

## Project Setup and Forest Scene Creation

Hey everyone! Lovely to see all of you here!

Welcome to the game development course using Unity. Today, we are going to look at creating a new project called “Food web”. I’m excited, let’s get started!

Today, we will learn how to create a new project in Unity and setup the game theme. Before we start, ensure that you have the latest version of Unity installed on your system.

Go to projects and click on ‘New’. Remember to select the version that you want to start creating with!

This project is going to be a 2D one, so let us select the 2D template and name this project as “FoodWeb”. With that, select the location on your local disk- this is basically where you want to save this project. I’m choosing Projects folder as the local directory where I want to save this project. Now click on ‘Create’.

Remember that Unity will take time to set up your project with 2D libraries and the required files and we are done!

Once the Unity project is launched we have multiple windows. On the top left side, it is a ‘Scene window’. This is a place where all the images and the objects go in for a game design. The output of scene window is seen below in the ‘Game window’. This is place where you get to see the final output of the game design. On the right side of scene window is the ‘Hierarchy window’ and it contains all the objects currently used in the game design. Below this is a ‘Project window’ which contain all the assets for our game design like images, shaders, 3D models, sounds etc.

Along with Project tab, we have Console tab too which show the output & debug logs of the game design. On the right side, we have ‘Inspector window’. It shows all the properties of the selected object from the hierarchy window or project window. For example, if I select Main Camera, it lists down all the properties of main camera

So, let’s begin creating our game design.

Before we proceed, let's save the scene. To do that, go to File and click on Save As. Select the Project folder, go to assets folder and then scenes folder. Name your scene as "Forest Scene". Double click on assets folder to see the created scene. Delete the sample scene as we don't need it. Next, let's add some images to the assets folder for designing the game. The images can be download from the description link below.

Go to the asset folder, right click on it and select create and click on folder option. Name this folder as 'Images'. Double click on images folder and create another folder called as "Forest". Double click on this folder and add images to it. Use the downloaded images from local drive. There are multiple ways to add images. Either you can drag an image to the folder as shown or right click in the forest folder, select 'Import New Asset' option. Select the images and click on import. Another way is to go to Assets section in the top menu. Click on Import New Asset and follow the same step as done previously.

Great! Let's begin adding these images to the scene!

Let's minimize this game window. Select the Hand tool from the top of scene editor to centrally align the Scene view.

We'll add Forest image as the background. To do that, go to hierarchy window, right click, select UI option and click on Image. Canvas gets created with image inside it. Canvas keeps all the 2D images, UI elements etc. that can be used in the scene.

As the camera angle is not, let's render the canvas to set the proper view. There are 3 ways to render the camera – Screen Space Overlay, Screen Space Camera and World Space is the last. Select Screen Space Camera. We noticed that Render Camera is missing. This indicates that the camera called the main camera is missing. The role of main camera is to focus on the scene that is going to be displayed as an output or in our case, how the user sees it.

To set the camera view, select Canvas to see the properties of it. Drag Main Camera and drop it on the field of Render Camera. You can select the same by clicking on the small circle and selecting the same from there.

Also, when you double click on any of the object, it gets focused in the scene editor. So, let's zoom out by scrolling down. Rename this image to 'Forest

Background' which you can do by right clicking on it and select rename option or rename it in the Inspector window.

Select the Forest Background object to add Forest image onto it. To do that, go to the inspector window, click on the dot circle of Source Image section under Image component, double click on the Forest image. Right now, the image looks very small.

So, let me just go to the forest background object. Click on the inspector window and click on the button called the 'Set Native Size'. This will expand the image to its original resolution. The image is not centred currently. To get it to the centre of the screen, we are going to set the X to zero and Y to zero, because the coordinate system of unity starts from the centre of the screen. So, anything on the right of the centre is positive x, anything on the top is positive y. Anything below the centre is negative y, anything on the left is negative x.

Now for me the image has fixed perfectly into this, but it might be possible that for some of you the image might not fit perfectly in your scene. As I've set the resolution to 1920 by 1080, which is the master resolution for me to start with. As my forest image resolution is 1920 by 1080, hence, I have opted for the same resolution for my scene. You can create your own resolution as per your choice.

So, we have done with the forest background. Next, we would like to add some hanging leaves in the scene. As you can see, we have an image titled 'Hanging Leaves'. Select it to see its image. To add this, again go to Canvas, right click on it and select 'Create Empty' option. A GameObject is created. Rename it to 'Hanging Leaves'.

Now select hanging leaves, right click on it. Go to UI and click on Image. This is going to be the first hanging leaf. Rename it to "HL\_1". Go to Source Image, click on the dot circle and select Hanging leaves image. Click on set native size to set it to the original size. Select the Rect tool from the top menu and drag the leaf to the shown position.

Now let's create a duplicate of it and rename it to "HL\_2". Select the HL\_2 and drag it on the right side. Align it perfectly with the other hanging leaves. Let's repeat the same steps by right clicking on HL\_2 and select Duplicate. Repeat the same steps for HL\_3, HL\_4 & HL\_5.

Now, we need to make the hanging leaves semi-transparent so that we can see what's going on behind it, without revealing too much in the background. To do that, select HL\_1, press SHIFT and click on the last one to select all the hanging leaves together. In the inspector window, it will show all the common properties of the selected leaves. Click on the Colour. To add transparency, we change the Alpha to 180. You can see the leaves are semi-transparent. Remember to save the scene every time a change is made.

Now, let us add a tree into the scene. To add a tree, right click on Canvas, select UI & click on 'Image' option. A GameObject is created. Rename it to 'Tree'. Go to Source Image, click on the dot circle and select Tree image. Click on set native size to set it to the original size. Position it accordingly as shown on the screen. It is important to keep the Rect tool selected for size and position change. Drag the Tree in between Forest Background and Hanging leaves to avoid overlaying it above the leaves.

Now, we will add bushes in front of all the leaves. To add bushes, right click on Canvas, select UI & click on 'Image' option. A GameObject is created. Rename it to 'Bush\_1'. Go to Source Image, click on the dot circle and select Flower Bush image. Click on set native size to set it to the original size. Position it accordingly as shown on the screen. Right click on Bush\_1 and select duplicate. Drag to the position as shown on the screen. Rename the file as 'Bush\_2'. We will change the type of bush. So, go to Source Image, click on the dot circle and select Bush image. Click on set native size to set it to the original size. Resize it accordingly to fit at the position properly.

Right click on Bush\_2 and select duplicate. Drag to the position as shown on the screen. Rename the file as 'Bush\_3'. Again right click on Bush\_3 and select duplicate. Rename the file as 'Bush\_4'. We will change the type of bush. So, go to Source Image, click on the dot circle and select Bush 1 image. Drag to the position as shown on the screen.

I want all the bushes under one object folder, so right click on canvas and create an empty object. Name this object as "Bushes". Select Bush\_1, hold shift and select Bush\_4 to select all the bushes. Drag all of them to the Bushes object folder. Save the progress.

Click on Play button to see the whole scene. Maximise the game window by clicking on 3 dots and selecting maximise option. Now, let's animate the hanging leaves by moving them left to right and vice-versa to show as if it is moved by wind. Let's click the play button again to go into the editing mode. Before moving further, let's just quickly reposition the flower bush by selecting it bush and moving down.

Now, let's add animation to hanging leaves. Maximise the Hanging leaves object folder and select HL\_1. Go to window, select Animation option & click on Animation. An animation window opens up. Drag the animation window and pin it next to Game window. Now, click on create button and create a new folder under assets folder named 'Animations'. Create another folder under it namely 'Hanging Leaves'. Name the animation as "HL\_Animation" and click on Save.

As you can see 'HL\_Animation' is created successfully. Now, go to the Assets folder, then animations, then hanging leaves folder and the created HL\_Animation. There is another file which got created named HL\_1, it is called as Animator.

Now, I want to move HL\_1 from left to right and right to left. To do that, select the Rotate tool and simply drag to see the angle of HL\_1 getting changed. I can see the change in Z value that defines the rotation change. After experimenting, we can say that 3-degree change will be good for animation purpose.

Now, click on the red dot to start the recording. Zoom out the timeline to see the seconds properly. Set the marker to 1 second i.e. 60 frames, change the z-value in rotation to 3-degrees. Again move the marker further to 2 seconds i.e. 120 frames, change the z-value back to 0 degree. Now stop the recording to see what happens. Select the Rect tool and click on Play button in animation field. So, the animation is added to HL\_1 . Click on play again to stop it.

The good part about unity is that the same animation can be used for other objects if required and you can add onto it easily. Once you select HL\_1, scroll down in inspector window to see the Animator component getting created automatically and the animation created just now gets added to HL\_1 as controller. So, we can use HL\_1 for other leaves too. To do that, select HL\_2, click on Add component in Inspector window and type Animator. Once animator



component gets added, click on the dot circle and select HL\_1 to add the same controller to HL\_2. Repeat the same steps for HL\_3, HL\_4 & HL\_5 to add the same animation to all the hanging leaves. So, we have successfully added the animations. Save the scene progress now.

Switch back to the Game window and select the option Maximise on Play. Now, click on Play button to see the scene created so far. As you can see the scene is working perfectly so far. Stop it by clicking back on the Play button.

So, this is it from the video. In the next video, we are going to learn about how to place different animals into the forest and animate them!

Till then, keep practicing and keep exploring unity. See you in the next video!