12. Levels

Series

You are reading **Part 12** of the Space Shooter Tutorial.

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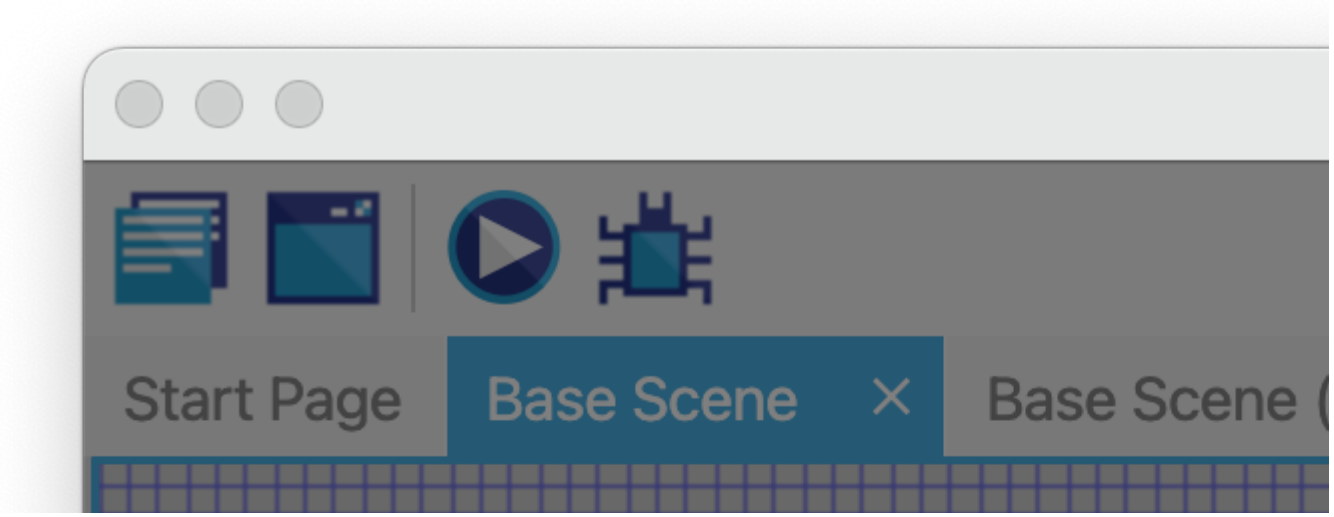
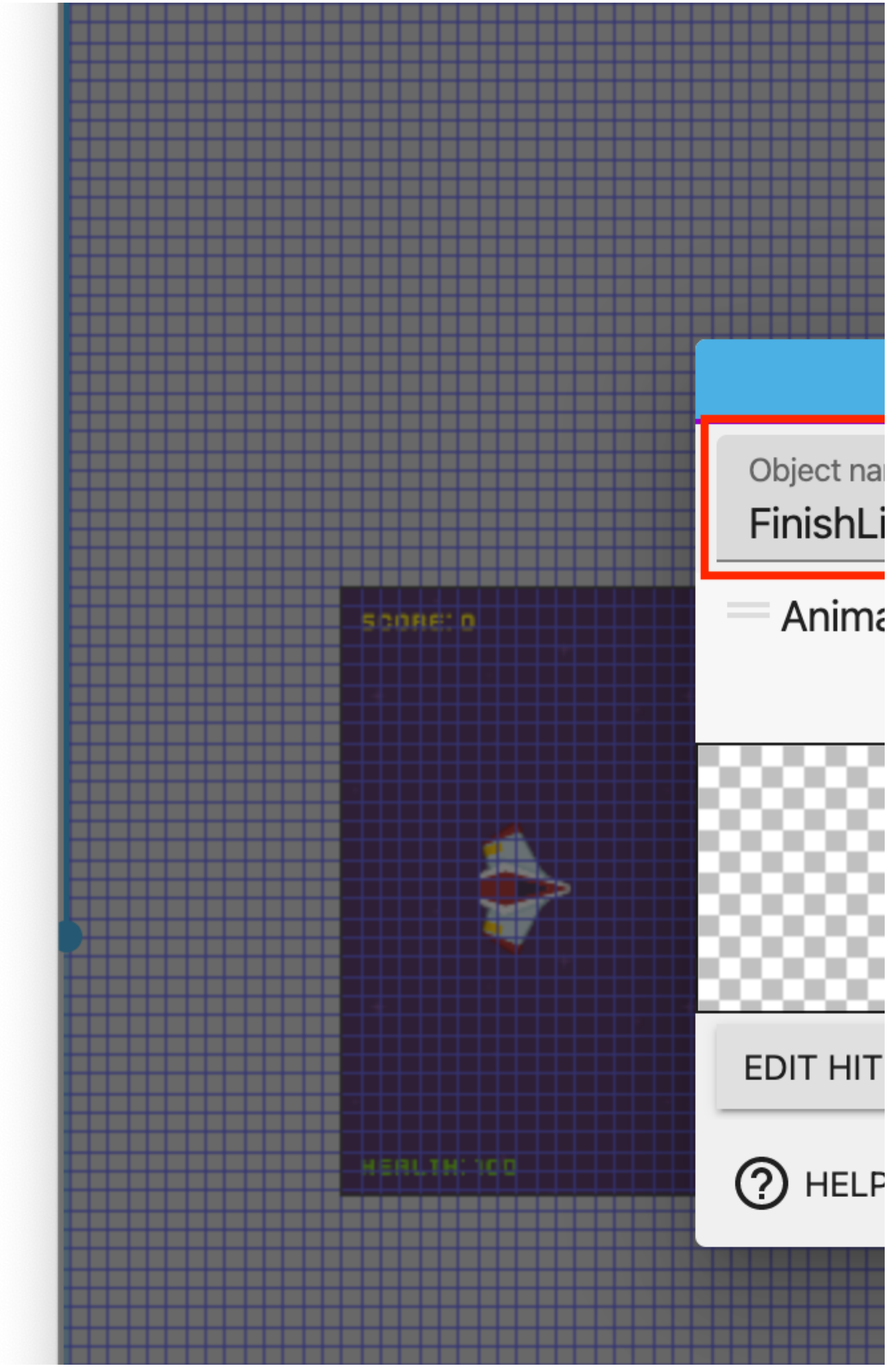
> In this chapter, we will learn how to design different levels and use them.

Finishing the levels

We will add an object called **FinishLine** to determine the end of the level. Use a transparent image **finish_line.png** from the assets folder as a sprite.

> We are using the collision between the **Player** and the **FinishLine** objects to determine the end of the level.




Object na
FinishLi
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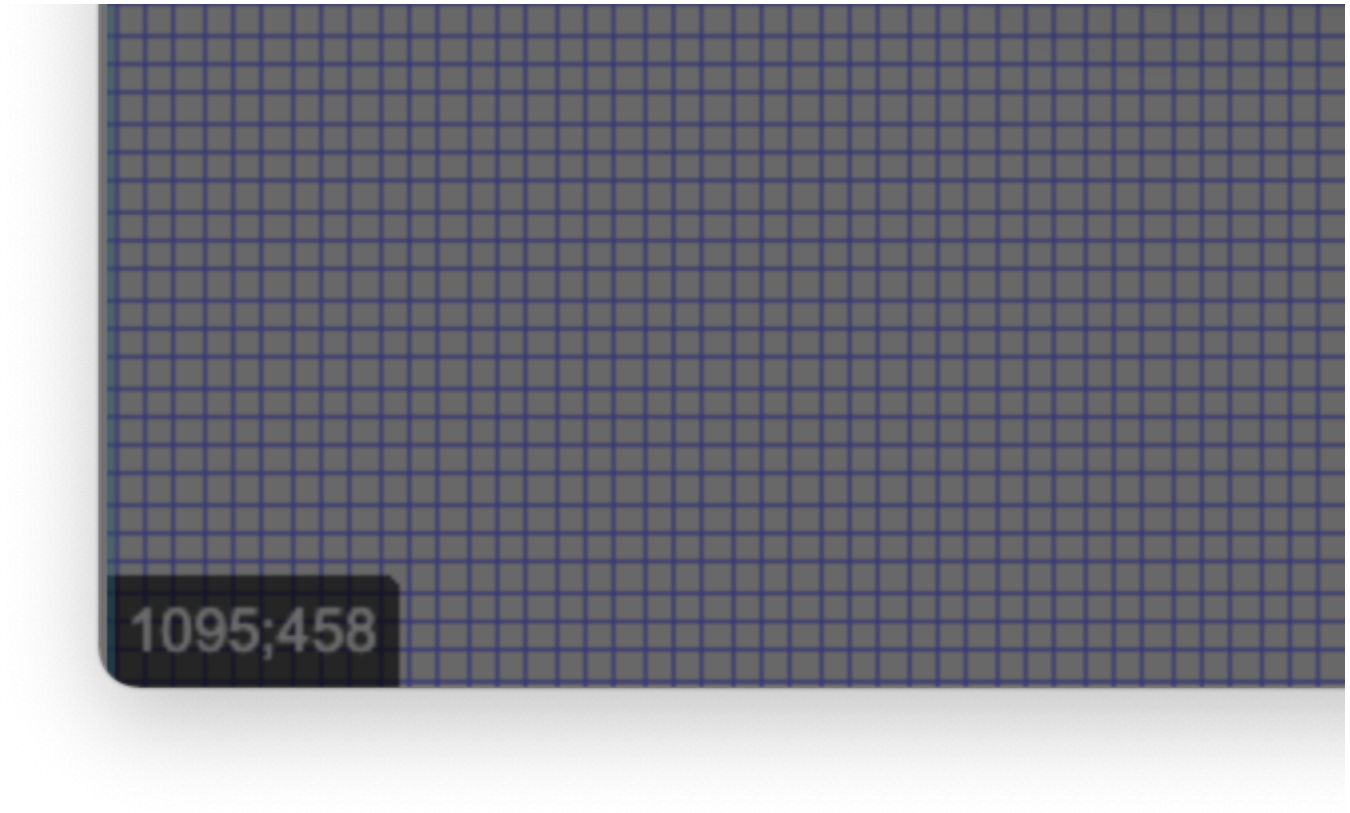
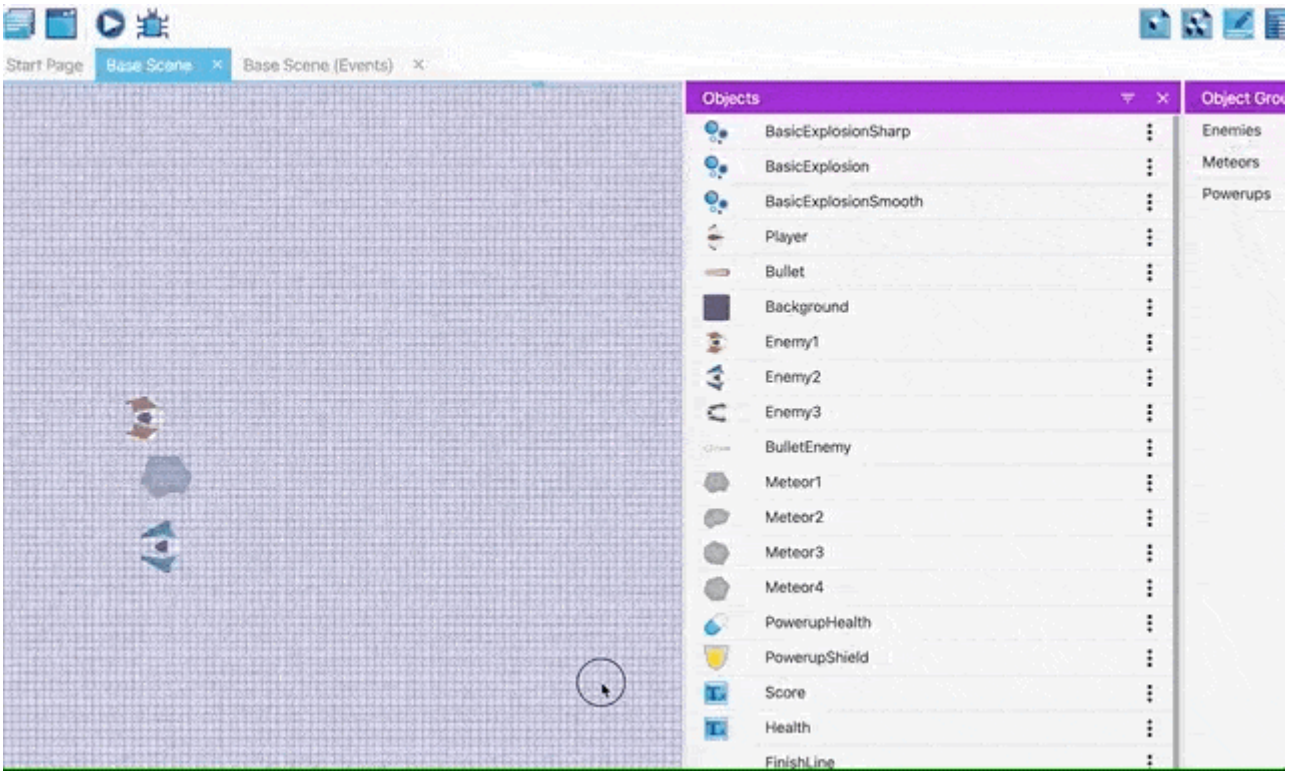


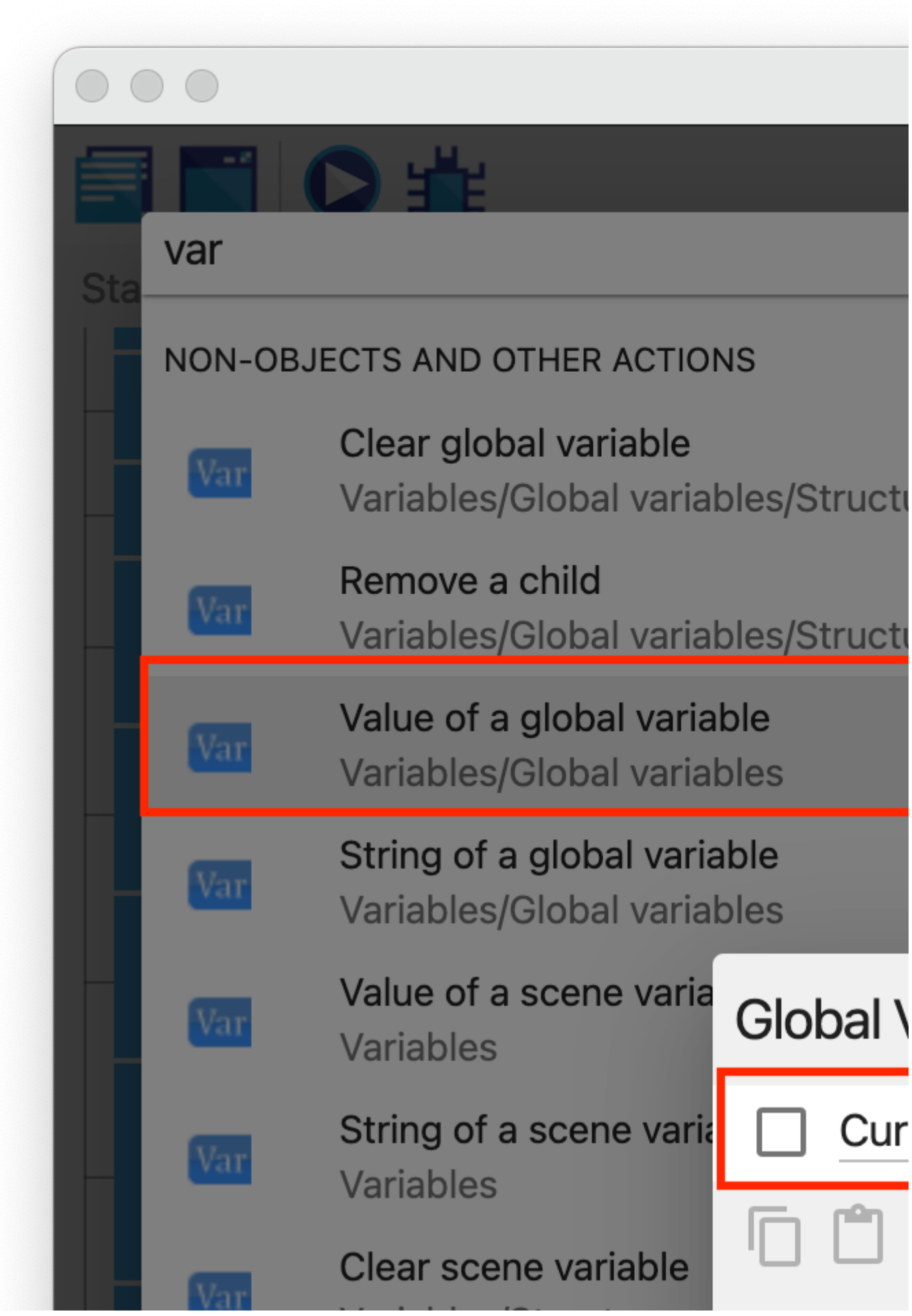
Then, **drag and drop** the **FinishLine** to **the end of the level**.

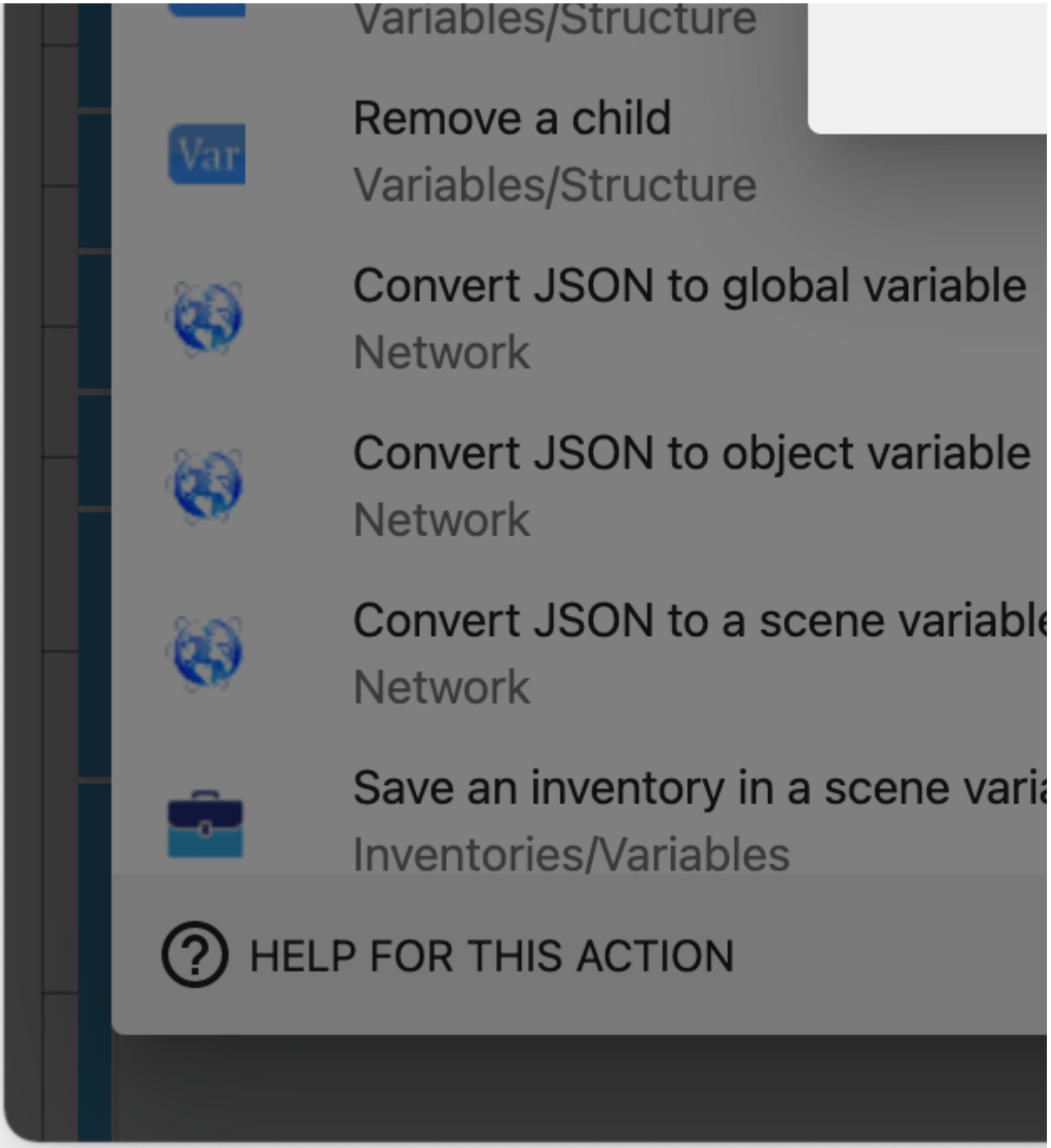
> Ensure that you **resize the object** and **cover the height of the screen**. If it is **too small** or **does not cover the size of the screen**, the player may miss the finish line.



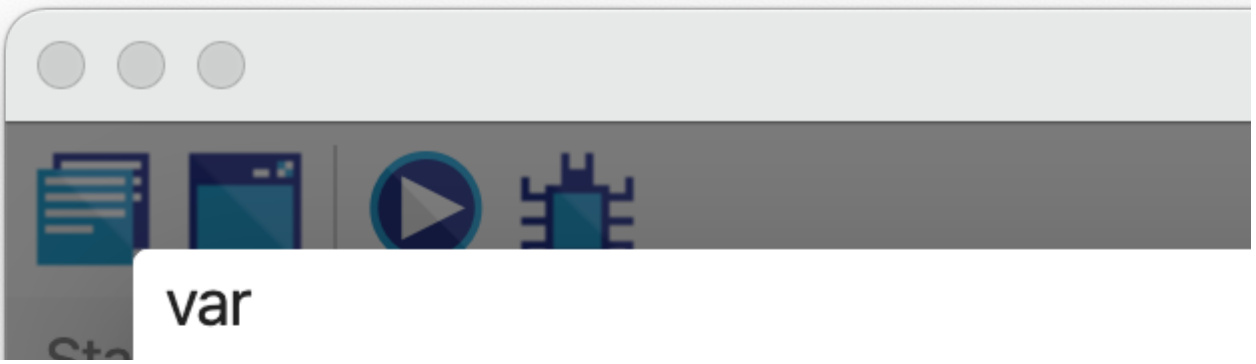
Open the **Events** tab, and add a new condition to determine the collision between

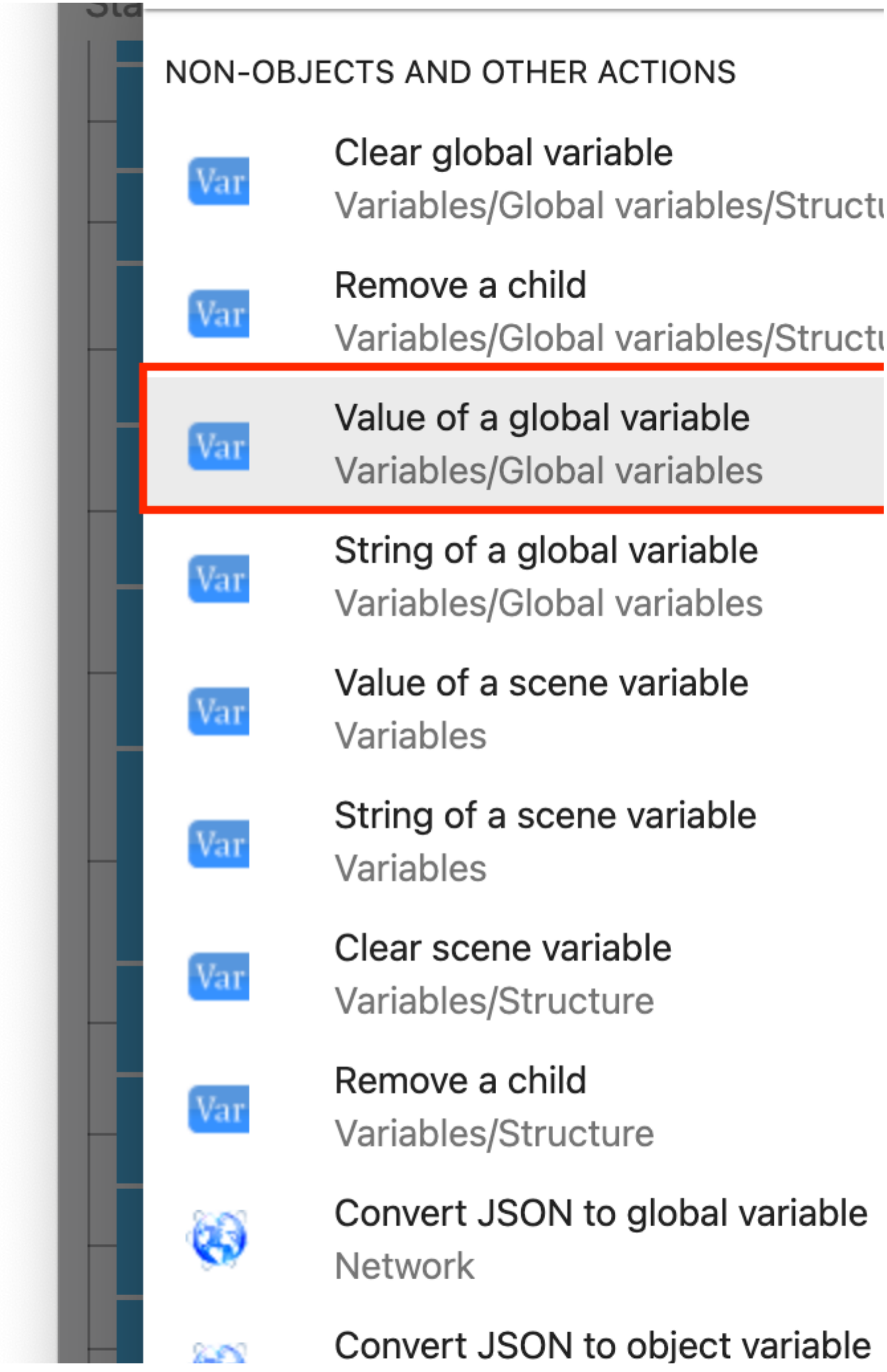
Player and **FinishLine**. Then, create a new **global variable** called **CurrentLevel** and set to **1**.

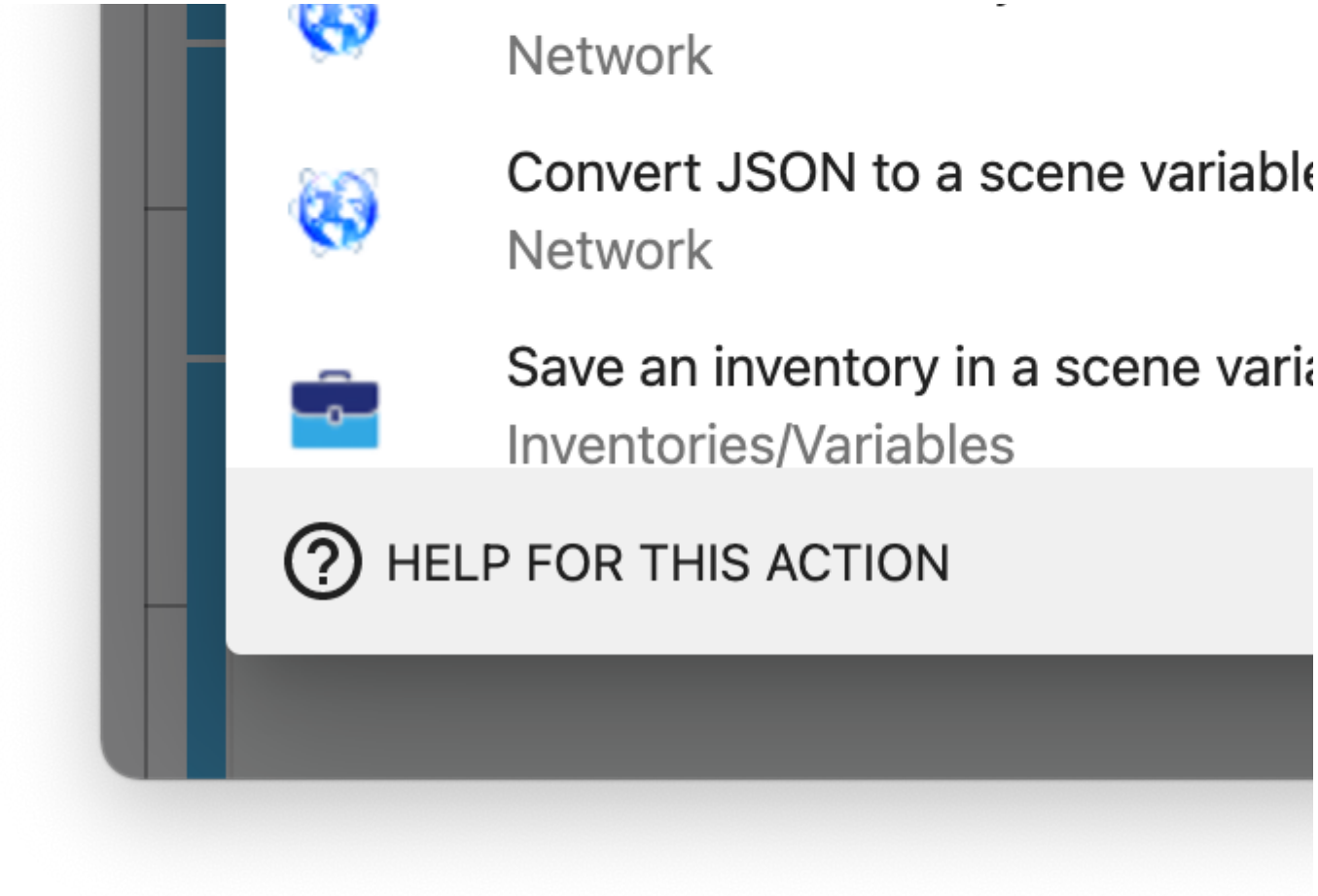




In the action, increment **CurrentLevel** by **1**.

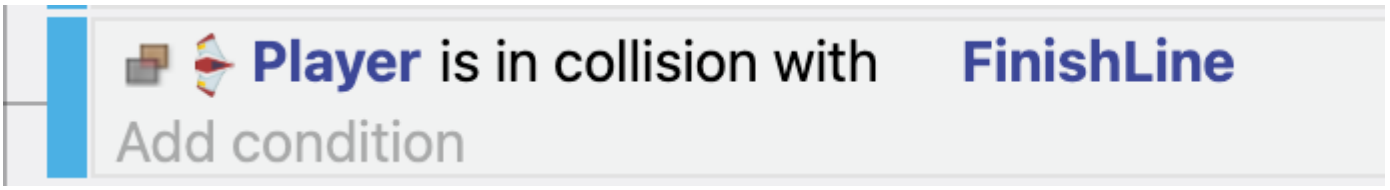



NON-OBJECTS AND OTHER ACTIONS
Clear global variable
Variables/Global variables/Structu
Remove a child
Variables/Global variables/Structu
Value of a global variable
Variables/Global variables
String of a global variable
Variables/Global variables
Value of a scene variable
Variables
String of a scene variable
Variables
Clear scene variable
Variables/Structure
Remove a child
Variables/Structure
Convert JSON to global variable
Network
Convert JSON to object variable



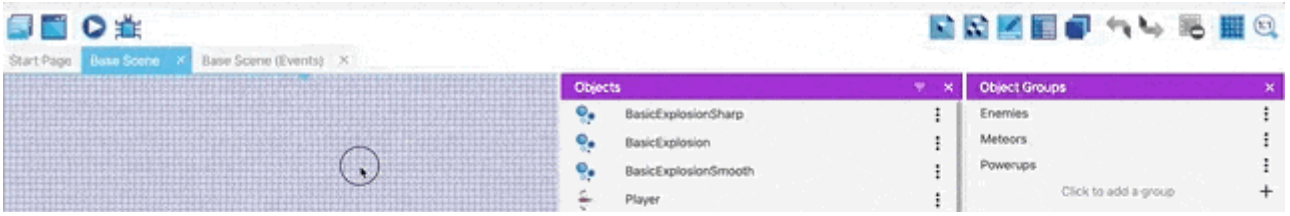
In the end, your event should look like this:

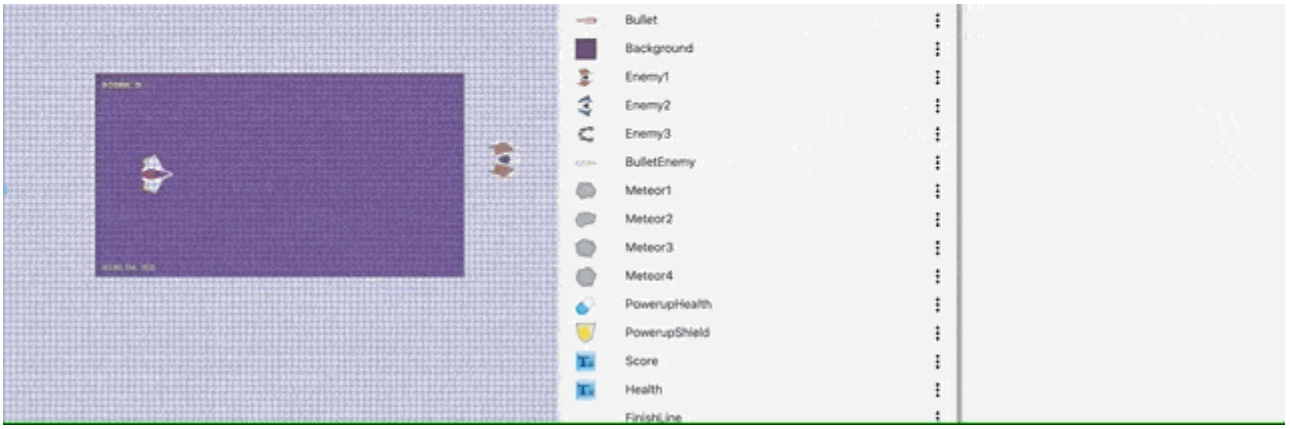
> This event only increases the **CurrentLevel** variable by **1** and does not affect the level changing process yet. We will update this event in the last chapter.



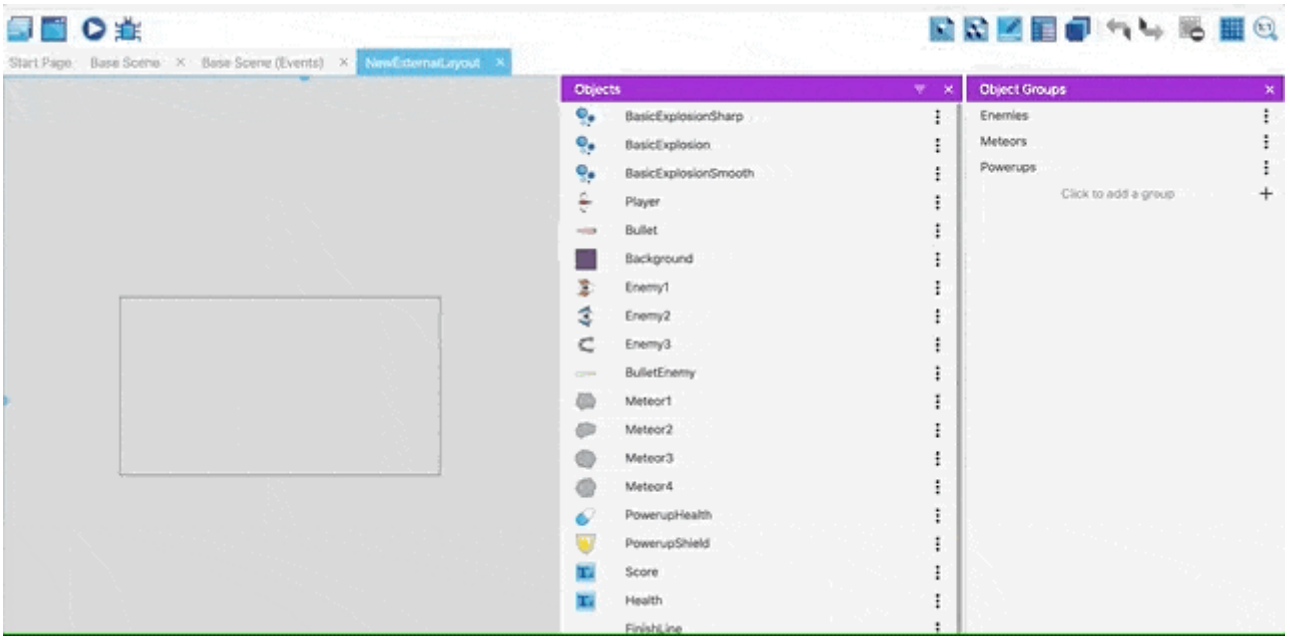
Using external layouts to create levels

We will use External Layouts to create new levels. The **external layout** can create a layout of objects, just as in a scene editor. The objects can be then **dynamically inserted in a scene using the actions in the External layouts** category. Create a new external layout from the project manager panel. Then, select the **Base Scene** as an associated scene. Change the name of the external layout with **Level1**.



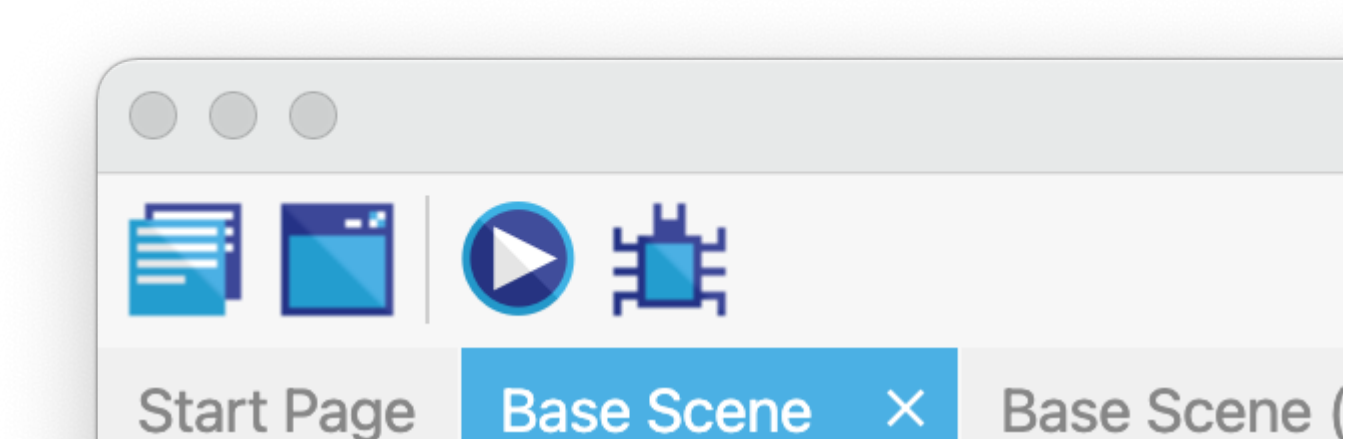


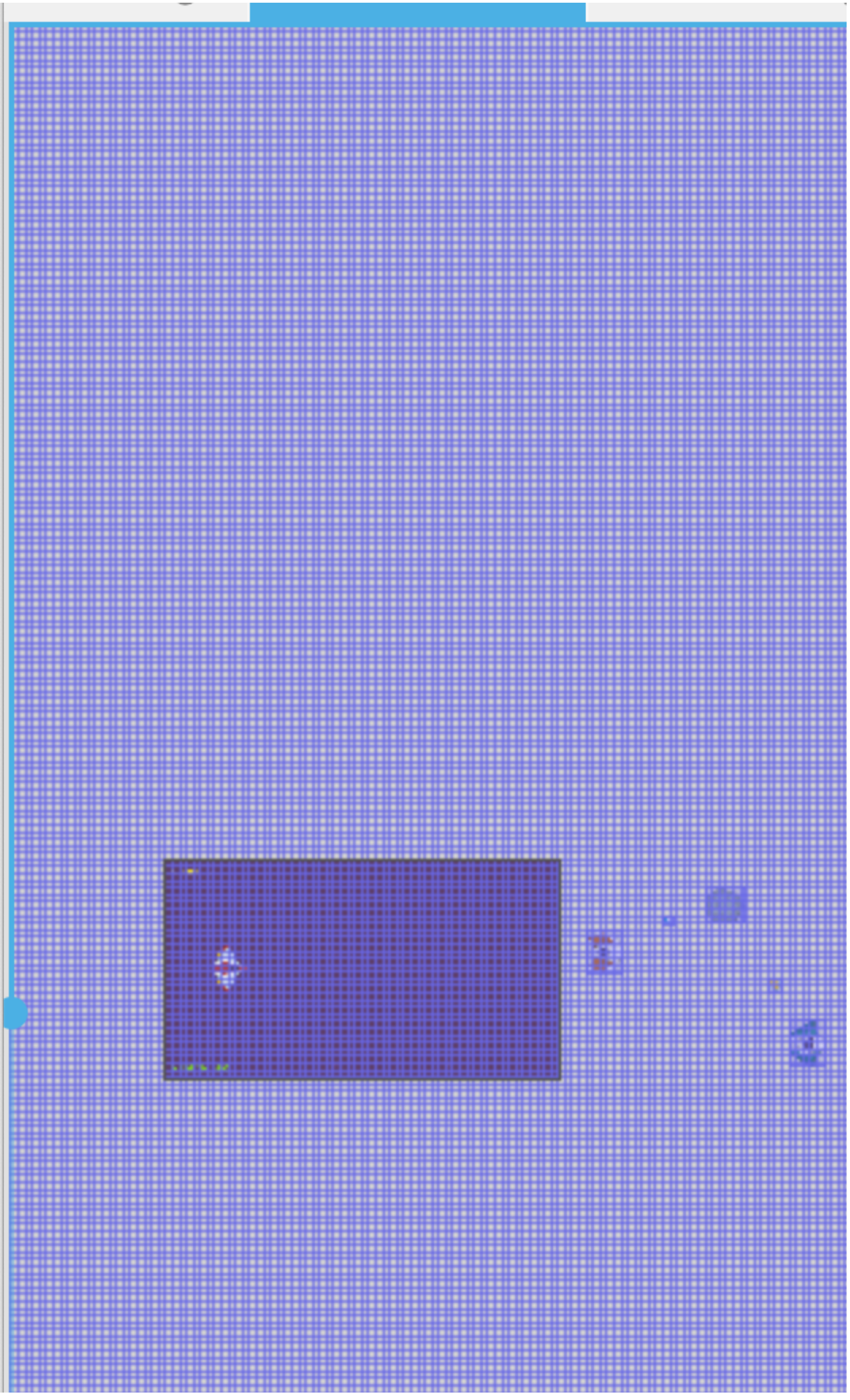
Set the grid view, just like in the first chapter, and show the grid. Select **16** for the **cell sizes**.

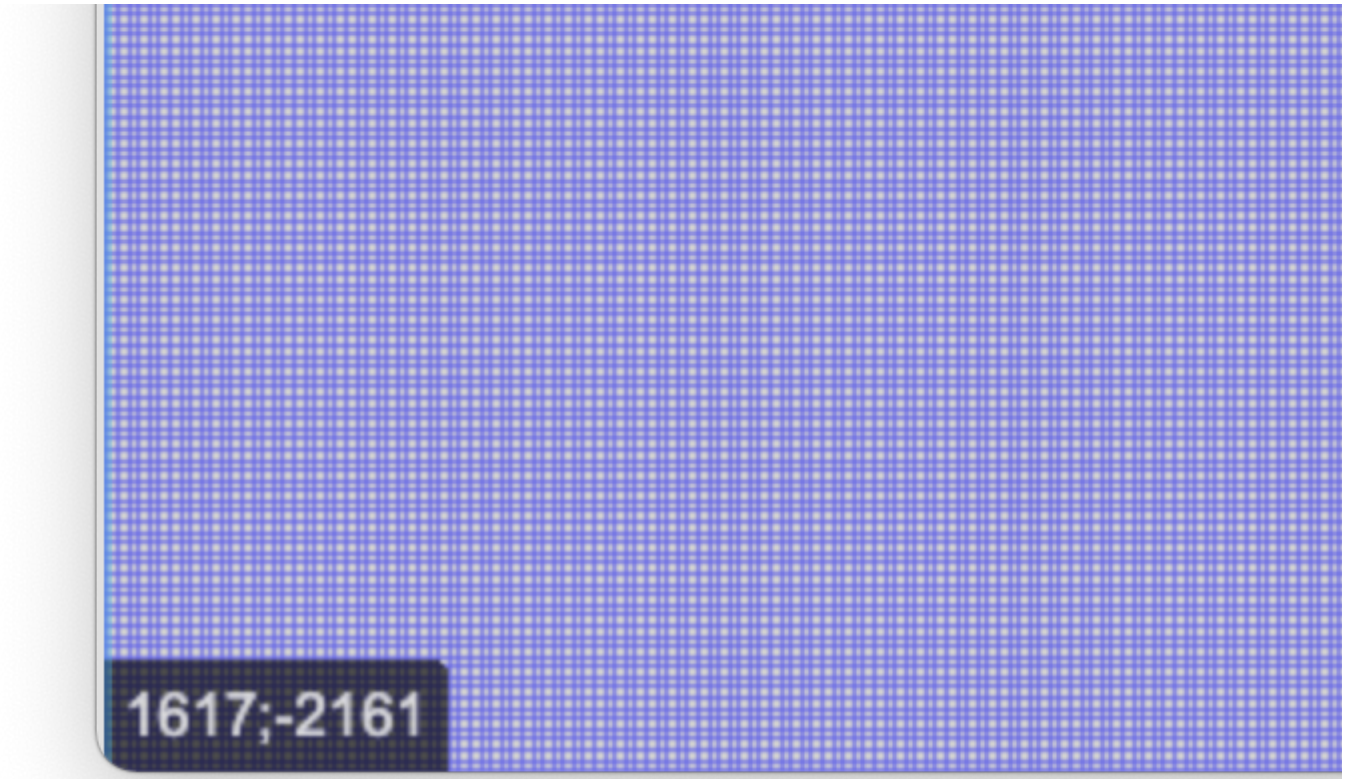


Now, we should go back to the **Base Scene** and delete all **enemies, powerups, meteors, and the finish line**. We will add those objects and set up our levels in the external layouts.

> **Do not delete** objects from **objects tab**. Delete the objects from the **scene view**.

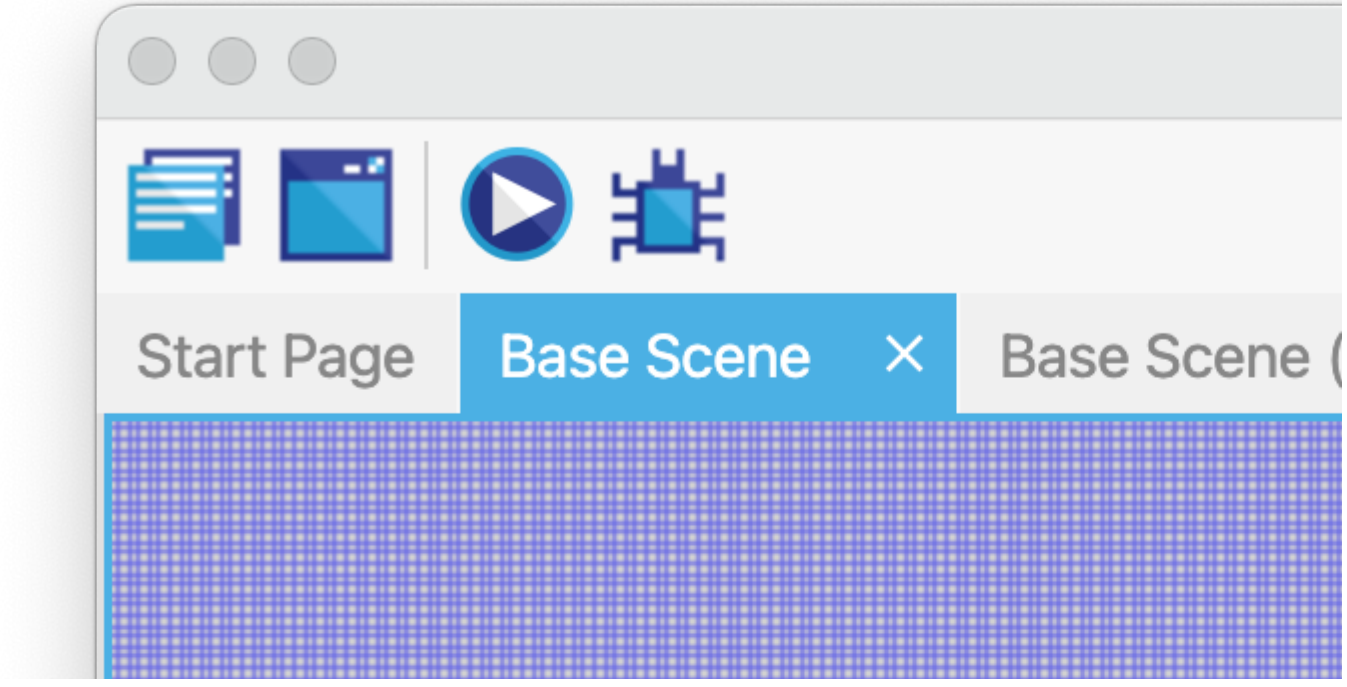


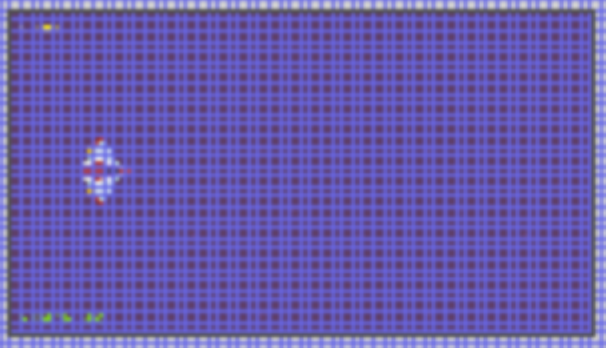


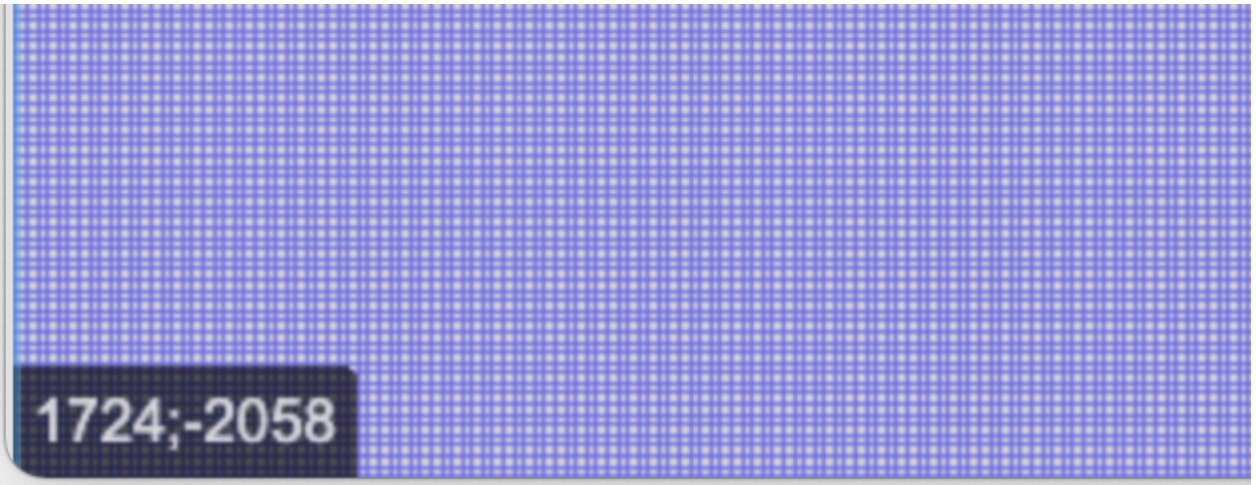


You should see a clear view of the scene and see the **same objects** in the **object's tab**.

> **Do not delete the player, background, text objects, and other objects on the camera.**

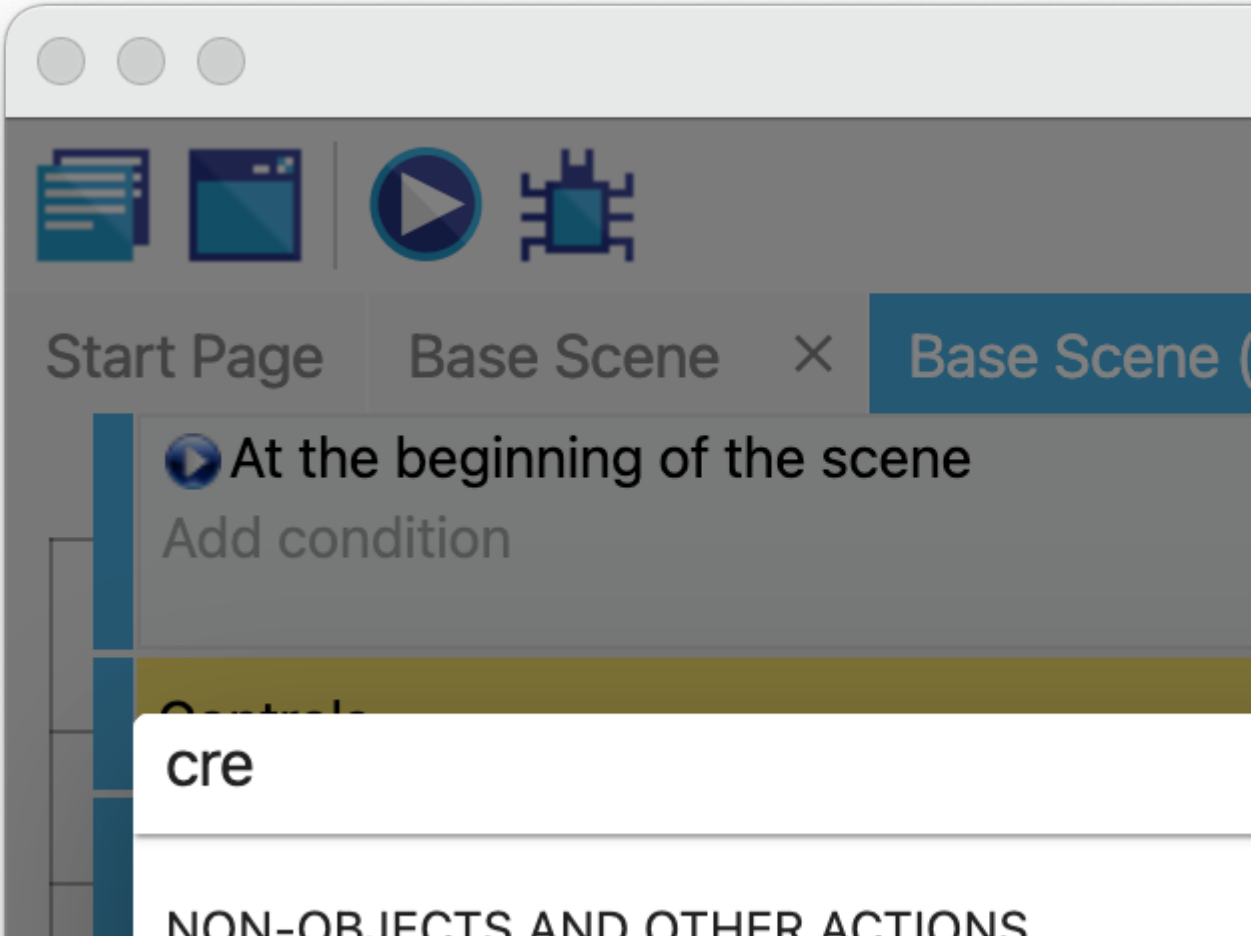


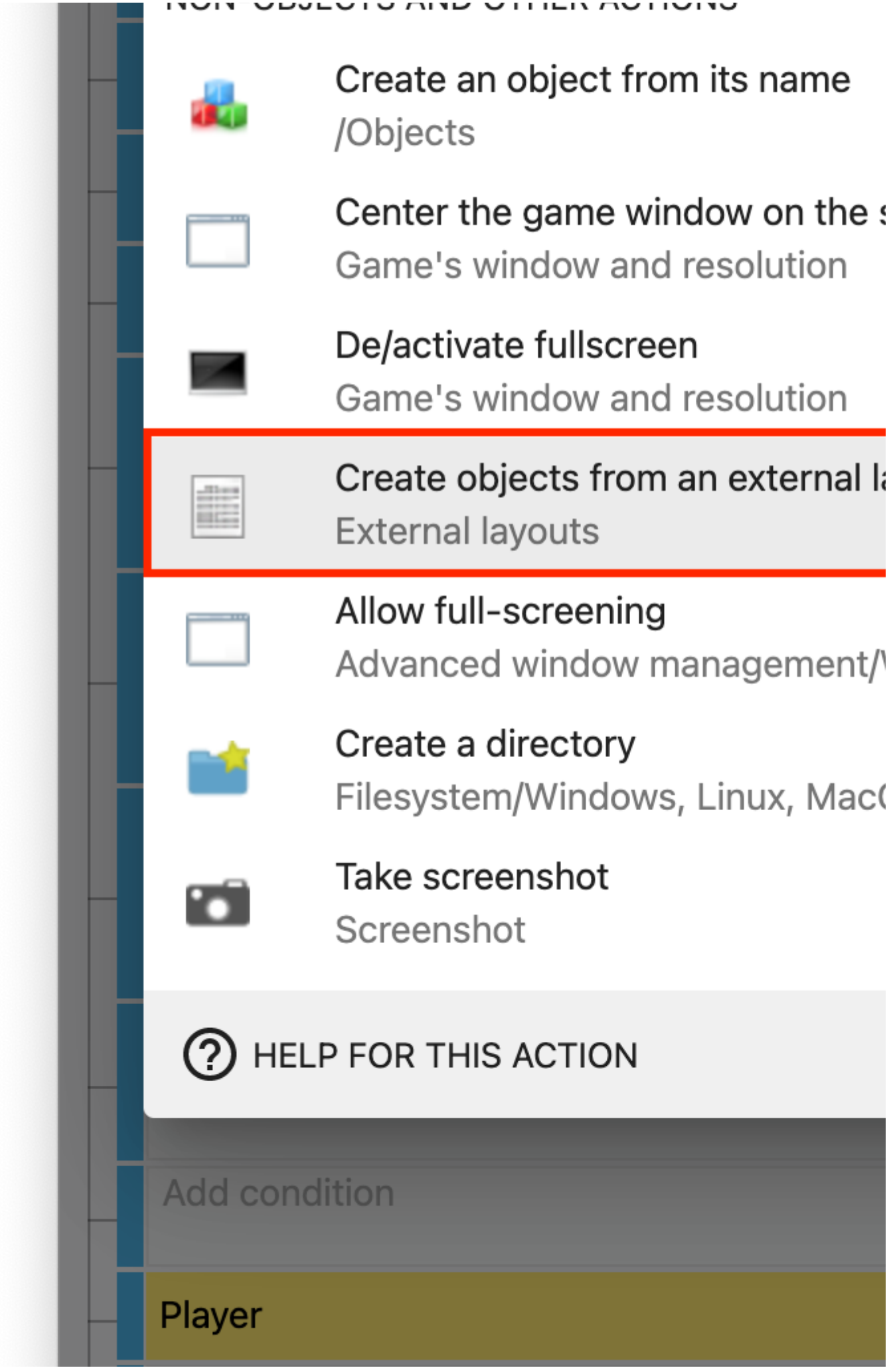




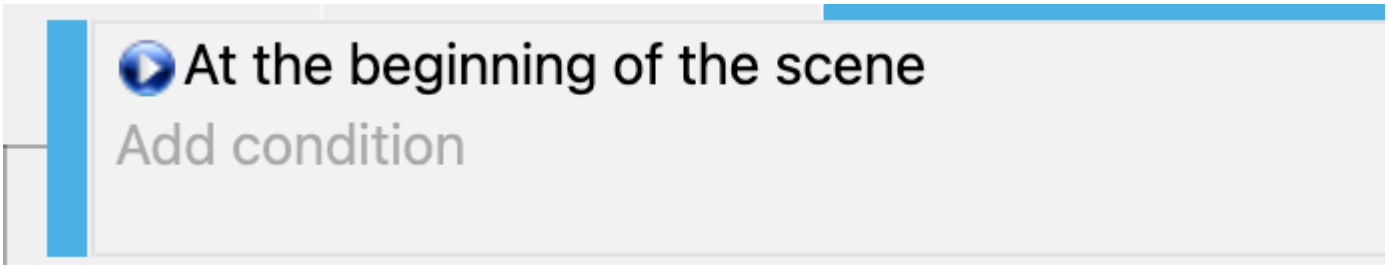
Open the events tab, and add a new action under the **At the beginning of the scene** event. Select **Create objects from external layout** and enter the name of our external layout, in that case, **Level1**.

> We will use a global variable to load the particular level in the next steps.

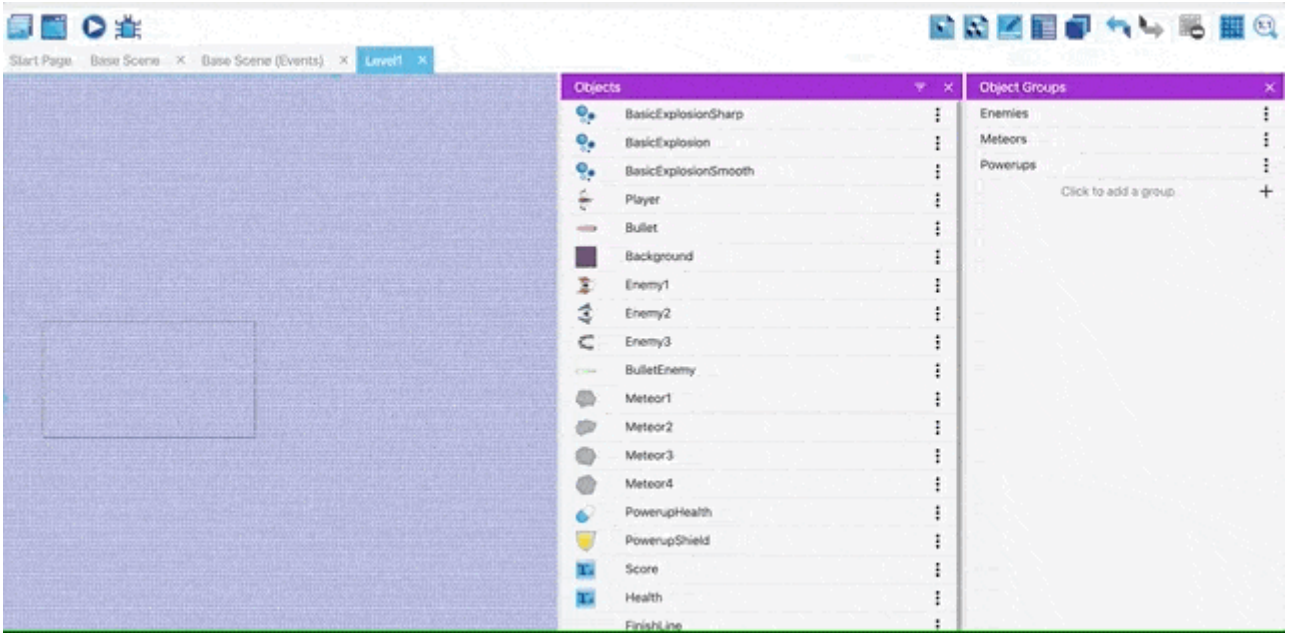



Create an object from its name
/Objects
Center the game window on the
Game's window and resolution
De/activate fullscreen
Game's window and resolution
Create objects from an external l
External layouts
Allow full-screening
Advanced window management/
Create a directory
Filesystem/Windows, Linux, Mac
Take screenshot
Screenshot
HELP FOR THIS ACTION
Add condition
Player

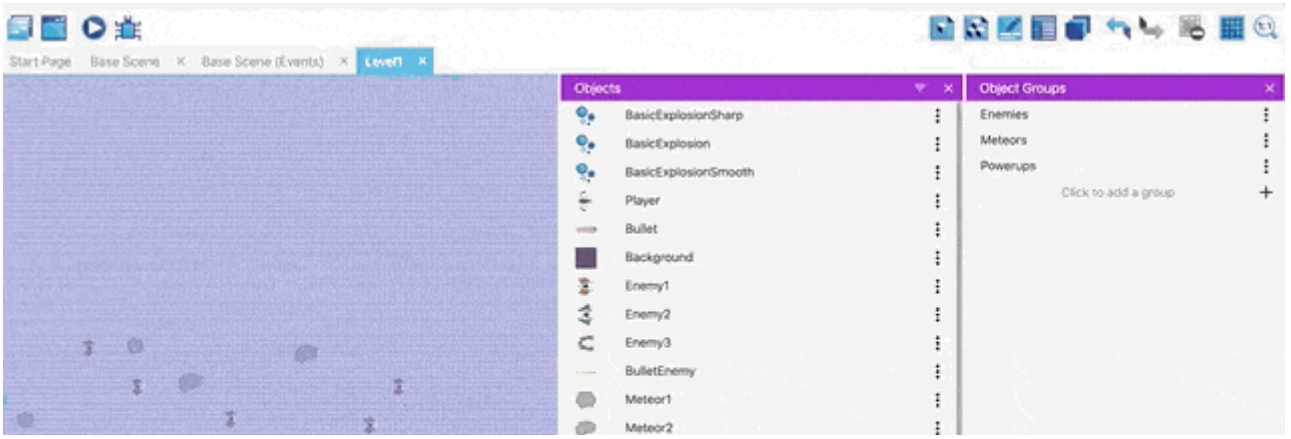
In the end, your event should look like this:

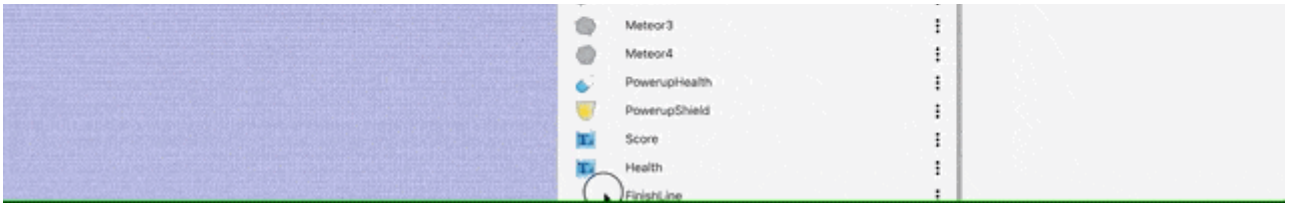


We can now go back to our external layout and design our level by dragging and dropping the objects.

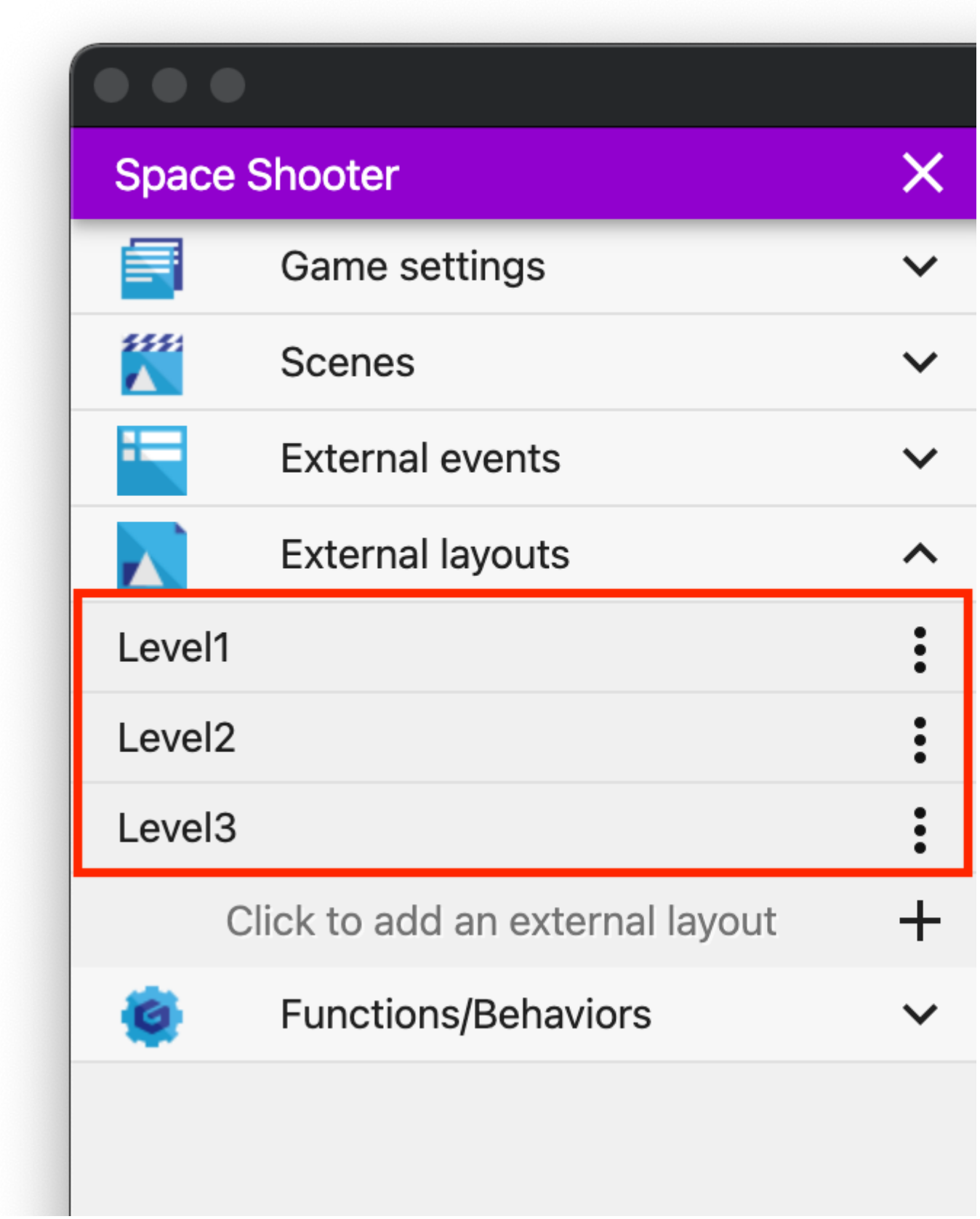


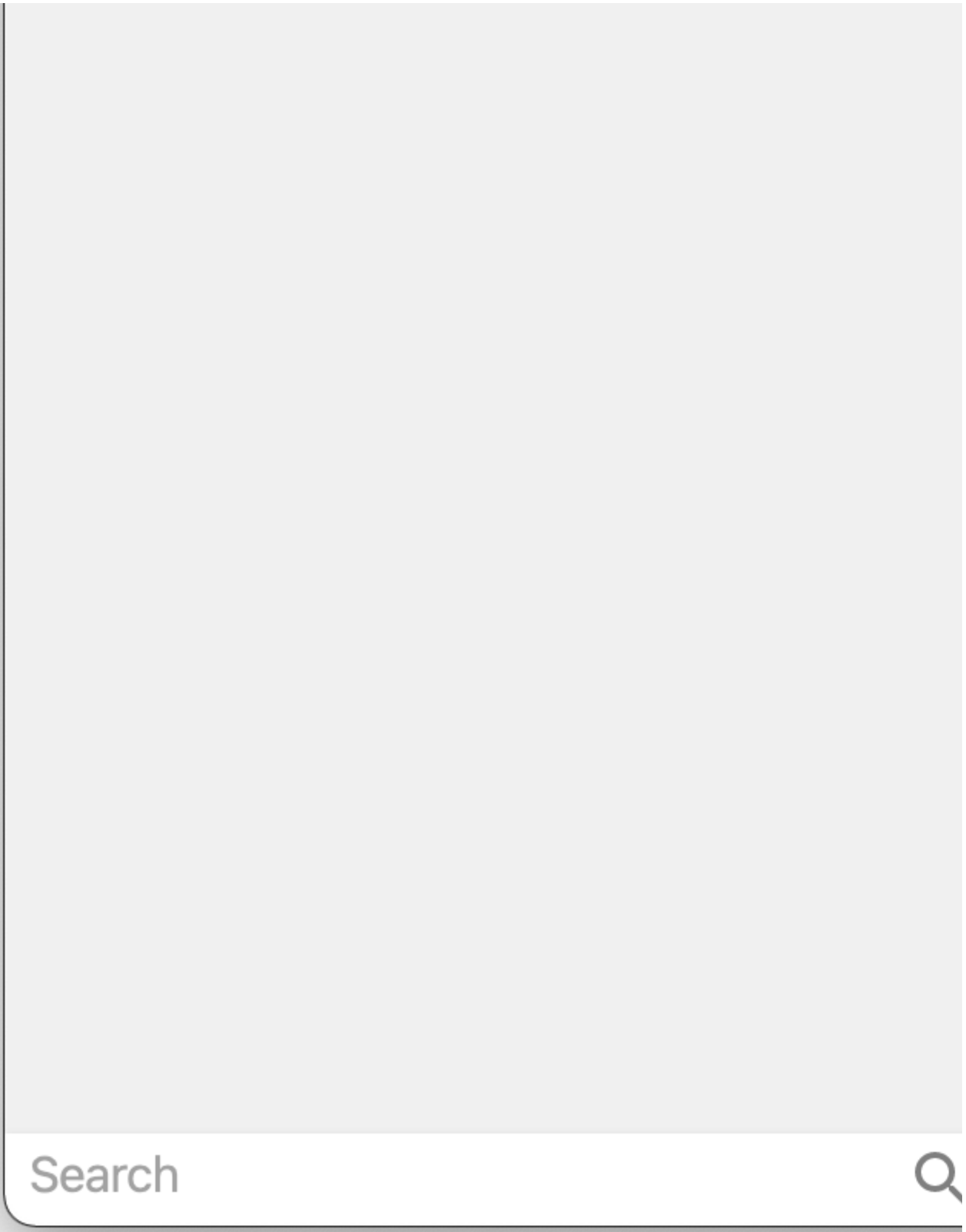
Then, add the finish line at the end of the view.



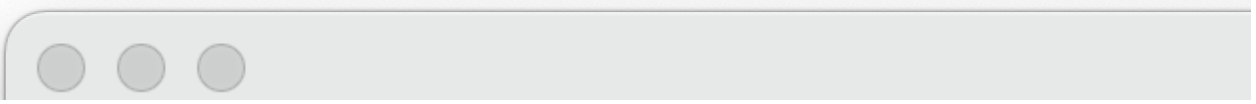


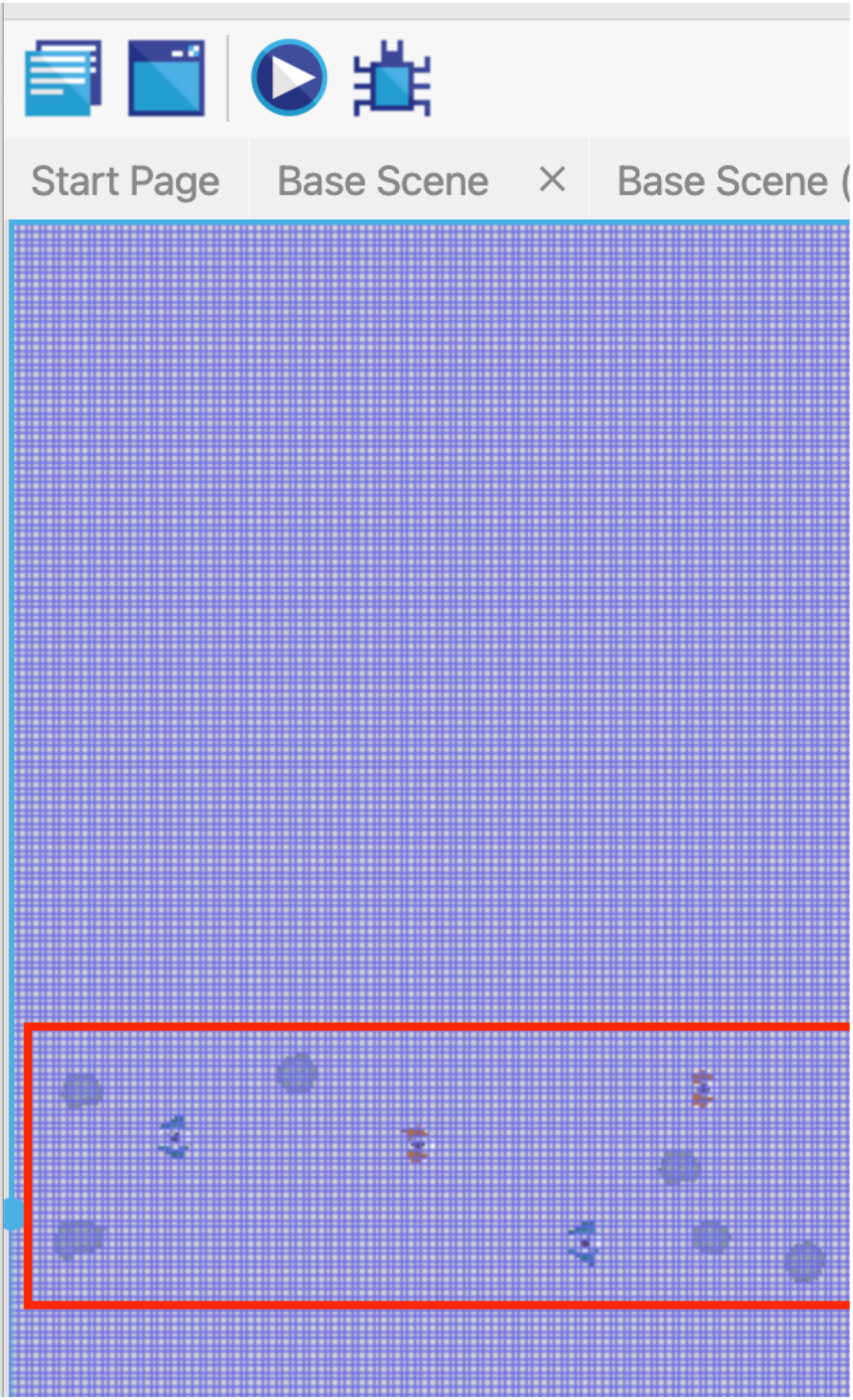
Repeat the same processes to create two more levels. In the end, you will have three different levels.

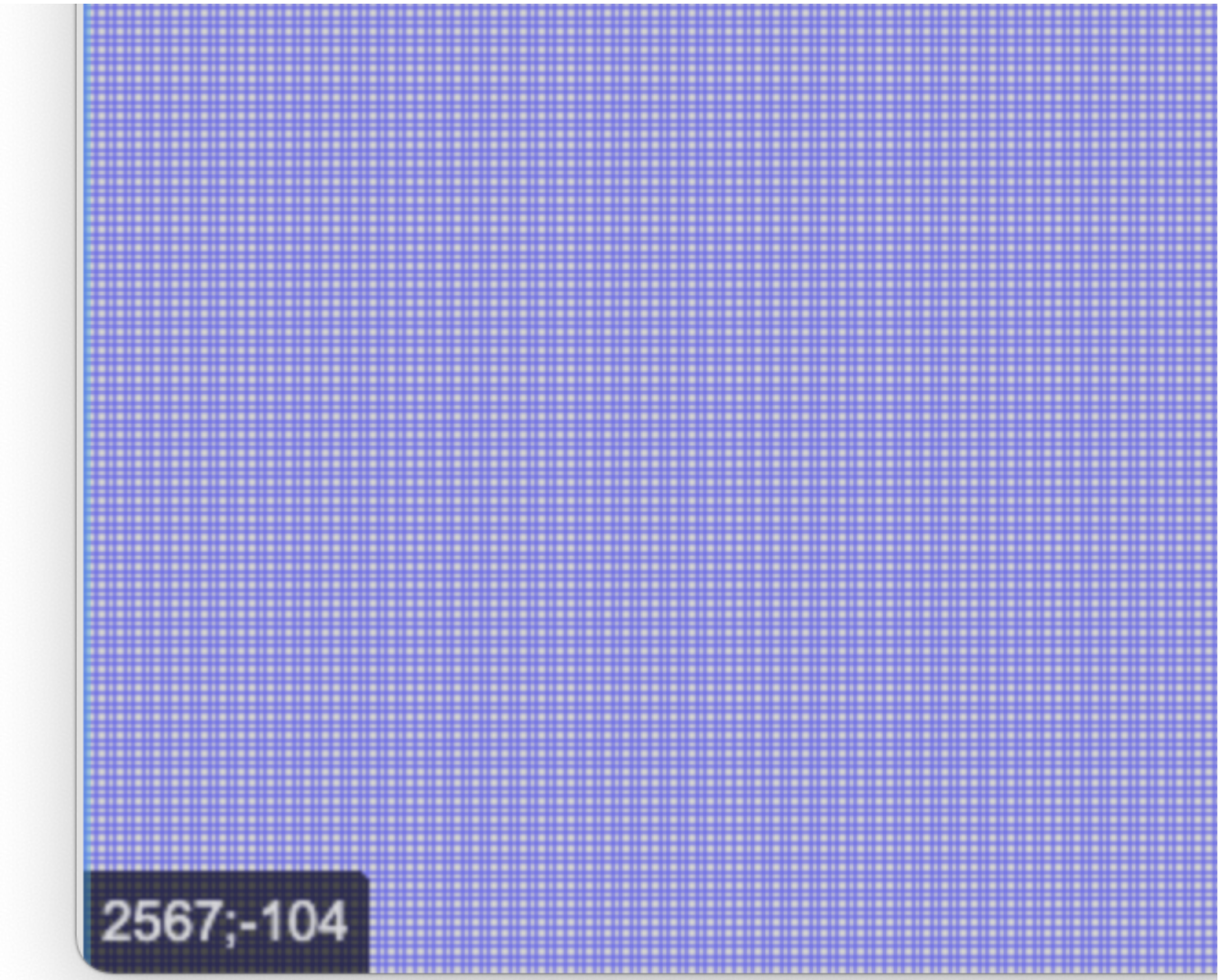




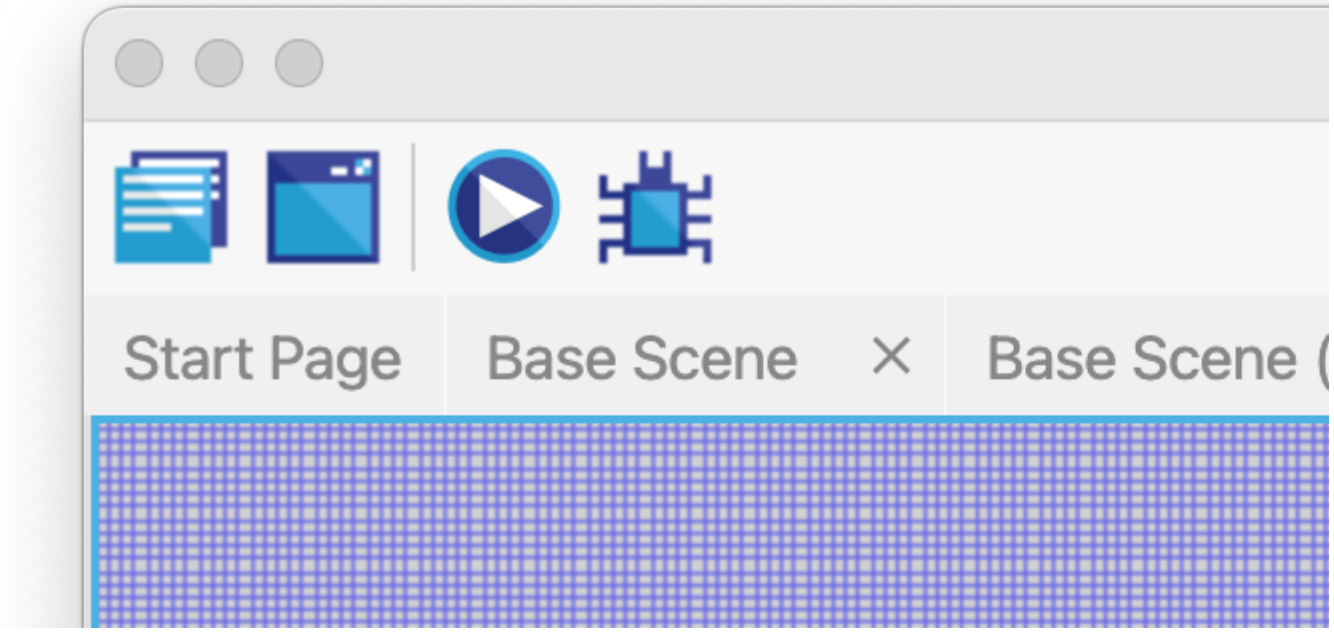
Level 2 as an example:

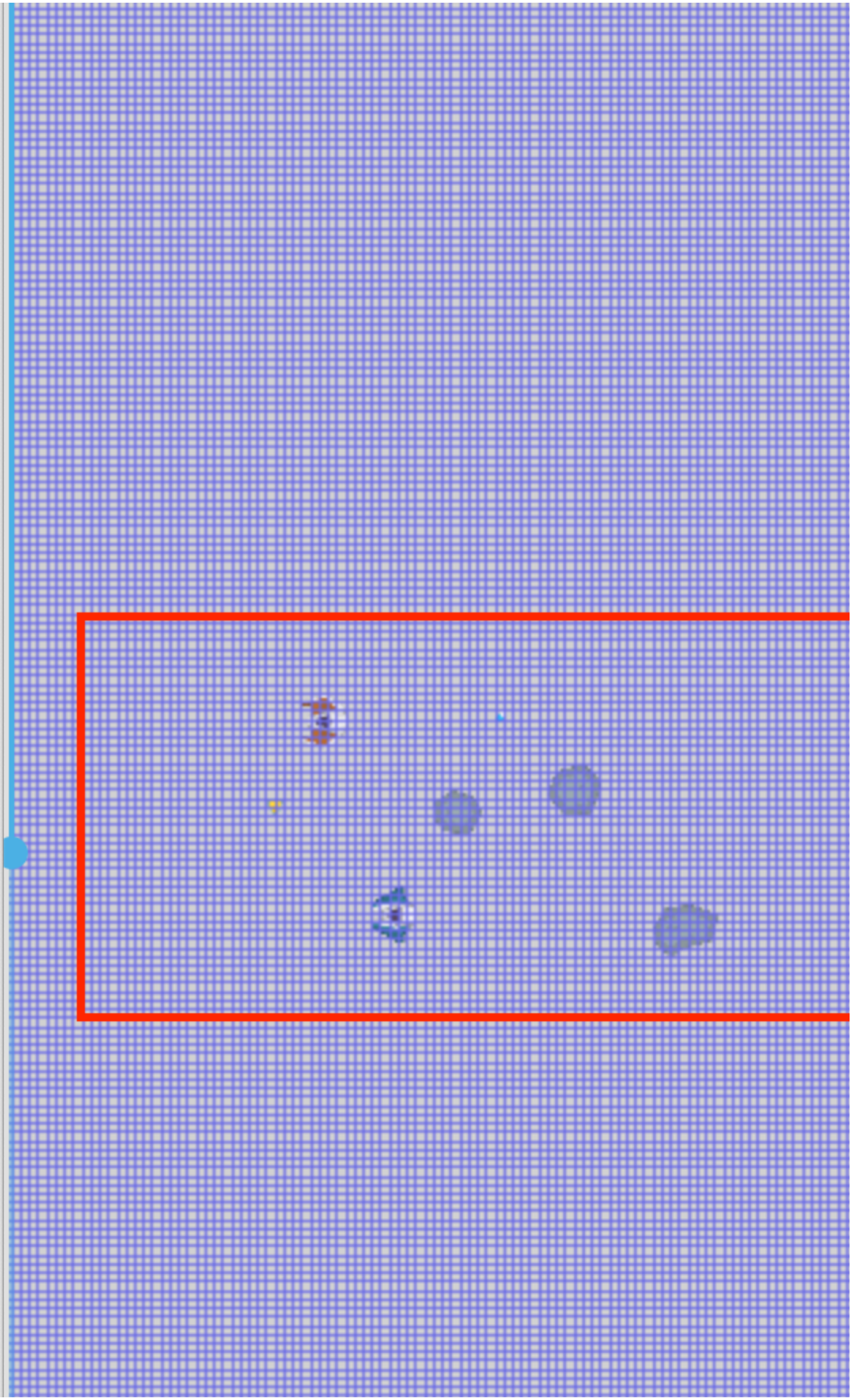


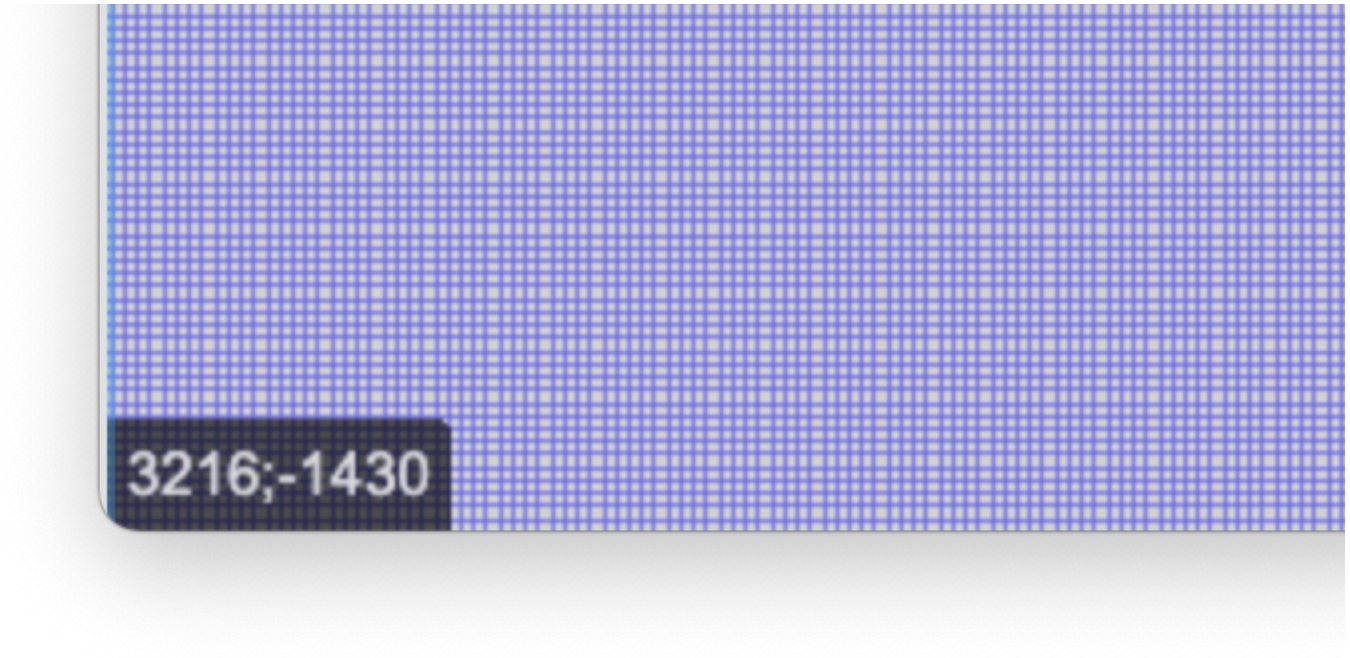

Start Page
Base Scene
Base Scene (



Level 3 as an example:







Next step

Space Shooter, Part 13