```
            fixed4 frag (v2f i) : SV_Target
            {
                // sample the texture
                fixed4 col = tex2D(_MainTex, i.uv);
                // apply fog
                UNITY_APPLY_FOG(i.fogCoord, col);
                return col;
            }
            ENDCG
        }
    }
}
```

Step 4: Create a new material or select the Curtain material if using the warehouse example. In the shader drop-down selection box your new shader will be available as Unlit/*Backface On*. You can now use the material like any other.

2.7.1.3 Level of Detail

Level of detail (LOD) is a technique for providing multiple models and textures for a single object with reducing levels of detail. For example, you may have a high polycount, high-resolution textured model; a medium polycount, medium-resolution textured model; and a low polycount, low-resolution texture model for a single character. The model that gets drawn by the renderer will depend on the distance the camera is away from the character. If the character is close, the highest quality version is used. If the character is far in the distance, the lowest quality version is used.

This method not only mimics human vision-making objects in the distance less defined, but also allows for the drawing of more objects in a scene as the ones farther away take up less memory.

Note, since creating the next hands-on tutorial, Unity has added a new component to handle LODs. While the following tutorial will show you how to achieve LODs manually, you may also be interested in investigating https://docs.unity3d.com/Manual/class-LODGroup.html.

Unity Hands On

Applying Level of Detail in Unity

Step 1: Download the file Chapter Five/LODHouse.zip from the website and open the **house** scene. In the scene you'll find a ground plane with a cobblestone texture and a pink house (called House_4 in the Hierarchy) as shown in Figure 2.47.

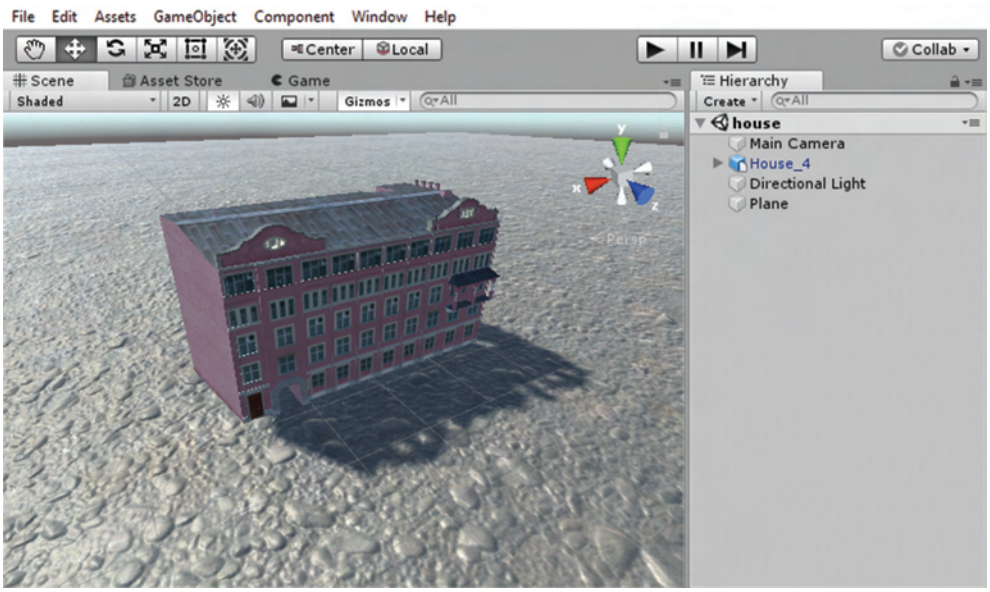

FIG 2.47 The house model placed on the ground plane in the Scene.

Note

The House_4 model was kindly provided by Unity Asset Store artist *ChermandirKun*. Please show your appreciation by visiting his website for more excellent Unity assets at https://www.weblancer.net/users/ShprotZLO/portfolio/.

Step 2: Notice in the Hierarchy, House_4 has three children. These are the house at different levels of detail, though they are not yet in operation. To activate the levels of detail, select House_4 in the Hierarchy then in the Inspector add the LOD Group component as shown in Figure 2.48.
Step 3: With House_4 still selected, slide the camera icon in the Inspector as shown in Figure 2.49 left and right across the LOD Groups. These show the relative distances from the house that each different LOD model will display. As you slide the camera, you will notice the LOD that is activated in the scene, although we have not yet set up the specific models for each LOD so you won't see these changes yet.
Step 4: To setup the models that will appear for each LOD, drag and drop the appropriate child model from House_4 onto the differing LOD bands in the Inspector as shown in Figure 2.50.
Step 5: Now as you move the camera closer or further away from the house the different LOD models will display based on your distance from them until you are so far away the model is completely culled. Note you can also adjust the bands on the LOD colored percentage slider to modify the distances at which each LOD appears.

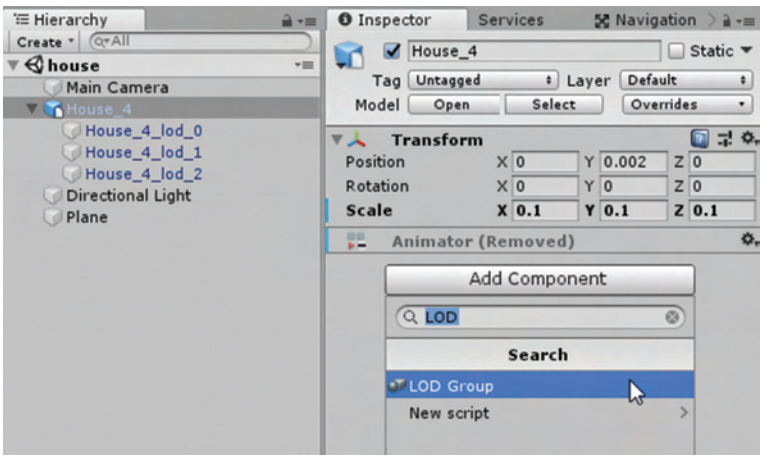

FIG 2.48 Adding a LOD Group to a model.

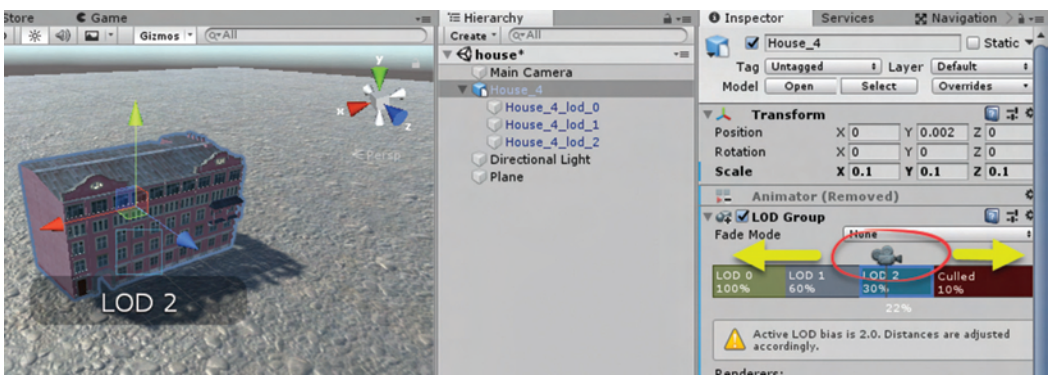

FIG 2.49 The LOD bands.

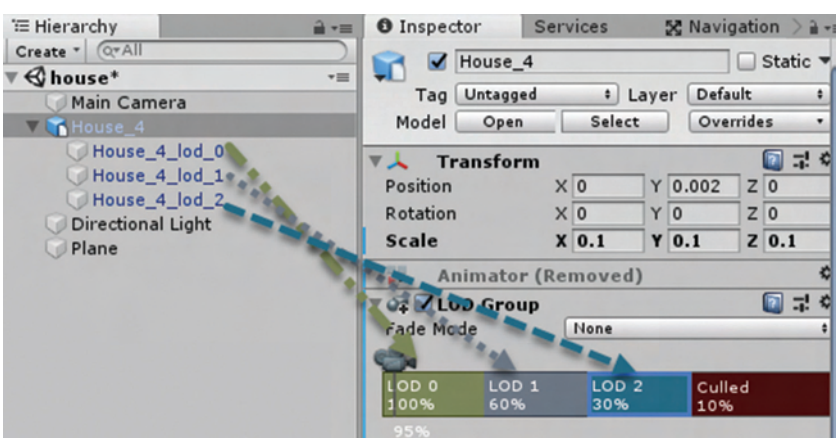

FIG 2.50 Assigning models with differing levels of detail to the LOD component.