Dialogue System Documentation

System Created by Declan McClintock

1 Intro

This dialogue system is set up so you can easily:
- Set up characters
- Enter sentences to display
- Call events during or after sentences are displayed

Sentences will display on a UI box and can be clicked through. Characters will fade in and out when speaking and become transparent when another character is speaking. All of these can be changed in the inspector with options to create a more dynamic dialogue.

2 System Breakdown

There are a series of scripts that work together to create the dialogue system. Each of these scripts are broken down here.

2.1 Speaker

A speaker is a scriptable object that stores information about how the character looks in a dialogue sequence.
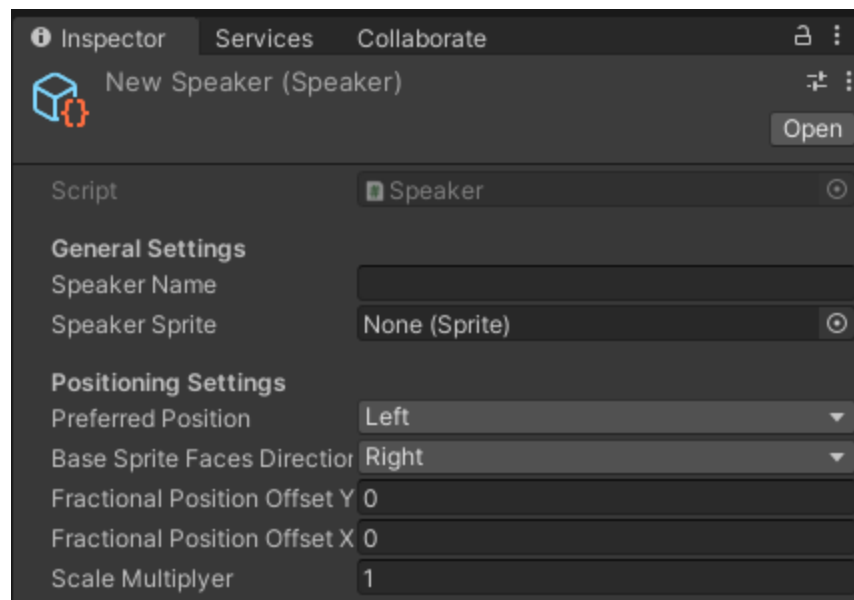
Speaker Name - the name that is displayed when the character is speaking
Speaker Sprite - the sprite that is displayed when the character is speaking
Preferred Position - what side the character would prefer to be on
Base Sprite Faces Direction - what direction the original character sprite is facing

Fractional Position Offset X/Y - alter the default position of the sprite when the character is speaking

Scale Multiplier - what size to scale the sprite by

2.2 Dialogue Triggerer

This script gets placed on a gameobject that triggers a specific dialogue holder when the player enters its collider. Attach this script to the gameobject with a trigger collider.
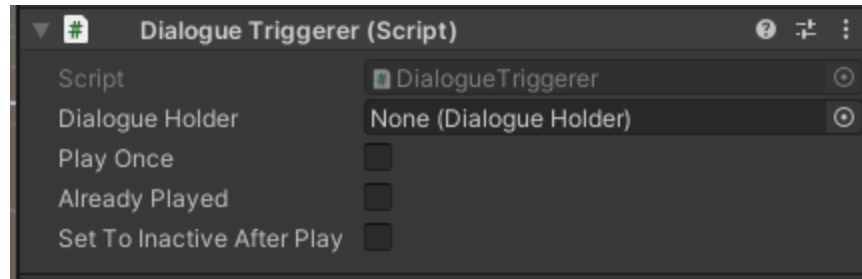
Dialogue Holder - a script that is dragged in from the scene that is played when the gameobject is triggered

Play Once - allows the player to only trigger the dialogue once

Already Played - is set to true after the player has triggered the gameobject

Set To Inactive After Play - sets the gameobject to inactive after triggered

2.3 Dialogue Sprite

This controls the sprites of characters during dialogue. Animations are activated in this script, allowing the character to enter, exit, and fade in and out during a conversation.
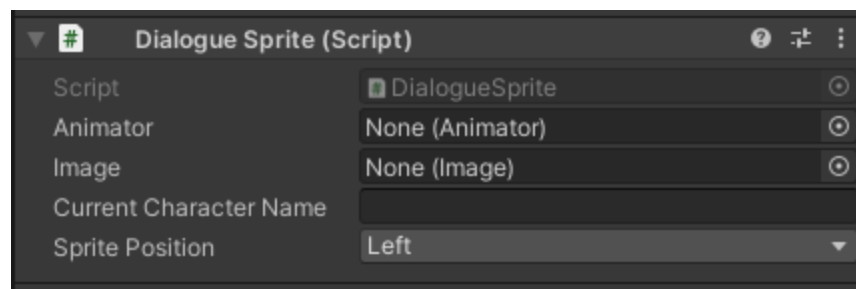
Animator - animator that moves the sprite on and off screen

Image - image of the speaker's sprite

Current Character Name - name of the character currently using this dialogue sprite

Sprite Position - the position of the dialogue sprite on screen

2.4 Dialogue

This script holds the speaker who is currently speaking and all of their sentences in an array. (Is shown as Element 0)
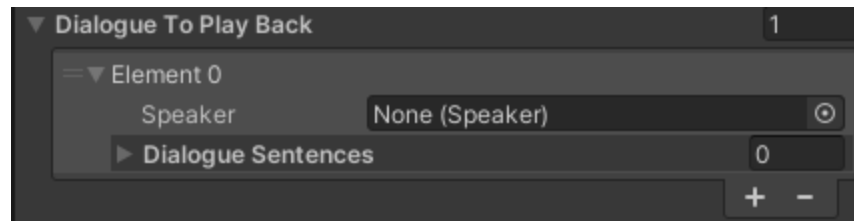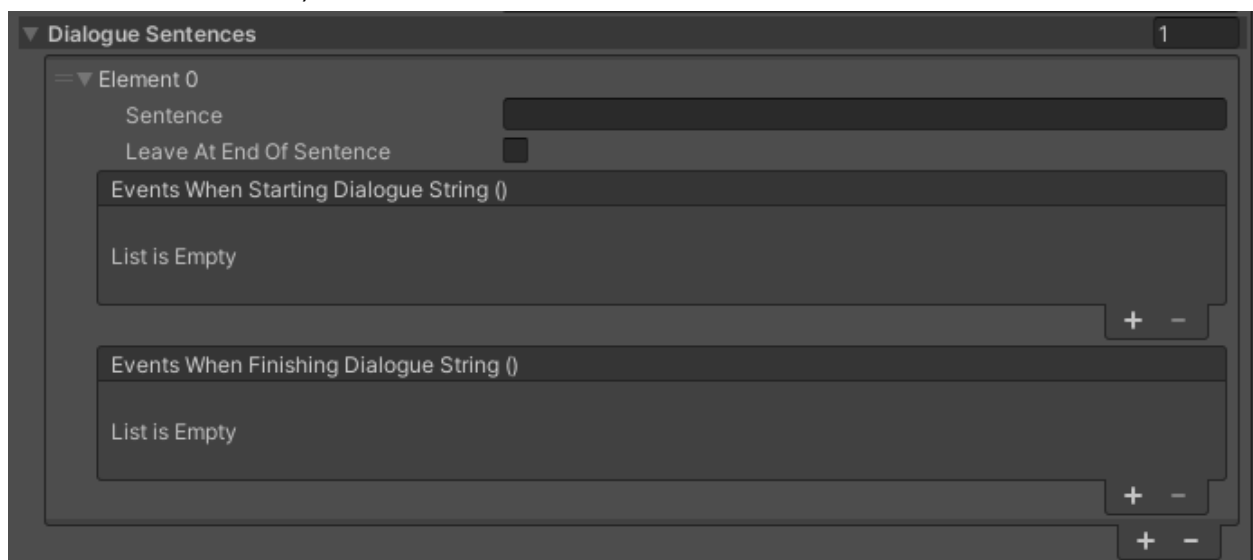

Speaker - the character that is speaking this dialogue
Dialogue Sentences - the dialogue strings that are being spoken

2.5 Dialogue Sentence

This script stores a sentence and the events that are paired with the sentence. (Is shown as Element 0)


Sentence - the sentence the speaker is saying
Leave At End Of Sentence - when set to true, the speaker leaves the screen after their sentence
Events When Starting/Finishing Dialogue String - events to play at a specific time during the speaker's sentence

2.6 Dialogue Holder

This script must be dragged onto a gameobject in the world. This is where you will set up the dialogue to display in game.
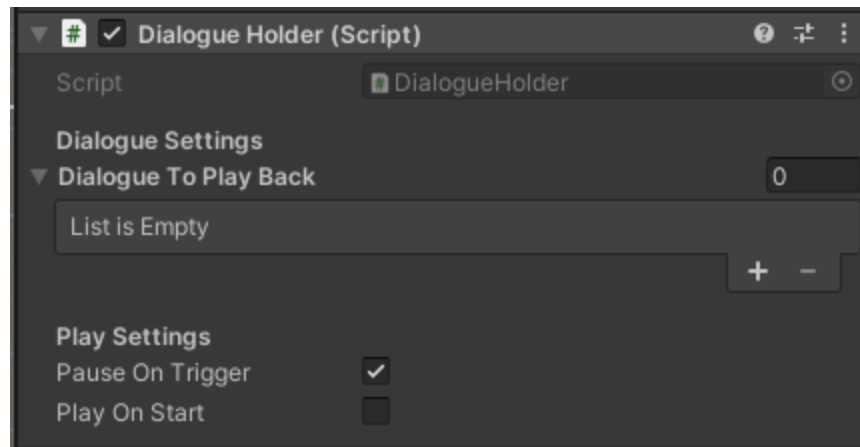
Dialogue To Play Back - a list of Dialogue objects
Pause on Trigger - will pause the game when dialogue begins if set to true
Play on Start - plays the dialogue when the script starts

2.7 Dialogue Manager

This script is on the DialogueCanvas prefab. It displays the dialogue UI, sets sprite position, and displays current sentences. First it creates a queue of dialogue strings, then sets and animates the sprite and determines what side to display them on. Next the box and UI are animated, filled in, and the first sentence is displayed. When all the sentences have been displayed, this ends dialogue, closes UI, and animates the sprites to leave.
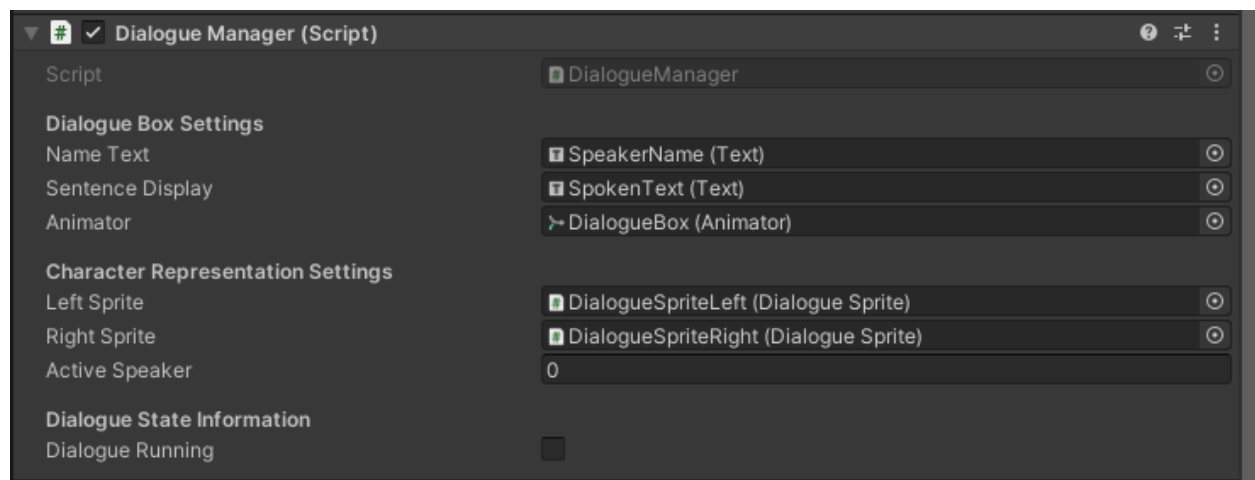
Name Text - text component that displays the speaker's name
Sentence Display - text component that displays the current sentence
Animator - controls the Dialogue Box UI animations
Left/Right Sprite - copies of the speaker's base sprite rotated to face the correct direction to display properly on either side
Active Speaker - what side the active speaker is on (0 is left, 1 is right)

Dialogue Running - is set to true when a character is speaking

3 How to Set Up Dialogue

Dialogue in games is a great way to help guide the player through the world, introduce a story, and make the player feel connected to the game. This dialogue system is basic and easy to navigate - one character speaks at a time, up to 2 characters can be visible at once, and there is no limit to the number of characters in a conversation.

## 3.1 Add the Dialogue Canvas Prefab to the Scene

The first thing to do is add the Dialogue Canvas to the scene so the dialogue will display properly.

Navigate to the Dialogue System folder in the Project tab
DialogueSystem > Prefabs > DialogueCanvas
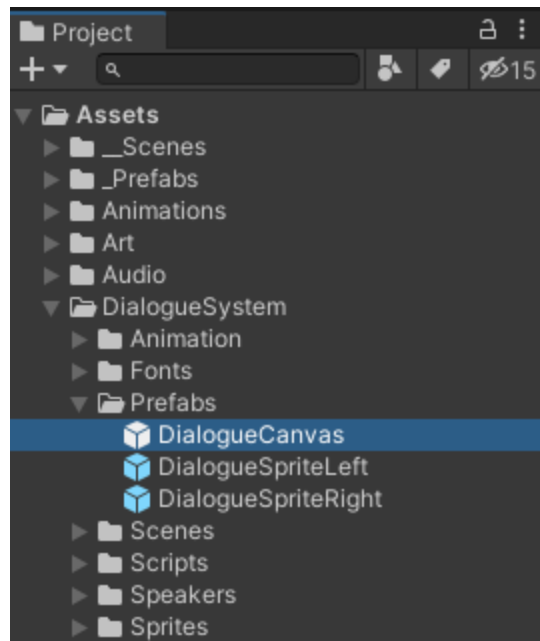
Drag the Dialogue Canvas into the scene
- If you change the screen resolution in the game or build, make sure to change the reference resolution under the Canvas Scaler to the resolution you are working in
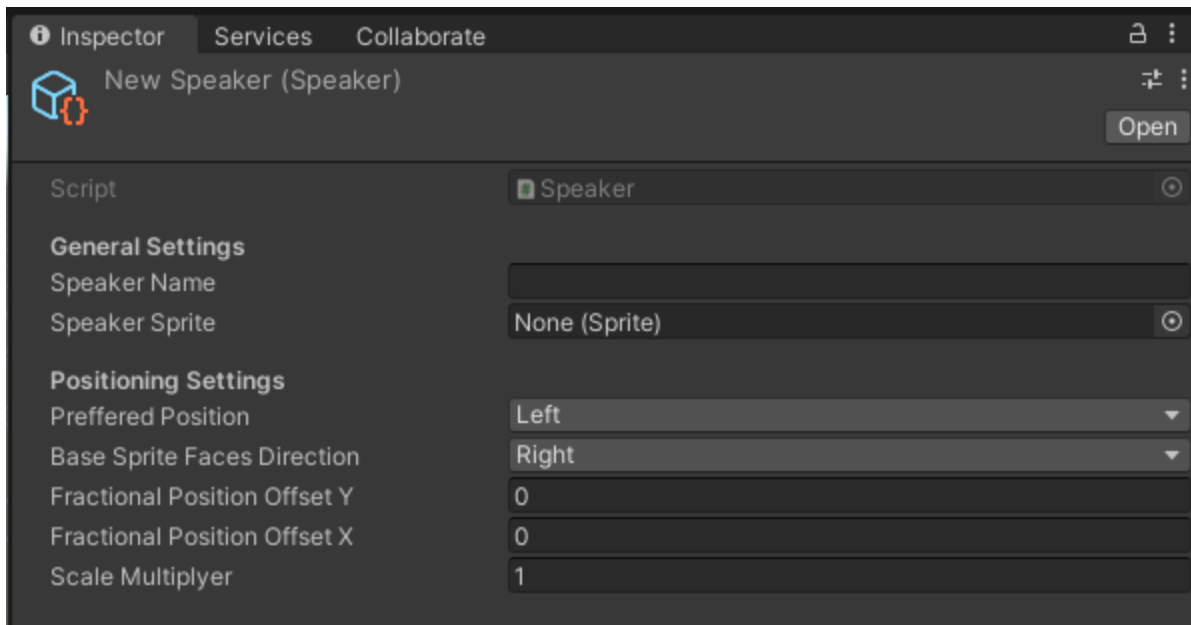- The initial prefab's canvas scaler is set to 1920 by 1080
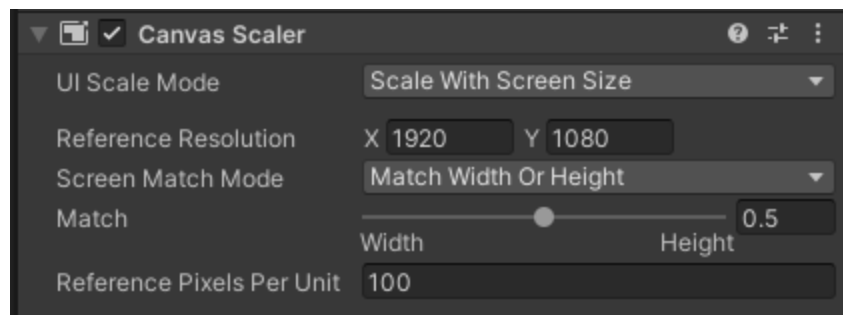
3.2 Create a Speaker

A speaker scriptable object holds all of the information for how the speaker looks in conversation in UI.

Assets > Create > Dialogue > Speaker
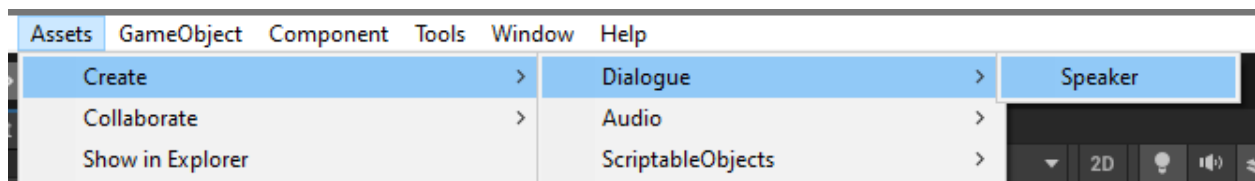
For the general settings, fill in the name and sprite you want displayed when the character is speaking.

The positioning settings are for altering the sprite's positioning and size
- Preferred Position - what side the sprite will try to be set to, the system handles for situations when that spot is already taken
  - For example, the main character is usually on the left in dialogue sections in most games
- Base Sprite Faces Direction - the system needs to know what way the Speaker Sprite is facing by default to have the character be facing the proper direction during conversation

We suggest keeping speakers in their own folder - since you will need to reference them often when setting up dialogue

Fun fact: you can set up a speaker without a name or sprite for a "narrator"

3.3 Set up Dialogue Holder

The Dialogue Holder is where we set up the conversation and how it is triggered in game.

First create an empty gameobject and drag the dialogue holder script onto the object.
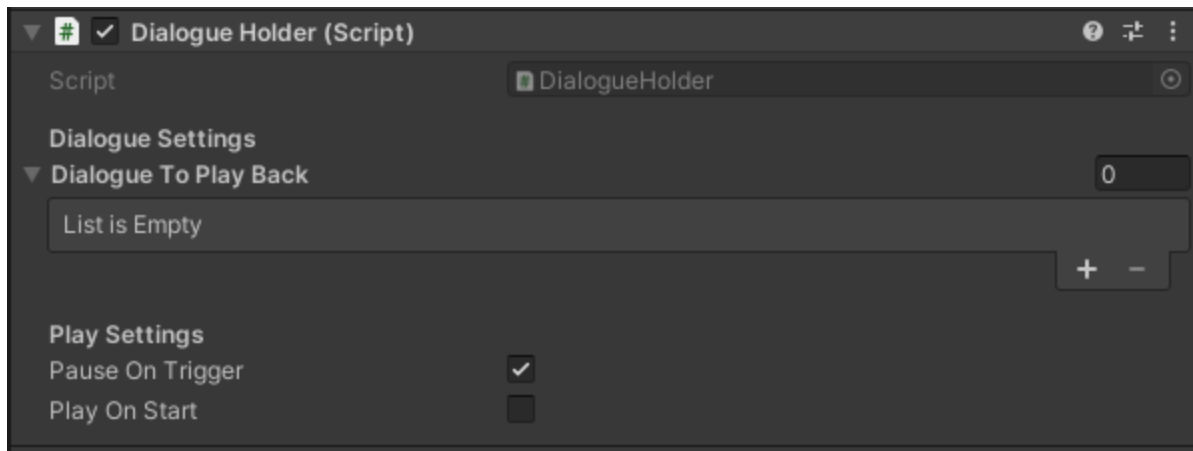
The Dialogue to Play Back list is where sentences will be added. Pause on trigger will cause the game to pause when the dialogue begins, setting the time scale to 0. Checking Play on Start will cause the dialogue to play when the scene starts.
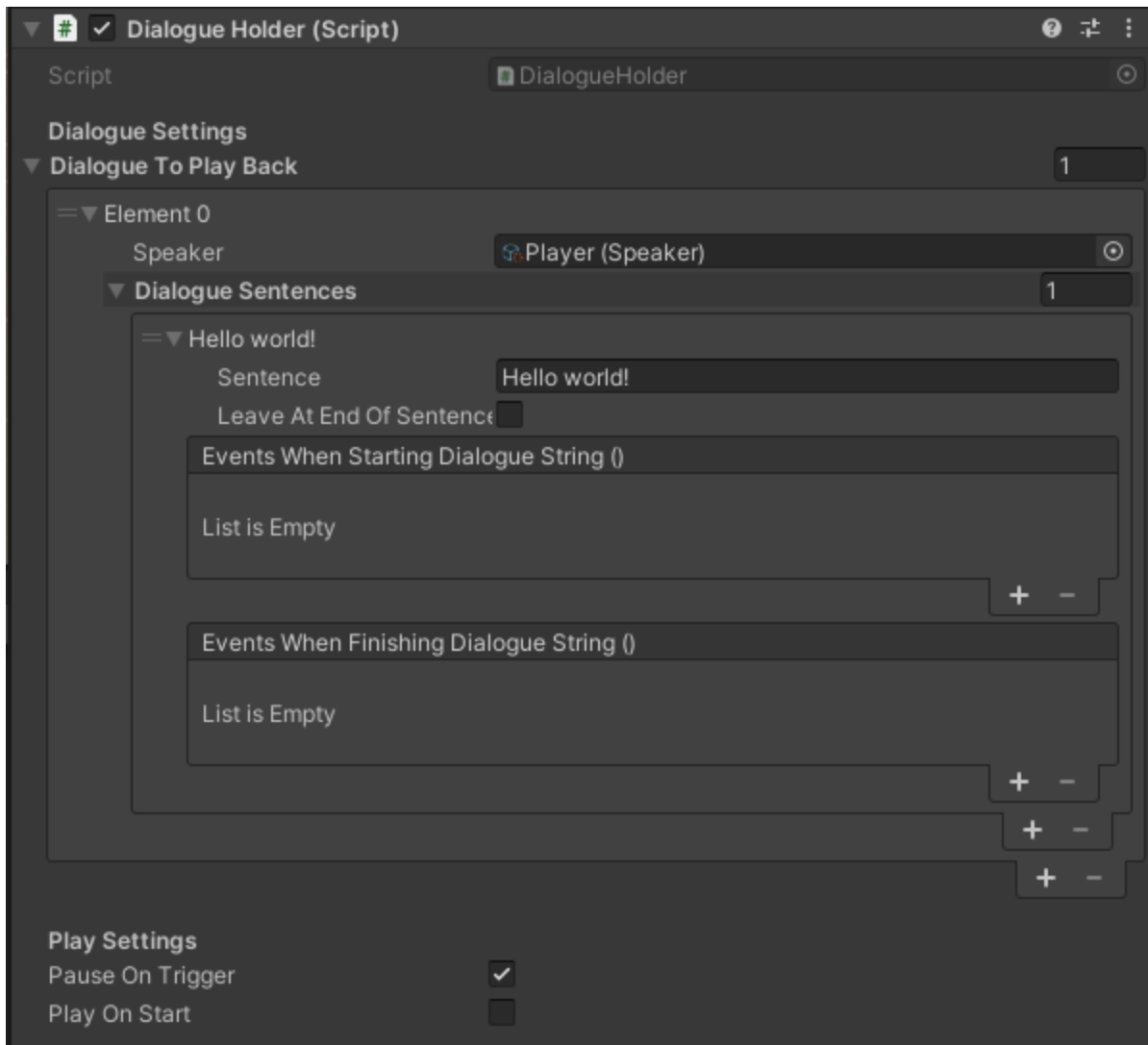
3.4 Add Sentences

To add sentences, hit the + under the Dialogue to Play Back list and drag in your speaker gameobject

Now that our speaker has been added into Element 0, we can begin adding sentences for the speaker to say.
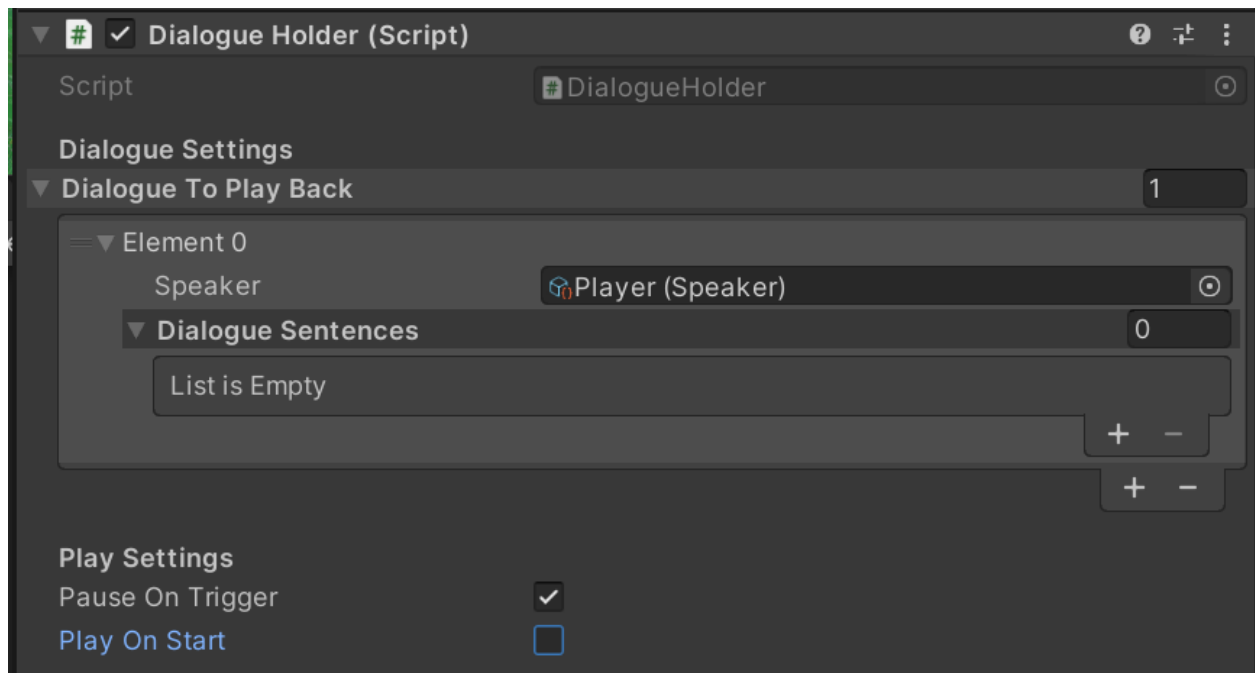
Press the + in the Dialogue Sentences list and add a sentence in the text box.

Now the dialogue system knows and will display the Player character saying "Hello World!" as the first line of dialogue.

If we leave this as the only line in this dialogue holder, the player sprite will disappear once the sentence has played. If you want the character to leave at the end of the sentence - used for characters leaving conversation before the conversation ends - check the box that says Leave at End of Sentence.

We can also have events occur when specific lines of dialogue begin and end. These can be created just like Button events, some examples of common events you might want to set up are:
-   Enable game objects - open door, show key, etc.
-   Create win condition for the game

Rather than focus on events, let's add a second speaker. This is done the same way we created the first speaker, by pressing the + at the very bottom of the Dialogue To Play Back list.

The second speaker will enter when their first line is played.
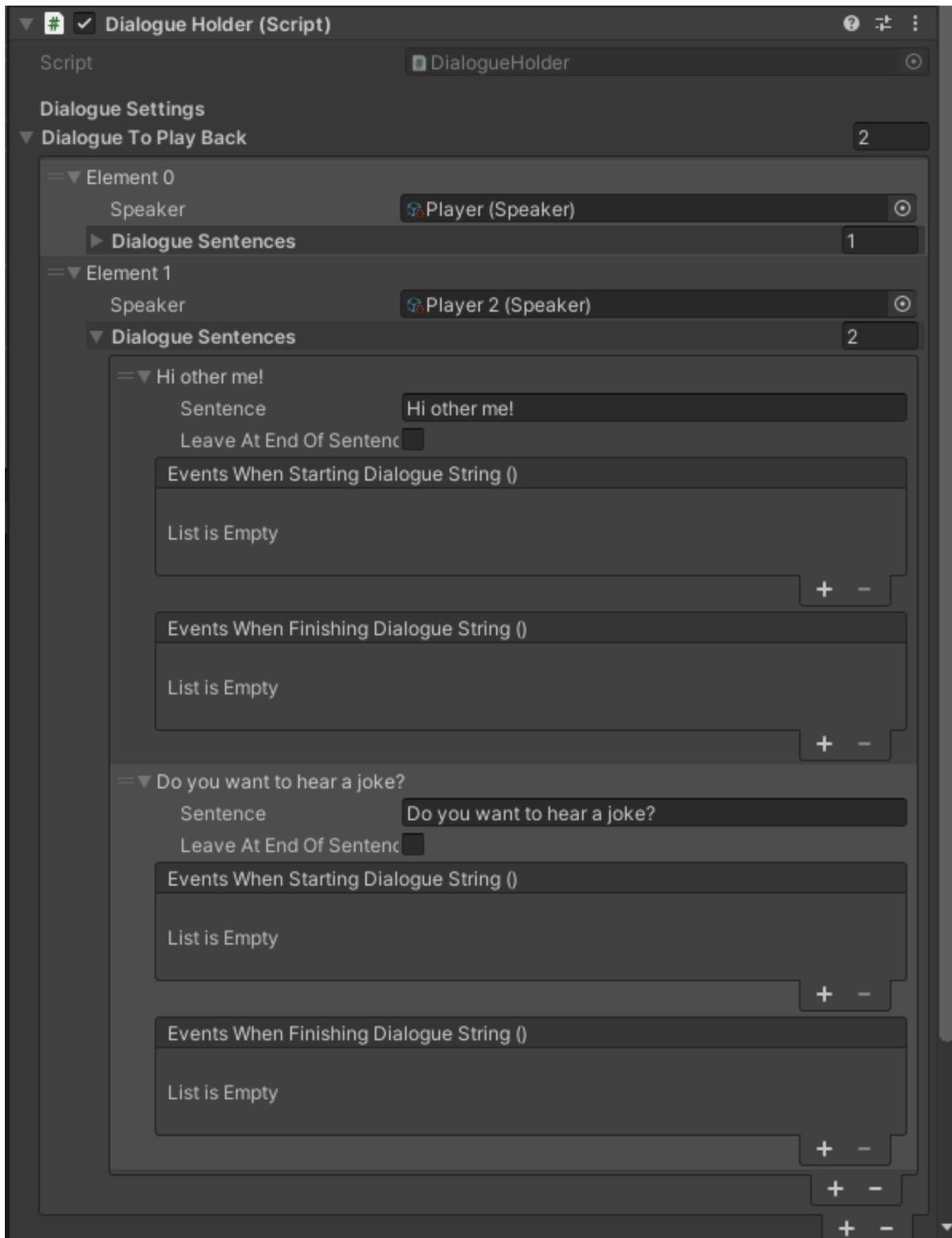
You can split up sentences so they will display one sentence at a time, the next sentence will be displayed after the continue button in the dialogue box is pressed.
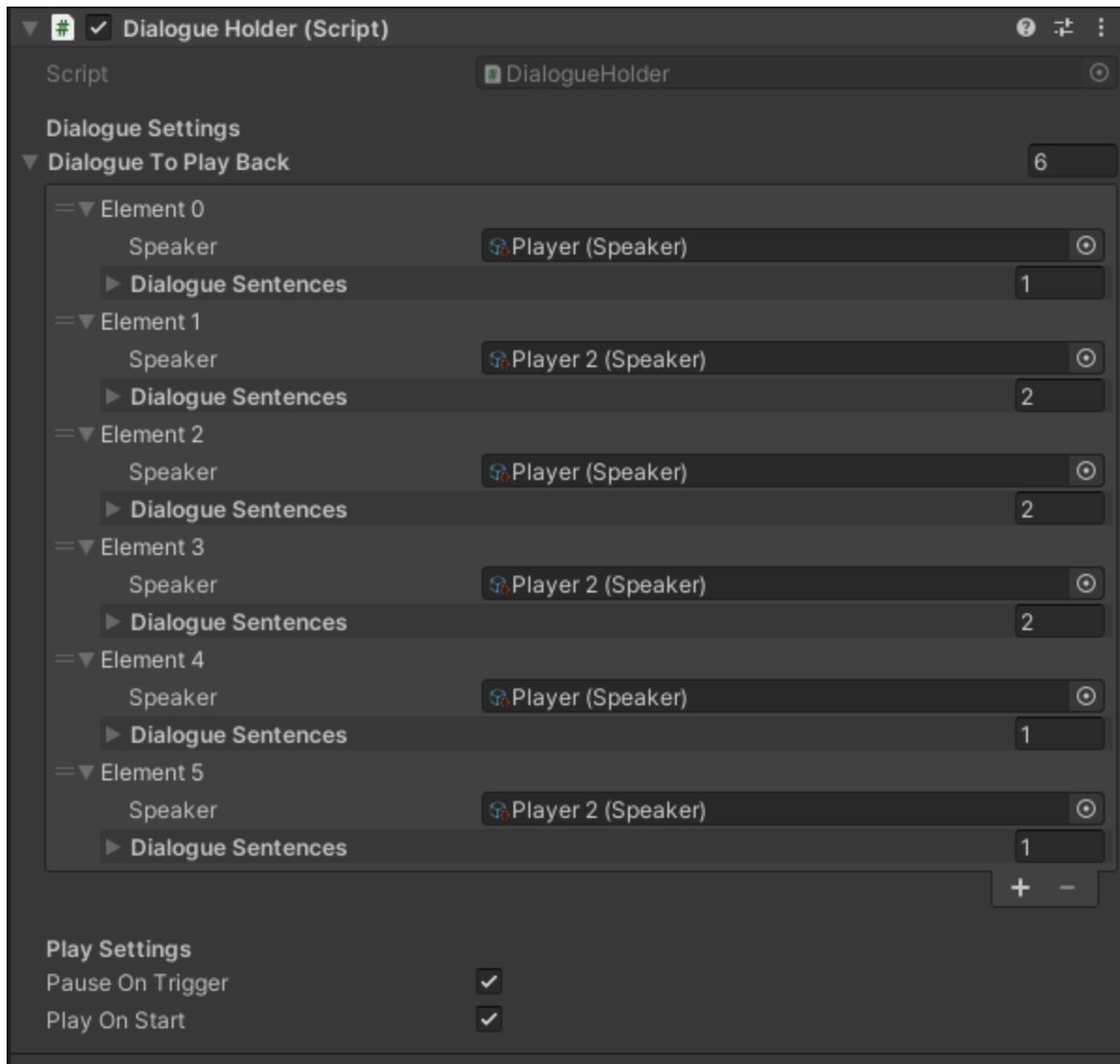
Here is what a set up dialogue looks like. As you can see, the Player and Player 2 are every other slot in the list, each with their own dialogue sentences.

To quickly test dialogue, you can check the Play On Start checkbox at the bottom so the dialogue displays right away.

## 3.5 Triggering Dialogue on Player Enter

If you want the dialogue to be triggered when the player enters the object, create a 3D object with a collider, make sure it is set to "IsTrigger."

Now find the script called Dialogue Triggerer under DialogueSystem > Scripts > Dialogue > Interactables > DialogueTriggerer, and drag that onto the 3D object with the trigger collider.
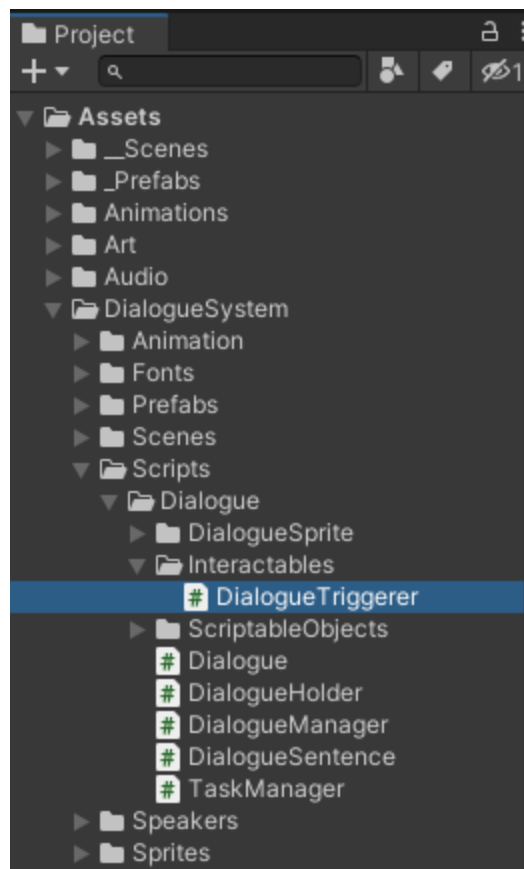

This script has a few options for us, but we just need to set the Dialogue Holder object with the Dialogue Holder we want to play when the player triggers the gameobject. Find the gameobject in your scene with the Dialogue Holder script on it and drag it into the slot.

Make sure the player is tagged as "Player" and has a rigidbody, otherwise the dialogue will not be triggered.
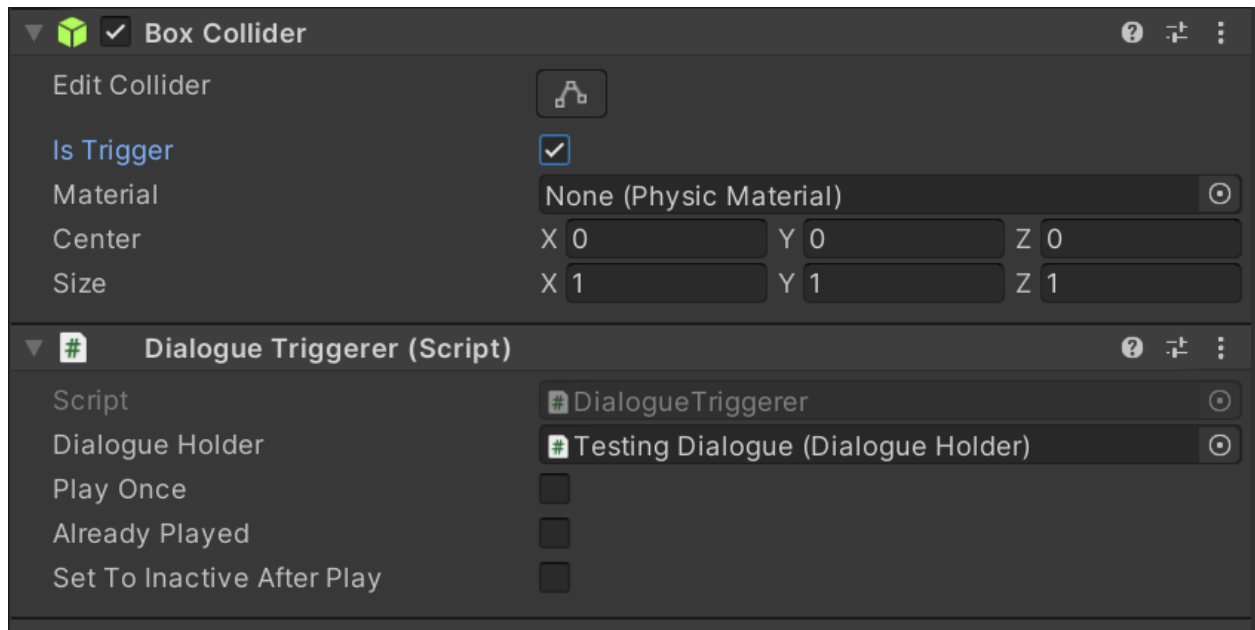
Lastly, uncheck the Play On Start checkbox in the Dialogue Holder script so the dialogue will only play when the Player triggers the 3D object.
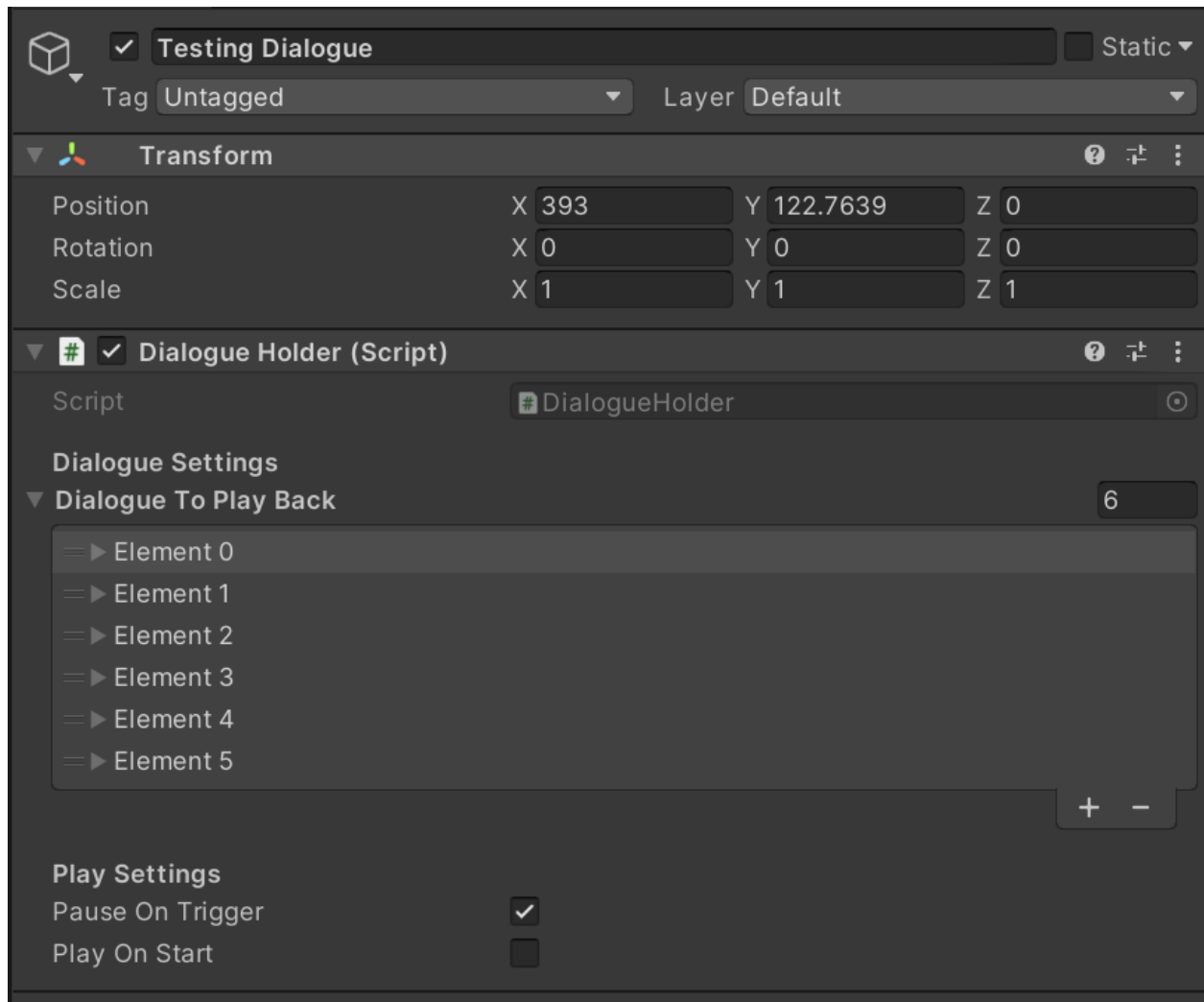
Now your dialogue plays when the player walks into the gameobject!

3.6 Customize your Dialogue

This system is built for easy customization of dialogue. You can set up characters entering and leaving, have up to 2 characters on screen at once, and trigger events during different lines of dialogue to create different scenarios within your game.