Editor Guide

CSD2451BF24

Spring 2024

-Team Insight-

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Koh Yan Khang	Product Manager	Graphics Champion
Ng Matthew De En	Programmer	Mechanics Champion
Tan Zheng Xun	Technical Lead	Engine Champion
Wu Zekai	Programmer	Physics Champion
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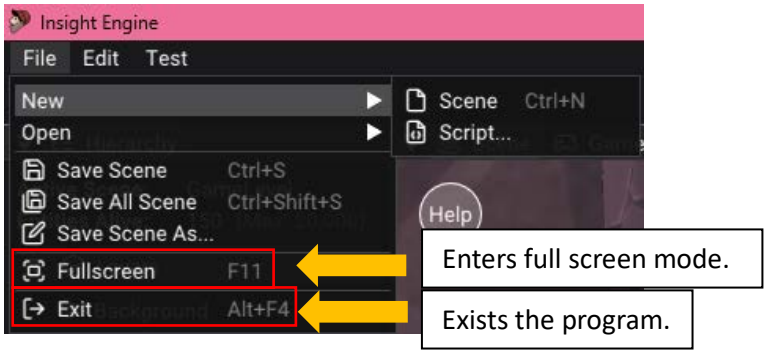
Menu bar

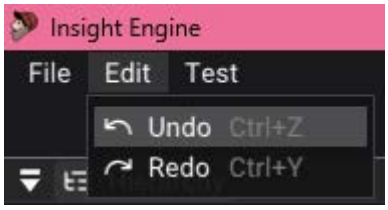
File

Refer to Scenes and Scripts sections for their functionalities.



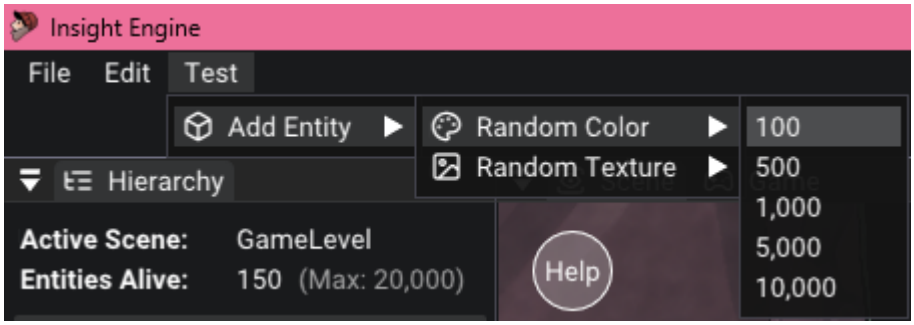
Edit

Refer to Command History for its functionalities.



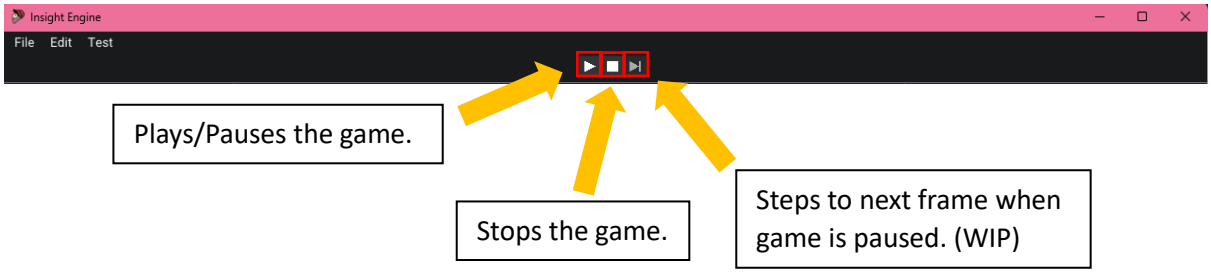
Test

Generates x number of Game Objects for stress testing graphics.



Toolbar

Controls game state of active scene.



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Hierarchy Panel

Displays useful information about the active scene, layers, camera as well as list of scenes and their game objects.

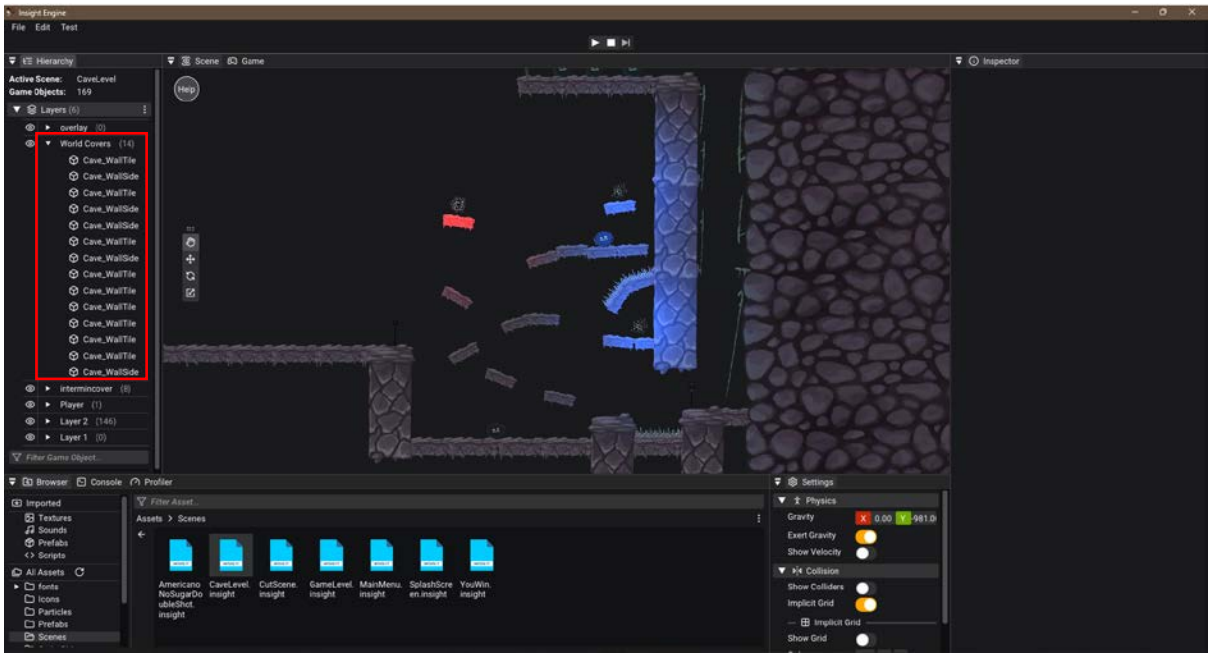
Layers

Layers determine the order of visibility of each game object.

It is shown from back the front. (i.e., Background, …, Foreground, UI).

List View

Selecting a layer will display the list of Game Objects within that layer.



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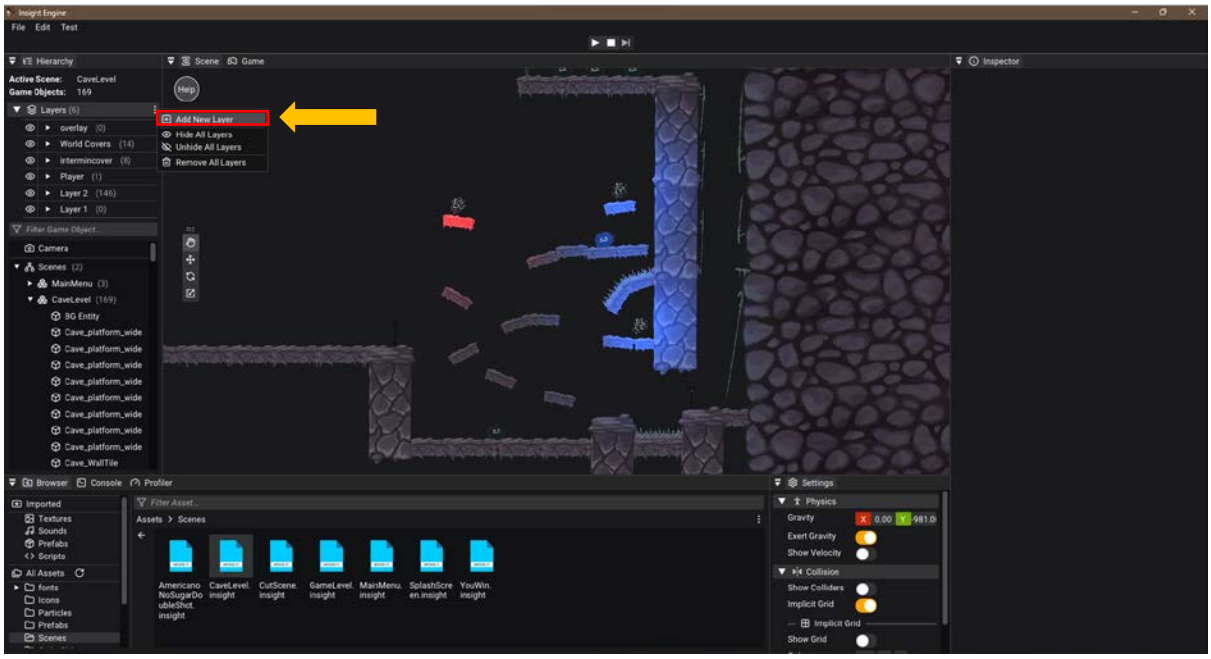
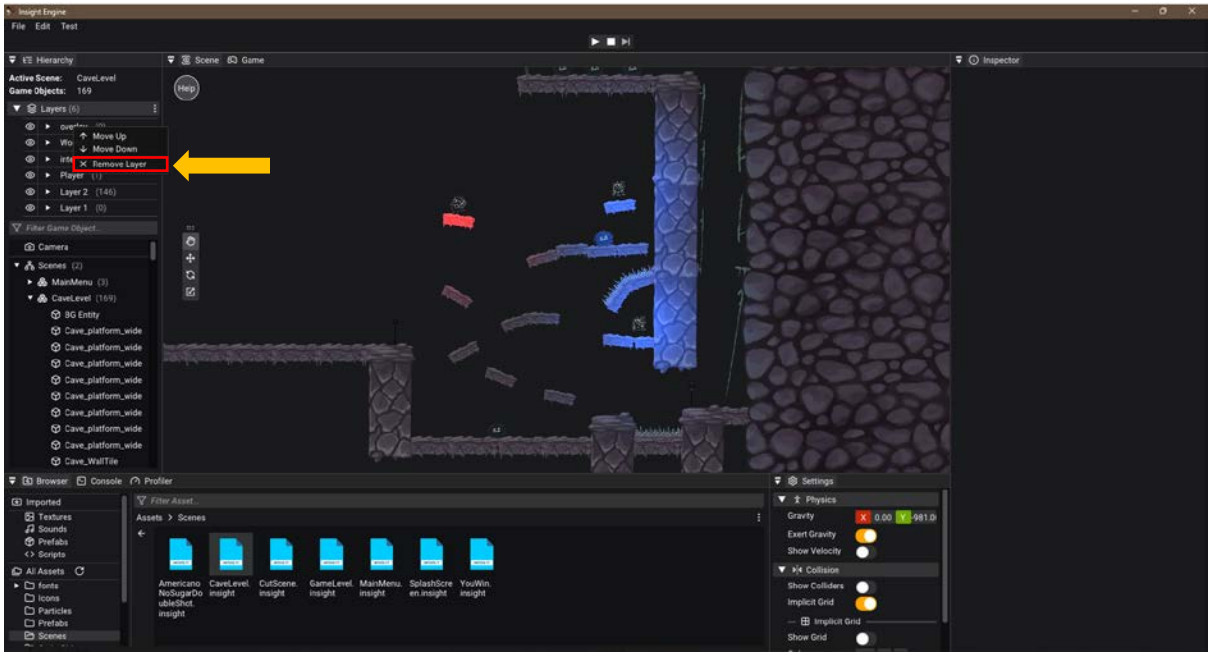
Add/Remove Layer

1. Click on the “3 dots” icon and click “Add New Layer”.



2. Right click on an existing layer and click on “Remove Layer” the remove the selected layer.



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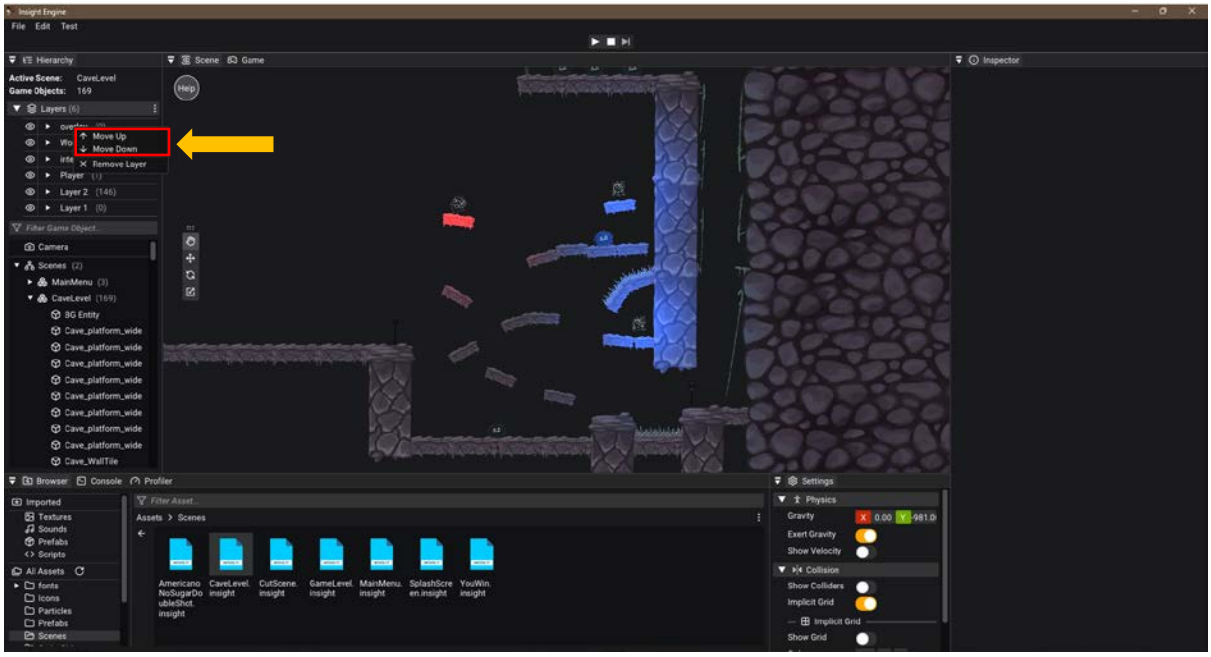
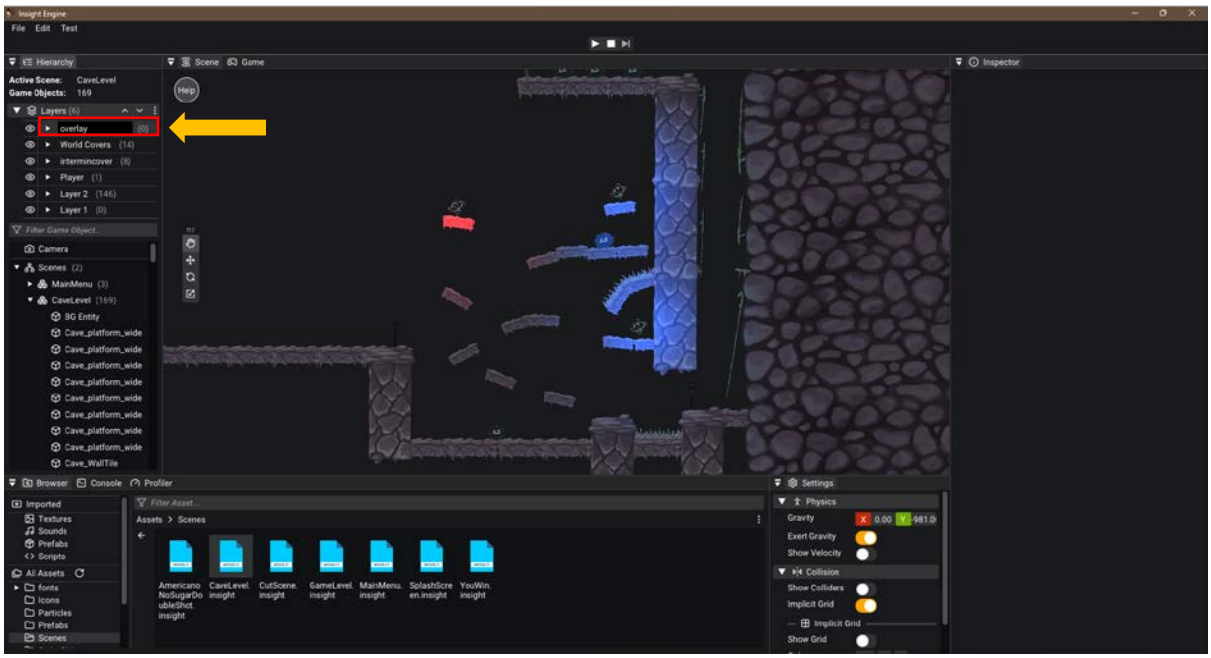
Reordering Layers

Right click on an existing layer, select “Move Up” or “Move Down” to change the order of the selected layer.



Renaming Layers

Double click on the name of an existing layer will change the display text into a text input field, the new layer name will be updated when enter is pressed.



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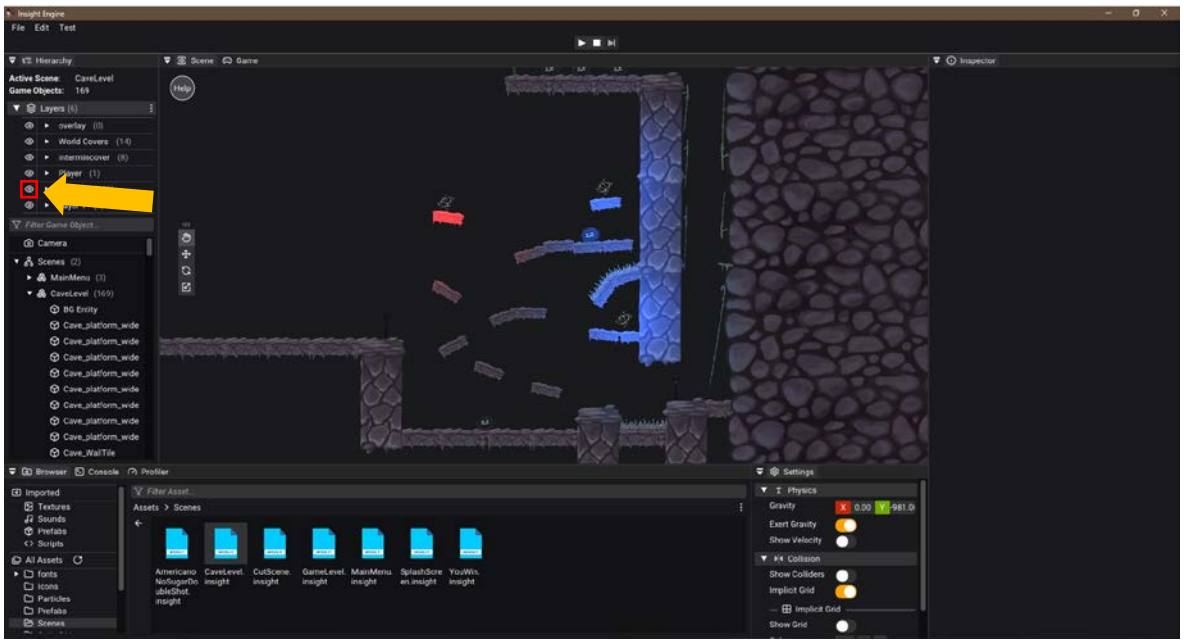
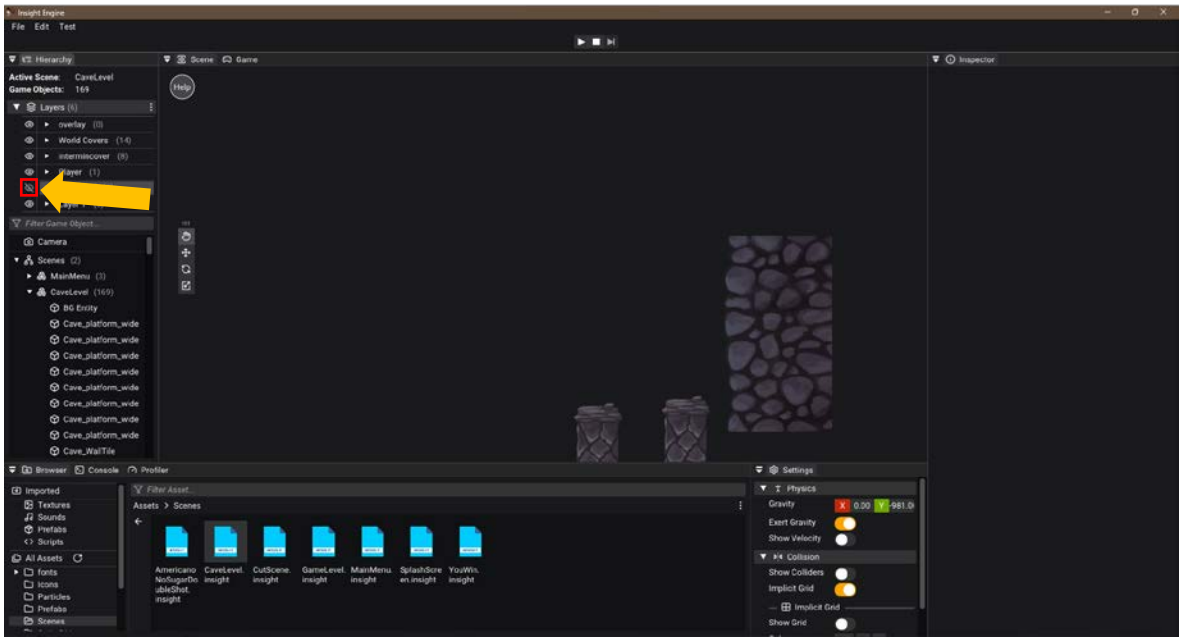
Hide/Unhide Layers

1. All layers are visible by default, click on the “eye” icon toggles the visibility of the layer



2. Below shows what it looks like when the “eye” icon is clicked.



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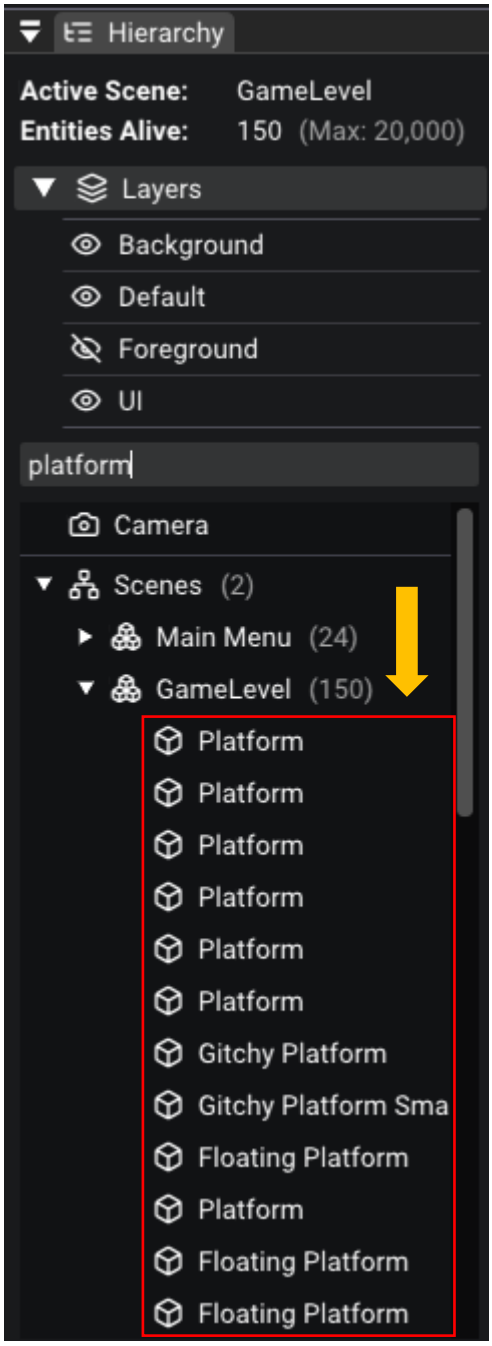
Search bar

Filters the Game Objects containing the keyword in its name in the Hierarchy List.



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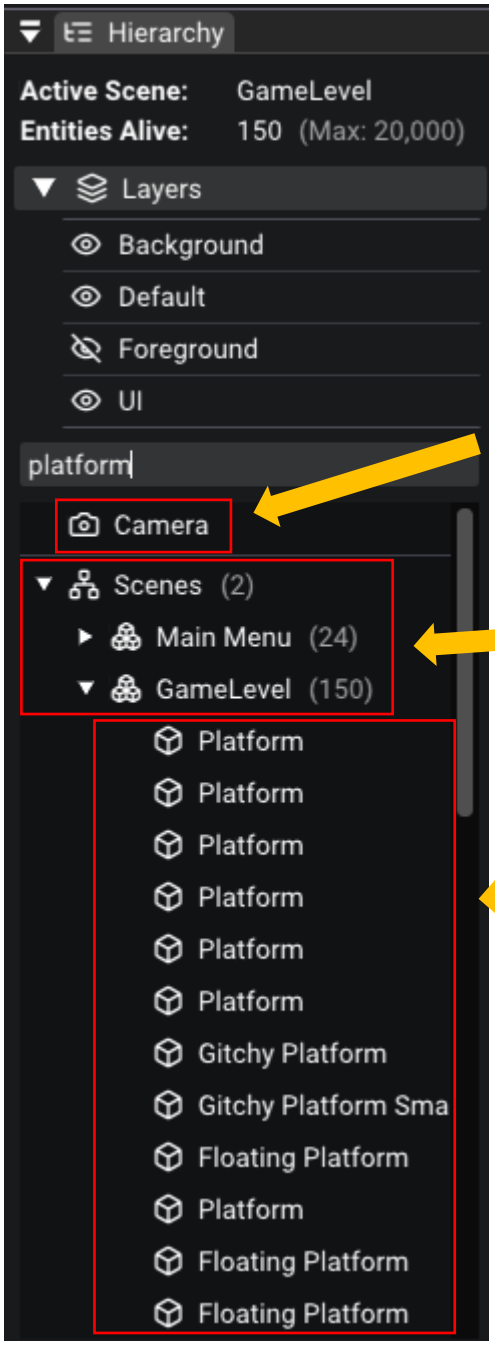
Hierarchy List

Displays active Camera, list of Scenes loaded and Game Objects of the active scene.



The active camera of the active scene.

The list of scenes loaded.

The list of game objects in a scene.

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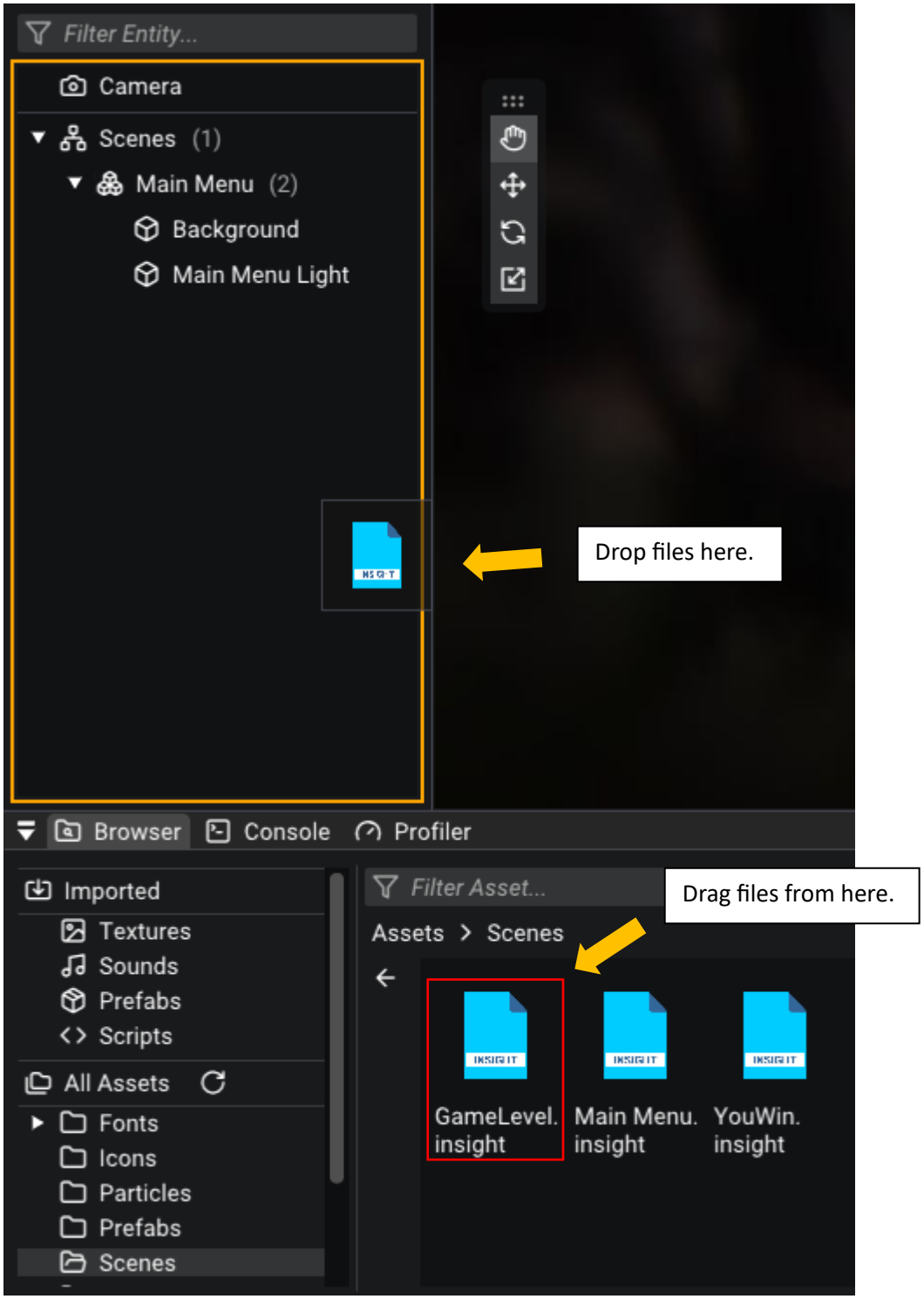
Drag/Drop

Accepts Browser Panel dropping of ".insight" scene files.



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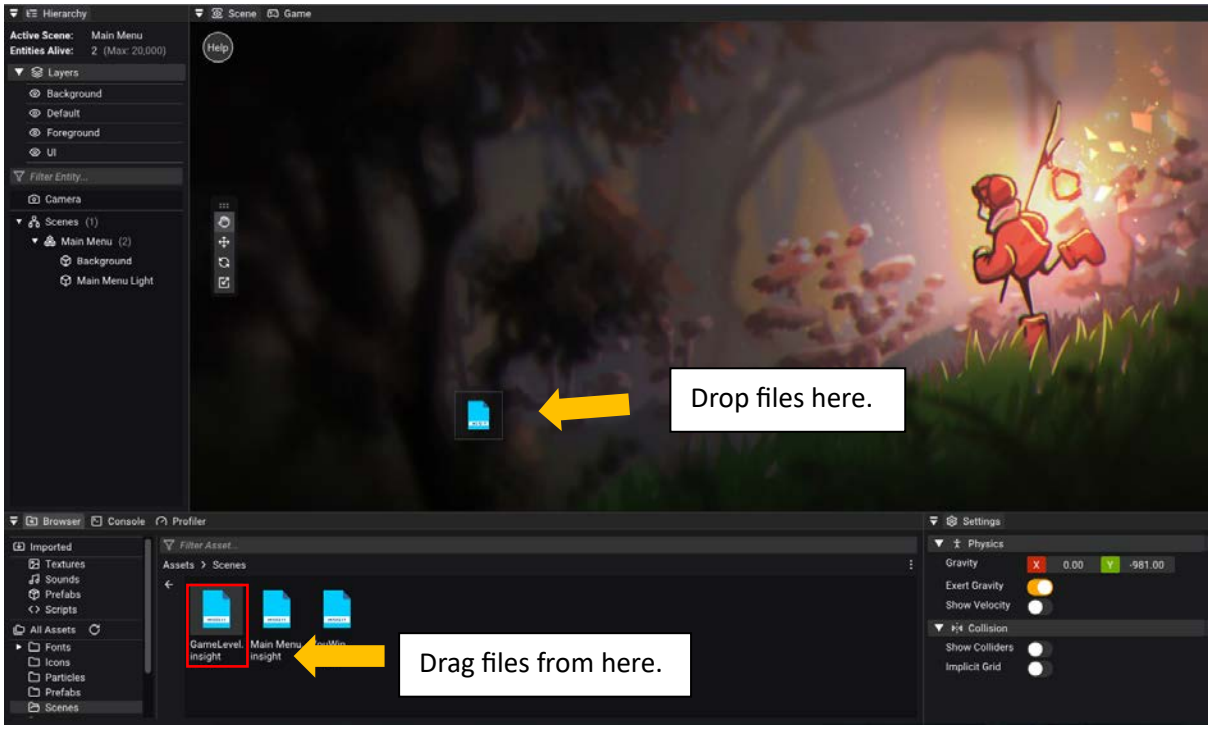
Scene Panel

Displays the active scene in edit mode.

Drag/Drop

Accepts Browser Panel dropping of ".insight" scene files.



Game Panel

Displays the game view of active scene.

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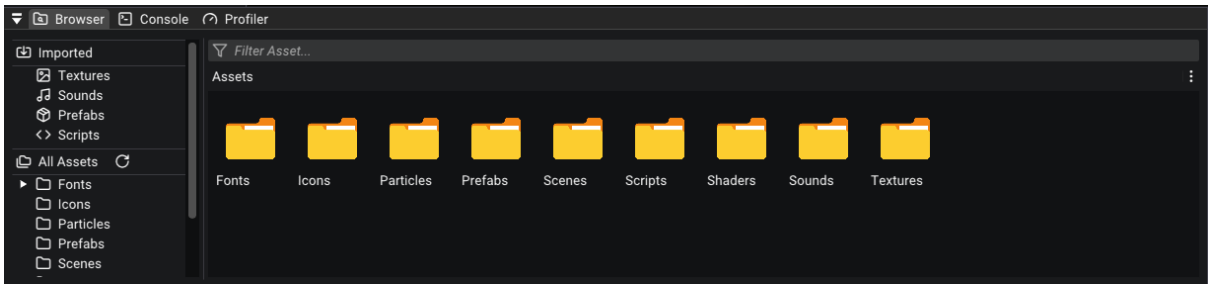
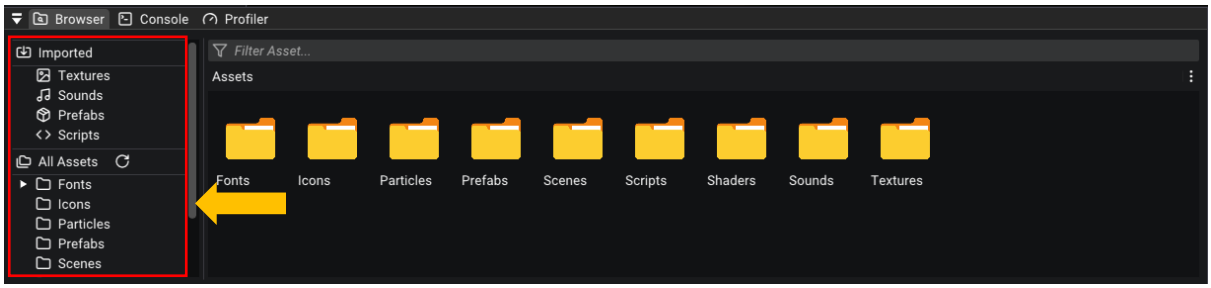
Browser Panel

Displays the assets imported and assets in the “Assets” folder.



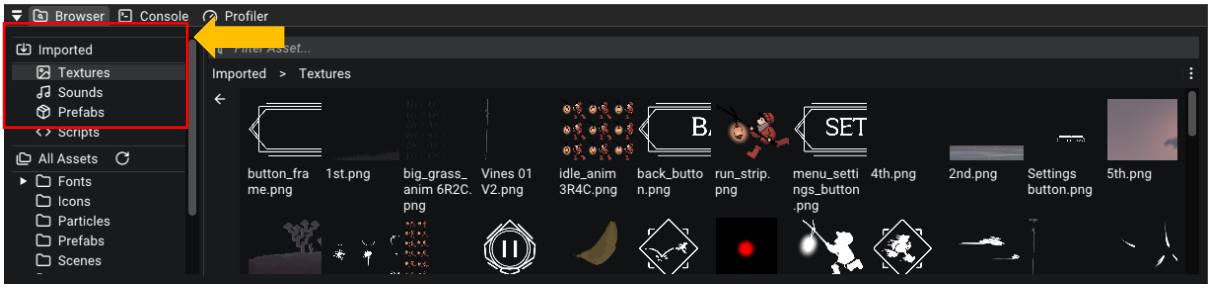
Navigation Pane

Navigates through the folders and control what is being displayed in the File List



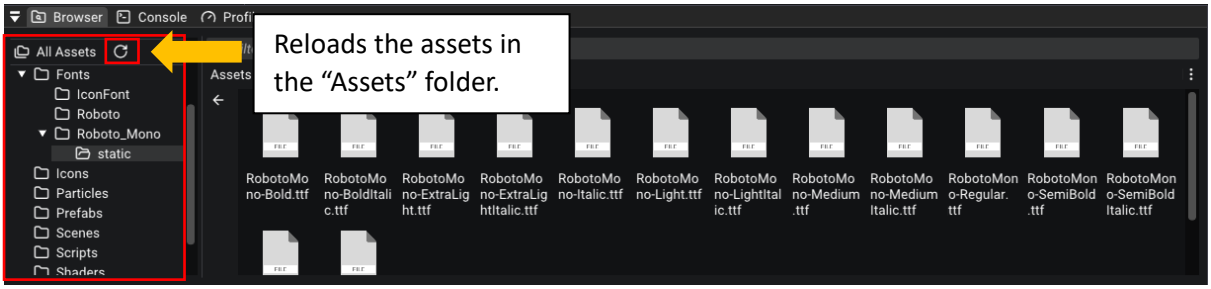
Imported Assets

Contain assets that the engine has already loaded.



All Assets

Contains all assets in the “Assets” folder in the working directory.



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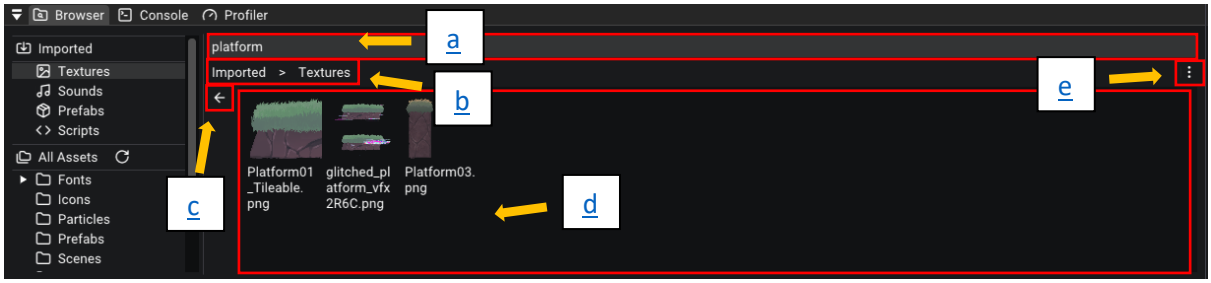
File List

Contains a search bar, navigation bar, as well as the list of files in the selected folder.



a) Search bar

Filters the files displayed.

b) Navigation bar

Shows the navigation path. Clicking on each folder changes the current directory.

c) Back button

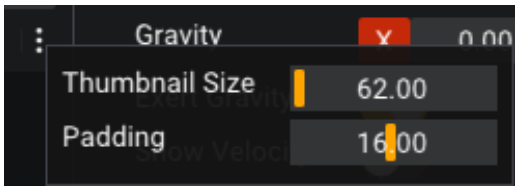
Return to the previous folder.

d) File list

List of files/folders in the current directory.

e) Options

Controls the thumbnail size and padding of the contents in file list.



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Drag/Drop

Accepts dragging of all imported assets as well as scenes files from all assets.

Textures

Dragging a texture into the Scene Panel creates a Game Object with Transform and Sprite components in its image resolution and at mouse location.

Sounds

Dragging a sound into the Inspector Panel's Audio Emitter Component changes the sound emitted.

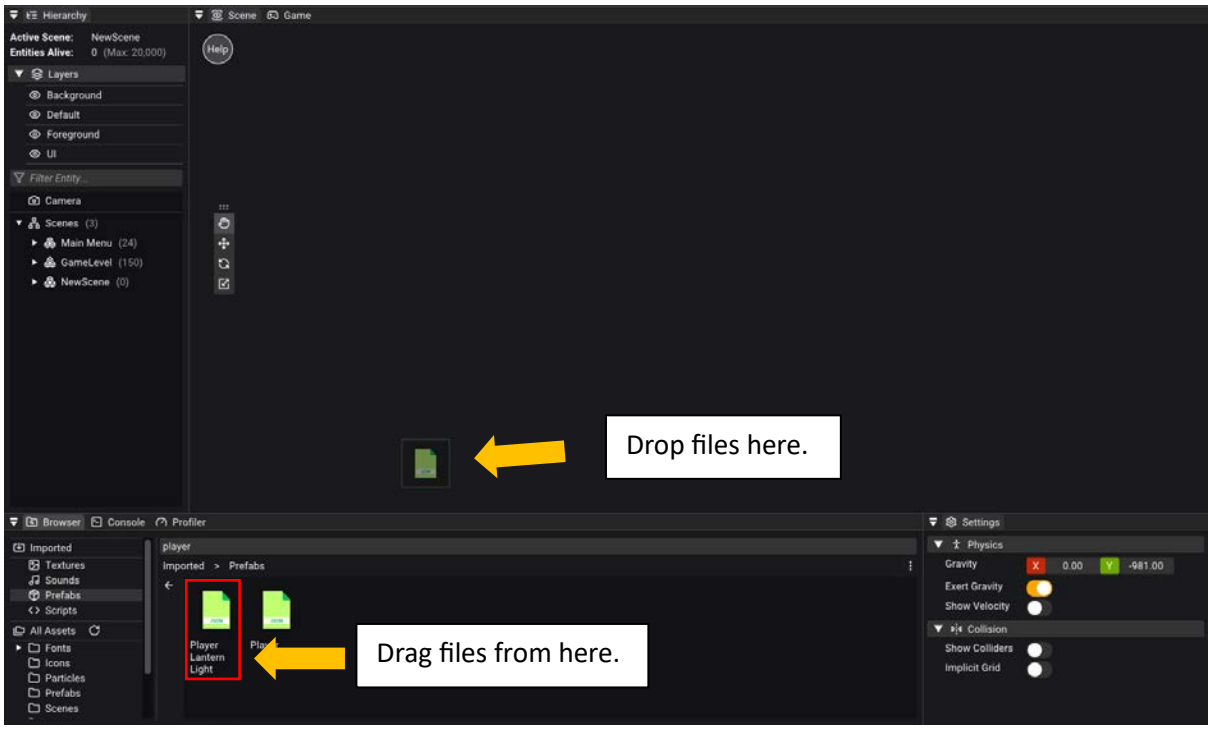
Prefabs

Dragging a prefab into the Scene Panel creates a Game Object with prefabricated components at mouse location.

Scripts

Dragging a script into the Inspector Panel's Script Component changes the script attached.

Example



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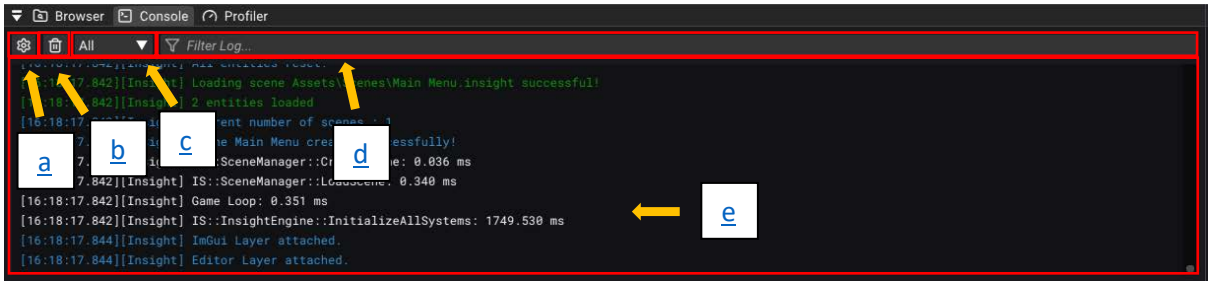
Console Panel

Displays an in-editor console log with additional functionalities such as auto scroll, clear, severity filter, as well as text filter.



a) Options

Toggles auto-scroll.

b) Clear

Clears the log console.

c) Severity filter

Filter log based on severity level (i.e., Trace, Debug, Info, Warning, Error, Critical).

d) Search bar

Filter log based on text.

e) Log console

Displays the logs.

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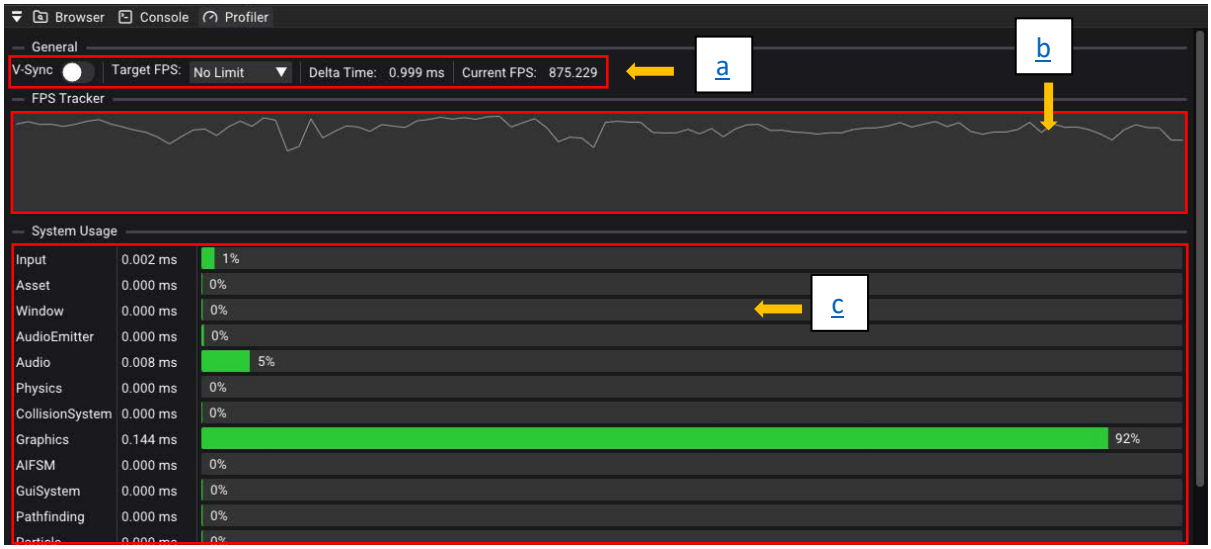
Profiler Panel

Displays profiling information and general controls of the engine (i.e., v-sync and target fps).



a) General

Toggles v-sync, select target fps, and displays delta time and current FPS.

b) FPS Tracker

Tracks the FPS for across frames.

c) System Usage

Displays the system name, delta time and usage in percent out of the engine's delta time.

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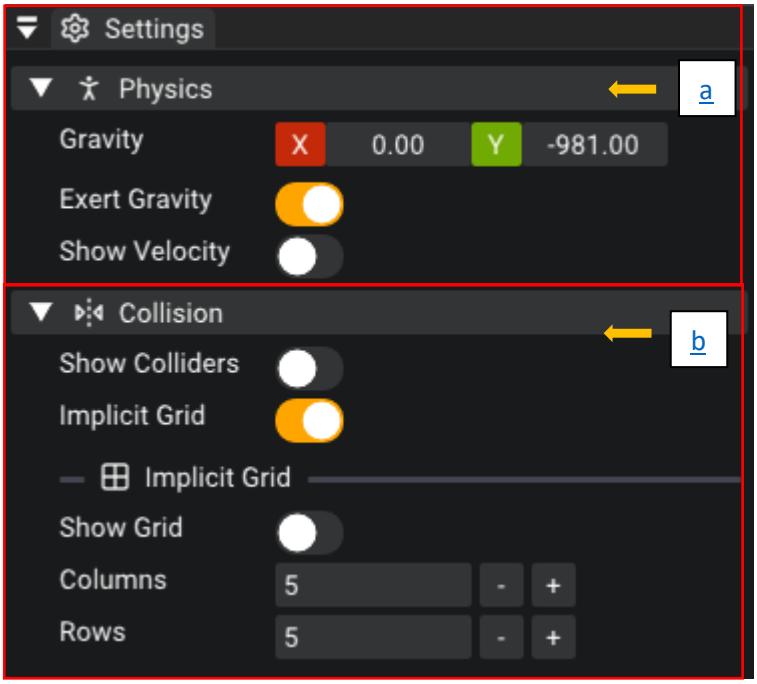
Settings Panel

Controls settings for physics and collision.



a) Physics settings

Controls the gravity exerted, toggles gravity exertion as well as showing debug line of velocity.

b) Collision settings

Toggles showing collider boxes/circles, implicit grid, rendering of grid as well as its columns and rows.

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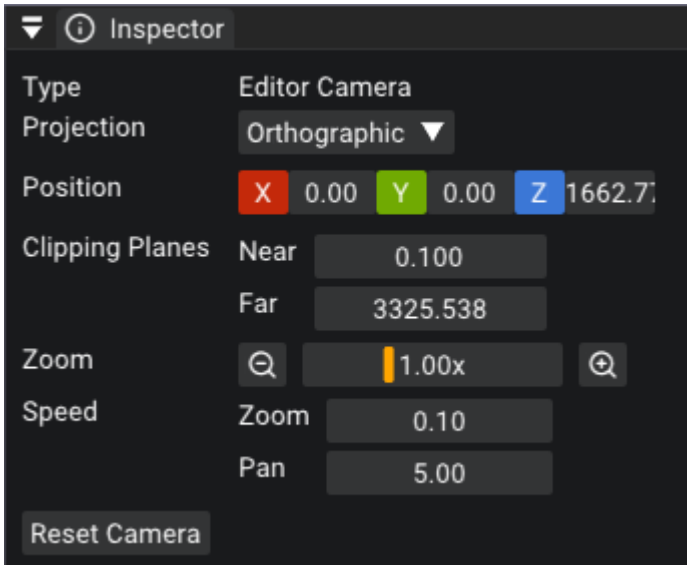
Inspector Panel

Inspects the active Camera of selected Game Object and display its properties.

Active Camera

Controls the properties of an active Camera in editor mode.

Refer to Camera section for its properties and controls in Scene Panel.



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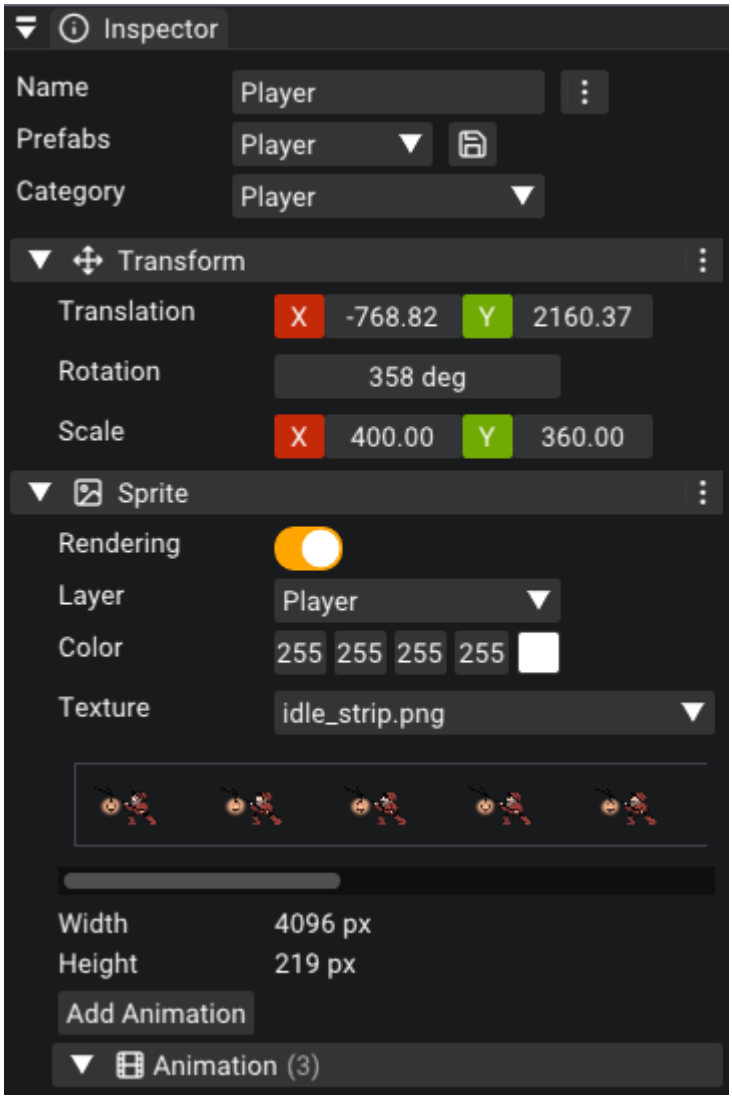
Game Object

Controls the properties of a Game Object.

Game Objects can be saved as prefabs and be reused.

Properties of a Game Object are known as Components.



Refer to Components section for the list of Components as well as adding and removing them.

Refer to Prefabs section for saving and loading of prefabs.

Refer to Game Objects section for creating, cloning, and deleting Game Objects.

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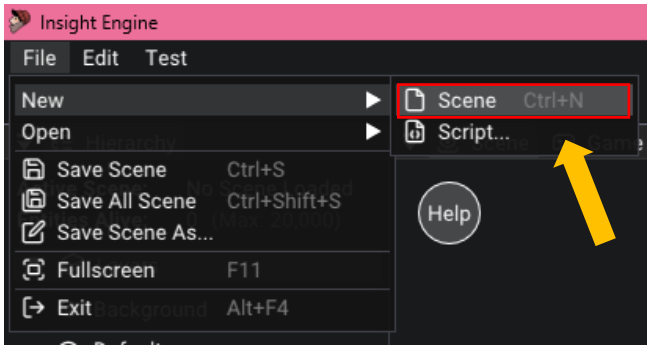
Scenes

New Scene

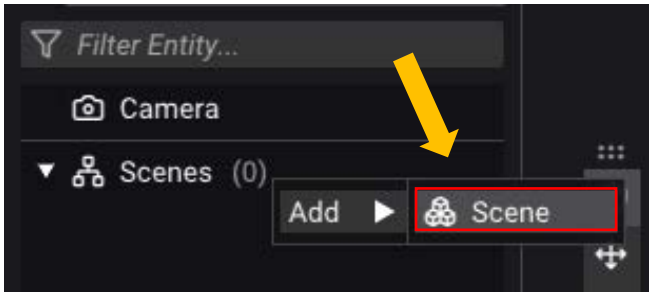
Method 1:

“File” > “New” > “Scene”. (Ctrl+N)



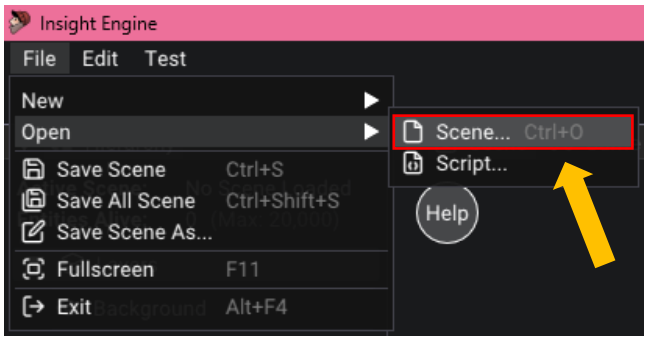
Method 2:

Right click on “Scenes” > “Add” > “Scene”.



Open Scene

1. “File” > “Open” > “Scene”. (Ctrl+O)



2. File explorer will open. Select a scene to open.

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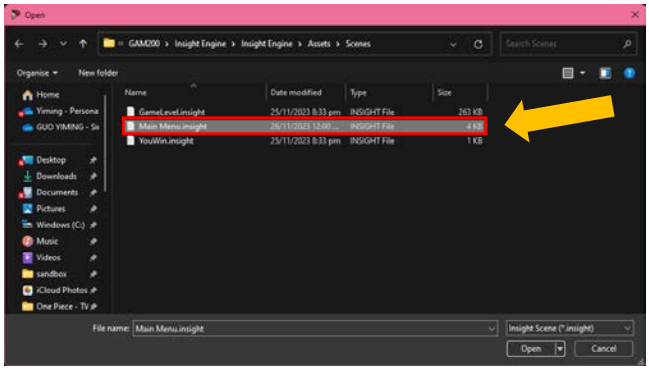
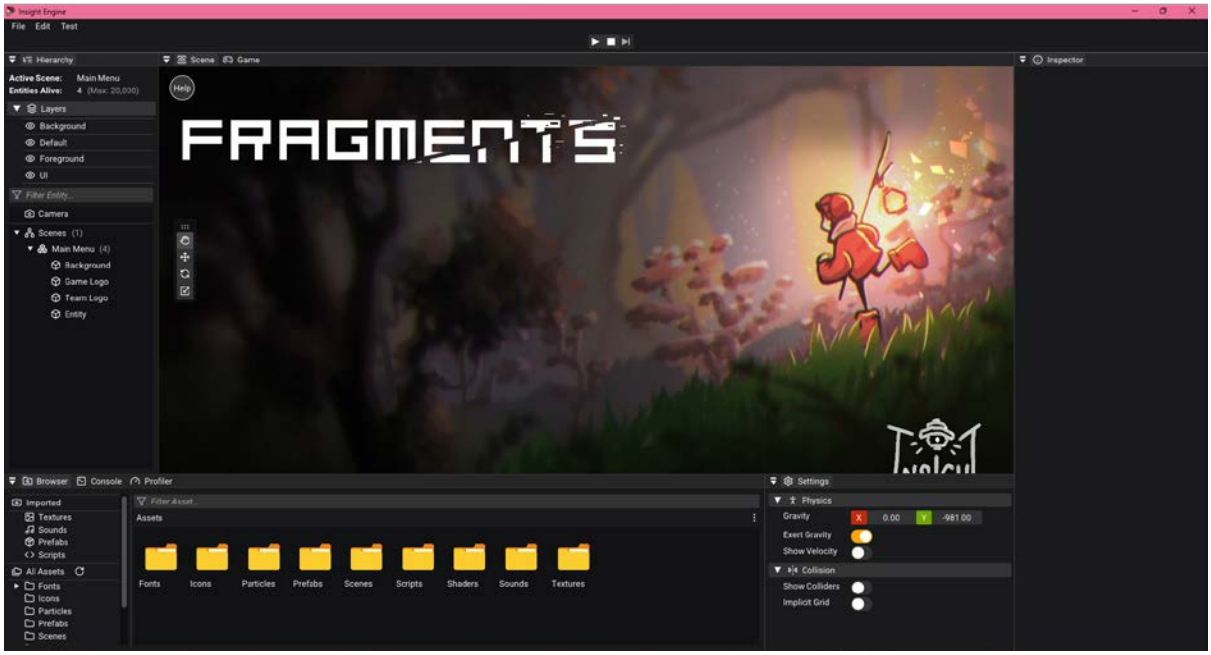
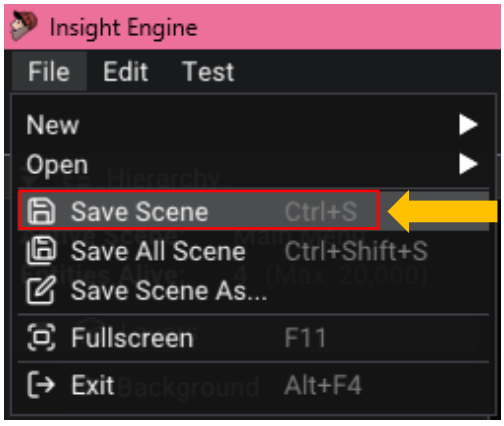


3. Scene should be loaded into the editor.



Save Scene

"File" > "Save Scene". (Ctrl+S)



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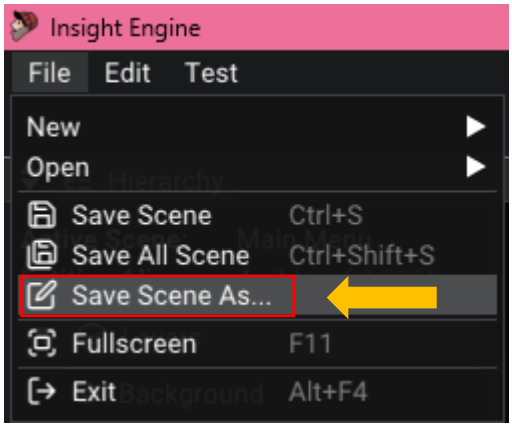
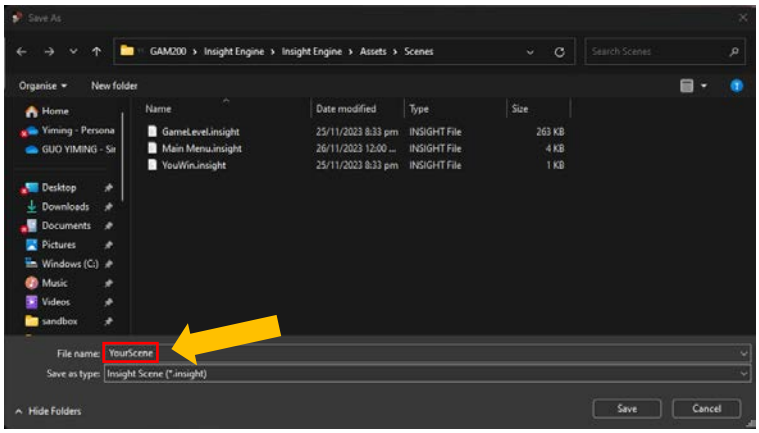
Save Scene As

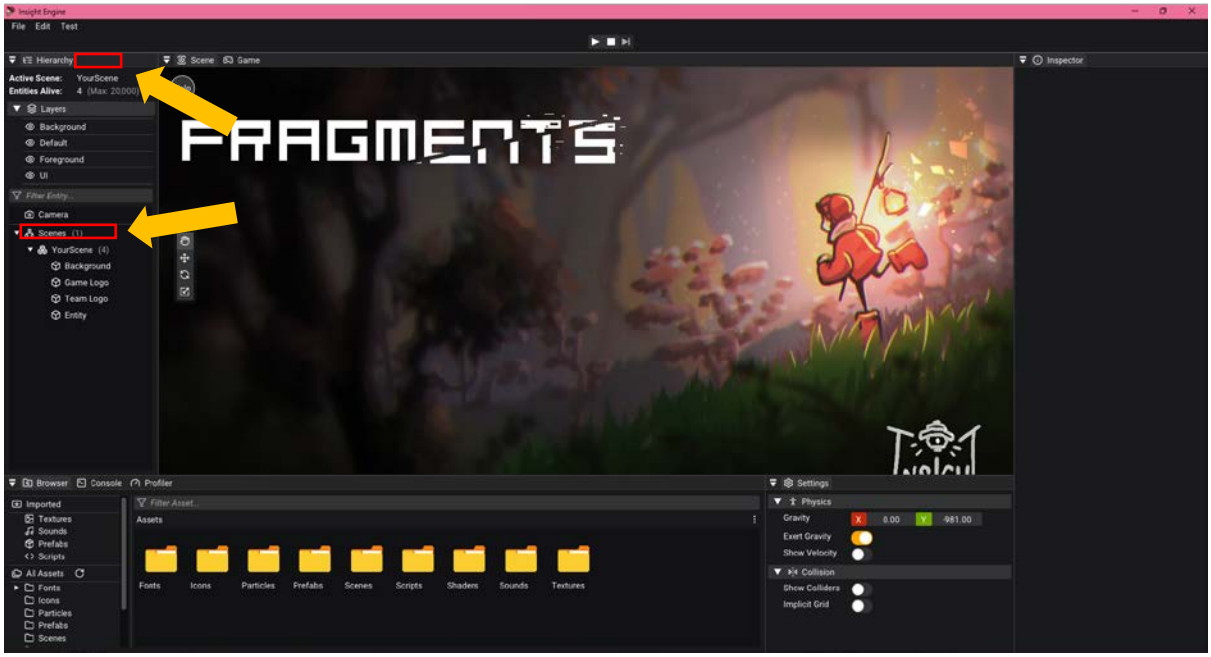
1. “File” > “Save Scene As…”.



2. File explorer will open. Enter the file name to save as.



3. Scene should be saved with the file name.



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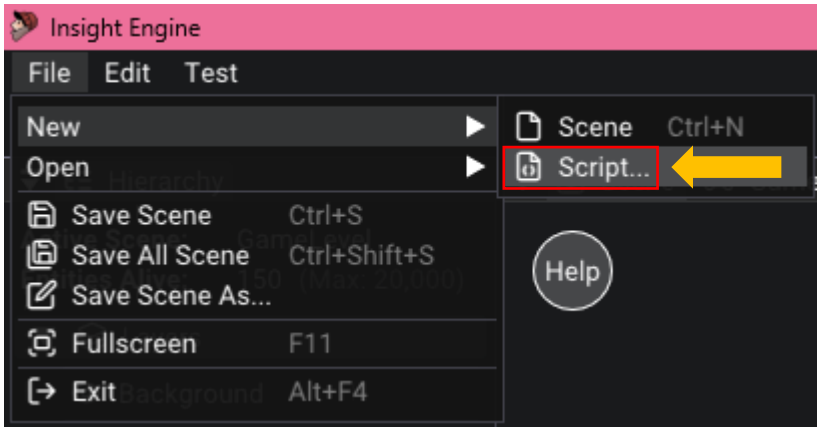
Scripts

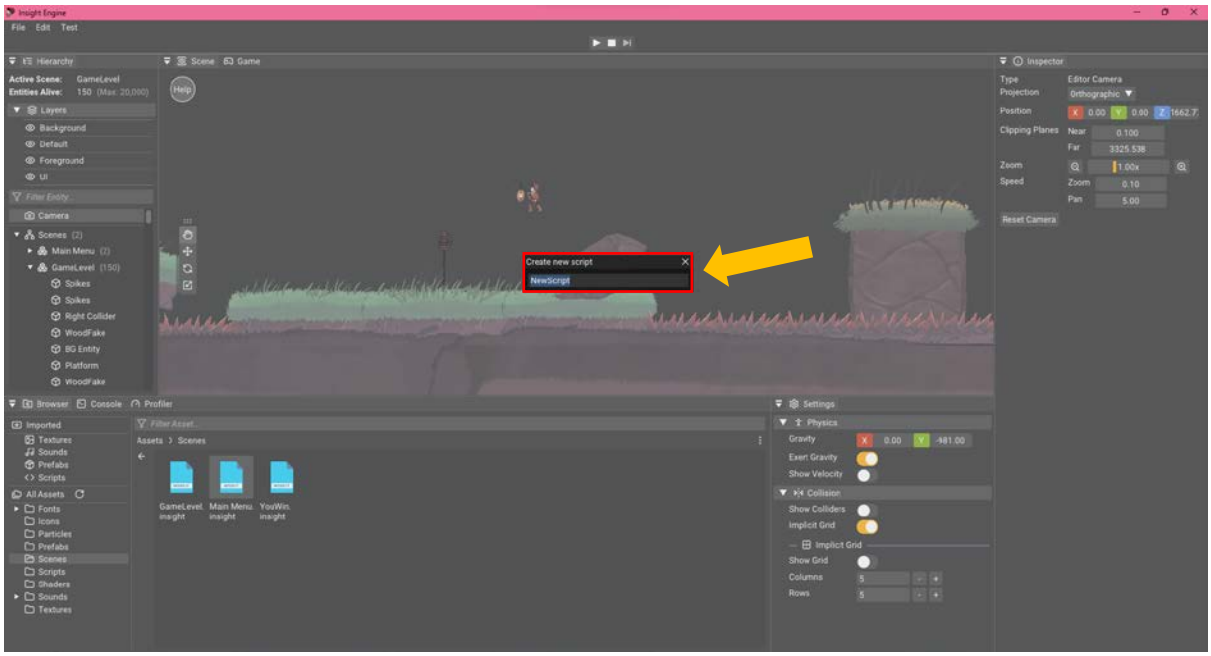
A script controls the behaviour (i.e., movement, health, damage, etc.) of a Game Object.

Create Script

1. “File” > “New” > “Script…”



2. A pop up will open and asks for the name of the script, press “Enter” key to save the script with the entered name.



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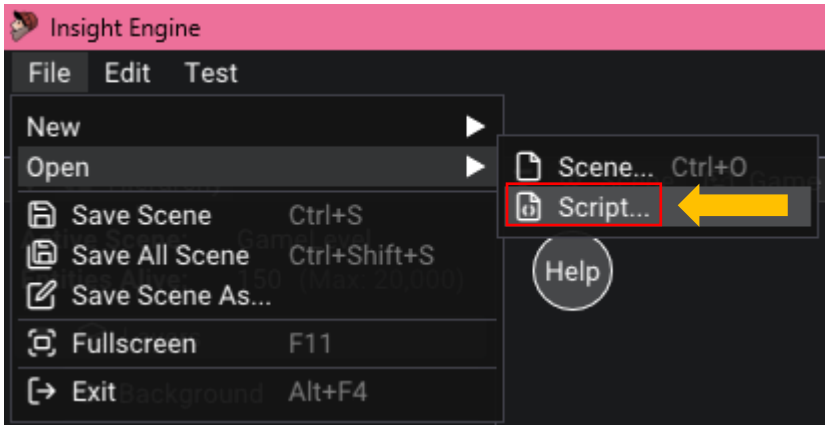
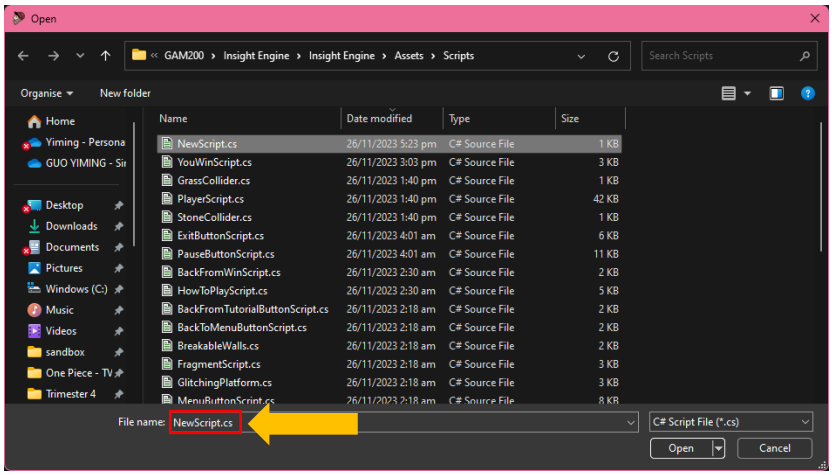
Open Script

1. “File” > “Open” > “Script…”



2. File explorer will open. Select a script to open.



3. The selected script will open in the default application used to open “.cs” files.

(i.e., Visual Studio 2022, Visual Studio Code, Notepad++, etc.)

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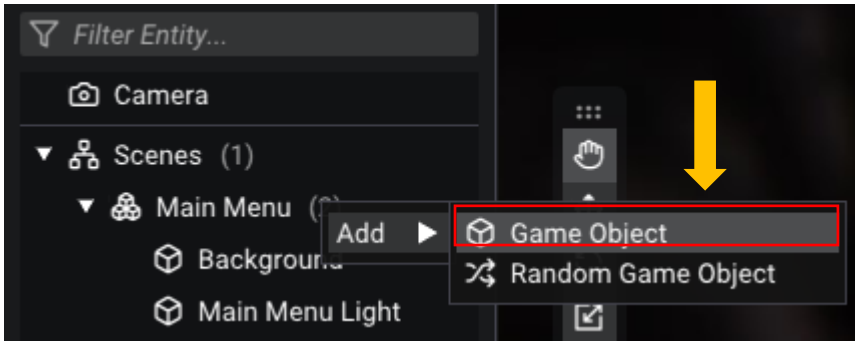
Game Objects

Game Objects are objects/entities that exist in a scene. (e.g., Player, NPC, Platform, etc.)

Create Game Object

Right click on a scene > “Add” > “Game Object”.

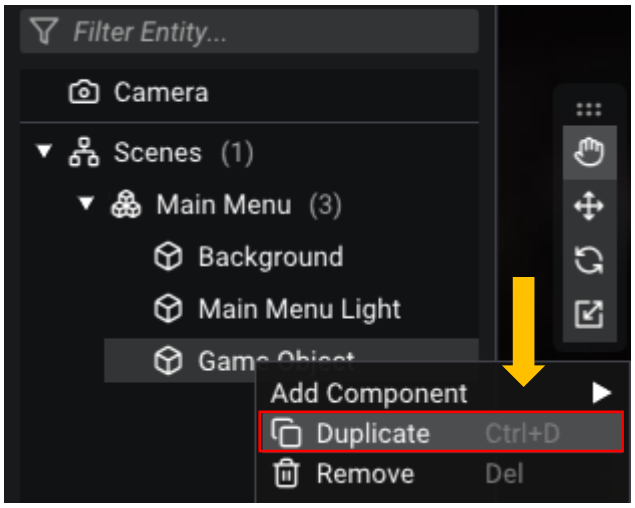


Refer to Components section on how to add Components to a Game Object.

Duplicate Game Object

Method 1:

Right click on a Game Object > “Duplicate”. (Ctrl+D)



Method 2:

Select a Game Object in Scene Panel and press “Ctrl+D”.

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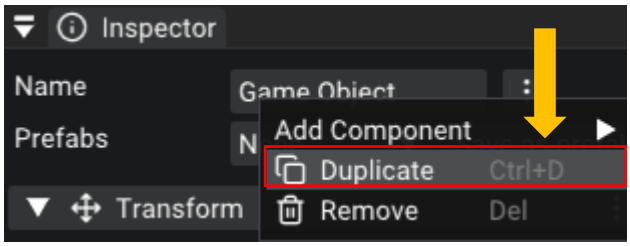
Method 3:

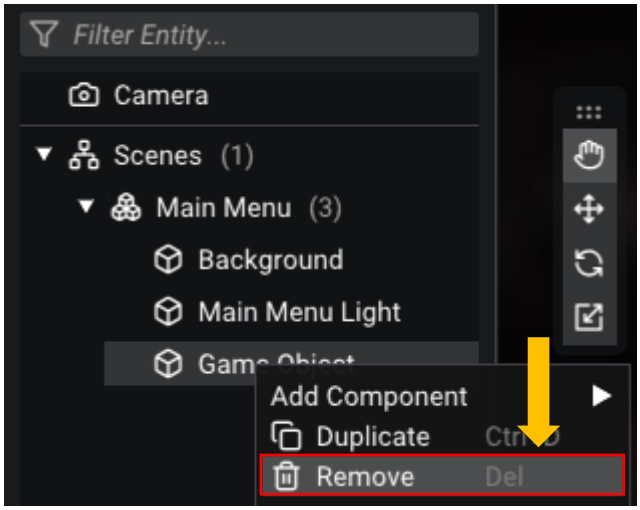
Click on “3 dots” beside the Game Object name in Inspector Panel > “Duplicate”.



Remove Game Object

Method 1:

Right click on a Game Object > “Remove”. (Del)



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Method 2:

Select a Game Object in Scene Panel and press “Del”.

A confirmation window will pop-up for removing Game Object for all 3 methods.

Click “Confirm” to proceed with deletion.

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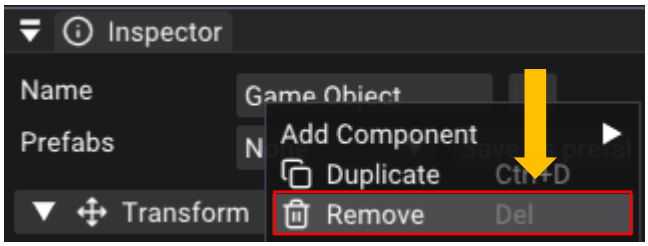
Method 3:

Click on “3 dots” beside the Game Object name in Inspector Panel > “Remove”.



Components

Components are properties of a Game Object, which dictates what the behaviour of a Game Object can be.

Add Component

Method 1:

Right click on selected Game Object > “Add Component” > Choose a component to add.

Method 2:

Click on “3 dots” beside the Game Object name in Inspector Panel

> “Add Component” > Choose a component to add.

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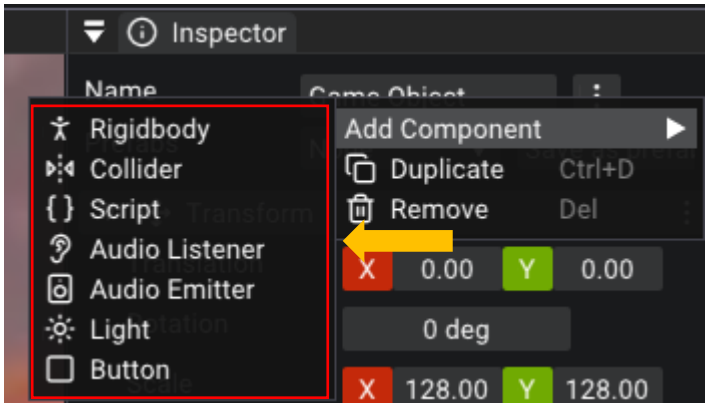


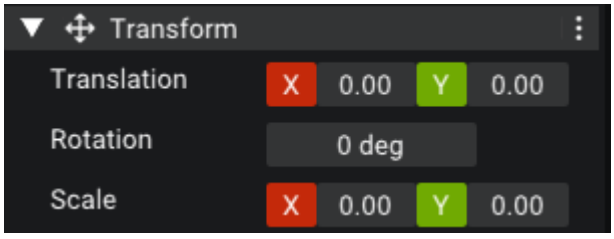
Remove Component

Click on “3 dots” beside a Component > “Remove Component”.

Transform Component

Controls the translation, rotation, and scale of the Game Object.

Note the values for translation are in world coordinates.



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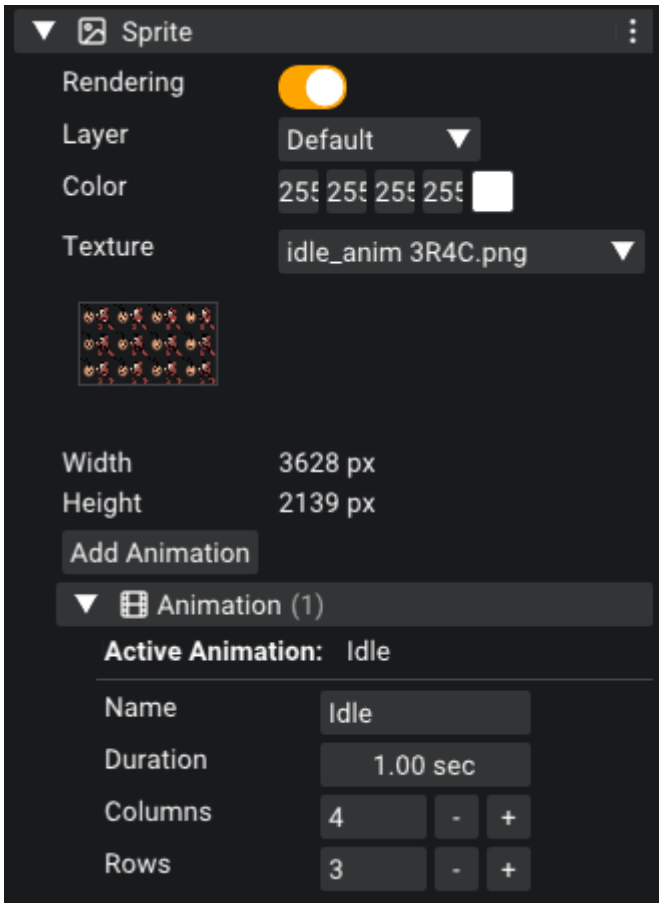
Sprite Component

Controls what the Game Object looks like.



Rendering

Toggles whether to render the Game Object or not.

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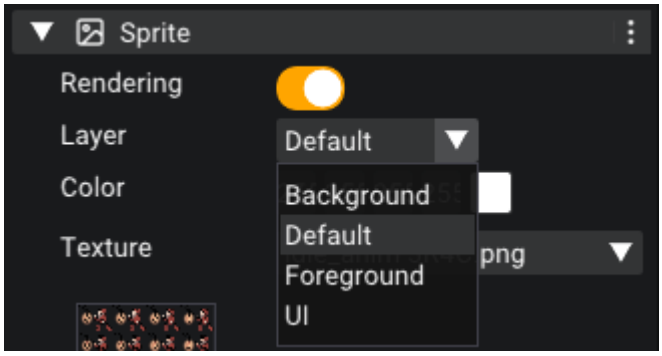
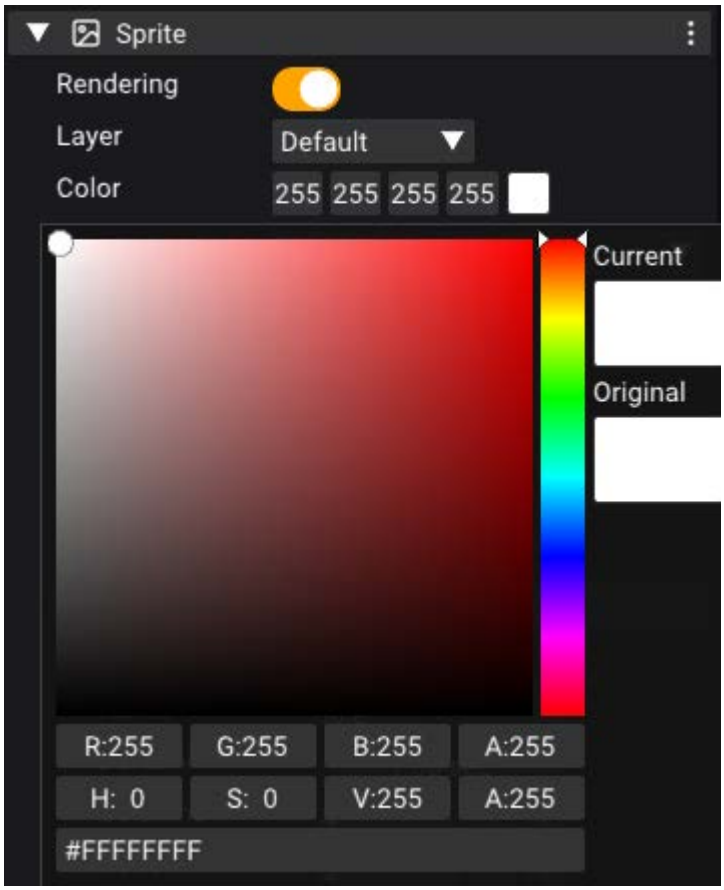
Layer

Controls which layer to render the Game Object in.



Color

Controls the color of the Game Object.



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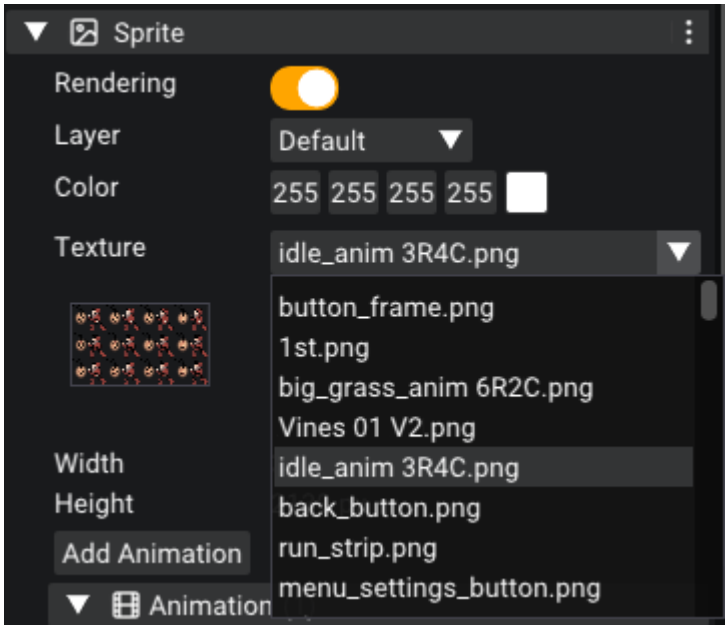
Texture

Controls the texture of the Game Object.

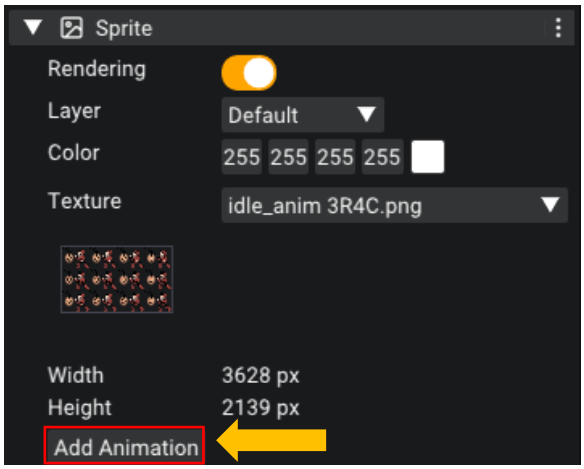


Refer to drag/drop section on texture drag/drop.

Animation

Add Animation

1. Click on “Add Animation”.



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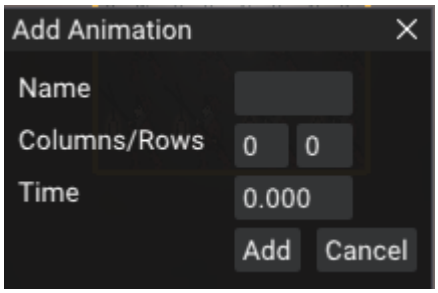
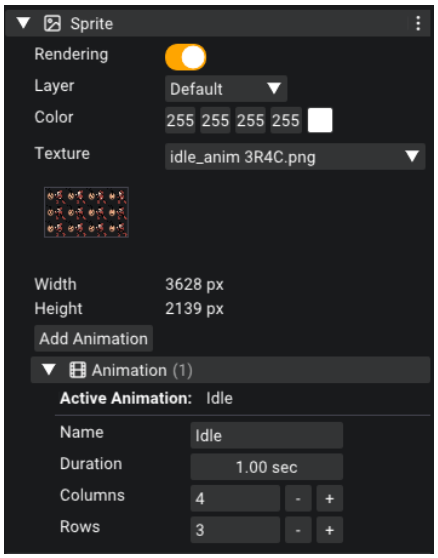
2. A pop-up window will appear, enter the necessary information, and click “Add”.



3. Animation should be added.



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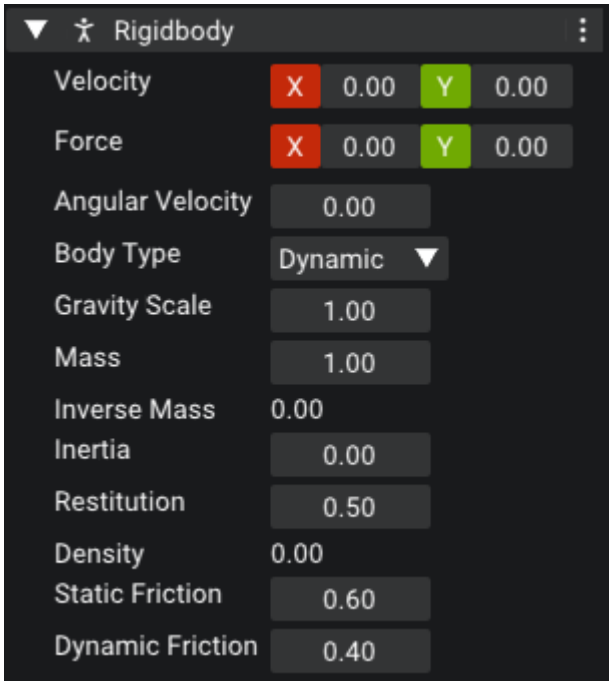
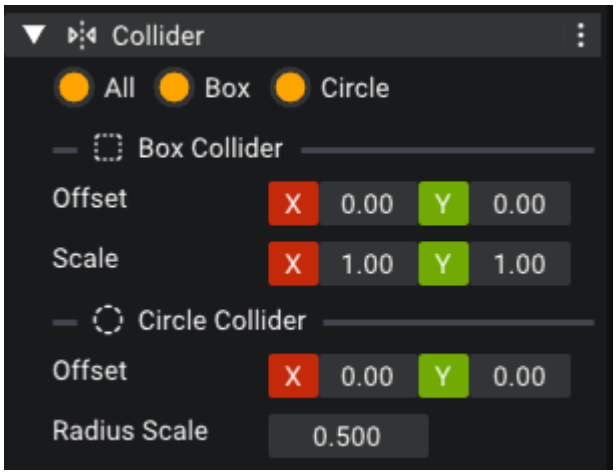
Rigid body Component

Controls the rigid body physics of the Game Object.



Collider Component

Controls the type of collider and its attributes. (i.e., Box, Circle).



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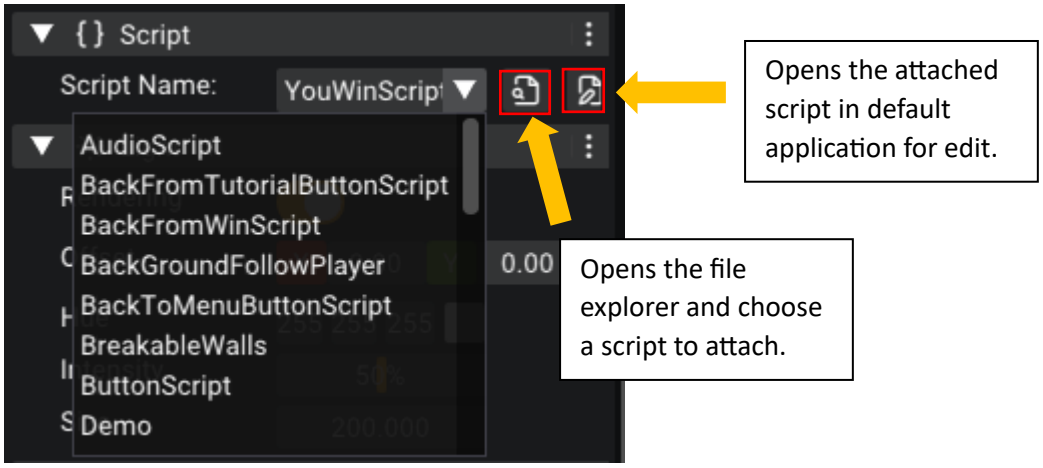
Script Component

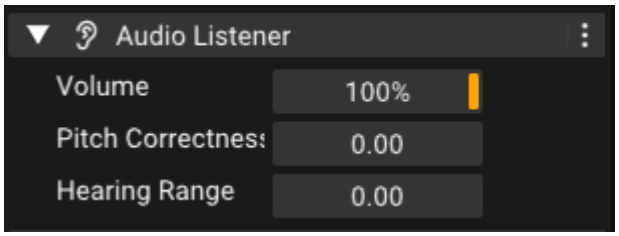
Refer to Scripts section on what a Script is.



Refer to drag/drop section on script drag/drop.

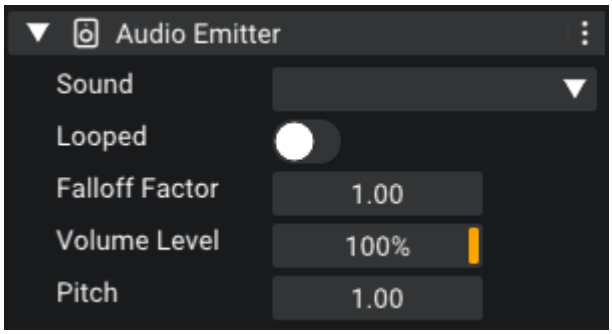
Audio Listener Component

Controls how audio is listened.



Audio Emitter Component

Controls what audio to play and its attributes.



Refer to drag/drop section for audio drag/drop.

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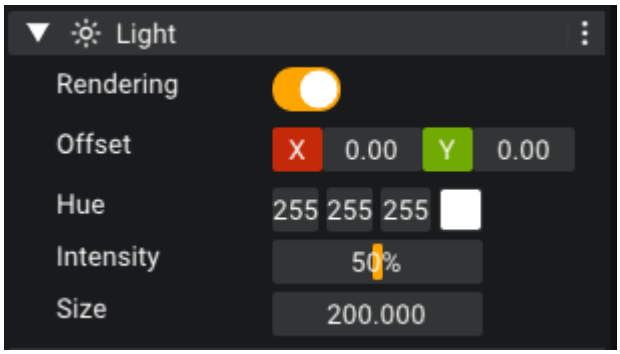
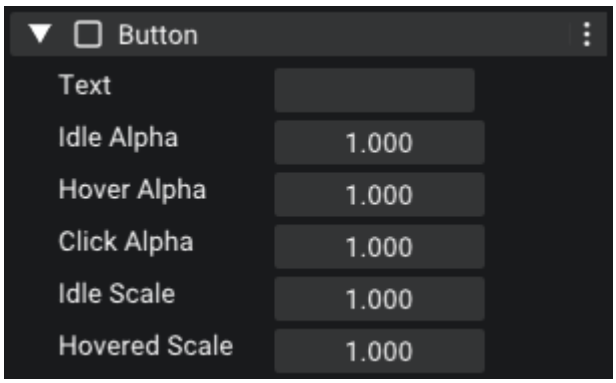
Light Component

Controls attributes of a light.



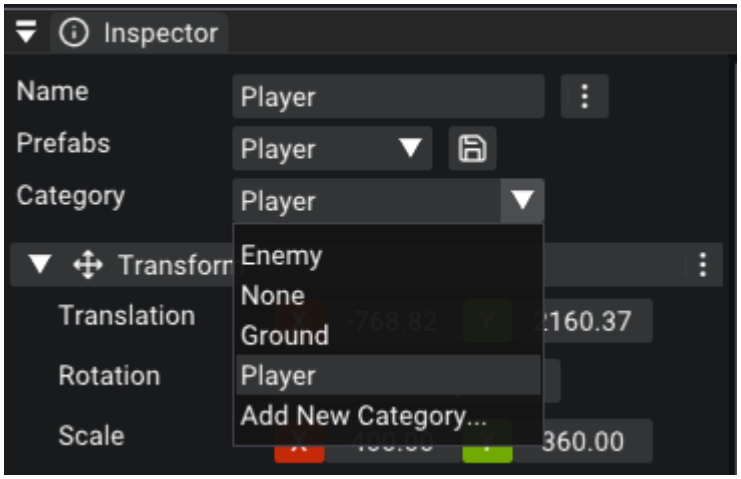
Button Component

Controls the text displayed on the button, alpha value of the button on idle, hover and click, and the scale on idle and hovered.



Category Component

A special component is that added via the field itself. It helps to separate Game Objects into different categories and apply certain logic to objects of the same category.



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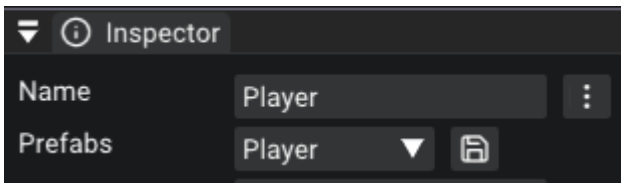
Prefabs

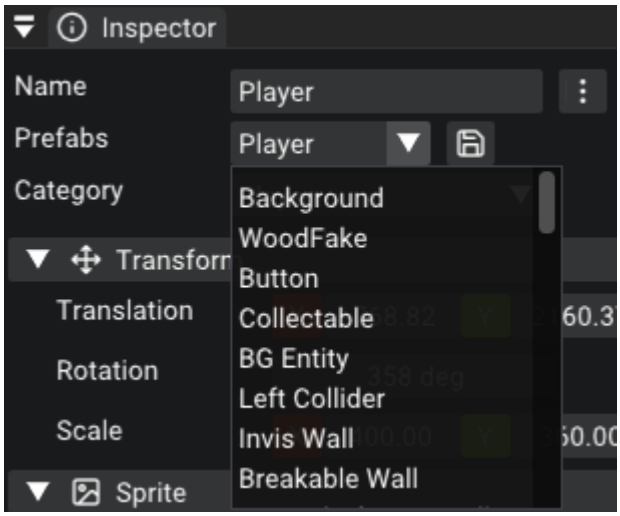
Create Prefab

Any Game Object can be saved as a prefab by clicking the “Save” button.



Load Prefab

Choose a prefab from the “Prefabs” dropdown-list.



Refer to drag/drop section for prefab drag/drop.

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Camera

Controls how you see the game world.

Properties

Types of Cameras: Editor and In-game camera.

Projection of Cameras: Orthographic and Perspective.

Position: Changes the position of active camera in 3D space.

Clipping Planes: Changes the near and far clipping planes.

Zoom: Changes the zoom of the camera.

Speed: Changes the speed of camera zoom and pan.

Reset Camera: Resets the camera attributes back to their initial values.

Controls

Zoom: Scroll up to zoom in and scroll down to zoom out.

Pan: Drag while holding down right mouse button.

Move: Left arrow key moves to left; Right arrow key moves to right.

Perspective Camera Only Controls:

Move: Up arrow key moves forward; Down arrow key moves backward.

Rotate: Drag while holding down scroll wheel rotates the camera.

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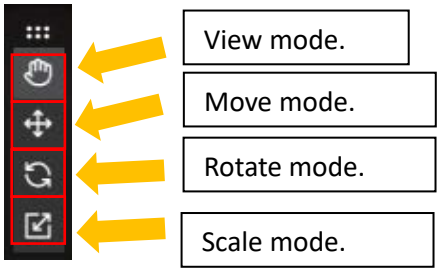
Gizmos

Controls the transformation of a Game Object with Transform Component.

Toolbar



Modes

View mode (Q)

Disables gizmo.

Move mode (W)

Controls the translation of the Game Object.

Rotate mode (E)

Controls the rotation of the Game Object.

Scale mode (R)

Controls the scaling of the Game Object.

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Command History

Undo/Redo

Features that support Undo/Redo:

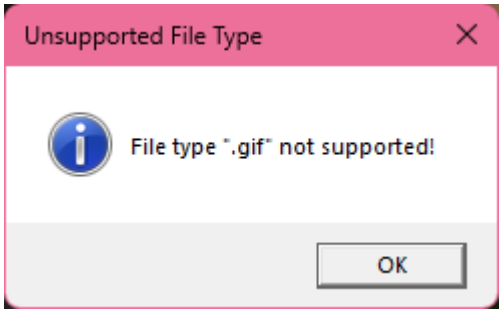
- Create Game Object
- Duplicate Game Object
- Remove Game Object
- Gizmos
- Drag/drop textures into Scene Panel.
- Drag/drop prefabs into Scene Panel.
- Most of Inspector Panel besides layering.

Miscellaneous

Drag/drop from Windows File Explorer:

- Load ".insight" files as scenes.
- Load ".png/.jpg/.jpeg" as textures.
- Load ".mp3/MP3/.wav/.WAV" as sounds.
- Load ".json" as prefabs.

A message box will appear if an unsupported file is dropped into the window.



Disable/Enable Editor:

Disable editor: Press "Tab" when Scene Panel is focused.

Enable editor: Press "Tab".

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Hot Reloading:

1. Script hot reloading is done when any saved changes to scripts in the current scene are updated immediately when the scene restarts.
2. Shader hot reloading is done when any saved changes to shaders in the current scene are update immediately even when the scene is running.

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