawAttribute (`
 `string condition,`
 `object value,`
 `bool isEqual = true)`

ConditionalAttribute that requires a serialized field named condition to be equal or not equal to value.

Parameters

<i>condition</i>	The name of a field.
<i>value</i>	The value to compare to.
<i>isEqual</i>	Whether to check for equality or inequality.

6.3.3 Property Documentation

6.3.3.1 Condition `string Infohazard.Core.ConditionalDrawAttribute.Condition [get]`

The serialized field to check.

6.3.3.2 IsEqual `bool Infohazard.Core.ConditionalDrawAttribute.IsEqual [get]`

Whether the value of the condition field should be equal to the given value in order to draw.

6.3.3.3 Value `object Infohazard.Core.ConditionalDrawAttribute.Value [get]`

The value to compare the Condition field to.

The documentation for this class was generated from the following file:

- Runtime/Attributes/ConditionalDrawAttribute.cs

6.4 Infohazard.Core.Editor.CoreEditorUtility Class Reference

Contains several editor-only utilities.

Static Public Member Functions

- static object [GetValue](#) (this SerializedProperty property)
Get the value of a SerializedProperty of any type. Does not work for serializable objects or gradients. Enum values are returned as ints.
- static object [FindValue](#) (this SerializedProperty prop)
Find the value of a given property using reflection and reading the field directly.
- static T [FindValue< T >](#) (this SerializedProperty prop)
Find the value of a given property using Reflection and reading the field directly.
- static List< string > [GetDefinesList](#) (BuildTargetGroup group)
Get the Unity PlayerSettings list of #define symbols for the given build target.
- static void [SetSymbolDefined](#) (string symbol, bool value, BuildTargetGroup group)
Sets whether the given symbol is defined in the PlayerSettings for the given build target.
- static string [GetResourcePath](#) (Object obj)
Get the path an object lives in relative to a resource folder.
- static string [GetResourcePath](#) (string path)
Get the given path relative to a resource folder.
- static string [GetPathRelativeToAssetsFolder](#) (string path)
Convert the given path to be relative to the Assets folder.
- static void [DoLazyDropdown< T >](#) (Rect position, GUIContent content, Func< T[]> optionsFunc, Func< T, string > stringifier, Action< T > setter)
Create a dropdown button in the IMGUI, whose options will not be calculated until it is clicked.
- static IEnumerable< T > [GetAssetsOfType< T >](#) ()
Find all the assets of the given type in the project.
- static IEnumerable< Object > [GetAssetsOfType](#) (string type)
Find all the assets of the given type in the project.
- static string [GetTypeFullName](#) (this SerializedProperty property)
Get the type full name (including assembly) of the type of the underlying field for the given property.
- static Type [GetFieldType](#) (this PropertyDrawer drawer)
Get the type of the field the property drawer is drawing. If the type is an array or list, returns the element type.
- static void [EnsureDataFolderExists](#) ()
Ensure that the DataFolder directory exists in your project, and contains an assembly definition.
- static bool [ExecuteProcess](#) (string command, string args, bool showMessages)
Launch an external process using the given command and arguments, and wait for it to complete.
- static GameObject [InstantiatePrefabInScene](#) (string path, string name)
Instantiate the given prefab in the scene, as a child of the selected GameObject if there is one.
- static GameObject [CreateGameObjectInScene](#) (string name)
Create an empty GameObject in the scene, as a child of the selected GameObject if there is one.
- static T [CreateGameObjectInSceneWithComponent< T >](#) (string name)
Create a GameObject in the scene with a given component, as a child of the selected GameObject if there is one.

Static Public Attributes

- const string [DataFolder](#) = "Assets/Infohazard.Core.Data/"
Folder where all generated files used by the [Infohazard](#) libraries should live.

6.4.1 Detailed Description

Contains several editor-only utilities.

6.4.2 Member Function Documentation

6.4.2.1 CreateGameObjectInScene() static GameObject Infohazard.Core.Editor.CoreEditorUtility.
CreateGameObjectInScene (
 string *name*) [static]

Create an empty GameObject in the scene, as a child of the selected GameObject if there is one.

Parameters

<i>name</i>	Name to assign to the object.
-------------	-------------------------------

Returns

The created GameObject.

6.4.2.2 CreateGameObjectInSceneWithComponent< T >() static T Infohazard.Core.Editor.CoreEditorUtility.
CreateGameObjectInSceneWithComponent< T > (
 string *name*) [static]

Create a GameObject in the scene with a given component, as a child of the selected GameObject if there is one.

Parameters

<i>name</i>	Name to assign to the object.
-------------	-------------------------------

Template Parameters

<i>T</i>	The type of component to add.
----------	-------------------------------

Returns

The created component.

Type Constraints

***T* : Component**

6.4.2.3 DoLazyDropdown< T >() static void Infohazard.Core.Editor.CoreEditorUtility.DoLazy↵
 Dropdown< T > (
 Rect *position*,
 GUIContent *content*,
 Func< T[] > *optionsFunc*,
 Func< T, string > *stringifier*,
 Action< T > *setter*) [static]

Create a dropdown button in the ImGui, whose options will not be calculated until it is clicked.

For a normal dropdown, you'd need to know all of the options before the button was clicked. With lazy dropdown, they are not evaluated until needed. They are also re-evaluated every time the dropdown is opened, preventing the need for cache invalidation.

Parameters

<i>position</i>	Position to draw the dropdown button.
<i>content</i>	Current value to show in the dropdown button (when not selected).
<i>optionsFunc</i>	Function that will calculate and return the options.
<i>stringifier</i>	Function that converts options to strings for display.
<i>setter</i>	Function that sets the value when an option is chosen.

Template Parameters

<i>T</i>	Type of the options before they are converted to strings.
----------	---

6.4.2.4 EnsureDataFolderExists() static void Infohazard.Core.Editor.CoreEditorUtility.Ensure↵
 DataFolderExists () [static]

Ensure that the [DataFolder](#) directory exists in your project, and contains an assembly definition.

6.4.2.5 ExecuteProcess() static bool Infohazard.Core.Editor.CoreEditorUtility.ExecuteProcess (
 string *command*,
 string *args*,
 bool *showMessages*) [static]

Launch an external process using the given command and arguments, and wait for it to complete.

Parameters

<i>command</i>	The command (executable file) to run.
<i>args</i>	The argument string to pass to the command.
<i>showMessages</i>	Whether to display a dialog box if the command fails.

Returns

Whether the command succeeded.

6.4.2.6 FindValue() `static object Infohazard.Core.Editor.CoreEditorUtility.FindValue (this SerializedProperty prop) [static]`

Find the value of a given property using reflection and reading the field directly.

Parameters

<i>prop</i>	The property to read.
-------------	-----------------------

Returns

The value of the property.

6.4.2.7 FindValue< T >() `static T Infohazard.Core.Editor.CoreEditorUtility.FindValue< T > (this SerializedProperty prop) [static]`

Find the value of a given property using Reflection and reading the field directly.

Template Parameters

<i>T</i>	The type to cast the value to.
----------	--------------------------------

Parameters

<i>prop</i>	The property to read
-------------	----------------------

Returns

The value of the property.

6.4.2.8 GetAssetsOfType() `static IEnumerable< Object > Infohazard.Core.Editor.CoreEditorUtility.GetAssetsOfType (string type) [static]`

Find all the assets of the given type in the project.

Only assets whose root object is the given type are included.

Parameters

<i>type</i>	The type name of assets to find.
-------------	----------------------------------

Returns

A sequence of all the found assets.

6.4.2.9 GetAssetsOfType< T >() static IEnumerable< T > [Infohazard.Core.Editor.CoreEditorUtility.GetAssetsOfType< T > \(\)](#) [static]

Find all the assets of the given type in the project.

Only assets whose root object is the given type are included.

Template Parameters

<i>T</i>	The type of asset to find.
----------	----------------------------

Returns

A sequence of all the found assets.

Type Constraints

T : Object

6.4.2.10 GetDefinesList() static List< string > [Infohazard.Core.Editor.CoreEditorUtility.GetDefinesList \(BuildTargetGroup group \)](#) [static]

Get the Unity PlayerSettings list of #define symbols for the given build target.

Parameters

<i>group</i>	The build target.
--------------	-------------------

Returns

A list of all defined symbols for that group.

6.4.2.11 GetFieldType() `static Type Infohazard.Core.Editor.CoreEditorUtility.GetFieldType (this PropertyDrawer drawer) [static]`

Get the type of the field the property drawer is drawing. If the type is an array or list, returns the element type.

Parameters

<i>drawer</i>	Drawer to get the type of.
---------------	----------------------------

Returns

Type of the drawer's field.

6.4.2.12 GetPathRelativeToAssetsFolder() `static string Infohazard.Core.Editor.CoreEditorUtility.GetPathRelativeToAssetsFolder (string path) [static]`

Convert the given path to be relative to the Assets folder.

Accepts absolute paths, paths starting with "Assets/", and paths starting with "/". </remarks> <param name="path">

Returns

6.4.2.13 GetResourcePath() [1/2] `static string Infohazard.Core.Editor.CoreEditorUtility.GetResourcePath (Object obj) [static]`

Get the path an object lives in relative to a resource folder.

The result path can be used with Resources.Load.

Parameters

<i>obj</i>	The object to get the path for.
------------	---------------------------------

Returns

The path relative to a resource folder, or null.

6.4.2.14 GetResourcePath() [2/2] `static string Infohazard.Core.Editor.CoreEditorUtility.GetResourcePath (string path) [static]`

Get the given path relative to a resource folder.

The result path can be used with Resources.Load.

Parameters

<i>path</i>	The path to search for.
-------------	-------------------------

Returns

The path relative to a resource folder, or null.

6.4.2.15 GetTypeNames() `static string Infohazard.Core.Editor.CoreEditorUtility.GetTypeNames (this SerializedProperty property) [static]`

Get the type full name (including assembly) of the type of the underlying field for the given property.

Due to how Unity works, this will not include the namespace. If you need to access the property type from a PropertyDrawer, use PropertyDrawer.fieldInfo.FieldType instead.

Parameters

<i>property</i>	Property to get type of.
-----------------	--------------------------

Returns

Type name of the property's underlying type, without namespace.

6.4.2.16 GetValue() `static object Infohazard.Core.Editor.CoreEditorUtility.GetValue (this SerializedProperty property) [static]`

Get the value of a SerializedProperty of any type. Does not work for serializable objects or gradients. Enum values are returned as ints.

Parameters

<i>property</i>	The property to read.
-----------------	-----------------------

Returns

The value of the property, or null if not readable.

6.4.2.17 InstantiatePrefabInScene() `static GameObject Infohazard.Core.Editor.CoreEditorUtility.InstantiatePrefabInScene (string path, string name) [static]`

Instantiate the given prefab in the scene, as a child of the selected GameObject if there is one.

Parameters

<i>path</i>	Prefab path to load.
<i>name</i>	Name to assign to the object, or null.

Returns

The instantiated GameObject.

6.4.2.18 SetSymbolDefined() `static void Infohazard.Core.Editor.CoreEditorUtility.SetSymbol↵
Defined (`
`string symbol,`
`bool value,`
`BuildTargetGroup group) [static]`

Sets whether the given symbol is defined in the PlayerSettings for the given build target.

Parameters

<i>symbol</i>	The symbol to set.
<i>value</i>	Whether the symbol should be defined.
<i>group</i>	The build target.

6.4.3 Member Data Documentation

6.4.3.1 DataFolder `const string Infohazard.Core.Editor.CoreEditorUtility.DataFolder = "Assets/Infohazard.↵
Core.Data/" [static]`

Folder where all generated files used by the [Infohazard](#) libraries should live.

Call [EnsureDataFolderExists](#) to make sure this folder exists before using it.

The documentation for this class was generated from the following file:

- Editor/Utility/CoreEditorUtility.cs

6.5 Infohazard.Core.DebugUtility Class Reference

Contains various static methods relating to debugging and diagnostics.

Static Public Member Functions

- static void [DrawDebugBounds](#) (Bounds bounds, Color color, float duration=0.0f, bool depthTest=true)
Draw the given Bounds in the scene view.
- static void [DrawDebugCircle](#) (Vector3 point, Vector3 normal, float radius, Color color, float duration=0.0f, bool depthTest=true, int pointCount=32)
Draw the given circle in the scene view.
- static void [DebugBreakAfterFrames](#) (this MonoBehaviour cmp, int frames)
Pause the editor after a given number of frames, using a Coroutine and Debug.Break().
- static bool [CheckPlaying](#) (bool propertySet=false, [CallerMemberName] string callerName="")
Checks whether in play mode (including standalone), and prints an error if it is.

6.5.1 Detailed Description

Contains various static methods relating to debugging and diagnostics.

6.5.2 Member Function Documentation

6.5.2.1 CheckPlaying() `static bool Infohazard.Core.DebugUtility.CheckPlaying (bool propertySet = false, [CallerMemberName] string callerName = "") [static]`

Checks whether in play mode (including standalone), and prints an error if it is.

Used to ensure certain properties are not edited while playing.

Parameters

<i>propertySet</i>	Whether the caller is a property set accessor (changes error log).
<i>callerName</i>	Set automatically, do not supply a value for this parameter.

Returns

True if in play mode.

6.5.2.2 DebugBreakAfterFrames() `static void Infohazard.Core.DebugUtility.DebugBreakAfterFrames (this MonoBehaviour cmp, int frames) [static]`

[Pause](#) the editor after a given number of frames, using a Coroutine and Debug.Break().

Only works in play mode. Will not cause errors if used in a standalone build, but will do unnecessary work.

Parameters

<i>cmp</i>	Component to attach the Coroutine to.
<i>frames</i>	Number of frames to wait before pausing.

6.5.2.3 DrawDebugBounds() `static void Infohazard.Core.DebugUtility.DrawDebugBounds (Bounds bounds, Color color, float duration = 0.0f, bool depthTest = true) [static]`

Draw the given Bounds in the scene view.

Parameters

<i>bounds</i>	Bounds to draw.
<i>color</i>	Color to use.
<i>duration</i>	Time, in seconds, to draw the lines for.
<i>depthTest</i>	Whether to depth dest the drawn lines.

6.5.2.4 DrawDebugCircle() `static void Infohazard.Core.DebugUtility.DrawDebugCircle (Vector3 point, Vector3 normal, float radius, Color color, float duration = 0.0f, bool depthTest = true, int pointCount = 32) [static]`

Draw the given circle in the scene view.

Parameters

<i>point</i>	Center of the circle.
<i>normal</i>	Normal that is perpendicular to the circle.
<i>radius</i>	Radius of the circle.
<i>color</i>	Color to use.
<i>duration</i>	Time, in seconds, to draw the circle for.
<i>depthTest</i>	Whether to depth dest the drawn circle.
<i>pointCount</i>	How many points the circle will consist of.

The documentation for this class was generated from the following file:

- Runtime/Utility/DebugUtility.cs

6.6 Infohazard.Core.DefaultPoolHandler Class Reference

An IPoolHandler that is passed a prefab directly.

Public Member Functions

- **DefaultPoolHandler** ([Spawnable](#) prefab, [Transform](#) transform)
Construct [DefaultPoolHandler](#) for a given prefab, attached to a given Transform.
- override string **ToString** ()
- virtual [Spawnable](#) **Spawn** ()
Spawn an object from the pool, using an inactive instance from the pool if possible (otherwise, a new instance is created via [Instantiate](#)).
- virtual void **Despawn** ([Spawnable](#) instance)
Despawn an object, deactivating it and releasing it back to the pool.
- virtual void **Retain** ()
Add an additional user to the pool, ensuring pooled instances will remain available.
- virtual void **Release** ()
Remove a user from the pool, clearing inactive instances if user count reaches zero.

Protected Member Functions

- virtual void **OnGet** ([Spawnable](#) obj)
Override to perform custom logic when an object is being spawned from the pool.
- virtual void **OnRelease** ([Spawnable](#) obj)
Override to perform custom logic when an object is being despawned and released back to the pool.
- virtual [Spawnable](#) **Instantiate** ()
Instantiate an object to add to the pool. Override to perform custom instantiation logic.
- virtual void **Destroy** ([Spawnable](#) obj)
Destroy an object after it is removed from the pool. Override to perform custom destruction logic.
- void **CheckClear** ()
[Clear](#) the pool if [ShouldClear](#) returns true.
- virtual bool **ShouldClear** ()
Should the pool be cleared?
- virtual void **Clear** ()
Clear all the inactive instances from the pool to free up memory.

Properties

- [Spawnable](#) **Prefab** [get, protected set]
The loaded prefab to be spawned by the handler.
- [Pool](#)< [Spawnable](#) > [Pool](#) [get]
The pool that will spawn the prefab.
- [Transform](#) **Transform** [get]
The transform that inactive instances in the pool are parented to.
- virtual bool **ShouldPool** [get]
Whether to use pooling - by default this returns [Spawnable.Pooled](#).
- int **RetainCount** [get, private set]

6.6.1 Detailed Description

An IPoolHandler that is passed a prefab directly.

6.6.2 Constructor & Destructor Documentation

6.6.2.1 DefaultPoolHandler() `Infohazard.Core.DefaultPoolHandler.DefaultPoolHandler (
Spawnable prefab,
Transform transform)`

Construct [DefaultPoolHandler](#) for a given prefab, attached to a given Transform.

Parameters

<i>prefab</i>	Prefab that this handler will spawn.
<i>transform</i>	Transform to attach inactive instances to.

6.6.3 Member Function Documentation

6.6.3.1 CheckClear() `void Infohazard.Core.DefaultPoolHandler.CheckClear () [protected]`

[Clear](#) the pool if [ShouldClear](#) returns true.

6.6.3.2 Clear() `virtual void Infohazard.Core.DefaultPoolHandler.Clear () [protected], [virtual]`

Clear all the inactive instances from the pool to free up memory.

6.6.3.3 Despawn() `virtual void Infohazard.Core.DefaultPoolHandler.Despawn (
Spawnable instance) [virtual]`

Despawn an object, deactivating it and releasing it back to the pool.

Parameters

<i>instance</i>	The object to be despawned.
-----------------	-----------------------------

6.6.3.4 Destroy() `virtual void Infohazard.Core.DefaultPoolHandler.Destroy (
 Spawnable obj) [protected], [virtual]`

Destroy an object after it is removed from the pool. Override to perform custom destruction logic.

This method is only used when an object is no longer needed and is permanently destroyed. To implement logic that happens every time an object is despawned, see [OnRelease](#).

Parameters

<i>obj</i>	The object to be destroyed.
------------	-----------------------------

6.6.3.5 Instantiate() `virtual Spawnable Infohazard.Core.DefaultPoolHandler.Instantiate () [protected], [virtual]`

Instantiate an object to add to the pool. Override to perform custom instantiation logic.

This method is only used when a new object is needed and the pool is empty. To implement logic that happens every time an object is spawned, see [OnGet](#). This method makes the spawned object inactive. If you implement your own instantiate logic instead of calling the base method, you should also make the object inactive.

Returns

The spawned object.

6.6.3.6 OnGet() `virtual void Infohazard.Core.DefaultPoolHandler.OnGet (
 Spawnable obj) [protected], [virtual]`

Override to perform custom logic when an object is being spawned from the pool.

Invoked before the object is made active. This method is called every time a pooled object becomes active (including right after it is instantiated). To implement custom creation logic that only happens once per object, see [Instantiate](#).

Parameters

<i>obj</i>	The object being spawned.
------------	---------------------------

6.6.3.7 OnRelease() `virtual void Infohazard.Core.DefaultPoolHandler.OnRelease (
 Spawnable obj) [protected], [virtual]`

Override to perform custom logic when an object is being despawned and released back to the pool.

Invoked before the object is made inactive. This method is called every time a pooled object becomes inactive (included right before it is destroyed). To implement cleanup creation logic that only happens once per object, see [Destroy\(Spawnable\)](#).

Parameters

<i>obj</i>	The object being spawned.
------------	---------------------------

6.6.3.8 Release() `virtual void Infohazard.Core.DefaultPoolHandler.Release () [virtual]`

Remove a user from the pool, clearing inactive instances if user count reaches zero.

When removing the last user, all inactive instances will be destroyed, and any additional calls to [Spawn](#) will need to create a new object via [Instantiate](#).

6.6.3.9 Retain() `virtual void Infohazard.Core.DefaultPoolHandler.Retain () [virtual]`

Add an additional user to the pool, ensuring pooled instances will remain available.

6.6.3.10 ShouldClear() `virtual bool Infohazard.Core.DefaultPoolHandler.ShouldClear () [protected], [virtual]`

Should the pool be cleared?

The base implementation returns true if [RetainCount](#) == 0.

Returns

True if the pool should be cleared.

6.6.3.11 Spawn() `virtual Spawnable Infohazard.Core.DefaultPoolHandler.Spawn () [virtual]`

Spawn an object from the pool, using an inactive instance from the pool if possible (otherwise, a new instance is created via [Instantiate](#)).

Returns

The spawned object.

6.6.3.12 ToString() `override string Infohazard.Core.DefaultPoolHandler.ToString ()`

6.6.4 Property Documentation

6.6.4.1 Pool `Pool<Spawnable> Infohazard.Core.DefaultPoolHandler.Pool [get], [protected]`

The pool that will spawn the prefab.

6.6.4.2 Prefab `Spawnable Infohazard.Core.DefaultPoolHandler.Prefab [get], [protected set]`

The loaded prefab to be spawned by the handler.

6.6.4.3 RetainCount `int Infohazard.Core.DefaultPoolHandler.RetainCount [get], [private set]`

6.6.4.4 ShouldPool `virtual bool Infohazard.Core.DefaultPoolHandler.ShouldPool [get]`

Whether to use pooling - by default this returns [Spawnable.Pooled](#).

6.6.4.5 Transform `Transform Infohazard.Core.DefaultPoolHandler.Transform [get]`

The transform that inactive instances in the pool are parented to.

The documentation for this class was generated from the following file:

- Runtime/Pooling/DefaultPoolHandler.cs

6.7 Infohazard.Core.DrawSingleChildPropertyAttribute Class Reference

Attribute draws only a single child property of a property.

Public Member Functions

- [DrawSingleChildPropertyAttribute](#) (string propertyName)
[DrawSingleChildPropertyAttribute](#) that will draw only the specified property.

Properties

- string [PropertyName](#) [get]
The child property to draw.

6.7.1 Detailed Description

Attribute draws only a single child property of a property.

6.7.2 Constructor & Destructor Documentation

6.7.2.1 DrawSingleChildPropertyAttribute() `Infohazard.Core.DrawSingleChildPropertyAttribute.↔
DrawSingleChildPropertyAttribute (
 string propertyName)`

[DrawSingleChildPropertyAttribute](#) that will draw only the specified property.

Parameters

<i>propertyName</i>	The child property to draw.
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6.7.3 Property Documentation

6.7.3.1 `PropertyName` `string Infohazard.Core.DrawSingleChildPropertyAttribute.PropertyName`
[get]

The child property to draw.

The documentation for this class was generated from the following file:

- Runtime/Attributes/DrawSingleChildPropertyAttribute.cs

6.8 Infohazard.Core.EditNameOnlyAttribute Class Reference

Attribute that draws only the name of an Object reference field.

6.8.1 Detailed Description

Attribute that draws only the name of an Object reference field.

The documentation for this class was generated from the following file:

- Runtime/Attributes/EditNameOnlyAttribute.cs

6.9 Infohazard.Core.EnumerableUtility Class Reference

Contains various static methods for working with sequences, extending the functionality of LINQ.

Public Member Functions

- delegate bool [SelectWhereDelegate< in T1, T2 >](#) (T1 input, out T2 output)
Delegate for functions that perform both a select/map and where/filter operation.

Static Public Member Functions

- static IEnumerable< T2 > [SelectWhere< T1, T2 >](#) (this IEnumerable< T1 > input, [SelectWhereDelegate< T1, T2 >](#) selectionDelegate)
Perform select/map and where/filter operations on a sequence with a single function.
- static T2 [FirstOrDefaultWhere< T1, T2 >](#) (this IEnumerable< T1 > input, [SelectWhereDelegate< T1, T2 >](#) selectionDelegate)
Perform select/map and where/filter operations on a sequence with a single function, and returns the result of the select operation for the first passing element.

6.9.1 Detailed Description

Contains various static methods for working with sequences, extending the functionality of LINQ.

6.9.2 Member Function Documentation

6.9.2.1 FirstOrDefaultWhere< T1, T2 >() static T2 Infohazard.Core.EnumerableUtility.FirstOrDefault↔
DefaultWhere< T1, T2 > (
 this IEnumerable< T1 > *input*,
 SelectWhereDelegate< T1, T2 > *selectionDelegate*) [static]

Perform select/map and where/filter operations on a sequence with a single function, and returns the result of the select operation for the first passing element.

Parameters

<i>input</i>	The input sequence.
<i>selectionDelegate</i>	The delegate to use.

Template Parameters

<i>T1</i>	Input type of the delegate.
<i>T2</i>	Output type of the select operation.

Returns

The result of the select operation for the first passing element.

6.9.2.2 SelectWhere< T1, T2 >() static IEnumerable< T2 > Infohazard.Core.EnumerableUtility.↔
SelectWhere< T1, T2 > (
 this IEnumerable< T1 > *input*,
 SelectWhereDelegate< T1, T2 > *selectionDelegate*) [static]

Perform select/map and where/filter operations on a sequence with a single function.

Parameters

<i>input</i>	The input sequence.
<i>selectionDelegate</i>	The delegate to use.

Template Parameters

<i>T1</i>	Input type of the delegate.
<i>T2</i>	Output type of the select operation.

Returns

The resulting sequence.

6.9.2.3 SelectWhereDelegate< in T1, T2 >() `delegate bool Infohazard.Core.EnumerableUtility.↔`
`SelectWhereDelegate< in T1, T2 > (`
`T1 input,`
`out T2 output)`

Delegate for functions that perform both a select/map and where/filter operation.

Template Parameters

<i>T1</i>	Input type of the function.
<i>T2</i>	Output type of the select operation.

The documentation for this class was generated from the following file:

- Runtime/Utility/EnumerableUtility.cs

6.10 Infohazard.Core.ExpandableAttribute Class Reference

Attribute that enables editing properties of a referenced object.

Public Member Functions

- [ExpandableAttribute](#) (bool alwaysExpanded=false, string savePath=null, bool showNewButton=true, bool showChildTypes=false)
Construct a new [ExpandableAttribute](#).

Properties

- bool [AlwaysExpanded](#) [get]
Whether the attribute is always expanded.
- bool [ShowNewButton](#) [get]
Whether to show a "New" button to create new instances.
- string [SavePath](#) [get]
The default path to save newly created ScriptableObjects at.
- bool [ShowChildTypes](#) [get]
Whether to show a dropdown of all types extending the type of the variable.

6.10.1 Detailed Description

Attribute that enables editing properties of a referenced object.

Normally, to edit a referenced object, you'd have to change the inspector context. With an [ExpandableAttribute](#), you can just expand the property and edit the referenced object inline. If the type of the reference field is a Scriptable↔Object, the [ExpandableAttribute](#) also allows creating new instances in the inspector.

6.10.2 Constructor & Destructor Documentation

6.10.2.1 ExpandableAttribute() `Infohazard.Core.ExpandableAttribute.ExpandableAttribute (bool alwaysExpanded = false, string savePath = null, bool showNewButton = true, bool showChildTypes = false)`

Construct a new [ExpandableAttribute](#).

Parameters

<i>alwaysExpanded</i>	Whether the attribute is always expanded.
<i>savePath</i>	Whether to show a "New" button to create new instances.
<i>showNewButton</i>	The default path to save newly created ScriptableObjects at.
<i>showChildTypes</i>	Whether to show a dropdown of all types extending the type of the variable.

6.10.3 Property Documentation

6.10.3.1 AlwaysExpanded `bool Infohazard.Core.ExpandableAttribute.AlwaysExpanded [get]`

Whether the attribute is always expanded.

If false, will show the expander.

6.10.3.2 SavePath `string Infohazard.Core.ExpandableAttribute.SavePath [get]`

The default path to save newly created ScriptableObjects at.

If unset, this will use the same path as the containing object if it is an asset.

6.10.3.3 ShowChildTypes `bool Infohazard.Core.ExpandableAttribute.ShowChildTypes [get]`

Whether to show a dropdown of all types extending the type of the variable.

6.10.3.4 ShowNewButton `bool Infohazard.Core.ExpandableAttribute.ShowNewButton [get]`

Whether to show a "New" button to create new instances.

This only works if the type of the field is a ScriptableObject.

The documentation for this class was generated from the following file:

- Runtime/Attributes/ExpandableAttribute.cs

6.11 Infohazard.Core.GameObjectUtility Class Reference

Contains utility methods for dealing with GameObjects and Transforms.

Static Public Member Functions

- static void [GetCapsuleInfo](#) (float radius, float height, Vector3 center, int direction, Transform transform, out Vector3 point1, out Vector3 point2, out float worldRadius, out float worldHeight)
Converts capsule info in transform/height/radius form to two-point form for use with Physics.CapsuleCast.
- static void [GetCapsuleInfo](#) (this CharacterController capsule, out Vector3 point1, out Vector3 point2, out float worldRadius, out float worldHeight)
Converts capsule info in a CharacterController to two-point form for use with Physics.CapsuleCast.
- static void [GetCapsuleInfo](#) (this CapsuleCollider capsule, out Vector3 point1, out Vector3 point2, out float worldRadius, out float worldHeight)
Converts capsule info in a CapsuleCollider to two-point form for use with Physics.CapsuleCast.
- static void [SetParentAndReset](#) (this Transform transform, Transform parent)
Set the parent of the given transform, and reset it's local position, rotation, and scale.
- static void [Initialize](#) (this Transform transform, Transform parent, Vector3? position=null, Quaternion? rotation=null, Vector3? scale=null, bool inWorldSpace=false, in Scene? scene=null)
Initialize the transform with the given parent, position, rotation, and scale.
- static void [Initialize](#) (this Transform transform, in [SpawnParams](#) spawnParams=default)
Initialize the transform with the given spawn params.
- static void [Initialize](#) (this Transform transform, Vector3? position=null, Quaternion? rotation=null, Vector3? scale=null)
Set's the transform's position, and rotation, and scale (if they are specified).
- static void [DestroyChildren](#) (this Transform transform)
Destroy all of the child GameObjects of a Transform at the end of this frame.
- static void [DestroyChildrenImmediate](#) (this Transform transform)
Destroy all of the child GameObjects of a Transform immediately.
- static void [DespawnChildren](#) (this Transform transform)
Despawn all of the child GameObjects of a Transform.
- static bool [TryGetComponentInParent< T >](#) (this GameObject obj, out T result)
Like GetComponentInParent, but more convenient if using in conditionals and also using the component value.
- static bool [TryGetComponentInChildren< T >](#) (this GameObject obj, out T result, bool includeInactive=false)
Like GetComponentInChildren, but more convenient if using in conditionals and also using the component value.
- static bool [TryGetComponentInParent< T >](#) (this Component cmp, out T result)
Like GetComponentInParent, but more convenient if using in if statements and also using the component value.
- static bool [TryGetComponentInChildren< T >](#) (this Component cmp, out T result)
Like GetComponentInChildren, but more convenient if using in if statements and also using the component value.
- static string [GetRelativeTransformPath](#) (this Transform from, Transform to)
Get the path from one transform to another (object names separated by slashes).
- static Transform [GetTransformAtRelativePath](#) (this Transform from, string path)
Parses a slash-separated Transform path from a parent object to find a child.
- static void [SetLayerRecursively](#) (this GameObject obj, int layer)
Sets the layer of a GameObject and all of its children.

6.11.1 Detailed Description

Contains utility methods for dealing with GameObjects and Transforms.

6.11.2 Member Function Documentation

6.11.2.1 DespawnChildren() `static void Infohazard.Core.GameObjectUtility.DespawnChildren (this Transform transform) [static]`

Despawn all of the child GameObjects of a Transform.

Parameters

<i>transform</i>	Transform to despawn children of.
------------------	-----------------------------------

6.11.2.2 DestroyChildren() `static void Infohazard.Core.GameObjectUtility.DestroyChildren (this Transform transform) [static]`

Destroy all of the child GameObjects of a Transform at the end of this frame.

Parameters

<i>transform</i>	Transform to destroy children of.
------------------	-----------------------------------

6.11.2.3 DestroyChildrenImmediate() `static void Infohazard.Core.GameObjectUtility.DestroyChildrenImmediate (this Transform transform) [static]`

Destroy all of the child GameObjects of a Transform immediately.

Parameters

<i>transform</i>	Transform to destroy children of.
------------------	-----------------------------------

6.11.2.4 GetCapsuleInfo() [1/3] `static void Infohazard.Core.GameObjectUtility.GetCapsuleInfo (float radius, float height, Vector3 center, int direction, Transform transform, out Vector3 point1, out Vector3 point2, out float worldRadius, out float worldHeight) [static]`

Converts capsule info in transform/height/radius form to two-point form for use with Physics.CapsuleCast.

Also tells you the radius and height of the capsule in world space.

Parameters

<i>radius</i>	Radius of the capsule in local space.
<i>height</i>	Height of the capsule in local space.
<i>center</i>	Center of the capsule in local space.
<i>direction</i>	On which axis the capsule extends (0 = x, 1 = y, 2 = z).
<i>transform</i>	Transform that the capsule is parented to.
<i>point1</i>	The first point of the capsule in world space.
<i>point2</i>	The second point of the capsule in world space.
<i>worldRadius</i>	The radius of the capsule in world space.
<i>worldHeight</i>	The height of the capsule in world space.

6.11.2.5 GetCapsuleInfo() [2/3] `static void Infohazard.Core.GameObjectUtility.GetCapsuleInfo (this CapsuleCollider capsule, out Vector3 point1, out Vector3 point2, out float worldRadius, out float worldHeight) [static]`

Converts capsule info in a CapsuleCollider to two-point form for use with Physics.CapsuleCast.

Also tells you the radius and height of the capsule in world space.

Parameters

<i>capsule</i>	The CapsuleCollider to read.
<i>point1</i>	The first point of the capsule in world space.
<i>point2</i>	The second point of the capsule in world space.
<i>worldRadius</i>	The radius of the capsule in world space.
<i>worldHeight</i>	The height of the capsule in world space.

6.11.2.6 GetCapsuleInfo() [3/3] `static void Infohazard.Core.GameObjectUtility.GetCapsuleInfo (this CharacterController capsule, out Vector3 point1, out Vector3 point2, out float worldRadius, out float worldHeight) [static]`

Converts capsule info in a CharacterController to two-point form for use with Physics.CapsuleCast.

Also tells you the radius and height of the capsule in world space.

Parameters

<i>capsule</i>	The CharacterController to read.
<i>point1</i>	The first point of the capsule in world space.
<i>point2</i>	The second point of the capsule in world space.
<i>worldRadius</i>	The radius of the capsule in world space.
<i>worldHeight</i>	The height of the capsule in world space.

6.11.2.7 GetRelativeTransformPath() `static string Infohazard.Core.GameObjectUtility.GetRelativeTransformPath (this Transform from, Transform to) [static]`

Get the path from one transform to another (object names separated by slashes).

The parameter to must be a direct descendent of from, or an error is logged. The returned path contains the name of to but not from. This path can be turned back to an object reference using [GetTransformAtRelativePath](#).

Parameters

<i>from</i>	The parent Transform to get the path from.
<i>to</i>	The Transform to get the path to.

Returns

The path relative transform path separated by slashes.

6.11.2.8 GetTransformAtRelativePath() `static Transform Infohazard.Core.GameObjectUtility.GetTransformAtRelativePath (this Transform from, string path) [static]`

Parses a slash-separated Transform path from a parent object to find a child.

This can be used to turn a path created by [GetRelativeTransformPath](#) back to an object reference.

Parameters

<i>from</i>	The parent Transform to search from.
<i>path</i>	The slash-separated path to search for.

Returns

The found child Transform, or null if not found.

6.11.2.9 Initialize() [1/3] `static void Infohazard.Core.GameObjectUtility.Initialize (this Transform transform, in SpawnParams spawnParams = default) [static]`

Initialize the transform with the given spawn params.

Parameters

<i>transform</i>	The transform to initialize.
<i>spawnParams</i>	The spawn parameters.

6.11.2.10 Initialize() [2/3] `static void Infohazard.Core.GameObjectUtility.Initialize (this Transform transform, Transform parent, Vector3? position = null, Quaternion? rotation = null, Vector3? scale = null, bool inWorldSpace = false, in Scene? scene = null) [static]`

Initialize the transform with the given parent, position, rotation, and scale.

Parameters

<i>transform</i>	The transform to initialize.
<i>parent</i>	The parent to attach to.
<i>position</i>	The position (if null, do not set).
<i>rotation</i>	The rotation (if null, do not set).
<i>scale</i>	The scale (if null, do not set).
<i>inWorldSpace</i>	Whether the given position, rotation, and scale should be considered global.
<i>scene</i>	An optional scene to move the object to.

6.11.2.11 Initialize() [3/3] `static void Infohazard.Core.GameObjectUtility.Initialize (this Transform transform, Vector3? position = null, Quaternion? rotation = null, Vector3? scale = null) [static]`

Set's the transform's position, and rotation, and scale (if they are specified).

Parameters

<i>transform</i>	The transform to initialize.
<i>position</i>	The position (if null, do not set).
<i>rotation</i>	The rotation (if null, do not set).
<i>scale</i>	The scale (if null, do not set).

6.11.2.12 SetLayerRecursively() `static void Infohazard.Core.GameObjectUtility.SetLayerRecursively (this GameObject obj, int layer) [static]`

Sets the layer of a GameObject and all of its children.

Parameters

<i>obj</i>	The GameObject to set the layer on.
<i>layer</i>	The layer index to set.

6.11.2.13 SetParentAndReset() `static void Infohazard.Core.GameObjectUtility.SetParentAndReset (this Transform transform, Transform parent) [static]`

Set the parent of the given transform, and reset it's local position, rotation, and scale.

Parameters

<i>transform</i>	The transform to reset.
<i>parent</i>	The transform to parent it to (can be null).

6.11.2.14 TryGetComponentInChildren< T >() [1/2] `static bool Infohazard.Core.GameObject↔Utility.TryGetComponentInChildren< T > (this Component cmp, out T result) [static]`

Like GetComponentInChildren, but more convenient if using in if statements and also using the component value.

6.11.2.15 TryGetComponentInChildren< T >() [2/2] `static bool Infohazard.Core.GameObject↔Utility.TryGetComponentInChildren< T > (this GameObject obj, out T result, bool includeInactive = false) [static]`

Like GetComponentInChildren, but more convenient if using in conditionals and also using the component value.

6.11.2.16 TryGetComponentInParent< T >() [1/2] `static bool Infohazard.Core.GameObjectUtility.<←`
`TryGetComponentInParent< T > (`
`this Component cmp,`
`out T result) [static]`

Like GetComponentInParent, but more convenient if using in if statements and also using the component value.

6.11.2.17 TryGetComponentInParent< T >() [2/2] `static bool Infohazard.Core.GameObjectUtility.<←`
`TryGetComponentInParent< T > (`
`this GameObject obj,`
`out T result) [static]`

Like GetComponentInParent, but more convenient if using in conditionals and also using the component value.

Parameters

<i>obj</i>	The object to search from.
<i>result</i>	The found component or null.

Template Parameters

<i>T</i>	The type of component to search for.
----------	--------------------------------------

Returns

Whether a component of the given type was found.

The documentation for this class was generated from the following file:

- Runtime/Utility/GameObjectUtility.cs

6.12 Infohazard.Core.IPersistedInstance Interface Reference

This is a hack so that [PoolManager](#) can send messages to PersistedGameObjects.

Public Member Functions

- void [SetupDynamicInstance](#) (ulong persistedInstanceId)
Initialize the current object as a new persisted instance with the given ID.
- void [RegisterDestroyed](#) ()
Remove the current object from persistence.

6.12.1 Detailed Description

This is a hack so that [PoolManager](#) can send messages to PersistedGameObjects.

There is likely no need to use this interface yourself.

6.12.2 Member Function Documentation

6.12.2.1 RegisterDestroyed() `void Infohazard.Core.IPersistedInstance.RegisterDestroyed ()`

Remove the current object from persistence.

6.12.2.2 SetupDynamicInstance() `void Infohazard.Core.IPersistedInstance.SetupDynamicInstance (ulong persistedInstanceID)`

Initialize the current object as a new persisted instance with the given ID.

Parameters

<code>persistedInstanceID</code>	The instance ID to use.
----------------------------------	-------------------------

The documentation for this interface was generated from the following file:

- Runtime/Pooling/IPersistedInstance.cs

6.13 Infohazard.Core.ListQueue< T > Class Template Reference

A FIFO data structure similar to a Queue, except that it implements all List operations.

Public Member Functions

- [ListQueue](#) (int initialCapacity=32)
Construct a new [ListQueue](#) with the given capacity.
- [ListQueue](#) (IEnumerable< T > enumerable)
Construct a new [ListQueue](#) containing all the elements of the given sequence.
- void [Enqueue](#) (T item)
Add an item to the front of the queue.
- void [EnsureCapacity](#) (int capacity)
Ensures that the capacity of the queue is at least the given value, and grows if not.
- T [Peek](#) ()
Returns the element at the front of the queue without removing it.
- bool [TryPeek](#) (out T item)
Get the element at the front of the queue if it is not empty, and return whether this was successful.
- T [Dequeue](#) ()
Removes and returns the element at the front of the queue.
- bool [TryDequeue](#) (out T item)
Get the element at the front of the queue if it is not empty, remove it, and return whether this was successful.
- IEnumerator< T > [GetEnumerator](#) ()
- void [Add](#) (T item)

- void [Clear](#) ()
 - bool [Contains](#) (T item)
 - void [CopyTo](#) (T[] array, int arrayIndex)
 - bool [Remove](#) (T item)
 - int [IndexOf](#) (T item)
 - void [Insert](#) (int index, T item)
 - void [RemoveAt](#) (int index)
 - void [RemoveRange](#) (int index, int count)
- Removes a range of items from the queue.*

Properties

- int [Count](#) [get, private set]
 - int [Capacity](#) [get]
- Current capacity, which will be automatically expanded when needed.*
- bool [IsReadOnly](#) [get]
 - T [this\[int index\]](#) [get, set]

6.13.1 Detailed Description

A FIFO data structure similar to a Queue, except that it implements all List operations.

This enables much greater flexibility than the builtin .NET Queue class. Unlike a List, it has O(1) performance for both Enqueue and Dequeue operations (assuming there is enough room).

Template Parameters

<i>T</i>	Type of elements in the structure.
----------	------------------------------------

6.13.2 Constructor & Destructor Documentation

6.13.2.1 [ListQueue\(\)](#) [1/2] [Infohazard.Core.ListQueue< T >.ListQueue](#) (
 int *initialCapacity* = 32)

Construct a new [ListQueue](#) with the given capacity.

Parameters

<i>initialCapacity</i>	Initial capacity, which will be expanded as needed.
------------------------	---

6.13.2.2 [ListQueue\(\)](#) [2/2] [Infohazard.Core.ListQueue< T >.ListQueue](#) (
 IEnumerable< T > *enumerable*)

Construct a new `ListQueue` containing all the elements of the given sequence.

Parameters

<i>enumerable</i>	Sequence to initialize the queue.
-------------------	-----------------------------------

6.13.3 Member Function Documentation

6.13.3.1 Add() void Infohazard.Core.ListQueue< T >.Add (
T *item*)

6.13.3.2 Clear() void Infohazard.Core.ListQueue< T >.Clear ()

6.13.3.3 Contains() bool Infohazard.Core.ListQueue< T >.Contains (
T *item*)

6.13.3.4 CopyTo() void Infohazard.Core.ListQueue< T >.CopyTo (
T[] *array*,
int *arrayIndex*)

6.13.3.5 Dequeue() T Infohazard.Core.ListQueue< T >.Dequeue ()

Removes and returns the element at the front of the queue.

Returns

The item at the front of the queue.

Exceptions

<i>InvalidOperationException</i>	If the queue is empty.
----------------------------------	------------------------

6.13.3.6 Enqueue() void Infohazard.Core.ListQueue< T >.Enqueue (
T *item*)

Add an item to the front of the queue.

The capacity of the queue will be grown if needed.

Parameters

<i>item</i>	The item to add.
-------------	------------------

6.13.3.7 EnsureCapacity() `void Infohazard.Core.ListQueue< T >.EnsureCapacity (
int capacity)`

Ensures that the capacity of the queue is at least the given value, and grows if not.

Parameters

<i>capacity</i>	The capacity to ensure.
-----------------	-------------------------

6.13.3.8 GetEnumerator() `IEnumerator< T > Infohazard.Core.ListQueue< T >.GetEnumerator ()`

6.13.3.9 IndexOf() `int Infohazard.Core.ListQueue< T >.IndexOf (
T item)`

6.13.3.10 Insert() `void Infohazard.Core.ListQueue< T >.Insert (
int index,
T item)`

6.13.3.11 Peek() `T Infohazard.Core.ListQueue< T >.Peek ()`

Returns the element at the front of the queue without removing it.

Returns

The item at the front of the queue.

Exceptions

<i>InvalidOperationException</i>	If the queue is empty.
----------------------------------	------------------------

6.13.3.12 Remove() `bool Infohazard.Core.ListQueue< T >.Remove (`
`T item)`

6.13.3.13 RemoveAt() `void Infohazard.Core.ListQueue< T >.RemoveAt (`
`int index)`

6.13.3.14 RemoveRange() `void Infohazard.Core.ListQueue< T >.RemoveRange (`
`int index,`
`int count)`

Removes a range of items from the queue.

Parameters

<i>index</i>	The first index to remove.
<i>count</i>	The number of items to remove.

6.13.3.15 TryDequeue() `bool Infohazard.Core.ListQueue< T >.TryDequeue (`
`out T item)`

Get the element at the front of the queue if it is not empty, remove it, and return whether this was successful.

Parameters

<i>item</i>	The item at the front of the queue.
-------------	-------------------------------------

Returns

Whether an item was available to dequeue.

6.13.3.16 TryPeek() `bool Infohazard.Core.ListQueue< T >.TryPeek (`
`out T item)`

Get the element at the front of the queue if it is not empty, and return whether this was successful.

Parameters

<i>item</i>	The item at the front of the queue.
-------------	-------------------------------------

Returns

Whether an item was available to peek.

6.13.4 Property Documentation

6.13.4.1 Capacity `int Infohazard.Core.ListQueue< T >.Capacity [get]`

Current capacity, which will be automatically expanded when needed.

Expanding capacity is an O(n) operation, so it should be avoided when possible.

6.13.4.2 Count `int Infohazard.Core.ListQueue< T >.Count [get], [private set]`

6.13.4.3 IsReadOnly `bool Infohazard.Core.ListQueue< T >.IsReadOnly [get]`

6.13.4.4 this[int index] `T Infohazard.Core.ListQueue< T >.this[int index] [get], [set]`

The documentation for this class was generated from the following file:

- Runtime/DataStructures/ListQueue.cs

6.14 Infohazard.Core.MathUtility Class Reference

Contains utility methods for working with mathematical types and solving math equations.

Static Public Member Functions

- static float [RoundToNearest](#) (float value, float factor)
Round a value to the nearest multiple of a given factor.
- static float [SignZero](#) (float value)
Same as Mathf.Sign, except that if the input is zero, it returns zero.
- static float [NormalizeAngle](#) (float angle)
Normalize an angle to a value between 0 and 360.
- static Vector3 [NormalizeAngles](#) (Vector3 angles)
Normalize a set of euler angles to values between 0 and 360.
- static float [NormalizeInnerAngle](#) (float angle)
Normalize an angle to a value between -180 and 180.
- static Vector3 [NormalizeInnerAngles](#) (Vector3 angles)
Normalize a set of euler angles to values between -180 and 180.
- static float [ClampInnerAngle](#) (float angle, float min, float max)

- Normalize an angle to a value between -180 and 180, then clamp it in the given range.*
- static Vector3 [ClampInnerAngles](#) (Vector3 angles, Vector3 min, Vector3 max)
- Normalize a set of euler angles to values between -180 and 180, then clamp them in the given ranges.*
- static Vector3 [Multiply](#) (Vector3 left, Vector3 right)
- Multiply the components of left by the components of right.*
- static Vector3 [Divide](#) (Vector3 left, Vector3 right)
- Divide the components of left by the components of right.*
- static Vector3 [Reciprocal](#) (Vector3 vector)
- Take the reciprocal of each component of a vector.*
- static Vector3 [Divide](#) (float left, Vector3 right)
- Divide a float by each component of a vector.*
- static Vector3 [RoundToNearest](#) (Vector3 vector, float factor)
- Round a each component of a vector to the nearest multiple of a given factor.*
- static bool [GetNearestPointOnLines](#) (Ray line1, Ray line2, out float t1, out float t2)
- Find the point along each line where the lines come closest to each other.*
- static float [GetNearestPointOnLine](#) (Ray line, Vector3 p)
- Get the point on a line where it is nearest to a position.*
- static bool [GetNearestPointOnSegment](#) (Vector3 v1, Vector3 v2, Vector3 point, out Vector3 pointOnSegment)
- Find the point on a bounded line segment where it is nearest to a position, and return whether that point is in the segment's bounds.*
- static Vector3 [GetNearestPointOnTriangleIncludingBounds](#) (Vector3 v1, Vector3 v2, Vector3 v3, Vector3 point)
- Find the point on a triangle (including its bounds) where it is nearest to a position.*
- static bool [GetNearestPointOnTriangle](#) (Vector3 v1, Vector3 v2, Vector3 v3, Vector3 point, out Vector3 point↵OnTriangle)
- Find the point on a triangle where it is nearest to a position, and return whether that point is in the triangle's bounds.*
- static bool [IsPointInsideBound](#) (Vector3 v1, Vector3 v2, Vector3 normal, Vector3 point)
- Returns true if a given point is on the inner side (defined by a given normal) of a segment.*
- static bool [DoesSegmentIntersectTriangle](#) (Vector3 v1, Vector3 v2, Vector3 v3, Vector3 s1, Vector3 s2, out float t)
- Raycast a line segment against a triangle, and return whether they intersect.*
- static Vector3 [WorldToCanvasPoint](#) (this Camera camera, Canvas canvas, Vector3 point)
- Projects a point in the world onto a canvas in camera or overlay space.*
- static Vector3 [GetPerpendicularVector](#) (this Vector3 vector)
- Returns a vector that is perpendicular to the given vector.*
- static int [Dot](#) (Vector3Int v1, Vector3Int v2)
- Dot product of two int vectors.*
- static Vector3 [WithX](#) (this Vector3 v, float x)
- Replace the X component of a vector.*
- static Vector3 [WithY](#) (this Vector3 v, float y)
- Replace the Y component of a vector.*
- static Vector3 [WithZ](#) (this Vector3 v, float z)
- Replace the Z component of a vector.*
- static Vector2 [WithX](#) (this Vector2 v, float x)
- Replace the X component of a vector.*
- static Vector2 [WithY](#) (this Vector2 v, float y)
- Replace the Y component of a vector.*
- static Vector3 [WithZ](#) (this Vector2 v, float z)
- Convert a Vector2 to a Vector3 with the given Z.*
- static Vector3 [AsXY](#) (this Vector2 v)
- Get a Vector3 with the components (x, y, 0).*
- static Vector3 [AsYX](#) (this Vector2 v)

- Get a Vector3 with the components (y, x, 0).*

 - static Vector3 **AsXZ** (this Vector2 v)
- Get a Vector3 with the components (x, 0, y).*

 - static Vector3 **AsZX** (this Vector2 v)
- Get a Vector3 with the components (y, 0, x).*

 - static Vector3 **AsYZ** (this Vector2 v)
- Get a Vector3 with the components (0, x, y).*

 - static Vector3 **AsZY** (this Vector2 v)
- Get a Vector3 with the components (0, y, x).*

 - static Vector2 **ToXY** (this Vector3 v)
- Get a Vector2 with the components (x, y).*

 - static Vector2 **ToYX** (this Vector3 v)
- Get a Vector2 with the components (y, x).*

 - static Vector2 **ToXZ** (this Vector3 v)
- Get a Vector2 with the components (x, z).*

 - static Vector2 **ToZX** (this Vector3 v)
- Get a Vector2 with the components (z, x).*

 - static Vector2 **ToYZ** (this Vector3 v)
- Get a Vector2 with the components (y, z).*

 - static Vector2 **ToZY** (this Vector3 v)
- Get a Vector2 with the components (z, y).*

 - static Vector4 **ToV4Pos** (this Vector3 vector)
- Get a Vector4 with the components (x, y, z, 1).*

 - static Vector4 **ToV4** (this Vector3 vector)
- Get a Vector4 with the components (x, y, z, 0).*

 - static Quaternion **XYRotation** (Vector3 right, Vector3 upHint)
- Get a quaternion based on a right vector and approximate up vector.*

 - static Quaternion **YXRotation** (Vector3 up, Vector3 rightHint)
- Get a quaternion based on a up vector and approximate right vector.*

 - static Quaternion **XZRotation** (Vector3 right, Vector3 forwardHint)
- Get a quaternion based on a right vector and approximate forward vector.*

 - static Quaternion **ZXRotation** (Vector3 forward, Vector3 rightHint)
- Get a quaternion based on a forward vector and approximate right vector.*

 - static Quaternion **YZRotation** (Vector3 up, Vector3 forwardHint)
- Get a quaternion based on a up vector and approximate forward vector.*

 - static Quaternion **ZYRotation** (Vector3 forward, Vector3 upHint)
- Get a quaternion based on a forward vector and approximate up vector.*

 - static void **GetCorners** (this Bounds bounds, Vector3[] corners)
- Get the eight corners of a bounding box and save them in the given array.*

 - static bool **BoundsToScreenRect** (Transform transform, Bounds bounds, Func< Vector3, Vector3 > world↔ToScreen, out Rect rect)
- Get a screen rect that encapsulates the given bounds.*

 - static void **SplitHorizontal** (Rect rect, float gap, out Rect out1, out Rect out2, float div=0.5f)
- Split a rect into two halves horizontally, with given gap between the halves.*

 - static void **SplitHorizontal** (Rect rect, float gap, out Rect out1, out Rect out2, out Rect out3, float div1=1.0f/3.0f, float div2=2.0f/3.0f)
- Split a rect into three thirds horizontally, with given gap between the thirds.*

Static Public Attributes

- static [Complex](#)
Evaluate all cubic roots of this Complex.
- static [Complex r1](#)
Solve a quadratic equation (find x such that the result is zero) in the form $ax^2 + bx + c = 0$.
- static readonly [Vector3\[\] BoundsCornerArray](#) = new [Vector3](#)[8]
A static array that can be used to store the output of [GetCorners](#), as long as the values are copied from the array right away.

6.14.1 Detailed Description

Contains utility methods for working with mathematical types and solving math equations.

6.14.2 Member Function Documentation

6.14.2.1 AsXY() `static Vector3 Infohazard.Core.MathUtility.AsXY (this Vector2 v) [static]`

Get a [Vector3](#) with the components (x, y, 0).

6.14.2.2 AsXZ() `static Vector3 Infohazard.Core.MathUtility.AsXZ (this Vector2 v) [static]`

Get a [Vector3](#) with the components (x, 0, y).

6.14.2.3 AsYX() `static Vector3 Infohazard.Core.MathUtility.AsYX (this Vector2 v) [static]`

Get a [Vector3](#) with the components (y, x, 0).

6.14.2.4 AsYZ() `static Vector3 Infohazard.Core.MathUtility.AsYZ (this Vector2 v) [static]`

Get a [Vector3](#) with the components (0, x, y).

6.14.2.5 AsZX() `static Vector3 Infohazard.Core.MathUtility.AsZX (this Vector2 v) [static]`

Get a Vector3 with the components (y, 0, x).

6.14.2.6 AsZY() `static Vector3 Infohazard.Core.MathUtility.AsZY (this Vector2 v) [static]`

Get a Vector3 with the components (0, y, x).

6.14.2.7 BoundsToScreenRect() `static bool Infohazard.Core.MathUtility.BoundsToScreenRect (Transform transform, Bounds bounds, Func< Vector3, Vector3 > worldToScreen, out Rect rect) [static]`

Get a screen rect that encapsulates the given bounds.

Parameters

<i>transform</i>	Parent that the bounds are attached to (can be null).
<i>bounds</i>	The input bounds.
<i>worldToScreen</i>	A function that converts world points to screen points, such as <code>Camera.WorldToScreenPoint</code> .
<i>rect</i>	A screen rect that encapsulates the bounds.

Returns

Whether a screen rect could be calculated (false if completely off screen).

6.14.2.8 ClampInnerAngle() `static float Infohazard.Core.MathUtility.ClampInnerAngle (float angle, float min, float max) [static]`

Normalize an angle to a value between -180 and 180, then clamp it in the given range.

Parameters

<i>angle</i>	Input angle.
<i>min</i>	Min clamp value (applied after normalize).
<i>max</i>	Max Clamp value (applied after normalize).

Returns

Angle between min and max.

6.14.2.9 ClampInnerAngles() `static Vector3 Infohazard.Core.MathUtility.ClampInnerAngles (Vector3 angles, Vector3 min, Vector3 max) [static]`

Normalize a set of euler angles to values between -180 and 180, then clamp them in the given ranges.

Parameters

<i>angles</i>	Input angles.
<i>min</i>	Min clamp values (applied after normalize).
<i>max</i>	Max Clamp values (applied after normalize).

Returns

Angles between min and max.

6.14.2.10 Divide() [1/2] `static Vector3 Infohazard.Core.MathUtility.Divide (float left, Vector3 right) [static]`

Divide a float by each component of a vector.

6.14.2.11 Divide() [2/2] `static Vector3 Infohazard.Core.MathUtility.Divide (Vector3 left, Vector3 right) [static]`

Divide the components of left by the components of right.

6.14.2.12 DoesSegmentIntersectTriangle() `static bool Infohazard.Core.MathUtility.DoesSegment↔IntersectTriangle (Vector3 v1, Vector3 v2, Vector3 v3, Vector3 s1, Vector3 s2, out float t) [static]`

Raycast a line segment against a triangle, and return whether they intersect.

Parameters

<i>v1</i>	The first triangle point.
<i>v2</i>	The second triangle point.
<i>v3</i>	The third triangle point.
<i>s1</i>	The start of the segment.
<i>s2</i>	The end of the segment.
<i>t</i>	The point along the input segment where it intersects the triangle, or -1.

Returns

Whether the segment intersects the triangle.

6.14.2.13 Dot() `static int Infohazard.Core.MathUtility.Dot (
 Vector3Int v1,
 Vector3Int v2) [static]`

Dot product of two int vectors.

6.14.2.14 GetCorners() `static void Infohazard.Core.MathUtility.GetCorners (
 this Bounds bounds,
 Vector3[] corners) [static]`

Get the eight corners of a bounding box and save them in the given array.

You can use [BoundsCornerArray](#) to avoid allocating here.

Parameters

<i>bounds</i>	The input bounds.
<i>corners</i>	Array to save the values in.

6.14.2.15 GetNearestPointOnLine() `static float Infohazard.Core.MathUtility.GetNearestPointOn↵
Line (
 Ray line,
 Vector3 p) [static]`

Get the point on a line where it is nearest to a position.

Parameters

<i>line</i>	The input line.
<i>p</i>	The input position.

Returns

The point along the line where it is nearest to the position.

6.14.2.16 GetNearestPointOnLines() `static bool Infohazard.Core.MathUtility.GetNearestPointOnLines (Ray line1, Ray line2, out float t1, out float t2) [static]`

Find the point along each line where the lines come closest to each other.

If the lines are parallel, then return false.

Parameters

<i>line1</i>	The first line.
<i>line2</i>	The second line.
<i>t1</i>	The point along the first line where they are closest to intersecting.
<i>t2</i>	The point along the second line where they are closest to intersecting.

Returns

False if the lines are parallel, true otherwise.

6.14.2.17 GetNearestPointOnSegment() `static bool Infohazard.Core.MathUtility.GetNearestPointOnSegment (Vector3 v1, Vector3 v2, Vector3 point, out Vector3 pointOnSegment) [static]`

Find the point on a bounded line segment where it is nearest to a position, and return whether that point is in the segment's bounds.

Does not return points on the ends of the segment. If the nearest point on the segment's line is outside the segment, will fail and not return a valid point.

Parameters

<i>v1</i>	The start of the segment.
<i>v2</i>	The end of the segment.
<i>point</i>	The point to search for.
<i>pointOnSegment</i>	The point on the segment closest to the input point.

Returns

Whether the nearest point is within the segment's bounds.

6.14.2.18 GetNearestPointOnTriangle() `static bool Infohazard.Core.MathUtility.GetNearestPointOnTriangle (Vector3 v1, Vector3 v2, Vector3 v3, Vector3 point, out Vector3 pointOnTriangle) [static]`

Find the point on a triangle where it is nearest to a position, and return whether that point is in the triangle's bounds.

Does not return points on the edge of the triangle. If the nearest point on the triangle's plane is outside the triangle, will fail and not return a valid point.

Parameters

<i>v1</i>	The first triangle point.
<i>v2</i>	The second triangle point.
<i>v3</i>	The third triangle point.
<i>point</i>	The point to search for.
<i>pointOnTriangle</i>	The point on the triangle closest to the input point.

Returns

Whether the nearest point is within the triangle's bounds.

6.14.2.19 GetNearestPointOnTriangleIncludingBounds() `static Vector3 Infohazard.Core.MathUtility.GetNearestPointOnTriangleIncludingBounds (Vector3 v1, Vector3 v2, Vector3 v3, Vector3 point) [static]`

Find the point on a triangle (including its bounds) where it is nearest to a position.

If nearest point is on the triangle's bounds, that point will be returned, unlike [GetNearestPointOnTriangle](#).

Parameters

<i>v1</i>	The first triangle point.
<i>v2</i>	The second triangle point.
<i>v3</i>	The third triangle point.
<i>point</i>	The point to search for.

Returns

The nearest point on the triangle to the given point.

6.14.2.20 GetPerpendicularVector() `static Vector3 Infohazard.Core.MathUtility.GetPerpendicularVector (this Vector3 vector) [static]`

Returns a vector that is perpendicular to the given vector.

Parameters

<i>vector</i>	Input vector.
---------------	---------------

Returns

A perpendicular vector.

6.14.2.21 IsPointInsideBound() `static bool Infohazard.Core.MathUtility.IsPointInsideBound (Vector3 v1, Vector3 v2, Vector3 normal, Vector3 point) [static]`

Returns true if a given point is on the inner side (defined by a given normal) of a segment.

Parameters

<i>v1</i>	The start of the segment.
<i>v2</i>	The end of the segment.
<i>normal</i>	The normal, defining which side is inside.
<i>point</i>	The point to search for.

Returns

Whether the point is on the inner side.

6.14.2.22 Multiply() `static Vector3 Infohazard.Core.MathUtility.Multiply (Vector3 left, Vector3 right) [static]`

Multiply the components of left by the components of right.

6.14.2.23 NormalizeAngle() `static float Infohazard.Core.MathUtility.NormalizeAngle (float angle) [static]`

Normalize an angle to a value between 0 and 360.

Parameters

<i>angle</i>	Input angle.
--------------	--------------

Returns

Angle between 0 and 360.

6.14.2.24 NormalizeAngles() `static Vector3 Infohazard.Core.MathUtility.NormalizeAngles (Vector3 angles) [static]`

Normalize a set of euler angles to values between 0 and 360.

Parameters

<i>angles</i>	Input angles.
---------------	---------------

Returns

Angles between 0 and 360.

6.14.2.25 NormalizeInnerAngle() `static float Infohazard.Core.MathUtility.NormalizeInnerAngle (float angle) [static]`

Normalize an angle to a value between -180 and 180.

Parameters

<i>angle</i>	Input angle.
--------------	--------------

Returns

Angle between -180 and 180.

6.14.2.26 NormalizeInnerAngles() `static Vector3 Infohazard.Core.MathUtility.NormalizeInnerAngles (Vector3 angles) [static]`

Normalize a set of euler angles to values between -180 and 180.

Parameters

<i>angles</i>	Input angles.
---------------	---------------

Returns

Angles between -180 and 180.

6.14.2.27 Reciprocal() `static Vector3 Infohazard.Core.MathUtility.Reciprocal (Vector3 vector) [static]`

Take the reciprocal of each component of a vector.

6.14.2.28 RoundToNearest() `[1/2] static float Infohazard.Core.MathUtility.RoundToNearest (float value, float factor) [static]`

Round a value to the nearest multiple of a given factor.

Parameters

<i>value</i>	Input value.
<i>factor</i>	Value to round to a multiple of.

Returns

Rounded value.

6.14.2.29 RoundToNearest() `[2/2] static Vector3 Infohazard.Core.MathUtility.RoundToNearest (Vector3 vector, float factor) [static]`

Round a each component of a vector to the nearest multiple of a given factor.

Parameters

<i>vector</i>	Input values.
<i>factor</i>	Value to round to a multiple of.

Returns

Rounded values.

6.14.2.30 SignZero() `static float Infohazard.Core.MathUtility.SignZero (float value) [static]`

Same as `Mathf.Sign`, except that if the input is zero, it returns zero.

Parameters

<i>value</i>	A number to get the sign of.
--------------	------------------------------

Returns

1 if the number is positive, -1 if the number is negative, 0 if the number is 0.

6.14.2.31 SplitHorizontal() [1/2] `static void Infohazard.Core.MathUtility.SplitHorizontal (Rect rect, float gap, out Rect out1, out Rect out2, float div = 0.5f) [static]`

Split a rect into two halves horizontally, with given gap between the halves.

Parameters

<i>rect</i>	Rect to split.
<i>gap</i>	Gap between the split halves.
<i>out1</i>	Output rect 1.
<i>out2</i>	Output rect 2.
<i>div</i>	The ratio of the total space taken up by the left rect.

6.14.2.32 SplitHorizontal() [2/2] `static void Infohazard.Core.MathUtility.SplitHorizontal (Rect rect, float gap, out Rect out1, out Rect out2, out Rect out3, float div1 = 1.0f / 3.0f, float div2 = 2.0f / 3.0f) [static]`

Split a rect into three thirds horizontally, with given gap between the thirds.

Parameters

<i>rect</i>	Rect to split.
-------------	----------------

Parameters

<i>gap</i>	Gap between the split halves.
<i>out1</i>	Output rect 1.
<i>out2</i>	Output rect 2.
<i>out3</i>	Output rect 3.
<i>div1</i>	The ratio of the total space taken up by the left rect.
<i>div2</i>	The ratio of the total space taken up by the left and center rect.

6.14.2.33 ToV4() `static Vector4 Infohazard.Core.MathUtility.ToV4 (this Vector3 vector) [static]`

Get a Vector4 with the components (x, y, z, 0).

6.14.2.34 ToV4Pos() `static Vector4 Infohazard.Core.MathUtility.ToV4Pos (this Vector3 vector) [static]`

Get a Vector4 with the components (x, y, z, 1).

6.14.2.35 ToXY() `static Vector2 Infohazard.Core.MathUtility.ToXY (this Vector3 v) [static]`

Get a Vector2 with the components (x, y).

6.14.2.36 ToXZ() `static Vector2 Infohazard.Core.MathUtility.ToXZ (this Vector3 v) [static]`

Get a Vector2 with the components (x, z).

6.14.2.37 ToYX() `static Vector2 Infohazard.Core.MathUtility.ToYX (this Vector3 v) [static]`

Get a Vector2 with the components (y, x).

6.14.2.38 ToYZ() `static Vector2 Infohazard.Core.MathUtility.ToYZ (
 this Vector3 v) [static]`

Get a Vector2 with the components (y, z).

6.14.2.39 ToZX() `static Vector2 Infohazard.Core.MathUtility.ToZX (
 this Vector3 v) [static]`

Get a Vector2 with the components (z, x).

6.14.2.40 ToZY() `static Vector2 Infohazard.Core.MathUtility.ToZY (
 this Vector3 v) [static]`

Get a Vector2 with the components (z, y).

6.14.2.41 WithX() [1/2] `static Vector2 Infohazard.Core.MathUtility.WithX (
 this Vector2 v,
 float x) [static]`

Replace the X component of a vector.

6.14.2.42 WithX() [2/2] `static Vector3 Infohazard.Core.MathUtility.WithX (
 this Vector3 v,
 float x) [static]`

Replace the X component of a vector.

6.14.2.43 WithY() [1/2] `static Vector2 Infohazard.Core.MathUtility.WithY (
 this Vector2 v,
 float y) [static]`

Replace the Y component of a vector.

6.14.2.44 WithY() [2/2] `static Vector3 Infohazard.Core.MathUtility.WithY (
 this Vector3 v,
 float y) [static]`

Replace the Y component of a vector.

6.14.2.45 WithZ() [1/2] `static Vector3 Infohazard.Core.MathUtility.WithZ (this Vector2 v, float z) [static]`

Convert a Vector2 to a Vector3 with the given Z.

6.14.2.46 WithZ() [2/2] `static Vector3 Infohazard.Core.MathUtility.WithZ (this Vector3 v, float z) [static]`

Replace the Z component of a vector.

6.14.2.47 WorldToCanvasPoint() `static Vector3 Infohazard.Core.MathUtility.WorldToCanvasPoint (this Camera camera, Canvas canvas, Vector3 point) [static]`

Projects a point in the world onto a canvas in camera or overlay space.

Similar to Camera.WorldToScreenPoint, but scaled to the size of the canvas and its viewport. Logs an error if the canvas is in world space, as that is not supported.

Parameters

<i>camera</i>	The camera to use for reference.
<i>canvas</i>	The canvas to use for reference.
<i>point</i>	The world point to find on the canvas.

Returns

The point on the canvas, usable as an anchoredPosition.

6.14.2.48 XYRotation() `static Quaternion Infohazard.Core.MathUtility.XYRotation (Vector3 right, Vector3 upHint) [static]`

Get a quaternion based on a right vector and approximate up vector.

6.14.2.49 XZRotation() `static Quaternion Infohazard.Core.MathUtility.XZRotation (Vector3 right, Vector3 forwardHint) [static]`

Get a quaternion based on a right vector and approximate forward vector.

6.14.2.50 YXRotation() `static Quaternion Infohazard.Core.MathUtility.YXRotation (Vector3 up, Vector3 rightHint) [static]`

Get a quaternion based on a up vector and approximate right vector.

6.14.2.51 YZRotation() `static Quaternion Infohazard.Core.MathUtility.YZRotation (Vector3 up, Vector3 forwardHint) [static]`

Get a quaternion based on a up vector and approximate forward vector.

6.14.2.52 ZXRotation() `static Quaternion Infohazard.Core.MathUtility.ZXRotation (Vector3 forward, Vector3 rightHint) [static]`

Get a quaternion based on a forward vector and approximate right vector.

6.14.2.53 ZYRotation() `static Quaternion Infohazard.Core.MathUtility.ZYRotation (Vector3 forward, Vector3 upHint) [static]`

Get a quaternion based on a forward vector and approximate up vector.

6.14.3 Member Data Documentation

6.14.3.1 BoundsCornerArray `readonly Vector3 [] Infohazard.Core.MathUtility.BoundsCornerArray = new Vector3[8] [static]`

A static array that can be used to store the output of [GetCorners](#), as long as the values are copied from the array right away.

6.14.3.2 Complex `static Infohazard.Core.MathUtility.Complex [static]`

Evaluate all cubic roots of this Complex.

Parameters

<i>complex</i>	The number to get the cube roots of.
----------------	--------------------------------------

Returns

All three complex cube roots.

6.14.3.3 r1 static `Complex` Infohazard.Core.MathUtility.r1 [static]

Solve a quadratic equation (find x such that the result is zero) in the form $ax^2 + bx + c = 0$.

Solve a quartic equation (find x such that the result is zero) of the form $ax^4 + bx^3 + cx^2 + dx + e = 0$.

Solve a cubic equation (find x such that the result is zero) in the form $ax^3 + bx^2 + cx + d = 0$.

Parameters

<i>a</i>	The coefficient for the x^2 term.
<i>b</i>	The coefficient for the x term.
<i>c</i>	The constant term.

Returns

The two roots of the quadratic equation, which may be complex.

Parameters

<i>a</i>	The coefficient for the x^3 term.
<i>b</i>	The coefficient for the x^2 term.
<i>c</i>	The coefficient for the x term.
<i>d</i>	The constant term.

Returns

The three roots of the cubic, which may be complex.

Parameters

<i>a</i>	The coefficient for the x^4 term.
<i>b</i>	The coefficient for the x^3 term.
<i>c</i>	The coefficient for the x^2 term.
<i>d</i>	The coefficient for the x term.
<i>e</i>	The constant term.

Returns

The four roots of the quartic, which may be complex.

The documentation for this class was generated from the following file:

- Runtime/Utility/MathUtility.cs

6.15 Infohazard.Core.PassiveTimer Struct Reference

A lightweight timer that does not need to be updated each frame.

Public Types

- enum [TimeMode](#)
The various modes available for timers.

Public Member Functions

- [PassiveTimer](#) (float interval, [TimeMode](#) mode=TimeMode.Scaled, bool initialize=true)
Construct a [PassiveTimer](#) with the given interval, which will be both the initial and repeat interval.
- [PassiveTimer](#) (float initialInterval, float interval, [TimeMode](#) mode=TimeMode.Scaled, bool initialize=true)
Construct a [PassiveTimer](#) with the given interval.
- void [Initialize](#) ()
Initialize the timer.
- bool [TryConsume](#) ()
If the current interval has ended, reset the interval and return true, else return false without reset.
- void [StartInterval](#) ()
Restart the interval, so that the timer starts counting down from its repeat interval.
- void [EndInterval](#) ()
End the interval, so the timer is in the expired state.

Properties

- float [InitialInterval](#) [get, set]
Initial interval to set the timer for in seconds.
- float [Interval](#) [get, set]
(Serialized) The repeat interval for the in seconds.
- [TimeMode](#) [Mode](#) [get, set]
What value for time that the timer uses (scaled, unscaled, or realtime).
- bool [IsIntervalEnded](#) [get]
Whether the timer is in the expired state, meaning the current interval has elapsed.
- float [IntervalStartTime](#) [get, set]
The start time for the current interval.
- float [IntervalEndTime](#) [get]
The time at which the current interval will end (or has ended).
- float [TimeSinceIntervalEnded](#) [get]
Time that has passed since the current interval ended (or, if not ended, a negative value).
- bool [IsInitialized](#) [get, private set]
Whether the timer is initialized.
- bool [HasIntervalStarted](#) [get, private set]
Whether an interval has started yet.
- float [TimeUntilIntervalEnd](#) [get]
The time in seconds until the current interval ends.
- float [RatioUntilIntervalEnd](#) [get]
A ratio going from one at interval start to zero at interval end.
- float [TimeSinceIntervalStart](#) [get]

- The time in seconds since the current interval started.*
- float [RatioSinceIntervalStart](#) [get]
- A ratio going from zero at interval start to one at interval end.*
- bool [DidIntervalEndThisFrame](#) [get]
- Whether the current interval ended during the current frame.*
- float [CurrentTimeWithoutPause](#) [get]
- The current time read from Unity, based on the [Mode](#).*
- float [CurrentTime](#) [get]
- The current time read from Unity, taking into account time that the [PassiveTimer](#) has spent paused.*
- float [DeltaTime](#) [get]
- The delta time read from Unity, based on the [Mode](#).*
- float [PausedTime](#) [get, private set]
- The time that the [PassiveTimer](#) has spent in a paused state.*
- bool [IsPaused](#) [get, set]
- Get or set whether the [PassiveTimer](#) is paused.*

Private Attributes

- float [_initialInterval](#)
- (Serialized) Initial interval to set the timer for in seconds.*
- float [_interval](#)
- (Serialized) The repeat interval for the timer in seconds.*
- [TimeMode](#) [_mode](#)
- (Serialized) What value for time that the timer uses (scaled, unscaled, or realtime).*

6.15.1 Detailed Description

A lightweight timer that does not need to be updated each frame.

Can be serialized directly in the inspector or created in code. If it is assigned in the inspector, you must call [Initialize](#) in Start/Awake/OnEnable/OnSpawned.

A [PassiveTimer](#) can be in one of four states:

- It has not yet been initialized (uninitialized state).
- An interval is active and counting down (counting state).
- The timer is paused (paused state).
- An interval has expired (expired state).

6.15.2 Member Enumeration Documentation

6.15.2.1 TimeMode `enum Infohazard.Core.PassiveTimer.TimeMode`

The various modes available for timers.

6.15.3 Constructor & Destructor Documentation

6.15.3.1 PassiveTimer() [1/2] `Infohazard.Core.PassiveTimer.PassiveTimer (float interval, TimeMode mode = TimeMode.Scaled, bool initialize = true)`

Construct a [PassiveTimer](#) with the given interval, which will be both the initial and repeat interval.

Parameters

<i>interval</i>	The initial and repeat interval.
<i>mode</i>	Time mode to use.
<i>initialize</i>	Whether to initialize the timer and start counting immediately.

6.15.3.2 PassiveTimer() [2/2] `Infohazard.Core.PassiveTimer.PassiveTimer (float initialInterval, float interval, TimeMode mode = TimeMode.Scaled, bool initialize = true)`

Construct a [PassiveTimer](#) with the given interval.

Parameters

<i>initialInterval</i>	The initial interval.
<i>interval</i>	The repeat interval.
<i>mode</i>	Time mode to use.
<i>initialize</i>	Whether to initialize the timer and start counting immediately.

6.15.4 Member Function Documentation

6.15.4.1 EndInterval() `void Infohazard.Core.PassiveTimer.EndInterval ()`

End the interval, so the timer is in the expired state.

6.15.4.2 Initialize() `void Infohazard.Core.PassiveTimer.Initialize ()`

Initialize the timer.

You must call this when your script initializes if the timer was assigned in the inspector.

6.15.4.3 StartInterval() `void Infohazard.Core.PassiveTimer.StartInterval ()`

Restart the interval, so that the timer starts counting down from its repeat interval.

6.15.4.4 TryConsume() `bool Infohazard.Core.PassiveTimer.TryConsume ()`

If the current interval has ended, reset the interval and return true, else return false without reset.

This is useful to create ability cooldowns or weapon fire rates. See the following example:

```
if (AbilityButtonPressed() && AbilityTimer.TryConsume()) {  
    UseAbility();  
}
```

Returns

Whether the interval was ended and has been reset.

6.15.5 Member Data Documentation**6.15.5.1 _initialInterval** `float Infohazard.Core.PassiveTimer._initialInterval [private]`

(Serialized) Initial interval to set the timer for in seconds.

6.15.5.2 _interval `float Infohazard.Core.PassiveTimer._interval [private]`

(Serialized) The repeat interval for the timer in seconds.

6.15.5.3 _mode `TimeMode Infohazard.Core.PassiveTimer._mode [private]`

(Serialized) What value for time that the timer uses (scaled, unscaled, or realtime).

6.15.6 Property Documentation**6.15.6.1 CurrentTime** `float Infohazard.Core.PassiveTimer.CurrentTime [get]`

The current time read from Unity, taking into account time that the [PassiveTimer](#) has spent paused.

6.15.6.2 CurrentTimeWithoutPause `float Infohazard.Core.PassiveTimer.CurrentTimeWithoutPause [get]`

The current time read from Unity, based on the [Mode](#).

Exceptions

<i>ArgumentOutOfRangeException</i>	If Mode is invalid.
------------------------------------	-------------------------------------

6.15.6.3 DeltaTime `float Infohazard.Core.PassiveTimer.DeltaTime [get]`

The delta time read from Unity, based on the [Mode](#).

Exceptions

<i>ArgumentOutOfRangeException</i>	If Mode is invalid or realtime.
------------------------------------	---

6.15.6.4 DidIntervalEndThisFrame `bool Infohazard.Core.PassiveTimer.DidIntervalEndThisFrame [get]`

Whether the current interval ended during the current frame.

This can be used to create actions that happen only once, the moment a timer expires.

6.15.6.5 HasIntervalStarted `bool Infohazard.Core.PassiveTimer.HasIntervalStarted [get], [private set]`

Whether an interval has started yet.

6.15.6.6 InitialInterval `float Infohazard.Core.PassiveTimer.InitialInterval [get], [set]`

Initial interval to set the timer for in seconds.

This interval begins when [Initialize](#) is called, or when the timer is created from a non-default constructor.

6.15.6.7 Interval `float Infohazard.Core.PassiveTimer.Interval [get], [set]`

(Serialized) The repeat interval for the in seconds.

This interval begins when [StartInterval](#) or [TryConsume](#) is used.

6.15.6.8 IntervalEndTime `float Infohazard.Core.PassiveTimer.IntervalEndTime [get]`

The time at which the current interval will end (or has ended).

6.15.6.9 IntervalStartTime float Infohazard.Core.PassiveTimer.IntervalStartTime [get], [set]

The start time for the current interval.

6.15.6.10 IsInitialized bool Infohazard.Core.PassiveTimer.IsInitialized [get], [private set]

Whether the timer is initialized.

6.15.6.11 IsIntervalEnded bool Infohazard.Core.PassiveTimer.IsIntervalEnded [get]

Whether the timer is in the expired state, meaning the current interval has elapsed.

6.15.6.12 IsPaused bool Infohazard.Core.PassiveTimer.IsPaused [get], [set]

Get or set whether the [PassiveTimer](#) is paused.

It is not necessary to pause timers to account for the game pausing, as long as they are using realtime. This allows an individual timer to be paused separately from the rest of the game.

6.15.6.13 Mode [TimeMode](#) Infohazard.Core.PassiveTimer.Mode [get], [set]

What value for time that the timer uses (scaled, unscaled, or realtime).

6.15.6.14 PausedTime float Infohazard.Core.PassiveTimer.PausedTime [get], [private set]

The time that the [PassiveTimer](#) has spent in a paused state.

6.15.6.15 RatioSinceIntervalStart float Infohazard.Core.PassiveTimer.RatioSinceIntervalStart [get]

A ratio going from zero at interval start to one at interval end.

6.15.6.16 RatioUntilIntervalEnd float Infohazard.Core.PassiveTimer.RatioUntilIntervalEnd [get]

A ratio going from one at interval start to zero at interval end.

6.15.6.17 TimeSinceIntervalEnded `float Infohazard.Core.PassiveTimer.TimeSinceIntervalEnded [get]`

Time that has passed since the current interval ended (or, if not ended, a negative value).

6.15.6.18 TimeSinceIntervalStart `float Infohazard.Core.PassiveTimer.TimeSinceIntervalStart [get]`

The time in seconds since the current interval started.

6.15.6.19 TimeUntilIntervalEnd `float Infohazard.Core.PassiveTimer.TimeUntilIntervalEnd [get]`

The time in seconds until the current interval ends.

The documentation for this struct was generated from the following file:

- `Runtime/Timing/PassiveTimer.cs`

6.16 Infohazard.Core.Pause Class Reference

Manages pausing and unpausing of the game.

Properties

- static bool [Paused](#) `[get, set]`
Controls paused state of the game.

Events

- static Action [GamePaused](#)
Invoked when the game pauses.
- static Action [GameResumed](#)
Invoked when the game un-pauses.

6.16.1 Detailed Description

Manages pausing and unpausing of the game.

Any actions that should only happen when the game is not paused should check `Pause.paused`. Can be used statically if pause is controlled elsewhere, or placed as a component to pause the game from a `UnityEvent`. The game will automatically un-pause when a new scene is loaded.

6.16.2 Property Documentation

6.16.2.1 Paused `bool Infohazard.Core.Pause.Paused [static], [get], [set]`

Controls paused state of the game.

This cannot completely prevent game actions from happening, but it does sets `Time.timeScale` to 0 so that Physics and animation will stop.

6.16.3 Event Documentation

6.16.3.1 GamePaused `Action Infohazard.Core.Pause.GamePaused [static]`

Invoked when the game pauses.

6.16.3.2 GameResumed `Action Infohazard.Core.Pause.GameResumed [static]`

Invoked when the game un-pauses.

The documentation for this class was generated from the following file:

- `Runtime/Timing/Pause.cs`

6.17 Infohazard.Core.Pool< T > Class Template Reference

Provides a simple pool with an interface similar to the official Unity pool added in 2021.

Public Member Functions

- `Pool` (`Func< T > createFunc`, `Action< T > getAction=null`, `Action< T > releaseAction=null`, `Action< T > destroyAction=null`, `int maxCount=0`)
Create a new ObjectPool.
- `T Get ()`
Retrieve an item from the pool, creating a new one if necessary.
- `void Release (T item)`
Return an object to the pool, destroying it if over max count.
- `void Clear ()`
Destroy all objects in the pool.
- `void Remove (T item)`
Remove an item from the pool without cleaning it up.
- `void Dispose ()`
Destroy all objects in the pool.

Properties

- `Func< T > CreateFunc` [get, set]
Function invoked to create an instance, which must not be null.
- `Action< T > GetAction` [get, set]
Callback invoked when an object is retrieved from the pool.
- `Action< T > ReleaseAction` [get, set]
Callback invoked when an object is returned to the pool.
- `Action< T > DestroyAction` [get, set]
Callback invoked when an object is destroyed in the pool.
- `int MaxCount = 0` [get, set]
Max objects in pool, or 0 for no limit.

6.17.1 Detailed Description

Provides a simple pool with an interface similar to the official Unity pool added in 2021.

Template Parameters

<code>T</code>	Type of pooled object.
----------------	------------------------

6.17.2 Constructor & Destructor Documentation

6.17.2.1 Pool() `Infohazard.Core.Pool< T >.Pool (`
`Func< T > createFunc,`
`Action< T > getAction = null,`
`Action< T > releaseAction = null,`
`Action< T > destroyAction = null,`
`int maxCount = 0)`

Create a new ObjectPool.

Parameters

<code>createFunc</code>	Function invoked to create an instance, which must not be null.
<code>getAction</code>	Callback invoked when an object is retrieved from the pool.
<code>releaseAction</code>	Callback invoked when an object is returned to the pool.
<code>destroyAction</code>	Callback invoked when an object is destroyed in the pool.
<code>maxCount</code>	Max objects in pool, or 0 for no limit.

6.17.3 Member Function Documentation

6.17.3.1 Clear() `void Infohazard.Core.Pool< T >.Clear ()`

Destroy all objects in the pool.

6.17.3.2 Dispose() `void Infohazard.Core.Pool< T >.Dispose ()`

Destroy all objects in the pool.

6.17.3.3 Get() `T Infohazard.Core.Pool< T >.Get ()`

Retrieve an item from the pool, creating a new one if necessary.

Returns

The retrieved object.

6.17.3.4 Release() `void Infohazard.Core.Pool< T >.Release (T item)`

Return an object to the pool, destroying it if over max count.

Parameters

<i>item</i>	The object to release.
-------------	------------------------

6.17.3.5 Remove() `void Infohazard.Core.Pool< T >.Remove (T item)`

Remove an item from the pool without cleaning it up.

Parameters

<i>item</i>	Item to remove.
-------------	-----------------

6.17.4 Property Documentation

6.17.4.1 CreateFunc `Func<T> Infohazard.Core.Pool< T >.CreateFunc [get], [set]`

Function invoked to create an instance, which must not be null.

6.17.4.2 DestroyAction `Action<T> Infohazard.Core.Pool< T >.DestroyAction [get], [set]`

Callback invoked when an object is destroyed in the pool.

6.17.4.3 GetAction `Action<T> Infohazard.Core.Pool< T >.GetAction [get], [set]`

Callback invoked when an object is retrieved from the pool.

6.17.4.4 MaxCount `int Infohazard.Core.Pool< T >.MaxCount = 0 [get], [set]`

Max objects in pool, or 0 for no limit.

6.17.4.5 ReleaseAction `Action<T> Infohazard.Core.Pool< T >.ReleaseAction [get], [set]`

Callback invoked when an object is returned to the pool.

The documentation for this class was generated from the following file:

- Runtime/Pooling/Pool.cs

6.18 Infohazard.Core.PooledParticleEffect Class Reference

A component that can be attached to ParticleSystem GameObjects to make them work correctly with pooling.

Private Attributes

- `bool _despawnOnDone = true`
(Serialized) Whether to despawn the [Spawnable](#) when the ParticleSystem finishes.

6.18.1 Detailed Description

A component that can be attached to ParticleSystem GameObjects to make them work correctly with pooling.

This script enables ParticleSystems to reset and play when they are spawned using the pooling system, and to optionally despawn themselves when they complete. This script must be placed on a GameObject with a ParticleSystem component, and there must be a [Spawnable](#) component in this object or a parent. In order for despawning to work, the ParticleSystem must have its Stop Action set to Callback. If there are multiple ParticleSystems in a prefab, only the root one should have `_despawnOnDone` set to true.

6.18.2 Member Data Documentation

6.18.2.1 `_despawnOnDone` `bool Infohazard.Core.PooledParticleSystem._despawnOnDone = true`
[private]

(Serialized) Whether to despawn the [Spawnable](#) when the ParticleSystem finishes.

To work, the ParticleSystem must have its Stop Action set to Callback.

The documentation for this class was generated from the following file:

- Runtime/Pooling/PooledParticleSystem.cs

6.19 Infohazard.Core.PooledTrail Class Reference

A component that can be attached to TrailRenderer GameObjects to make them work correctly with pooling.

6.19.1 Detailed Description

A component that can be attached to TrailRenderer GameObjects to make them work correctly with pooling.

This script enables TrailRenderers to reset when they are spawned using the pooling system. This script must be placed on a GameObject with a TrailRenderer component.

The documentation for this class was generated from the following file:

- Runtime/Pooling/PooledTrail.cs

6.20 Infohazard.Core.PoolManager Class Reference

The singleton manager class that handles object pooling.

Public Member Functions

- [Spawnable](#) `SpawnPrefab` ([Spawnable](#) prefab, in [SpawnParams](#) spawnParams=default)
Spawn an instance of the specified prefab, creating a [DefaultPoolHandler](#) if one does not already exist.
- [Spawnable](#) `SpawnFromKey` (object key, in [SpawnParams](#) spawnParams=default)
Spawn an instance with the specified key. If no [IPoolHandler](#) is registered for key, an error is logged and null is returned.
- bool `HasPoolHandler` (object key)
Return whether a [IPoolHandler](#) has been registered with the given key.
- bool `TryGetPoolHandler` (object key, out [IPoolHandler](#) handler)
Get the [IPoolHandler](#) for the given key, if one is registered (return false otherwise).
- void `AddPoolHandler` (object key, [IPoolHandler](#) handler)
Register a new [IPoolHandler](#) for the given key.
- void `DespawnInstance` ([Spawnable](#) instance)
Despawn the given instance, returning it back to its pool if it has one.
- void `ClearInactiveObjects` ()
Destroy and cleanup any inactive instances for [DefaultPoolHandlers](#) created by the [PoolManager](#).

Properties

- static [PoolManager Instance](#) [get]
The singleton [PoolManager](#) instance.
- Transform [PoolTransform](#) [get]
Transform that inactive instances will be parented to.

6.20.1 Detailed Description

The singleton manager class that handles object pooling.

There should only ever be one [PoolManager](#) at a time, but this can be created either manually or automatically when needed. You can have one [PoolManager](#) per scene, or have a shared one across all scenes. The only time you'll typically need to interact with the [PoolManager](#) is to call [ClearInactiveObjects](#) when loading a new level, if the previously pooled objects are no longer necessary. All normal spawning and despawning of instances should be done through the [Spawnable](#) class.

6.20.2 Member Function Documentation

6.20.2.1 AddPoolHandler() `void Infohazard.Core.PoolManager.AddPoolHandler (object key, IPoolHandler handler)`

Register a new IPoolHandler for the given key.

The registered IPoolHandler will NOT be retained by the [PoolManager](#).

Parameters

<i>key</i>	Key used to spawn objects using handler.
<i>handler</i>	IPoolHandler used to spawn objects for key.

6.20.2.2 ClearInactiveObjects() `void Infohazard.Core.PoolManager.ClearInactiveObjects ()`

Destroy and cleanup any inactive instances for [DefaultPoolHandlers](#) created by the [PoolManager](#).

IPoolHandlers created manually and added using [AddPoolHandler](#) will NOT be affected. This is meant to be called when loading a new level, to ensure pooled instances to not stay around forever.

6.20.2.3 DespawnInstance() `void Infohazard.Core.PoolManager.DespawnInstance (Spawnable instance)`

Despawn the given instance, returning it back to its pool if it has one.

Parameters

<i>instance</i>	
-----------------	--

6.20.2.4 HasPoolHandler() `bool Infohazard.Core.PoolManager.HasPoolHandler (object key)`

Return whether a IPoolHandler has been registered with the given key.

Parameters

<i>key</i>	Key of the IPoolHandler, such as the prefab itself.
------------	---

Returns

Whether there is an IPoolHandler for key.

6.20.2.5 SpawnFromKey() `Spawnable Infohazard.Core.PoolManager.SpawnFromKey (object key, in SpawnParams spawnParams = default)`

Spawn an instance with the specified key. If no IPoolHandler is registered for key, an error is logged and null is returned.

The key may be a prefab that was previously registered using [SpawnPrefab](#), or another object for which an IPoolHandler was manually registered using [AddPoolHandler](#).

Parameters

<i>key</i>	Key of the IPoolHandler, such as the prefab itself.
<i>spawnParams</i>	Additional spawn info.

Returns

The spawned instance, or null if no handler found.

6.20.2.6 SpawnPrefab() `Spawnable Infohazard.Core.PoolManager.SpawnPrefab (Spawnable prefab, in SpawnParams spawnParams = default)`

Spawn an instance of the specified prefab, creating a [DefaultPoolHandler](#) if one does not already exist.

If a new [DefaultPoolHandler](#) is created, it will be retained by the [PoolManager](#).

Parameters

<i>prefab</i>	The prefab to spawn.
<i>spawnParams</i>	Additional spawn information.

Returns

The spawned instance.

6.20.2.7 TryGetPoolHandler() `bool Infohazard.Core.PoolManager.TryGetPoolHandler (object key, out IPoolHandler handler)`

Get the IPoolHandler for the given key, if one is registered (return false otherwise).

Parameters

<i>key</i>	Key of the IPoolHandler, such as the prefab itself.
<i>handler</i>	The registered IPoolHandler for key, or null if none.

Returns

Whether there is an IPoolHandler for key.

6.20.3 Property Documentation

6.20.3.1 Instance `PoolManager Infohazard.Core.PoolManager.Instance [static], [get]`

The singleton [PoolManager](#) instance.

If this property is accessed when there is no active instance, one will be created automatically.

6.20.3.2 PoolTransform `Transform Infohazard.Core.PoolManager.PoolTransform [get]`

Transform that inactive instances will be parented to.

The documentation for this class was generated from the following file:

- Runtime/Pooling/PoolManager.cs

6.21 Infohazard.Core.ProgressBar Class Reference

Used to create health bars and other types of progress bars without using a Slider.

Properties

- float `FillAmount` [get, set]
By what value to fill the bar.

Private Attributes

- Image `_fillImage`
(Serialized) Image that will be used as the bar fill.
- float `_fillAmount` = 0.5f
(Serialized) By what value to fill the bar.
- TMP_Text `_percentText`
(Serialized) An optional text label to show the progress percentage on.

6.21.1 Detailed Description

Used to create health bars and other types of progress bars without using a Slider.

It supports images that fill the bar using either the “filled” image type or by manipulating the RectTransform anchors.

6.21.2 Member Data Documentation

6.21.2.1 `_fillAmount` float Infohazard.Core.ProgressBar._fillAmount = 0.5f [private]

(Serialized) By what value to fill the bar.

A value of zero means empty, one means full.

6.21.2.2 `_fillImage` Image Infohazard.Core.ProgressBar._fillImage [private]

(Serialized) Image that will be used as the bar fill.

If the image mode is set to fill, the fill amount will be controlled. Otherwise, the RectTransform anchors will be controlled.

6.21.2.3 `_percentText` TMP_Text Infohazard.Core.ProgressBar._percentText [private]

(Serialized) An optional text label to show the progress percentage on.

The text will be formatted as {XYZ}%, with no decimal places.

6.21.3 Property Documentation

6.21.3.1 FillAmount `float Infohazard.Core.ProgressBar.FillAmount [get], [set]`

By what value to fill the bar.

A value of zero means empty, one means full.

The documentation for this class was generated from the following file:

- Runtime/Misc/ProgressBar.cs

6.22 Infohazard.Core.SpawnRefBase< T >.PropNames Class Reference

This is used to refer to the names of private fields in this class from a custom [Editor](#).

6.22.1 Detailed Description

This is used to refer to the names of private fields in this class from a custom [Editor](#).

The documentation for this class was generated from the following file:

- Runtime/Pooling/SpawnRef.cs

6.23 Infohazard.Core.RandomUtility Class Reference

Contains extensions to builtin randomization functionality.

Static Public Member Functions

- static long [NextLong](#) (this System.Random random, long min, long max)
Generate a random long between min and max.
- static ulong [NextUlong](#) (this System.Random random)
Generate a random ulong.

6.23.1 Detailed Description

Contains extensions to builtin randomization functionality.

6.23.2 Member Function Documentation

6.23.2.1 NextLong() `static long Infohazard.Core.RandomUtility.NextLong (this System.Random random, long min, long max) [static]`

Generate a random long between min and max.

6.23.2.2 NextUlong() `static ulong Infohazard.Core.RandomUtility.NextUlong (this System.Random random) [static]`

Generate a random ulong.

The documentation for this class was generated from the following file:

- Runtime/Utility/RandomUtility.cs

6.24 Infohazard.Core.SceneControl Class Reference

Provides some methods to navigate to scenes.

Public Member Functions

- void [QuitButton](#) ()
Non-static equivalent of [Quit](#).
- void [ReloadScene](#) ()
Reload the current scene.
- void [LoadScene](#) (string sceneName)
Load a scene with a given name.

Static Public Member Functions

- static void [Quit](#) ()
If in the editor, exit play mode. Otherwise, close the application.

6.24.1 Detailed Description

Provides some methods to navigate to scenes.

Also provides a static method to quit the game that works in a standalone build as well as in the editor. This script is useful if you're building a super quick main menu (such as in the last half hour of a game jam) and need to hook up your buttons as fast as possible.

6.24.2 Member Function Documentation

6.24.2.1 LoadScene() `void Infohazard.Core.SceneControl.LoadScene (string sceneName)`

Load a scene with a given name.

Scene will be loaded as a single (not additively).

Parameters

<code>sceneName</code>	The scene name to load.
------------------------	-------------------------

6.24.2.2 Quit() `static void Infohazard.Core.SceneControl.Quit () [static]`

If in the editor, exit play mode. Otherwise, close the application.

6.24.2.3 QuitButton() `void Infohazard.Core.SceneControl.QuitButton ()`

Non-static equivalent of [Quit](#).

6.24.2.4 ReloadScene() `void Infohazard.Core.SceneControl.ReloadScene ()`

Reload the current scene.

Current scene is determined by `SceneManager.SetActiveScene ()`, and is loaded as a single scene. This method is not very helpful if your game has multiple scenes open at a time.

The documentation for this class was generated from the following file:

- Runtime/Misc/SceneControl.cs

6.25 Infohazard.Core.Singleton< T > Class Template Reference

Base class that makes it easier to write scripts that always have exactly one instance.

Properties

- static T [Instance](#) `[get]`
Get the singleton instance of the script.

6.25.1 Detailed Description

Base class that makes it easier to write scripts that always have exactly one instance.

You can inherit from this script in managers or other scripts. You must still place the script on a `GameObject` in the scene. A static [Instance](#) accessor is automatically provided, which will do a lazy search for the correct instance the first time it is used, or if the previous instance was destroyed. After that it will just return a cached instance.

Template Parameters

<i>T</i>	Pass the name of the inheriting class here to set the type of Instance .
----------	--

Type Constraints

T* : *SingletonBase

6.25.2 Property Documentation

6.25.2.1 Instance `T Infohazard.Core.Singleton< T >.Instance [static], [get]`

Get the singleton instance of the script.

If it hasn't been found yet (or the old instance was destroyed), will do a search using `Object.Find{T}`. Otherwise it returns the cached instance. However, it will not create a new instance for you.

The documentation for this class was generated from the following file:

- Runtime/Misc/Singleton.cs

6.26 Infohazard.Core.SingletonAsset< T > Class Template Reference

Base class that makes it easier to write ScriptableObjects that always have exactly one instance in your project.

Properties

- static `T Instance [get]`
Get the singleton instance of the script.

6.26.1 Detailed Description

Base class that makes it easier to write ScriptableObjects that always have exactly one instance in your project.

Similar to [Singleton](#), but for ScriptableObjects. You specify a path in your subclass where the instance should live (this must be under a Resources folder) and the editor will automatically handle loading and even creating this asset for you when needed.

Template Parameters

<i>T</i>	Pass the name of the inheriting class here to set the type of Instance .
----------	--

Type Constraints

T : [SingletonAssetBase](#)

6.26.2 Property Documentation

6.26.2.1 Instance `T Infohazard.Core.SingletonAsset< T >.Instance [static], [get]`

Get the singleton instance of the script.

If it hasn't been loaded yet, will try to load from [SingletonAssetBase.ResourcePath](#). If in the editor and the asset doesn't exist, it will be created at [SingletonAssetBase.ResourceFolderPath/SingletonAssetBase.ResourcePath](#). Otherwise, the cached instance (or null) will be returned.

The documentation for this class was generated from the following file:

- Runtime/Misc/SingletonAsset.cs

6.27 Infohazard.Core.SingletonAssetBase Class Reference

Base class of SingletonAsset<T>. For internal use only.

Properties

- abstract string [ResourceFolderPath](#) [get]
Return the path at which the Resources folder containing this asset lives.
- abstract string [ResourcePath](#) [get]
Returns the path of this asset relative to its Resources folder.

6.27.1 Detailed Description

Base class of SingletonAsset<T>. For internal use only.

6.27.2 Property Documentation

6.27.2.1 ResourceFolderPath `abstract string Infohazard.Core.SingletonAssetBase.Resource↵
FolderPath [get]`

Return the path at which the Resources folder containing this asset lives.

```
public override string ResourceFolderPath => "Infohazard.Core.Data/Resources";
```

6.27.2.2 ResourcePath `abstract string Infohazard.Core.SingletonAssetBase.ResourcePath [get]`

Returns the path of this asset relative to its Resources folder.

The documentation for this class was generated from the following file:

- Runtime/Misc/SingletonAsset.cs

6.28 Infohazard.Core.Spawnable Class Reference

Attach this component to a prefab to enable it to use the pooling system.

Public Member Functions

- void [DespawnSelf](#) ()
Despawn this instance and return it to the [PoolManager](#).

Static Public Member Functions

- static [Spawnable](#) [Spawn](#) ([Spawnable](#) prefab, Vector3? position=null, Quaternion? rotation=null, Transform parent=null, bool inWorldSpace=false, ulong persistedInstanceId=0, Scene? scene=null)
Spawn a new pooled instance with the given properties.
- static [Spawnable](#) [Spawn](#) ([Spawnable](#) prefab, in [SpawnParams](#) spawnParams=default)
Spawn a new pooled instance with the given properties.
- static void [Despawn](#) ([Spawnable](#) instance, float inSeconds=0.0f)
Despawn a pooled instance, optionally after some time has passed.
- static GameObject [Spawn](#) (GameObject prefab, Vector3? position=null, Quaternion? rotation=null, Transform parent=null, bool inWorldSpace=false, ulong persistedInstanceId=0, Scene? scene=null)
Spawn a new instance with the given properties, using the pooling system if the prefab has a [Spawnable](#) script.
- static GameObject [Spawn](#) (GameObject prefab, in [SpawnParams](#) spawnParams=default)
Spawn a new instance with the given properties, using the pooling system if the prefab has a [Spawnable](#) script.
- static void [Despawn](#) (GameObject instance, float inSeconds=0.0f)
Despawn an instance, optionally after some time has passed, using the pooling system if the prefab has a [Spawnable](#) script.
- static T [Spawn](#)< T > (T prefab, Vector3? position=null, Quaternion? rotation=null, Transform parent=null, bool inWorldSpace=false, ulong persistedInstanceId=0, Scene? scene=null)
Spawn a new instance with the given properties, using the pooling system if the prefab has a [Spawnable](#) script.
- static T [Spawn](#)< T > (T prefab, in [SpawnParams](#) spawnParams=default)
Spawn a new instance with the given properties, using the pooling system if the prefab has a [Spawnable](#) script.

Properties

- bool [Pooled](#) [get]
Whether this object should be pooled.
- bool [IsSpawned](#) [get, private set]
Whether or not this object is an active, spawned instance.
- IPoolHandler [PoolHandler](#) [get, set]
IPoolHandler which was used to spawn the object.

Events

- Action< [Spawnable](#) > [Spawned](#)
Invoked when the [Spawnable](#) is spawned.
- Action< [Spawnable](#) > [Despawned](#)
Invoke when the [Spawnable](#) is despawned.
- Action< [Spawnable](#) > [Destroyed](#)
Invoked when the [Spawnable](#) is destroyed (not just despawned).

Private Attributes

- bool [_pooled](#) = true
(Serialized) Whether this object should be pooled.

6.28.1 Detailed Description

Attach this component to a prefab to enable it to use the pooling system.

The static methods in this class are also the main way to spawn objects in a way that's compatible with the pooling system. When a [Spawnable](#) object is spawned, it will broadcast the `OnSpawned` message to its children. When it is despawned, it will broadcast the `OnDespawned` method.

6.28.2 Member Function Documentation

6.28.2.1 Despawn() [1/2] `static void Infohazard.Core.Spawnable.Despawn (GameObject instance, float inSeconds = 0.0f) [static]`

Despawn an instance, optionally after some time has passed, using the pooling system if the prefab has a [Spawnable](#) script.

Parameters

<i>instance</i>	The instance to despawn.
<i>inSeconds</i>	The time to wait before despawning. If zero, despawn is synchronous.

6.28.2.2 Despawn() [2/2] `static void Infohazard.Core.Spawnable.Despawn (Spawnable instance, float inSeconds = 0.0f) [static]`

Despawn a pooled instance, optionally after some time has passed.

Parameters

<i>instance</i>	The instance to despawn.
<i>inSeconds</i>	The time to wait before despawning. If zero, despawn is synchronous.

6.28.2.3 DespawnSelf() `void Infohazard.Core.Spawnable.DespawnSelf ()`

Despawn this instance and return it to the [PoolManager](#).

6.28.2.4 Spawn() [1/4] `static GameObject Infohazard.Core.Spawnable.Spawn (`
`GameObject prefab,`
`in SpawnParams spawnParams = default) [static]`

Spawn a new instance with the given properties, using the pooling system if the prefab has a [Spawnable](#) script.

Parameters

<i>prefab</i>	The prefab to spawn.
<i>spawnParams</i>	Spawn properties.

Returns

The spawned instance.

6.28.2.5 Spawn() [2/4] `static GameObject Infohazard.Core.Spawnable.Spawn (`
`GameObject prefab,`
`Vector3? position = null,`
`Quaternion? rotation = null,`
`Transform parent = null,`
`bool inWorldSpace = false,`
`ulong persistedInstanceID = 0,`
`Scene? scene = null) [static]`

Spawn a new instance with the given properties, using the pooling system if the prefab has a [Spawnable](#) script.

Parameters

<i>prefab</i>	The prefab to spawn.
<i>position</i>	The position to spawn at.
<i>rotation</i>	The rotation to spawn at.
<i>parent</i>	The parent to spawn under.
<i>inWorldSpace</i>	If true, position/rotation are global, else they are local to parent.
<i>persistedInstanceID</i>	Existing persisted instance ID to assign.
<i>scene</i>	The scene to spawn in.

Returns

The spawned instance.

6.28.2.6 Spawn() [3/4] `static Spawnable Infohazard.Core.Spawnable.Spawn (Spawnable prefab, in SpawnParams spawnParams = default) [static]`

Spawn a new pooled instance with the given properties.

Parameters

<i>prefab</i>	The prefab to spawn.
<i>spawnParams</i>	Spawn properties.

Returns

The spawned instance.

6.28.2.7 Spawn() [4/4] `static Spawnable Infohazard.Core.Spawnable.Spawn (Spawnable prefab, Vector3? position = null, Quaternion? rotation = null, Transform parent = null, bool inWorldSpace = false, ulong persistedInstanceID = 0, Scene? scene = null) [static]`

Spawn a new pooled instance with the given properties.

Parameters

<i>prefab</i>	The prefab to spawn.
<i>position</i>	The position to spawn at.
<i>rotation</i>	The rotation to spawn at.
<i>parent</i>	The parent to spawn under.
<i>inWorldSpace</i>	If true, position/rotation are global, else they are local to parent.
<i>persistedInstanceID</i>	Existing persisted instance ID to assign.
<i>scene</i>	The scene to spawn in.

Returns

The spawned instance.

6.28.2.8 Spawn< T >() [1/2] static T [Infohazard.Core.Spawnable.Spawn](#)< T > (
T *prefab*,
in [SpawnParams](#) *spawnParams* = default) [static]

Spawn a new instance with the given properties, using the pooling system if the prefab has a [Spawnable](#) script.

Parameters

<i>prefab</i>	The prefab to spawn.
<i>spawnParams</i>	Spawn properties.

Returns

The spawned instance.

Type Constraints

T : *Component*

6.28.2.9 Spawn< T >() [2/2] static T [Infohazard.Core.Spawnable.Spawn](#)< T > (
T *prefab*,
Vector3? *position* = null,
Quaternion? *rotation* = null,
Transform *parent* = null,
bool *inWorldSpace* = false,
ulong *persistedInstanceID* = 0,
Scene? *scene* = null) [static]

Spawn a new instance with the given properties, using the pooling system if the prefab has a [Spawnable](#) script.

Parameters

<i>prefab</i>	The prefab to spawn.
<i>position</i>	The position to spawn at.
<i>rotation</i>	The rotation to spawn at.
<i>parent</i>	The parent to spawn under.
<i>inWorldSpace</i>	If true, position/rotation are global, else they are local to parent.
<i>persistedInstanceID</i>	Existing persisted instance ID to assign.
<i>scene</i>	The scene to spawn in.

Returns

The spawned instance.

Type Constraints

T : *Component*

6.28.3 Member Data Documentation

6.28.3.1 `_pooled` `bool Infohazard.Core.Spawnable._pooled = true [private]`

(Serialized) Whether this object should be pooled.

6.28.4 Property Documentation

6.28.4.1 `IsSpawned` `bool Infohazard.Core.Spawnable.IsSpawned [get], [private set]`

Whether or not this object is an active, spawned instance.

6.28.4.2 `Pooled` `bool Infohazard.Core.Spawnable.Pooled [get]`

Whether this object should be pooled.

6.28.4.3 `PoolHandler` `IPoolHandler Infohazard.Core.Spawnable.PoolHandler [get], [set], [package]`

IPoolHandler which was used to spawn the object.

6.28.5 Event Documentation

6.28.5.1 `Despawned` `Action<Spawnable> Infohazard.Core.Spawnable.Despawned`

Invoke when the [Spawnable](#) is despawned.

6.28.5.2 `Destroyed` `Action<Spawnable> Infohazard.Core.Spawnable.Destroyed`

Invoked when the [Spawnable](#) is destroyed (not just despawned).

6.28.5.3 `Spawned` `Action<Spawnable> Infohazard.Core.Spawnable.Spawned`

Invoked when the [Spawnable](#) is spawned.

The documentation for this class was generated from the following file:

- Runtime/Pooling/Spawnable.cs

6.29 Infohazard.Core.SpawnParams Struct Reference

Used to pass spawn parameters to various object creation/initialization methods.

Static Public Member Functions

- static [SpawnParams At](#) (Transform transform, bool parented=false, bool includeScene=false)
Spawn at a given transform (copy position and rotation).

Public Attributes

- Vector3? [Position](#)
Position to spawn at (if null, do not set position).
- Quaternion? [Rotation](#)
Position to spawn at (if null, do not set rotation).
- Vector3? [Scale](#)
Scale to spawn at (if null, do not set the scale).
- Transform [Parent](#)
Parent to attach the object to. If null, no parent.
- bool [InWorldSpace](#)
If true, given position/rotation/scale are considered world space. If false, they are considered in the space of the parent.
- ulong [PersistedInstanceId](#)
Instance ID to pass to a [IPersistedInstance](#) script.
- Scene? [Scene](#)
Scene to spawn in, if [Parent](#) is null.

Static Public Attributes

- static readonly [SpawnParams Default](#) = new [SpawnParams](#)()
Default spawn params (no transform, parent, scene, or instance ID).

6.29.1 Detailed Description

Used to pass spawn parameters to various object creation/initialization methods.

6.29.2 Member Function Documentation

6.29.2.1 At() static [SpawnParams](#) Infohazard.Core.SpawnParams.At (Transform transform, bool parented = false, bool includeScene = false) [static]

Spawn at a given transform (copy position and rotation).

Parameters

<i>transform</i>	The transform to spawn at.
<i>parented</i>	If true, parent spawned object to given transform.
<i>includeScene</i>	If true and parented is false, move to given transform's scene.

Returns

Resulting [SpawnParams](#).

6.29.3 Member Data Documentation

6.29.3.1 Default `readonly SpawnParams Infohazard.Core.SpawnParams.Default = new SpawnParams()`
[static]

Default spawn params (no transform, parent, scene, or instance ID).

6.29.3.2 InWorldSpace `bool Infohazard.Core.SpawnParams.InWorldSpace`

If true, given position/rotation/scale are considered world space. If false, they are considered in the space of the parent.

6.29.3.3 Parent `Transform Infohazard.Core.SpawnParams.Parent`

Parent to attach the object to. If null, no parent.

6.29.3.4 PersistedInstanceID `ulong Infohazard.Core.SpawnParams.PersistedInstanceID`

Instance ID to pass to a [IPersistedInstance](#) script.

6.29.3.5 Position `Vector3? Infohazard.Core.SpawnParams.Position`

Position to spawn at (if null, do not set position).

6.29.3.6 Rotation Quaternion? Infohazard.Core.SpawnParams.Rotation

Position to spawn at (if null, do not set rotation).

6.29.3.7 Scale Vector3? Infohazard.Core.SpawnParams.Scale

Scale to spawn at (if null, do not set the scale).

6.29.3.8 Scene Scene? Infohazard.Core.SpawnParams.Scene

Scene to spawn in, if [Parent](#) is null.

The documentation for this struct was generated from the following file:

- Runtime/Pooling/SpawnParams.cs

6.30 Infohazard.Core.SpawnRef< T > Class Template Reference

[SpawnRef](#) for spawning a GameObject directly.

Public Member Functions

- [SpawnRef](#) ()
Default constructor (needed for Unity serialization).
- [SpawnRef](#) (GameObject prefab)
Construct with a given prefab.
- [SpawnRef](#) ()
Default constructor (needed for Unity serialization).
- [SpawnRef](#) (T prefab)
Construct with a given prefab component.

Protected Member Functions

- override void [GetSpawnableAndGameObject](#) (T obj, out [Spawnable](#) spawnable, out GameObject game↔Object)
Override to return the associated [Spawnable](#) script and GameObject for given object.

Additional Inherited Members**6.30.1 Detailed Description**

[SpawnRef](#) for spawning a GameObject directly.

[SpawnRef](#) for spawning a GameObject via one of its components.

Type Constraints

***T* : [Component](#)**

6.30.2 Constructor & Destructor Documentation

6.30.2.1 `SpawnRef()` [1/4] `Infohazard.Core.SpawnRef< T >.SpawnRef ()`

Default constructor (needed for Unity serialization).

6.30.2.2 `SpawnRef()` [2/4] `Infohazard.Core.SpawnRef< T >.SpawnRef (GameObject prefab)`

Construct with a given prefab.

Parameters

<code>prefab</code>	The prefab to be spawned.
---------------------	---------------------------

inheritdoc/>

6.30.2.3 `SpawnRef()` [3/4] `Infohazard.Core.SpawnRef< T >.SpawnRef ()`

Default constructor (needed for Unity serialization).

6.30.2.4 `SpawnRef()` [4/4] `Infohazard.Core.SpawnRef< T >.SpawnRef (T prefab)`

Construct with a given prefab component.

Parameters

<code>prefab</code>	The prefab to be spawned.
---------------------	---------------------------

inheritdoc/>

6.30.3 Member Function Documentation

6.30.3.1 `GetSpawnableAndGameObject()` `override void Infohazard.Core.SpawnRef< T >.GetSpawnableAndGameObject (T obj, out Spawnable spawnable, out GameObject gameObject) [protected], [virtual]`

Override to return the associated `Spawnable` script and `GameObject` for given object.

Parameters

<i>obj</i>	The attached object.
<i>spawnable</i>	The Spawnable script for obj.
<i>gameObject</i>	The GameObject for obj.

Implements [Infohazard.Core.SpawnRefBase< T >](#).

The documentation for this class was generated from the following file:

- Runtime/Pooling/SpawnRef.cs

6.31 Infohazard.Core.SpawnRefBase< T > Class Template Reference

Only used internally.

Classes

- class [PropNames](#)

This is used to refer to the names of private fields in this class from a custom [Editor](#).

Public Member Functions

- [SpawnRefBase](#) ()
Default constructor (needed for Unity serialization).
- [SpawnRefBase](#) (T prefab)
Construct with a given prefab.
- virtual void [Retain](#) ()
Add a user to the [SpawnRef](#), creating the [DefaultPoolHandler](#) if necessary.
- virtual void [Release](#) ()
Remove a user from the [SpawnRef](#), in turn releasing the [IPoolHandler](#).
- T [Spawn](#) (in [SpawnParams](#) spawnParams=default)
Spawn an instance of [Prefab](#). The [SpawnRef](#) MUST be retained.

Protected Member Functions

- abstract void [GetSpawnableAndGameObject](#) (T obj, out [Spawnable](#) spawnable, out GameObject game↵Object)
Override to return the associated [Spawnable](#) script and GameObject for given object.

Properties

- bool [Valid](#) [get]
Whether there is a valid prefab is attached.
- T [Prefab](#) [get]
The prefab to be spawned.

Private Attributes

- [T_prefab](#)
(Serialized) The prefab to be spawned.

6.31.1 Detailed Description

Only used internally.

Used as a serializable utility for referencing a prefab, managing its [DefaultPoolHandler](#), and retaining/releasing that pool handler as necessary.

Template Parameters

<i>T</i>	The type of object to be referenced.
----------	--------------------------------------

Type Constraints

T: *Object*

6.31.2 Constructor & Destructor Documentation

6.31.2.1 [SpawnRefBase\(\)](#) [1/2] [Infohazard.Core.SpawnRefBase](#)< *T* >.[SpawnRefBase](#) ()

Default constructor (needed for Unity serialization).

6.31.2.2 [SpawnRefBase\(\)](#) [2/2] [Infohazard.Core.SpawnRefBase](#)< *T* >.[SpawnRefBase](#) (*T prefab*)

Construct with a given prefab.

Parameters

<i>prefab</i>	The prefab to be spawned.
---------------	---------------------------

6.31.3 Member Function Documentation

6.31.3.1 [GetSpawnableAndGameObject\(\)](#) `abstract void Infohazard.Core.SpawnRefBase< T >.GetSpawnableAndGameObject (`

```

T obj,
out Spawnable spawnable,
out GameObject gameObject ) [protected], [pure virtual]

```

Override to return the associated [Spawnable](#) script and GameObject for given object.

Parameters

<i>obj</i>	The attached object.
<i>spawnable</i>	The Spawnable script for obj.
<i>gameObject</i>	The GameObject for obj.

Implemented in [Infohazard.Core.SpawnRef< T >](#).

6.31.3.2 Release() virtual void [Infohazard.Core.SpawnRefBase< T >](#).Release () [virtual]

Remove a user from the [SpawnRef](#), in turn releasing the IPoolHandler.

6.31.3.3 Retain() virtual void [Infohazard.Core.SpawnRefBase< T >](#).Retain () [virtual]

Add a user to the [SpawnRef](#), creating the [DefaultPoolHandler](#) if necessary.

The IPoolHandler for the object will be retained.

6.31.3.4 Spawn() T [Infohazard.Core.SpawnRefBase< T >](#).Spawn (
in [SpawnParams](#) spawnParams = default)

Spawn an instance of [Prefab](#). The [SpawnRef](#) MUST be retained.

Parameters

<i>spawnParams</i>	Additional spawn info.
--------------------	------------------------

Returns

The spawned object.

6.31.4 Member Data Documentation

6.31.4.1 _prefab T [Infohazard.Core.SpawnRefBase< T >](#)._prefab [private]

(Serialized) The prefab to be spawned.

6.31.5 Property Documentation

6.31.5.1 Prefab `T Infohazard.Core.SpawnRefBase< T >.Prefab [get]`

The prefab to be spawned.

6.31.5.2 Valid `bool Infohazard.Core.SpawnRefBase< T >.Valid [get]`

Whether there is a valid prefab is attached.

The documentation for this class was generated from the following file:

- Runtime/Pooling/SpawnRef.cs

6.32 Infohazard.Core.StringUtility Class Reference

Contains string processing utilities.

Static Public Member Functions

- static string `SplitCamelCase` (this string str, bool capitalizeFirst=false)
Splits a camel-case string into words separated by spaces.

6.32.1 Detailed Description

Contains string processing utilities.

6.32.2 Member Function Documentation

6.32.2.1 SplitCamelCase() `static string Infohazard.Core.StringUtility.SplitCamelCase (this string str, bool capitalizeFirst = false) [static]`

Splits a camel-case string into words separated by spaces.

Multiple consecutive capitals are considered the same word.

Parameters

<i>str</i>	The string to split.
<i>capitalizeFirst</i>	Whether to capitalize the first letter.

Returns

The split string.

The documentation for this class was generated from the following file:

- Runtime/Utility/StringUtility.cs

6.33 Infohazard.Core.Tag Class Reference

Provides string constants for builtin Unity tags.

Static Public Attributes

- const string [Untagged](#) = "Untagged"
The string "Untagged".
- const string [Respawn](#) = "Respawn"
The string "Respawn".
- const string [Finish](#) = "Finish"
The string "Finish".
- const string [EditorOnly](#) = "EditorOnly"
The string "EditorOnly".
- const string [MainCamera](#) = "MainCamera"
The string "MainCamera".
- const string [Player](#) = "Player"
The string "Player".
- const string [GameController](#) = "GameController"
The string "GameController".
- static readonly string[] [DefaultTags](#)
Array of default tags provided by Unity.
- static string[] [GameOverrideTags](#) = null
Set by the generated GameTag script.

Properties

- static string[] [Tags](#) [get]
Array of all default and custom tags in the project.

6.33.1 Detailed Description

Provides string constants for builtin Unity tags.

To extend with custom tags, see [GameTag](#), which you can generate using the command [Infohazard](#) > Generate > Update GameTag.cs.

6.33.2 Member Data Documentation

6.33.2.1 DefaultTags readonly string [] Infohazard.Core.Tag.DefaultTags [static]

Initial value:

```
= {  
    "Untagged", "Respawn", "Finish", "EditorOnly", "MainCamera", "Player", "GameController",  
}
```

Array of default tags provided by Unity.

6.33.2.2 EditorOnly const string Infohazard.Core.Tag.EditorOnly = "EditorOnly" [static]

The string "EditorOnly".

6.33.2.3 Finish const string Infohazard.Core.Tag.Finish = "Finish" [static]

The string "Finish".

6.33.2.4 GameController const string Infohazard.Core.Tag.GameController = "GameController"
[static]

The string "GameController".

6.33.2.5 GameOverrideTags string [] Infohazard.Core.Tag.GameOverrideTags = null [static]

Set by the generated GameTag script.

6.33.2.6 MainCamera const string Infohazard.Core.Tag.MainCamera = "MainCamera" [static]

The string "MainCamera".

6.33.2.7 Player const string Infohazard.Core.Tag.Player = "Player" [static]

The string "Player".

6.33.2.8 Respawn `const string Infohazard.Core.Tag.Respawn = "Respawn" [static]`

The string "Respawn".

6.33.2.9 Untagged `const string Infohazard.Core.Tag.Untagged = "Untagged" [static]`

The string "Untagged".

6.33.3 Property Documentation

6.33.3.1 Tags `string [] Infohazard.Core.Tag.Tags [static], [get]`

Array of all default and custom tags in the project.

The documentation for this class was generated from the following file:

- Runtime/Misc/Tag.cs

6.34 Infohazard.Core.TagMask Struct Reference

Used to select tags in the inspector, including the ability to select multiple tags.

Public Member Functions

- [TagMask](#) (long value)
Initialize a new [TagMask](#) with the given value.
- override string [ToString](#) ()
- bool [Equals](#) ([TagMask](#) other)
- override bool [Equals](#) (object obj)
- override int [GetHashCode](#) ()

Static Public Member Functions

- static implicit [operator long](#) ([TagMask](#) mask)
Convert a [TagMask](#) to a long.
- static implicit [operator TagMask](#) (long mask)
Convert a long to a [TagMask](#).
- static [TagMask operator&](#) (in [TagMask](#) lhs, in [TagMask](#) rhs)
Apply bitwise AND operator to two [TagMasks](#).
- static [TagMask operator&](#) ([TagMask](#) lhs, long rhs)
Apply bitwise AND operator to a [TagMask](#) and a long.
- static long [operator&](#) (long lhs, [TagMask](#) rhs)
Apply bitwise AND operator to a long and a [TagMask](#).
- static [TagMask operator|](#) ([TagMask](#) lhs, [TagMask](#) rhs)
Apply bitwise OR operator to a [TagMask](#) and a [TagMask](#).
- static [TagMask operator|](#) ([TagMask](#) lhs, long rhs)
Apply bitwise OR operator to a [TagMask](#) and a long.
- static long [operator|](#) (long lhs, [TagMask](#) rhs)
Apply bitwise OR operator to a long and a [TagMask](#).
- static [TagMask operator^](#) ([TagMask](#) lhs, [TagMask](#) rhs)
Apply bitwise XOR operator to a [TagMask](#) and a [TagMask](#).
- static [TagMask operator^](#) ([TagMask](#) lhs, long rhs)
Apply bitwise XOR operator to a [TagMask](#) and a long.
- static long [operator^](#) (long lhs, [TagMask](#) rhs)
Apply bitwise XOR operator to a long and a [TagMask](#).
- static [TagMask operator~](#) ([TagMask](#) mask)
Apply bitwise NOT operator to a [TagMask](#).
- static int [NameToTag](#) (string name)
Gets the index of a given tag in the [Tag.Tags](#) array.
- static string [TagToName](#) (int tag)
Gets the tag name at the given index in the [Tag.Tags](#) array.
- static long [GetMask](#) (params string[] names)
Get a mask value that contains all the given tag names.
- static long [GetMask](#) (string name)
Get a mask value that contains the given tag name.

Static Public Attributes

- const long [UntaggedMask](#) = 1 << 0
Mask value for the Untagged tag.
- const long [RespawnMask](#) = 1 << 1
Mask value for the Respawn tag.
- const long [FinishMask](#) = 1 << 2
Mask value for the Finish tag.
- const long [EditorOnlyMask](#) = 1 << 3
Mask value for the EditorOnly tag.
- const long [MainCameraMask](#) = 1 << 4
Mask value for the MainCamera tag.
- const long [PlayerMask](#) = 1 << 5
Mask value for the Player tag.
- const long [GameControllerMask](#) = 1 << 6
Mask value for the GameController tag.

Properties

- long [Value](#) [get, set]
The value of the mask as a 64-bit integer.

6.34.1 Detailed Description

Used to select tags in the inspector, including the ability to select multiple tags.

Works similar to LayerMask. If you have a custom GameTag script generated, your custom tags will be available here too. You can find code constants for those tags in GameTagMask. Like LayerMask, [TagMask](#) is implicitly convertible to and from an integer value (long in this case).

6.34.2 Constructor & Destructor Documentation

6.34.2.1 TagMask() Infohazard.Core.TagMask.TagMask (
long value)

Initialize a new [TagMask](#) with the given value.

Parameters

<i>value</i>	The value to initialize with, representing which tags are "on".
--------------	---

6.34.3 Member Function Documentation

6.34.3.1 Equals() [1/2] override bool Infohazard.Core.TagMask.Equals (
object obj)

6.34.3.2 Equals() [2/2] bool Infohazard.Core.TagMask.Equals (
[TagMask](#) other)

6.34.3.3 GetHashCode() override int Infohazard.Core.TagMask.GetHashCode ()

6.34.3.4 GetMask() [1/2] static long Infohazard.Core.TagMask.GetMask (
params string[] names) [static]

Get a mask value that contains all the given tag names.

Parameters

<i>names</i>	Names of tags to include in the mask.
--------------	---------------------------------------

Returns

The created mask.

6.34.3.5 GetMask() [2/2] `static long Infohazard.Core.TagMask.GetMask (`
`string name) [static]`

Get a mask value that contains the given tag name.

Parameters

<i>name</i>	Name of tag to include in the mask.
-------------	-------------------------------------

Returns

The created mask.

6.34.3.6 NameToTag() `static int Infohazard.Core.TagMask.NameToTag (`
`string name) [static]`

Gets the index of a given tag in the [Tag.Tags](#) array.

Parameters

<i>name</i>	Tag name.
-------------	---------------------------

Returns

The index of the tag or -1 if it doesn't exist.

6.34.3.7 operator long() `static implicit Infohazard.Core.TagMask.operator long (`
`TagMask mask) [static]`

Convert a [TagMask](#) to a long.

Parameters

<i>mask</i>	TagMask to convert.
-------------	-------------------------------------

Returns

The mask's value.

6.34.3.8 operator TagMask() static implicit Infohazard.Core.TagMask.operator TagMask (
 long mask) [static]

Convert a long to a TagMask.

Parameters

<i>mask</i>	The mask value.
-------------	-----------------

Returns

The created TagMask.

6.34.3.9 operator&() [1/3] static TagMask Infohazard.Core.TagMask.operator& (
 in TagMask lhs,
 in TagMask rhs) [static]

Apply bitwise AND operator to two TagMasks.

6.34.3.10 operator&() [2/3] static long Infohazard.Core.TagMask.operator& (
 long lhs,
 TagMask rhs) [static]

Apply bitwise AND operator to a long and a TagMask.

6.34.3.11 operator&() [3/3] static TagMask Infohazard.Core.TagMask.operator& (
 TagMask lhs,
 long rhs) [static]

Apply bitwise AND operator to a TagMask and a long.

6.34.3.12 operator^() [1/3] static long Infohazard.Core.TagMask.operator^ (
 long lhs,
 TagMask rhs) [static]

Apply bitwise XOR operator to a long and a TagMask.

6.34.3.13 `operator^()` [2/3] `static TagMask Infohazard.Core.TagMask.operator^ (TagMask lhs, long rhs) [static]`

Apply bitwise XOR operator to a [TagMask](#) and a long.

6.34.3.14 `operator^()` [3/3] `static TagMask Infohazard.Core.TagMask.operator^ (TagMask lhs, TagMask rhs) [static]`

Apply bitwise XOR operator to a [TagMask](#) and a [TagMask](#).

6.34.3.15 `operator" |()` [1/3] `static long Infohazard.Core.TagMask.operator| (long lhs, TagMask rhs) [static]`

Apply bitwise OR operator to a long and a [TagMask](#).

6.34.3.16 `operator" |()` [2/3] `static TagMask Infohazard.Core.TagMask.operator| (TagMask lhs, long rhs) [static]`

Apply bitwise OR operator to a [TagMask](#) and a long.

6.34.3.17 `operator" |()` [3/3] `static TagMask Infohazard.Core.TagMask.operator| (TagMask lhs, TagMask rhs) [static]`

Apply bitwise OR operator to a [TagMask](#) and a [TagMask](#).

6.34.3.18 `operator~()` `static TagMask Infohazard.Core.TagMask.operator~ (TagMask mask) [static]`

Apply bitwise NOT operator to a [TagMask](#).

6.34.3.19 `TagToName()` `static string Infohazard.Core.TagMask.TagToName (int tag) [static]`

Gets the tag name at the given index in the [Tag.Tags](#) array.

Parameters

<i>tag</i>	Tag index. Must be in range [0, TAG COUNT - 1].
------------	---

Returns

The tag's name.

6.34.3.20 ToString() `override string Infohazard.Core.TagMask.ToString ()`

6.34.4 Member Data Documentation

6.34.4.1 EditorOnlyMask `const long Infohazard.Core.TagMask.EditorOnlyMask = 1 << 3 [static]`

Mask value for the EditorOnly tag.

6.34.4.2 FinishMask `const long Infohazard.Core.TagMask.FinishMask = 1 << 2 [static]`

Mask value for the Finish tag.

6.34.4.3 GameControllerMask `const long Infohazard.Core.TagMask.GameControllerMask = 1 << 6 [static]`

Mask value for the GameController tag.

6.34.4.4 MainCameraMask `const long Infohazard.Core.TagMask.MainCameraMask = 1 << 4 [static]`

Mask value for the MainCamera tag.

6.34.4.5 PlayerMask `const long Infohazard.Core.TagMask.PlayerMask = 1 << 5 [static]`

Mask value for the Player tag.

6.34.4.6 RespawnMask `const long Infohazard.Core.TagMask.RespawnMask = 1 << 1 [static]`

Mask value for the Respawn tag.

6.34.4.7 UntaggedMask `const long Infohazard.Core.TagMask.UntaggedMask = 1 << 0 [static]`

Mask value for the Untagged tag.

6.34.5 Property Documentation

6.34.5.1 Value `long Infohazard.Core.TagMask.Value [get], [set]`

The value of the mask as a 64-bit integer.

The documentation for this struct was generated from the following file:

- Runtime/Misc/Tag.cs

6.35 Infohazard.Core.TagMaskUtility Class Reference

Static operations on [Tag](#) enum values.

Static Public Member Functions

- static bool [CompareTagMask](#) (this GameObject obj, long tag)
Return true if GameObject's tag matches given any tag in given value.
- static bool [CompareTagMask](#) (this Component obj, long tag)
Return true if Component's tag matches given any tag in given value.
- static void [SetTagIndex](#) (this GameObject obj, int tagIndex)
Set the tag index of a GameObject.
- static int [GetTagIndex](#) (this GameObject obj)
Get the tag index of a GameObject.
- static int [GetTagIndex](#) (this Component obj)
Get the tag index of a Component.
- static long [GetTagMask](#) (this GameObject obj)
Get the tag mask of a GameObject.
- static long [GetTagMask](#) (this Component obj)
Get the tag mask of a Component.

6.35.1 Detailed Description

Static operations on [Tag](#) enum values.

6.35.2 Member Function Documentation

6.35.2.1 CompareTagMask() [1/2] `static bool Infohazard.Core.TagMaskUtility.CompareTagMask (this Component obj, long tag) [static]`

Return true if Component's tag matches given any tag in given value.

Parameters

<i>obj</i>	The Component to check.
<i>tag</i>	The tag to compare, which may be multiple tags.

Returns

Whether Component matches given tag.

6.35.2.2 CompareTagMask() [2/2] `static bool Infohazard.Core.TagMaskUtility.CompareTagMask (this GameObject obj, long tag) [static]`

Return true if GameObject's tag matches given any tag in given value.

Parameters

<i>obj</i>	The GameObject to check.
<i>tag</i>	The tag to compare, which may be multiple tags.

Returns

Whether GameObject matches given tag.

6.35.2.3 GetTagIndex() [1/2] `static int Infohazard.Core.TagMaskUtility.GetTagIndex (this Component obj) [static]`

Get the tag index of a Component.

Parameters

<i>obj</i>	Object to read.
------------	-----------------

Returns

The Component's tag index.

6.35.2.4 GetTagIndex() [2/2] `static int Infohazard.Core.TagMaskUtility.GetTagIndex (this GameObject obj) [static]`

Get the tag index of a GameObject.

Parameters

<i>obj</i>	Object to read.
------------	-----------------

Returns

The GameObject's tag index.

6.35.2.5 GetTagMask() [1/2] `static long Infohazard.Core.TagMaskUtility.GetTagMask (this Component obj) [static]`

Get the tag mask of a Component.

Parameters

<i>obj</i>	Object to read.
------------	-----------------

Returns

The Component's tag as a mask.

6.35.2.6 GetTagMask() [2/2] `static long Infohazard.Core.TagMaskUtility.GetTagMask (this GameObject obj) [static]`

Get the tag mask of a GameObject.

Parameters

<i>obj</i>	Object to read.
------------	-----------------

Returns

The GameObject's tag as a mask.

6.35.2.7 SetTagIndex() `static void Infohazard.Core.TagMaskUtility.SetTagIndex (this GameObject obj, int tagIndex) [static]`

Set the tag index of a GameObject.

Parameters

<i>obj</i>	Object to modify.
<i>tagIndex</i>	Tag to set.

The documentation for this class was generated from the following file:

- Runtime/Misc/Tag.cs

6.36 Infohazard.Core.Editor.TagsGenerator Class Reference

Class used to generate the GameTag.cs file to use your custom tags in code.

Static Public Member Functions

- static void [Generate](#) ()
Generate the GameTag file.
- static void [Remove](#) ()
Remove the GameTag file.

6.36.1 Detailed Description

Class used to generate the GameTag.cs file to use your custom tags in code.

To generate this file, use the menu item [Infohazard](#) > Generate > Update GameTag.cs.

6.36.2 Member Function Documentation

6.36.2.1 [Generate\(\)](#) `static void Infohazard.Core.Editor.TagsGenerator.Generate () [static]`

Generate the GameTag file.

6.36.2.2 [Remove\(\)](#) `static void Infohazard.Core.Editor.TagsGenerator.Remove () [static]`

Remove the GameTag file.

The documentation for this class was generated from the following file:

- Editor/Misc/TagsGenerator.cs

6.37 Infohazard.Core.TimeToLive Class Reference

Despawns a GameObject after a set amount of time.

Properties

- float [TimeRemaining](#) [get, set]
How much time remains before the GameObject is destroyed.

Private Attributes

- float [_timeToLive](#) = 5
(Serialized) How much time remains before the GameObject is destroyed.
- float [_linger](#) = 0
(Serialized) How long the object will remain after its time to live has passed.
- [SpawnRef _spawnObjectOnDeath](#)
(Serialized) Optional object that will be spawned when the time to live has passed (but before the linger).

6.37.1 Detailed Description

Despawns a GameObject after a set amount of time.

Compatible with the pooling system.

6.37.2 Member Data Documentation

6.37.2.1 [_linger](#) float Infohazard.Core.TimeToLive._linger = 0 [private]

(Serialized) How long the object will remain after its time to live has passed.

6.37.2.2 [_spawnObjectOnDeath](#) [SpawnRef](#) Infohazard.Core.TimeToLive._spawnObjectOnDeath [private]

(Serialized) Optional object that will be spawned when the time to live has passed (but before the linger).

6.37.2.3 [_timeToLive](#) float Infohazard.Core.TimeToLive._timeToLive = 5 [private]

(Serialized) How much time remains before the GameObject is destroyed.

6.37.3 Property Documentation

6.37.3.1 TimeRemaining `float Infohazard.Core.TimeToLive.TimeRemaining [get], [set]`

How much time remains before the GameObject is destroyed.

The documentation for this class was generated from the following file:

- Runtime/Timing/TimeToLive.cs

6.38 Infohazard.Core.TriggerVolume.TriggerEvents Class Reference

Class that stores the UnityEvents used by a [TriggerVolume](#).

Properties

- UnityEvent [OnTriggerEnter](#) [get]
Invoked when an object matching the tag filter enters the trigger.
- UnityEvent [OnTriggerExit](#) [get]
Invoked when an object matching the tag filter exits the trigger.
- UnityEvent [OnAllExit](#) [get]
Invoked when the last object matching the tag filter exits the trigger.

Private Attributes

- UnityEvent [_onTriggerEnter](#)
(Serialized) Invoked when an object matching the tag filter enters the trigger.
- UnityEvent [_onTriggerExit](#)
(Serialized) Invoked when an object matching the tag filter exits the trigger.
- UnityEvent [_onAllExit](#)
(Serialized) Invoked when the last object matching the tag filter exits the trigger.

6.38.1 Detailed Description

Class that stores the UnityEvents used by a [TriggerVolume](#).

6.38.2 Member Data Documentation

6.38.2.1 [_onAllExit](#) `UnityEvent Infohazard.Core.TriggerVolume.TriggerEvents._onAllExit [private]`

(Serialized) Invoked when the last object matching the tag filter exits the trigger.

6.38.2.2 `_onTriggerEnter` `UnityEvent` `Infohazard.Core.TriggerVolume.TriggerEvents._onTriggerEnter`
[private]

(Serialized) Invoked when an object matching the tag filter enters the trigger.

6.38.2.3 `_onTriggerExit` `UnityEvent` `Infohazard.Core.TriggerVolume.TriggerEvents._onTriggerExit`
[private]

(Serialized) Invoked when an object matching the tag filter exits the trigger.

6.38.3 Property Documentation

6.38.3.1 `OnAllExit` `UnityEvent` `Infohazard.Core.TriggerVolume.TriggerEvents.OnAllExit` [get]

Invoked when the last object matching the tag filter exits the trigger.

6.38.3.2 `OnTriggerEnter` `UnityEvent` `Infohazard.Core.TriggerVolume.TriggerEvents.OnTriggerEnter`
[get]

Invoked when an object matching the tag filter enters the trigger.

6.38.3.3 `OnTriggerExit` `UnityEvent` `Infohazard.Core.TriggerVolume.TriggerEvents.OnTriggerExit`
[get]

Invoked when an object matching the tag filter exits the trigger.

The documentation for this class was generated from the following file:

- `Runtime/Misc/TriggerVolume.cs`

6.39 Infohazard.Core.TriggerVolume Class Reference

A script that makes it easy to add events to a trigger collider.

Classes

- class [TriggerEvents](#)
Class that stores the UnityEvents used by a [TriggerVolume](#).

Properties

- [TriggerEvents Events](#) [get]
UnityEvents that enable you to assign functionality in the editor.
- `HashSet< GameObject >` [Occupants](#) [get]
All objects currently inside the trigger volume.
- `Collider[]` [ControlledColliders](#) [get]
List of colliders to enable/disable along with this component.

Events

- `Action< GameObject >` [TriggerEntered](#)
Invoked when an object matching the tag filter enters the trigger.
- `Action< GameObject >` [TriggerExited](#)
Invoked when an object matching the tag filter exits the trigger.
- `Action< GameObject >` [AllExited](#)
Invoked when the last object matching the tag filter exits the trigger.

Private Attributes

- `TagMask` [_tagFilter](#) = `TagMask.PlayerMask`
(Serialized) Mask of tags that can activate the trigger.
- `Collider[]` [_controlledColliders](#)
(Serialized) List of colliders to enable/disable along with this component.
- `TriggerEvents` [_events](#) = default
(Serialized) UnityEvents that enable you to assign functionality in the editor.

6.39.1 Detailed Description

A script that makes it easy to add events to a trigger collider.

Provides both UnityEvents (assignable in the inspector) and normal C# events for when an object enters or leaves the trigger, and when all objects have left the trigger. Also provides a tag filter, allowing you to control which types of object can activate it.

6.39.2 Member Data Documentation

6.39.2.1 `_controlledColliders` `Collider []` Infohazard.Core.TriggerVolume._controlledColliders
[private]

(Serialized) List of colliders to enable/disable along with this component.

6.39.2.2 `_events` `TriggerEvents` `Infohazard.Core.TriggerVolume._events = default` `[private]`

(Serialized) UnityEvents that enable you to assign functionality in the editor.

6.39.2.3 `_tagFilter` `TagMask` `Infohazard.Core.TriggerVolume._tagFilter = TagMask.PlayerMask` `[private]`

(Serialized) Mask of tags that can activate the trigger.

6.39.3 Property Documentation

6.39.3.1 `ControlledColliders` `Collider []` `Infohazard.Core.TriggerVolume.ControlledColliders` `[get]`

List of colliders to enable/disable along with this component.

6.39.3.2 `Events` `TriggerEvents` `Infohazard.Core.TriggerVolume.Events` `[get]`

UnityEvents that enable you to assign functionality in the editor.

6.39.3.3 `Occupants` `HashSet<GameObject>` `Infohazard.Core.TriggerVolume.Occupants` `[get]`

All objects currently inside the trigger volume.

6.39.4 Event Documentation

6.39.4.1 `AllExited` `Action<GameObject>` `Infohazard.Core.TriggerVolume.AllExited`

Invoked when the last object matching the tag filter exits the trigger.

6.39.4.2 `TriggerEntered` `Action<GameObject>` `Infohazard.Core.TriggerVolume.TriggerEntered`

Invoked when an object matching the tag filter enters the trigger.

6.39.4.3 TriggerExited `Action<GameObject> Infohazard.Core.TriggerVolume.TriggerExited`

Invoked when an object matching the tag filter exits the trigger.

The documentation for this class was generated from the following file:

- Runtime/Misc/TriggerVolume.cs

6.40 Infohazard.Core.TypeSelectAttribute Class Reference

Attribute that draws string fields as a dropdown where a Type can be selected.

Public Member Functions

- [TypeSelectAttribute](#) (Type baseClass, bool allowAbstract=false, bool allowGeneric=false, bool search=false)
Construct a new [TypeSelectAttribute](#).

Properties

- Type [BaseClass](#) [get]
If set, dropdown will only show types assignable to this type.
- bool [AllowAbstract](#) [get]
Whether to show abstract classes.
- bool [AllowGeneric](#) [get]
Whether to show generic types.
- bool [Search](#) [get]
Whether to show a search bar.

6.40.1 Detailed Description

Attribute that draws string fields as a dropdown where a Type can be selected.

6.40.2 Constructor & Destructor Documentation

6.40.2.1 TypeSelectAttribute() `Infohazard.Core.TypeSelectAttribute.TypeSelectAttribute (Type baseClass, bool allowAbstract = false, bool allowGeneric = false, bool search = false)`

Construct a new [TypeSelectAttribute](#).

Parameters

<i>baseClass</i>	If set, dropdown will only show types assignable to this type.
<i>allowAbstract</i>	Whether to show abstract classes.
<i>allowGeneric</i>	Whether to show generic types.
<i>search</i>	Whether to show a search bar./

6.40.3 Property Documentation

6.40.3.1 AllowAbstract `bool Infohazard.Core.TypeSelectAttribute.AllowAbstract [get]`

Whether to show abstract classes.

6.40.3.2 AllowGeneric `bool Infohazard.Core.TypeSelectAttribute.AllowGeneric [get]`

Whether to show generic types.

6.40.3.3 BaseClass `Type Infohazard.Core.TypeSelectAttribute.BaseClass [get]`

If set, dropdown will only show types assignable to this type.

6.40.3.4 Search `bool Infohazard.Core.TypeSelectAttribute.Search [get]`

Whether to show a search bar.

The documentation for this class was generated from the following file:

- Runtime/Attributes/TypeSelectAttribute.cs

6.41 Infohazard.Core.TypeUtility Class Reference

Contains utilities for working with C# reflection types and getting a type by its name.

Static Public Member Functions

- static Type [GetType](#) (string fullName)
Get a type given its full name (including namespace).

Properties

- static Assembly[] [AllAssemblies](#) [get]
Returns an array of all loaded assemblies.
- static IEnumerable< Type > [AllTypes](#) [get]
Returns an enumeration of all loaded types.

6.41.1 Detailed Description

Contains utilities for working with C# reflection types and getting a type by its name.

6.41.2 Member Function Documentation

6.41.2.1 GetType() static Type Infohazard.Core.TypeUtility.GetType (
string *fullName*) [static]

Get a type given its full name (including namespace).

Parameters

<i>fullName</i>	Name of the type including namespace.
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Returns

The found type, or null.

6.41.3 Property Documentation

6.41.3.1 AllAssemblies Assembly [] Infohazard.Core.TypeUtility.AllAssemblies [static], [get]

Returns an array of all loaded assemblies.

6.41.3.2 AllTypes IEnumerable<Type> Infohazard.Core.TypeUtility.AllTypes [static], [get]

Returns an enumeration of all loaded types.

The documentation for this class was generated from the following file:

- Runtime/Utility/TypeUtility.cs

6.42 Infohazard.Core.UniqueNamedObject Class Reference

This script is used to assign a unique name to an object, which can then be used to find that object.

Static Public Member Functions

- static bool [TryGetObject](#) (string name, out GameObject result)
Try to get a GameObject with the given unique name, and return whether it was found.
- static bool [TryGetObject](#) ([UniqueNameListEntry](#) entry, out GameObject result)
Try to get a GameObject with the given unique name asset, and return whether it was found.

Properties

- [UniqueNameListEntry UniqueNameListEntry](#) [get]
Unique name asset for the object.
- string [UniqueName](#) [get, private set]
Unique name string for the object.
- static IReadOnlyDictionary< string, [UniqueNamedObject](#) > [Objects](#) [get]
Dictionary of all active UniqueNamedObjects keyed by their unique names.

Events

- static Action< [UniqueNamedObject](#) > [ObjectAdded](#)
Invoked when a new UniqueNamedObject is added to the dictionary.
- static Action< [UniqueNamedObject](#) > [ObjectRemoved](#)
Invoked when a UniqueNamedObject is removed from the dictionary.

Private Attributes

- [UniqueNameListEntry _uniqueName](#)
(Serialized) Unique name asset for the object.

6.42.1 Detailed Description

This script is used to assign a unique name to an object, which can then be used to find that object.

Unique names can be created under a [UniqueNameList](#). The static methods in this class can be used to quickly find objects by their unique names. Since the unique names are asset references, there is no chance of making typos, and they can even be renamed without breaking references. There is nothing that prevents two objects from sharing the same name, but you will get a log error if they are active at the same time.

6.42.2 Member Function Documentation

6.42.2.1 TryGetObject() [1/2] static bool Infohazard.Core.UniqueNamedObject.TryGetObject (
string name,
out GameObject result) [static]

Try to get a GameObject with the given unique name, and return whether it was found.

Parameters

<i>name</i>	The name to search for.
<i>result</i>	The object with that name, or null if not found.

Returns

Whether the object was found.

6.42.2.2 TryGetObject() [2/2] `static bool Infohazard.Core.UniqueNamedObject.TryGetObject (UniqueNameListEntry entry, out GameObject result) [static]`

Try to get a GameObject with the given unique name asset, and return whether it was found.

Parameters

<i>entry</i>	The name asset to search for.
<i>result</i>	The object with that name, or null if not found.

Returns

Whether the object was found.

6.42.3 Member Data Documentation

6.42.3.1 _uniqueName `UniqueNameListEntry Infohazard.Core.UniqueNamedObject._uniqueName [private]`

(Serialized) Unique name asset for the object.

6.42.4 Property Documentation

6.42.4.1 Objects `ReadOnlyDictionary<string, UniqueNamedObject> Infohazard.Core.UniqueNamedObject.Objects [static], [get]`

Dictionary of all active UniqueNamedObjects keyed by their unique names.

6.42.4.2 UniqueName `string Infohazard.Core.UniqueNamedObject.UniqueName [get], [private set]`

Unique name string for the object.

6.42.4.3 UniqueNameListEntry `UniqueNameListEntry Infohazard.Core.UniqueNamedObject.UniqueNameListEntry [get]`

Unique name asset for the object.

6.42.5 Event Documentation

6.42.5.1 ObjectAdded `Action<UniqueNamedObject> Infohazard.Core.UniqueNamedObject.ObjectAdded [static]`

Invoked when a new [UniqueNamedObject](#) is added to the dictionary.

6.42.5.2 ObjectRemoved `Action<UniqueNamedObject> Infohazard.Core.UniqueNamedObject.ObjectRemoved [static]`

Invoked when a [UniqueNamedObject](#) is removed from the dictionary.

The documentation for this class was generated from the following file:

- Runtime/UniqueName/UniqueNamedObject.cs

6.43 Infohazard.Core.UniqueNameList Class Reference

A list used to organize unique names used by objects.

Properties

- `ReadOnlyList< UniqueNameListEntry > Entries [get]`
All unique name assets in this list.

Private Attributes

- `UniqueNameListEntry[] _entries`
(Serialized) All unique name assets in this list.

6.43.1 Detailed Description

A list used to organize unique names used by objects.

You can have one or many UniqueNameLists in your project, it is totally up to you. When selecting a unique name for an object, you will have the option to create a new one in any [UniqueNameList](#).

6.43.2 Member Data Documentation

6.43.2.1 `_entries` [UniqueNameListEntry](#) [] Infohazard.Core.UniqueNameList._entries [private]

(Serialized) All unique name assets in this list.

6.43.3 Property Documentation

6.43.3.1 `Entries` [IReadOnlyList<UniqueNameListEntry>](#) Infohazard.Core.UniqueNameList.Entries [get]

All unique name assets in this list.

The documentation for this class was generated from the following file:

- Runtime/UniqueName/UniqueNameList.cs

6.44 Infohazard.Core.UniqueNameListEntry Class Reference

A unique name asset, usable by a [UniqueNamedObject](#).

6.44.1 Detailed Description

A unique name asset, usable by a [UniqueNamedObject](#).

The asset's name is the unique name that will be referenced. UniqueNameListEntries should be created via a [UniqueNameList](#).

The documentation for this class was generated from the following file:

- Runtime/UniqueName/UniqueNameListEntry.cs

