GEOMETRY COMBINER

Advanced Mesh Combine Tool

Introduction

This plug-in is used to combine multiple meshes and materials.
Simple in front, complex inside.
This document will show you how start quickly and confident.

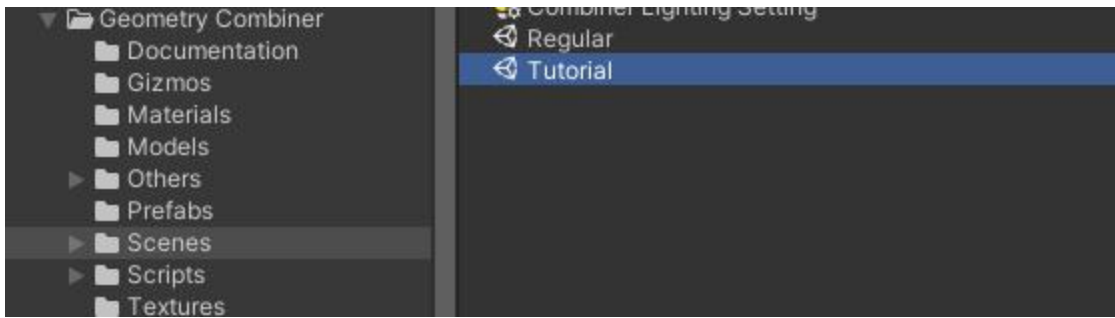# Colors Guideline

Red Color: Important Parts

Blue Color: Links

Beige Color: Comments

Green Color: Point To Variable

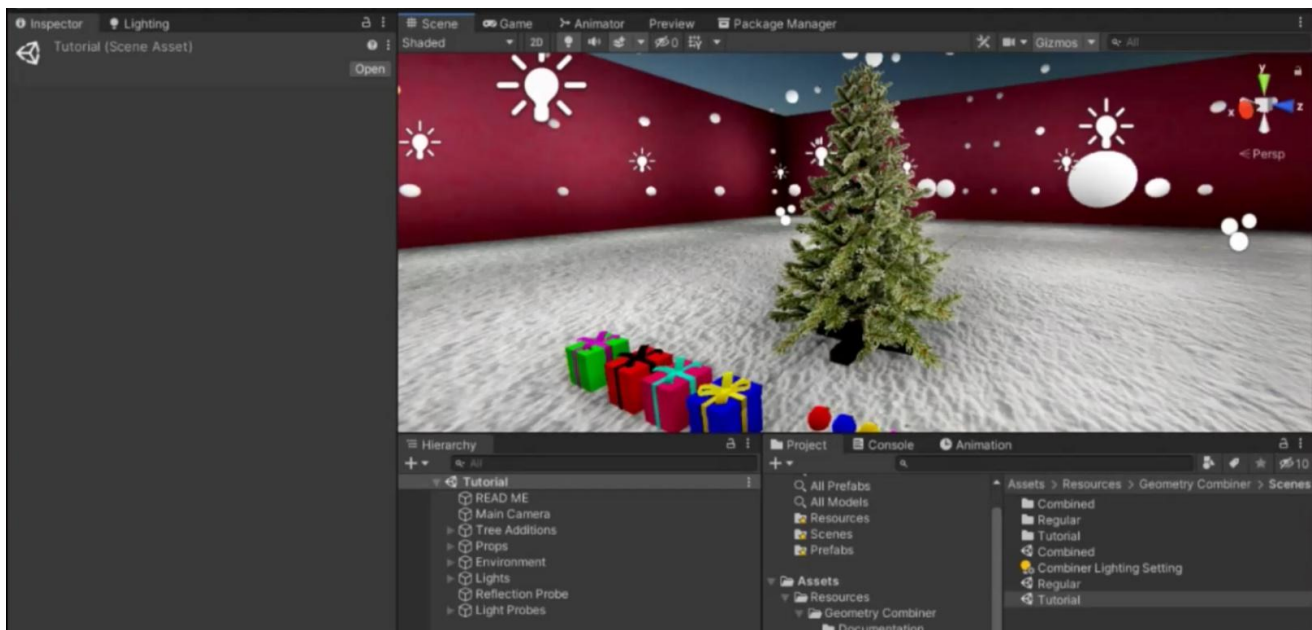**Bold** Text: **Variables** Or **Notes**

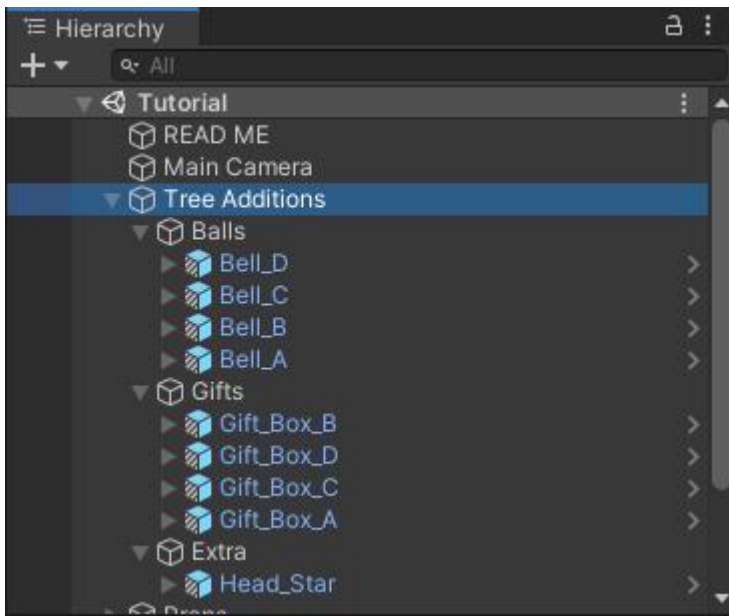Pink Color: Unity Editor Options

As we start you can find the 'Tutorial' called scene under 'Scenes' in package, open the scene and continue.

While we're in the scene we face with tree and props to decorate the pine tree.

you can find the props as child of 'Tree Additions'.

'Tree Additions' gameobject, you can find the props as the child of its relevant gameobject.
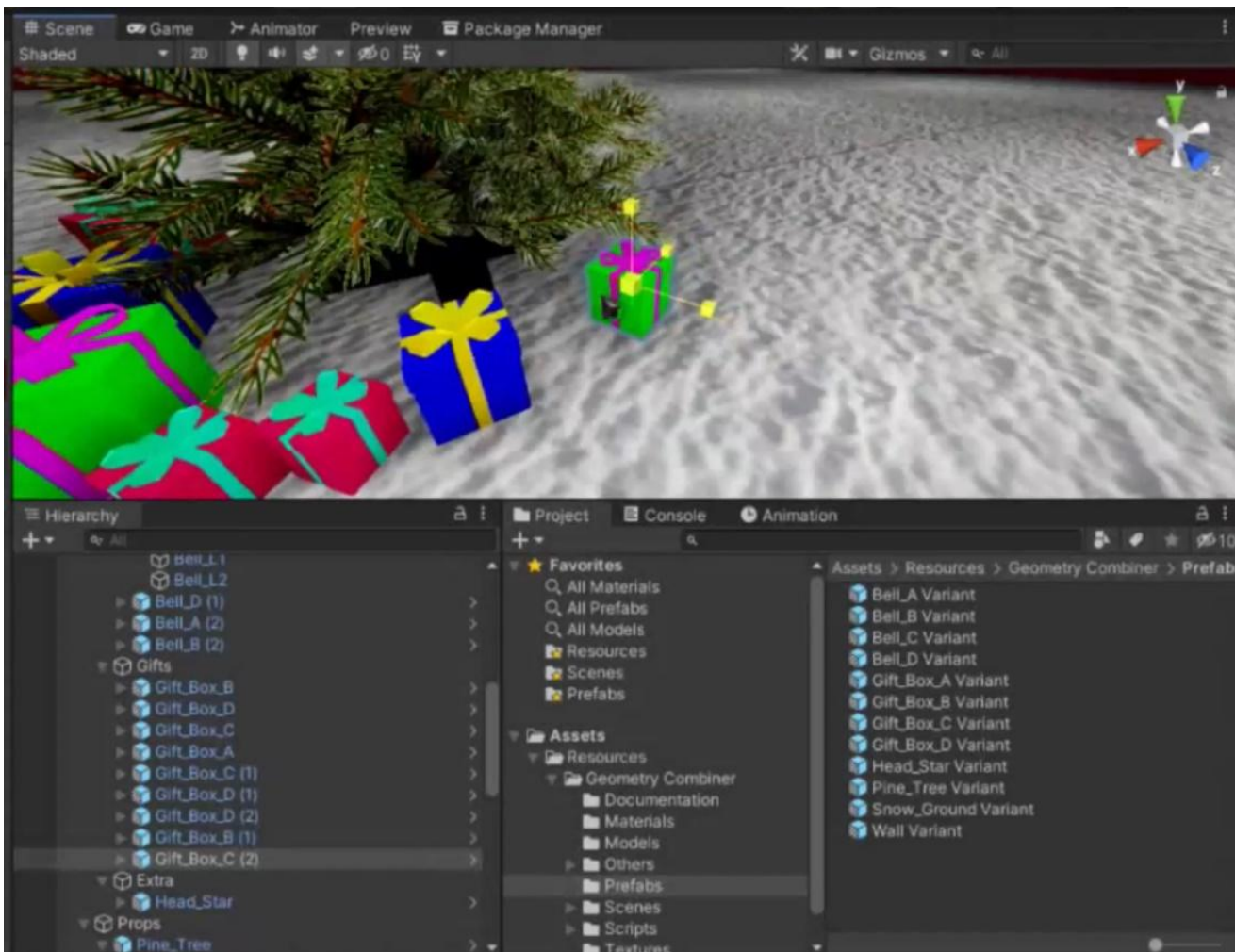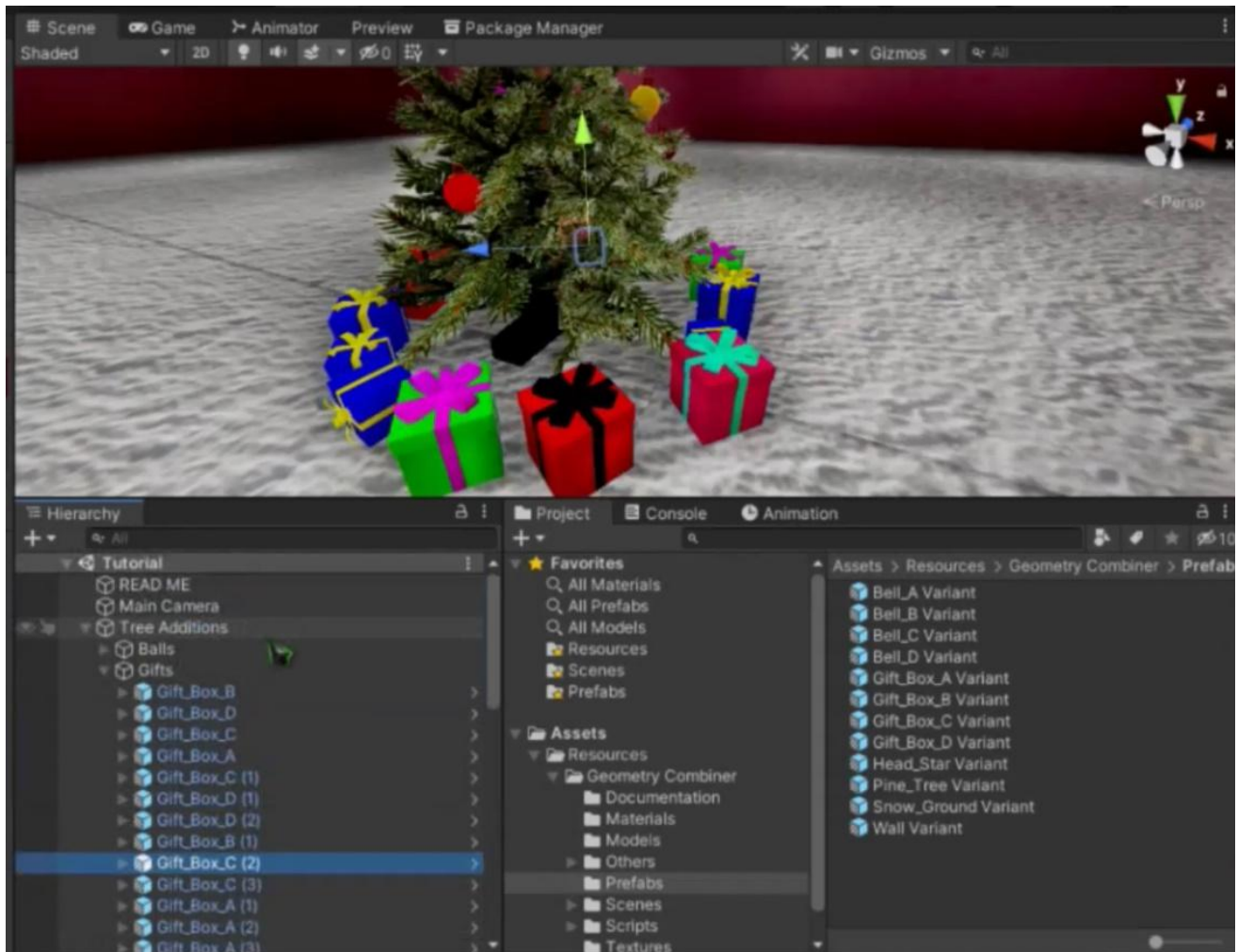
Feel free to move,scale,rotate,duplicate,delete the props and decorating the tree with those.

quantity,size,position,rotation are not matter for combine.

when you are satisfy with props you can go to next step.

Cut or Copy the decorated gift boxes,just select the props.
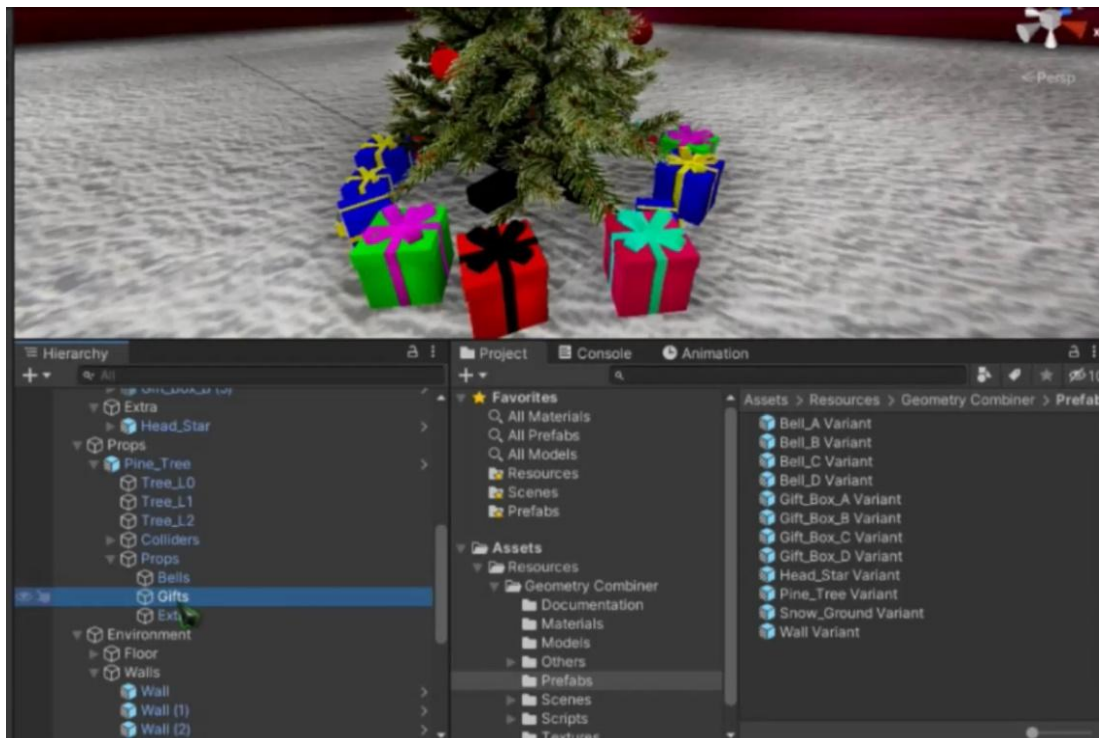
Select the 'Pine_Tree' under the 'Props' game-object select

'Gifts' and Paste the gift boxes you've copied as children of 'Gifts'.

don't separating the props in different

groups has no problem,but for keep everything organized we put
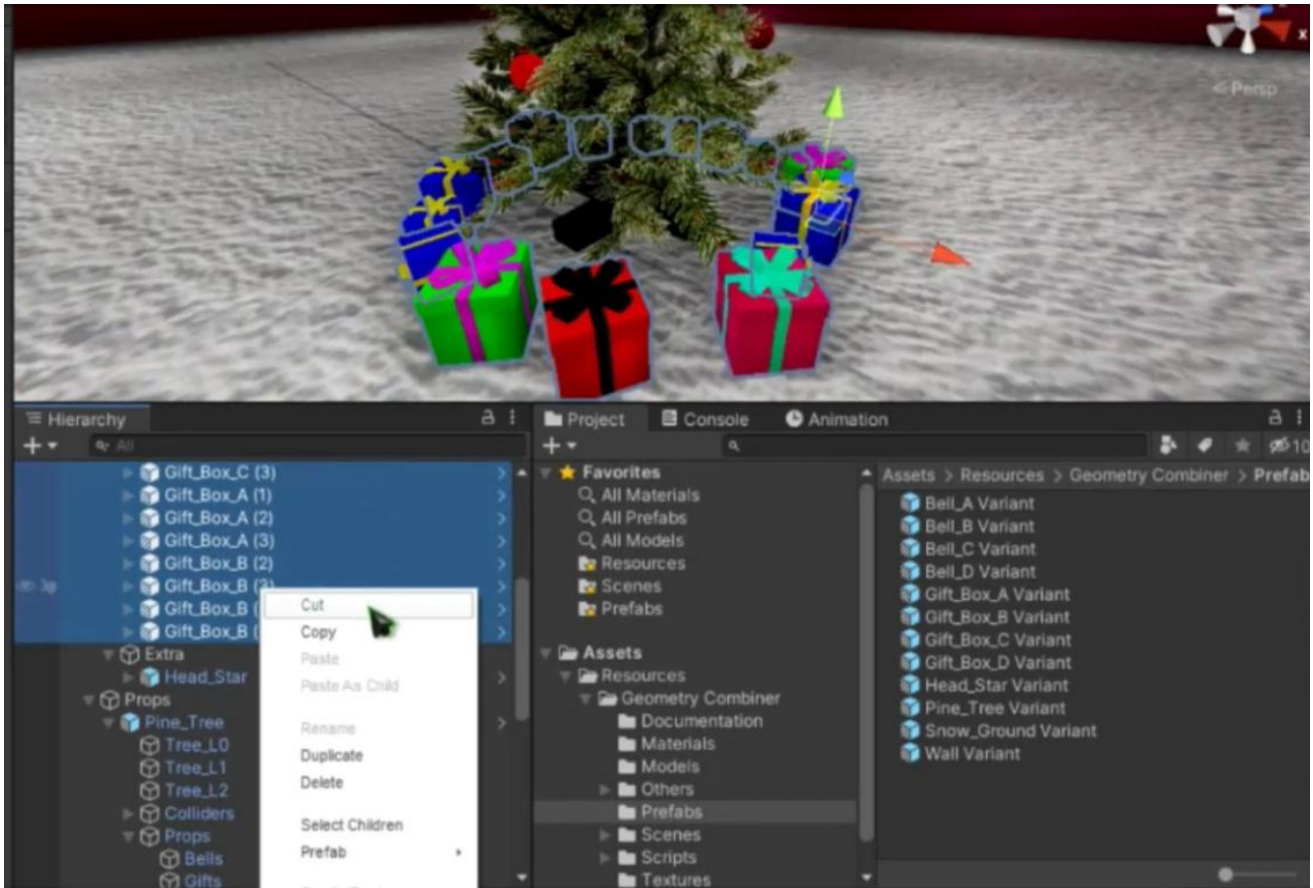
the gift boxes as (Gifts) children.(Props/Gifts)
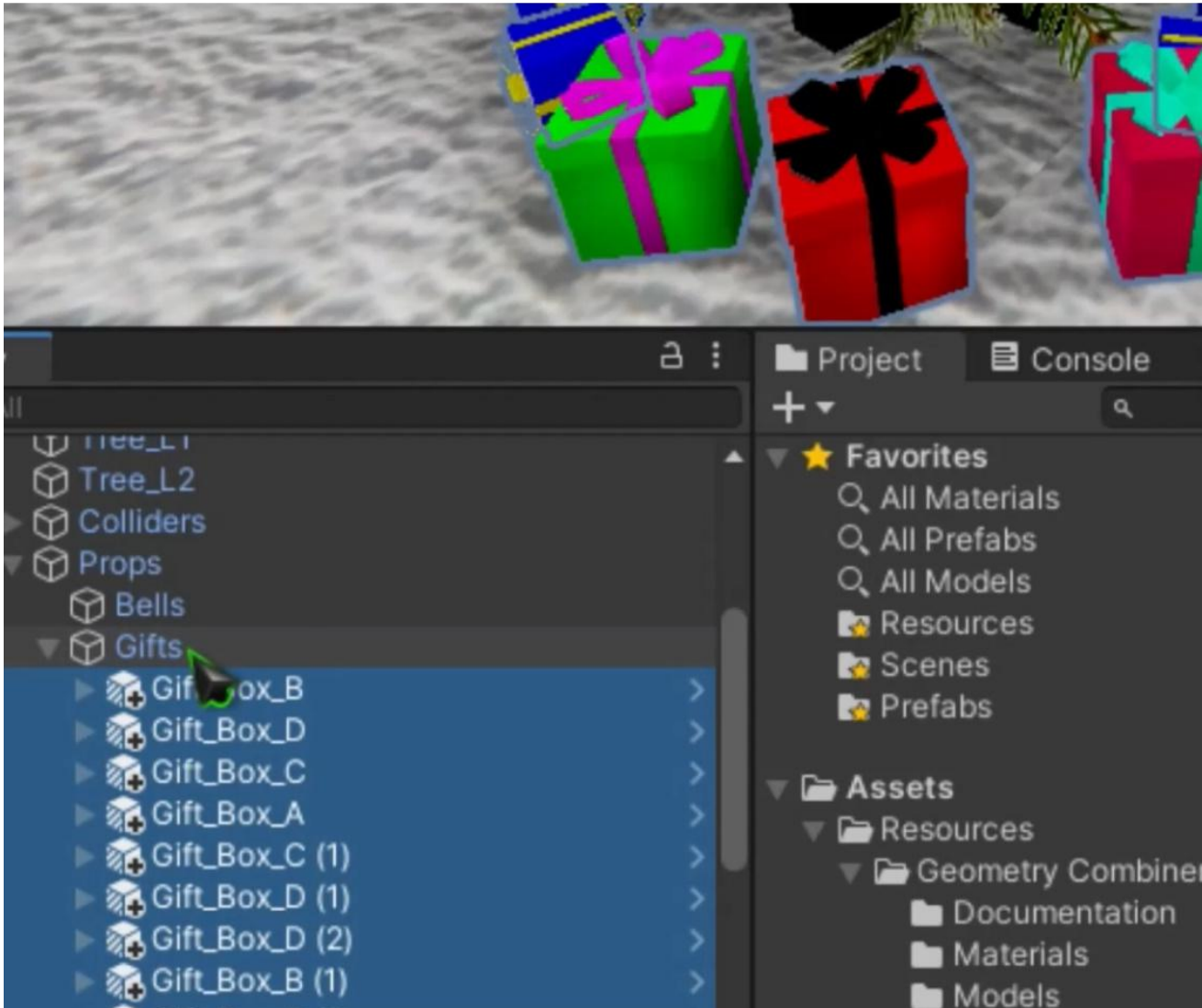
After you copied to Gift Boxes as child of 'Gifts' game-object

you face with top picture situation.

The reason why we copy as children of the game-object is,

Geometry Combiner combines, the meshes which are children of

the game-object script is attached to.
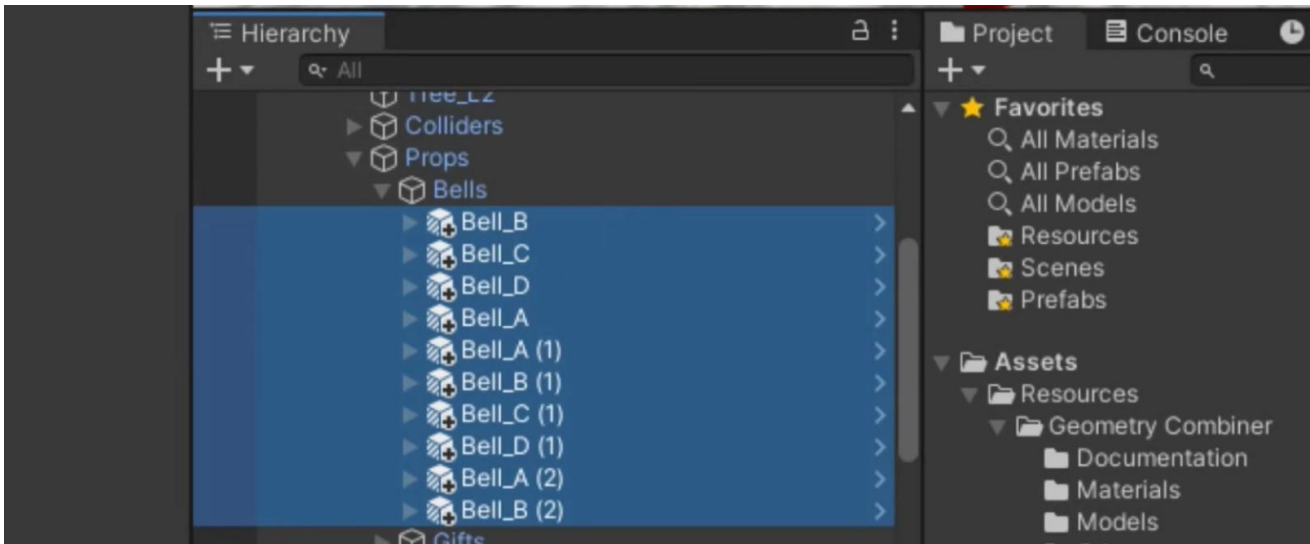
Do the same thing for bells Copy and Paste them as children of 'Bells' called game-object (Props/Bells).

And finally Copy & Paste the Head_Star as the child of 'Extra' (Props/Extra).
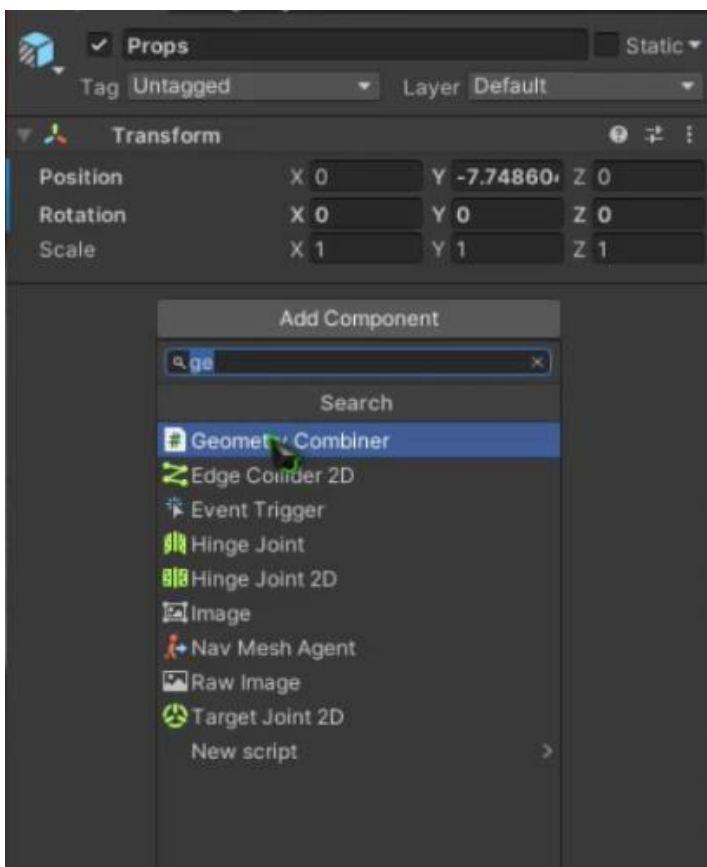
Select Props (Pine_Tree/Props) click on Add Component type a partial name of **Geometry Combiner**, add the component.
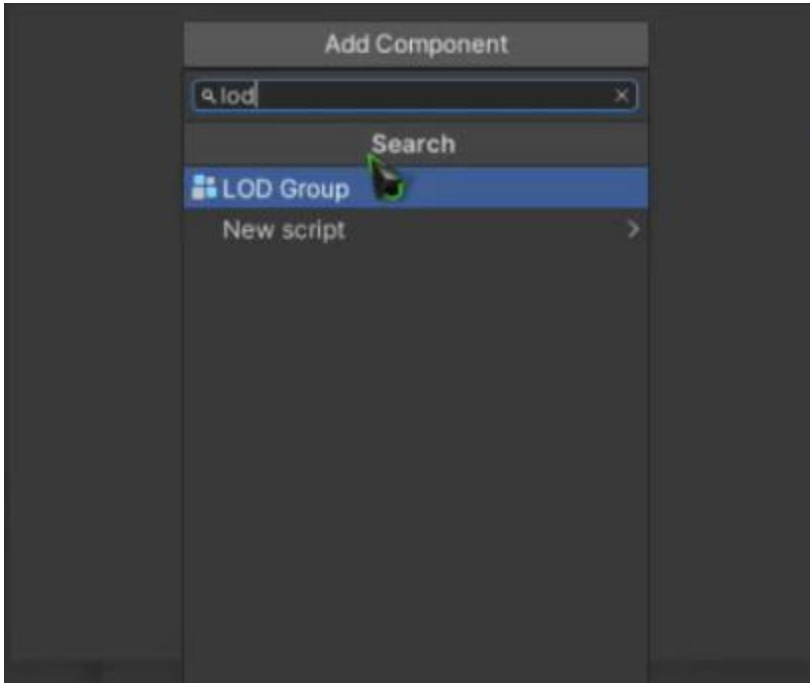
Because we have LOD for meshes we need LOD Group, add this component as well.
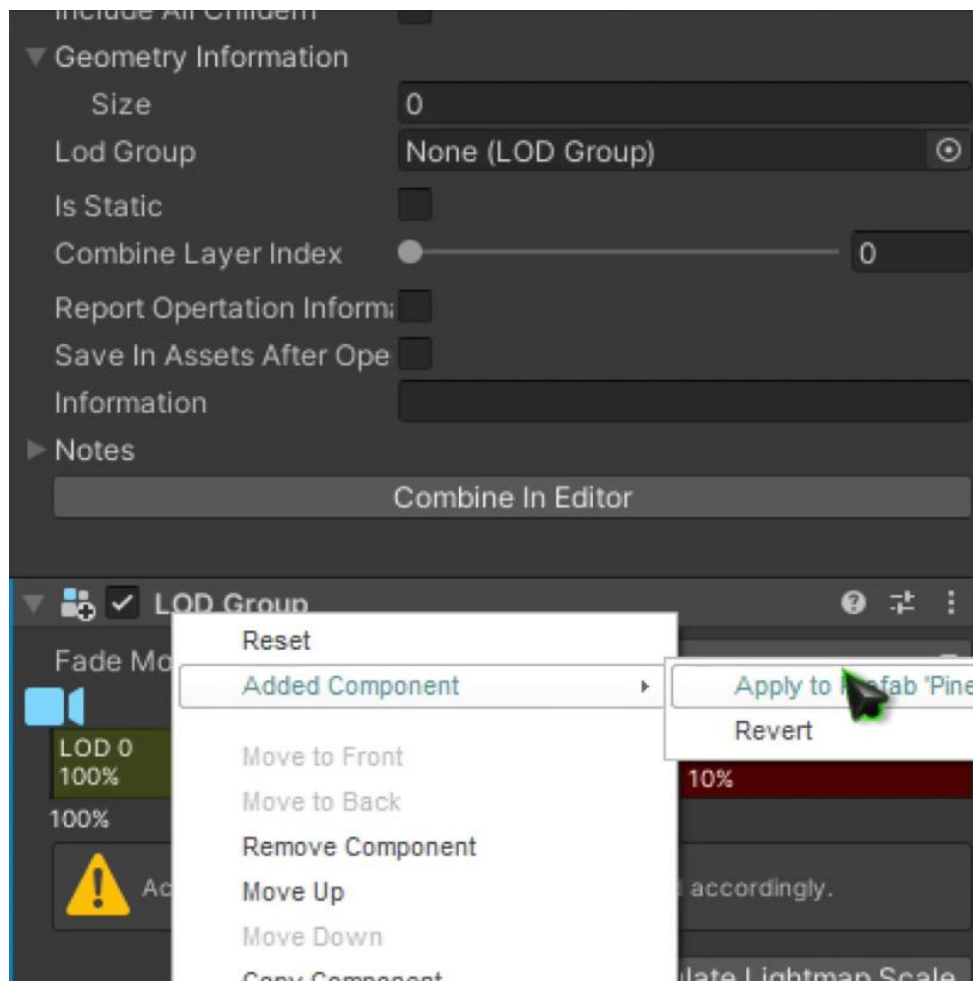
Apply the both components and specially **Geometry Combiner** to access the 'Save In Assets After Operation'.
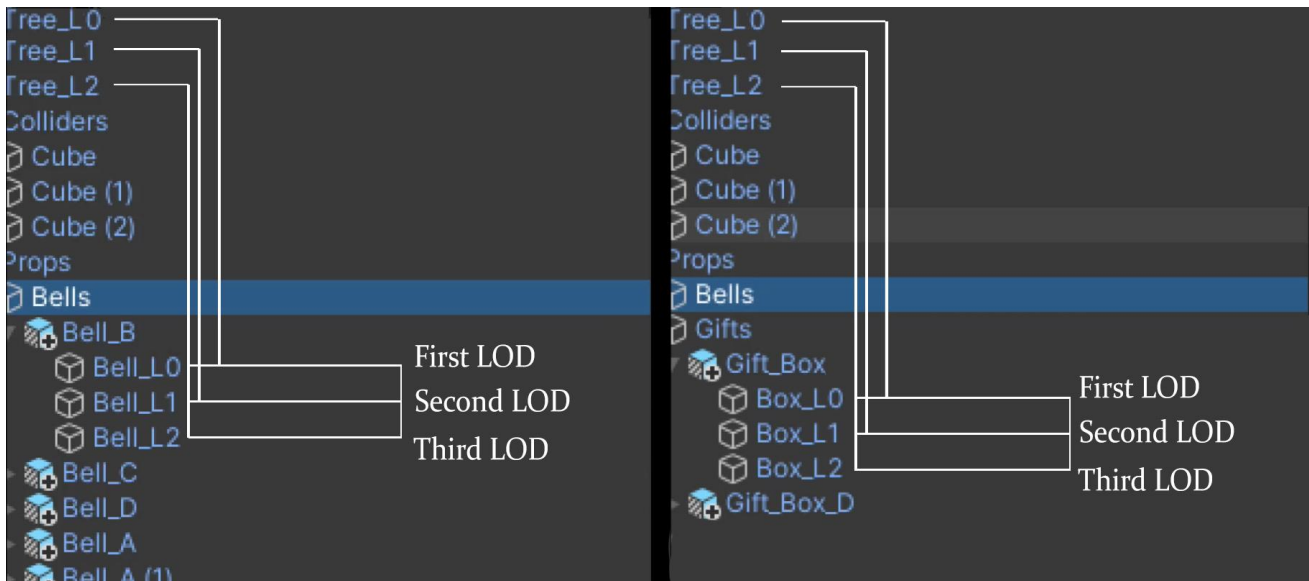
The picture at the top can easily express how LOD combine works.

If you have a closer you see there a similar symbol after underline,L0,L1,L2 these symbols can be found in bells LOD,Tree LOD,Gift_Box LOD, operation will be:

L0 > first LOD - Tree_L0,Box_L0,Bell_L0.

L1 > second LOD - Tree_L1,Box_L1,Bell_L1.

L2 > third LOD - Tree_L2,Box_L2,Bell_L2.

LOD will be a mix of the game-objects which contain the same symbol.

keep in mind there is no limit for symbol can be anything for batter identification.

if don't have equal LOD number for any of the props: for instance box has 2 LODS but the tree has 3 LODS, lod system will be fine but you'll have no lod at third level for box.
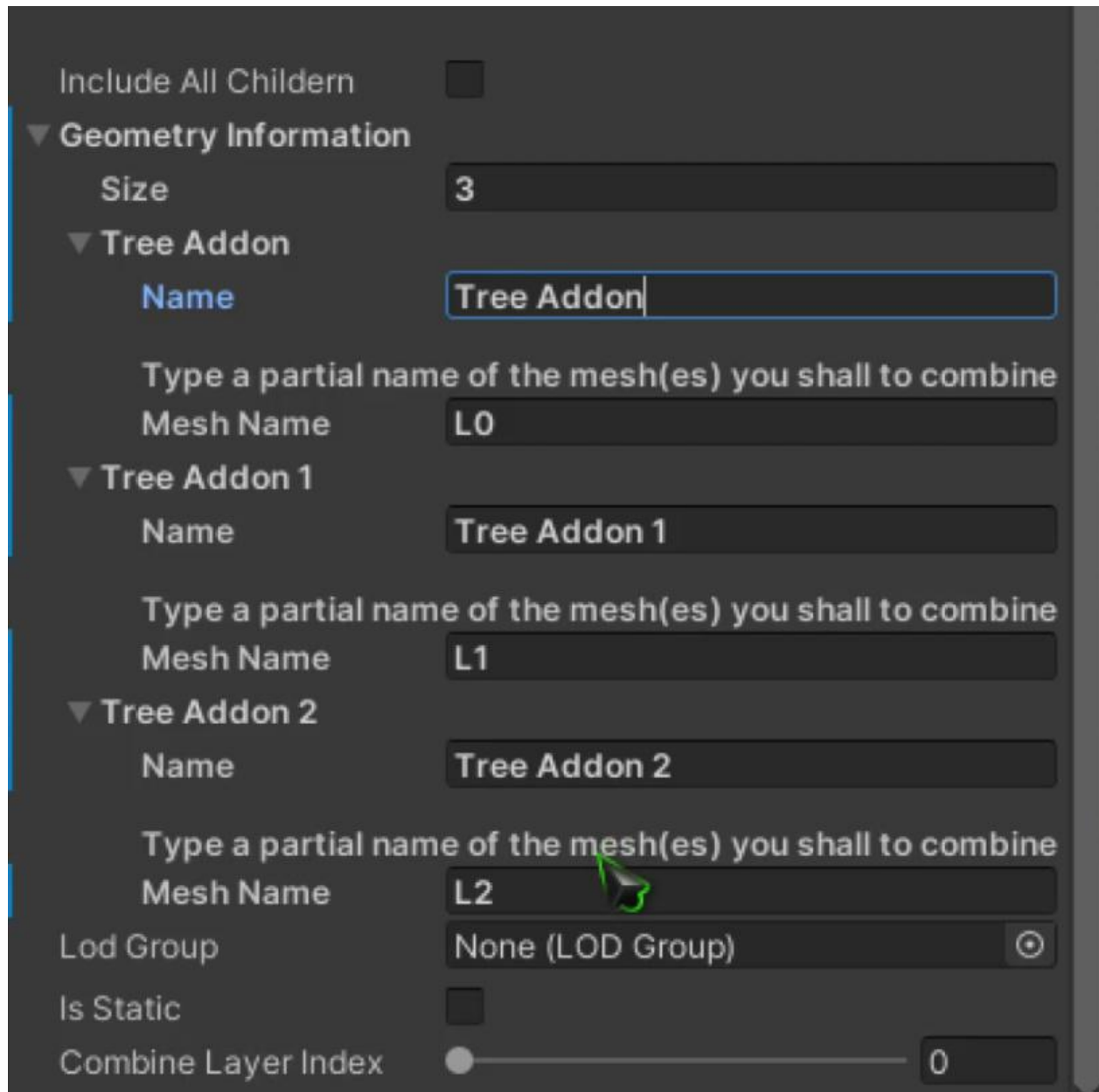
Now click on **Props** which you've added the component to, open and add 3 elements to Geometry Information (3 elements for 3 LOD levels), open any list and begin with the first element (L0) write the symbol at 'Mesh Name', 'Name' is the name of combine mesh which will be created later (can be anything). Go ahead and change the second and third Elements as is must be.

If you are in trouble to understand why we've added L0, L1, L2 for combine at 'Mesh Name' section restudy the last Chapter.
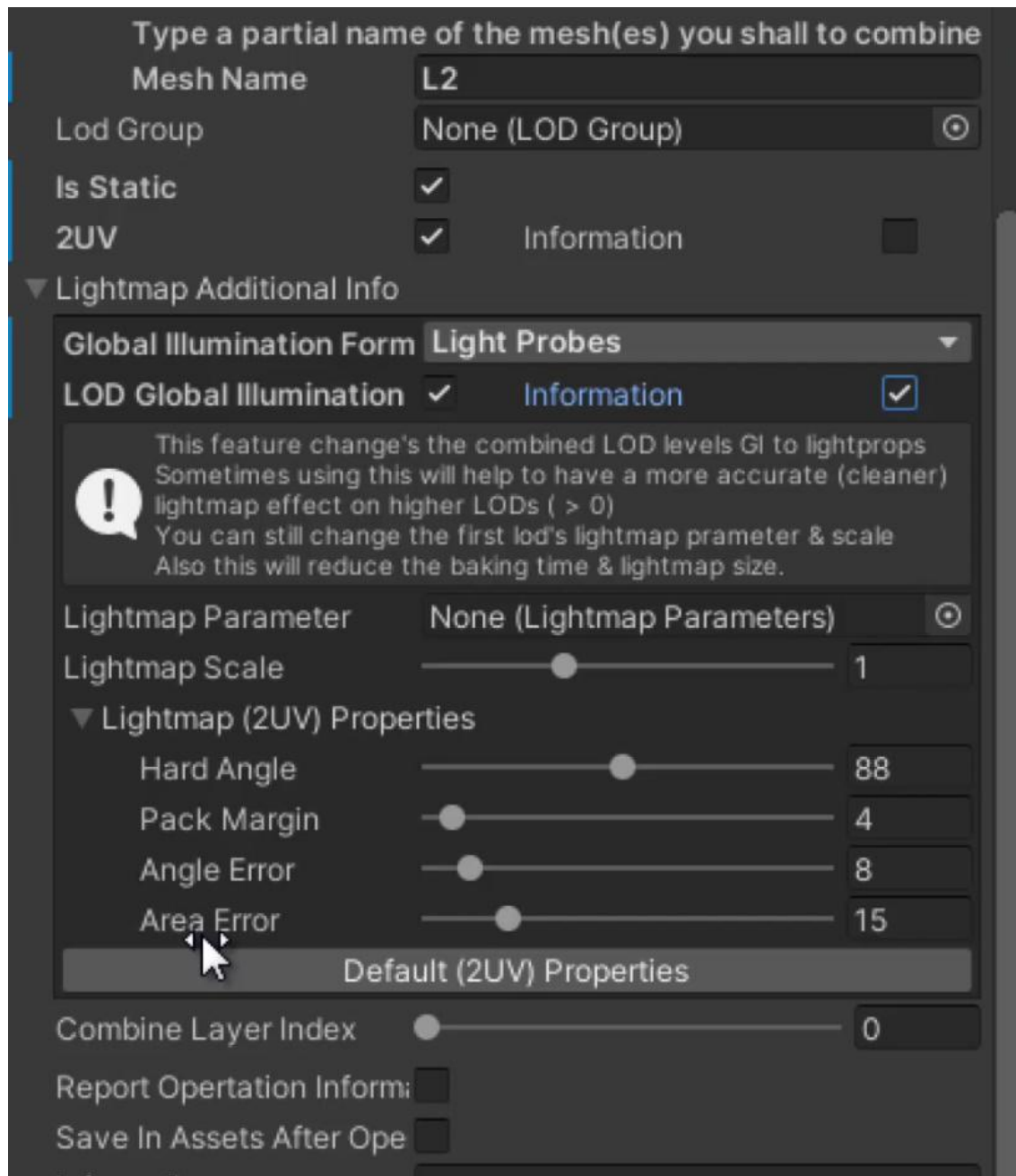
Our mesh will be static,enable the Is Static to access other features, turn 2UV on to generate Light-map UV and avoid UV Override, expand the Lightmap Additional info.

Global Illumination Format = Light Props, this option will change the changes the combined Mesh-Renderer/Receive Global Illumination to Light Props. Enable the LOD Global Illumination too (read the notes under the option at the top picture to know the enabling reason!).
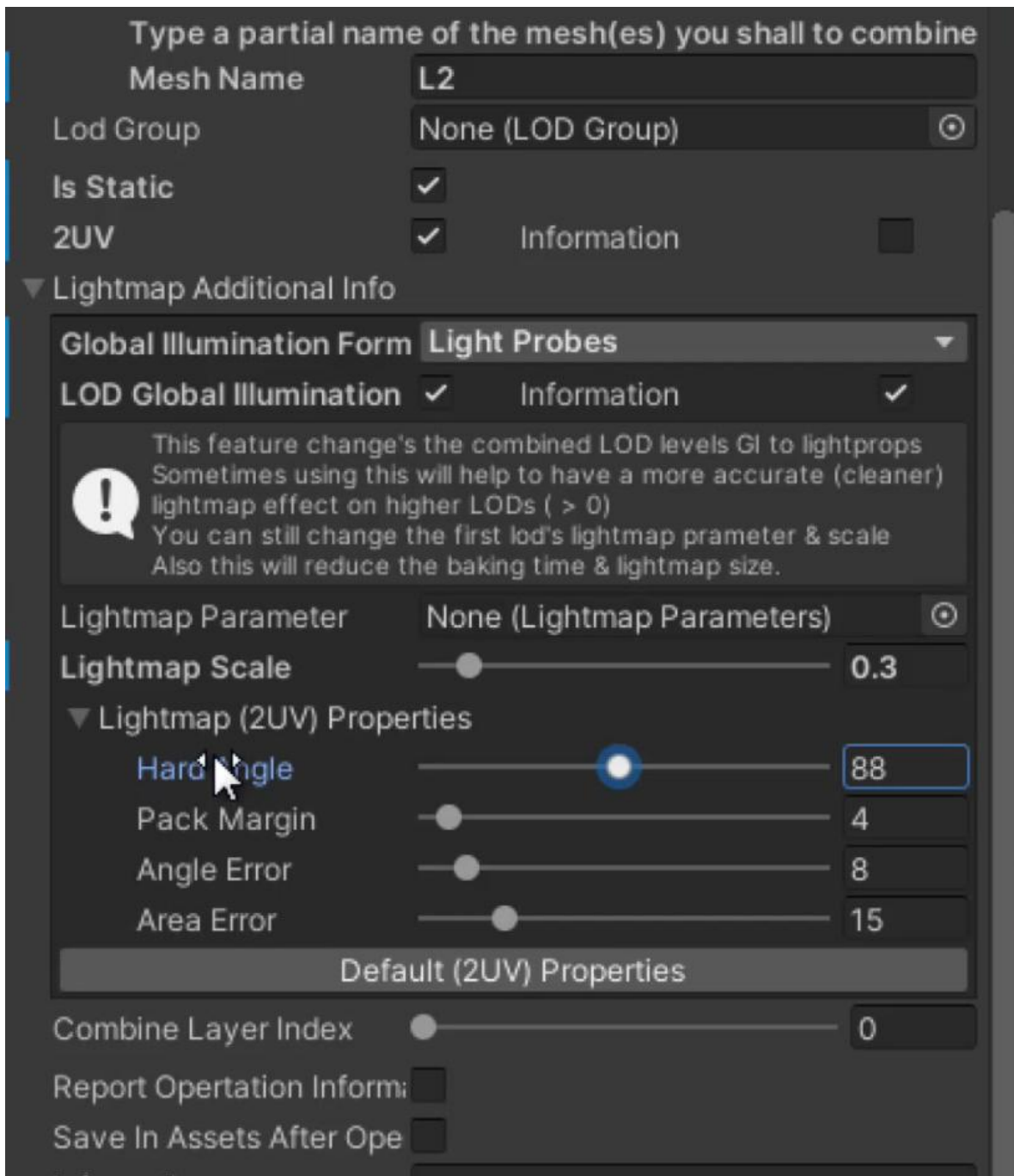
📝 Lightmap Scale reduce it to 0.3,no need so much light-map resolution for this combine.

Lightmap (2UV) Properties is gateway to change 2UV Setting, you can customize it or just leave it as it is.
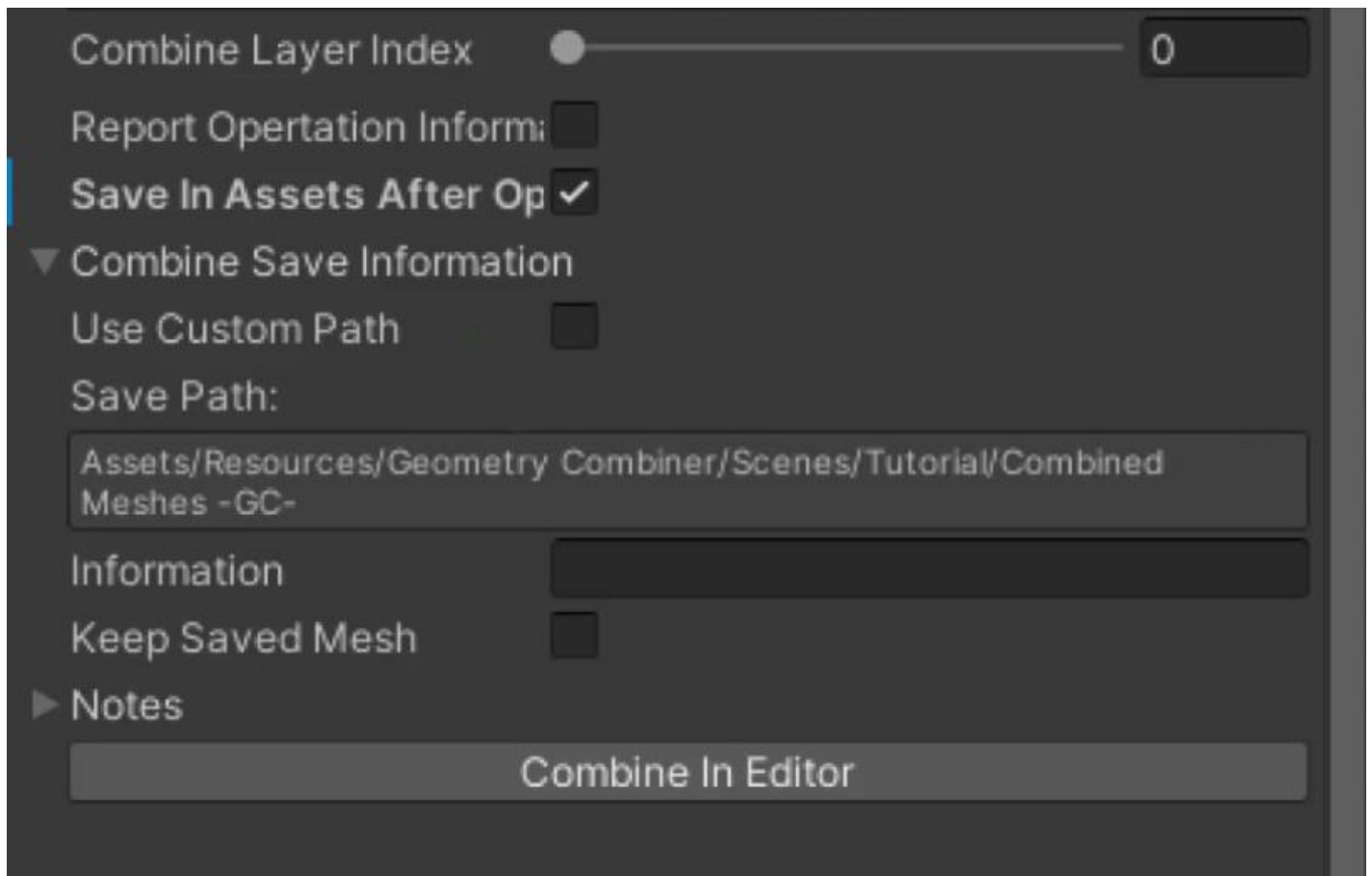
📑 Enable The Save In Assets After Operation.

Allows you to save combined meshes at project files.

Save path is shown after Save Path: but you still can have custom path by enabling the Use Custom Path.
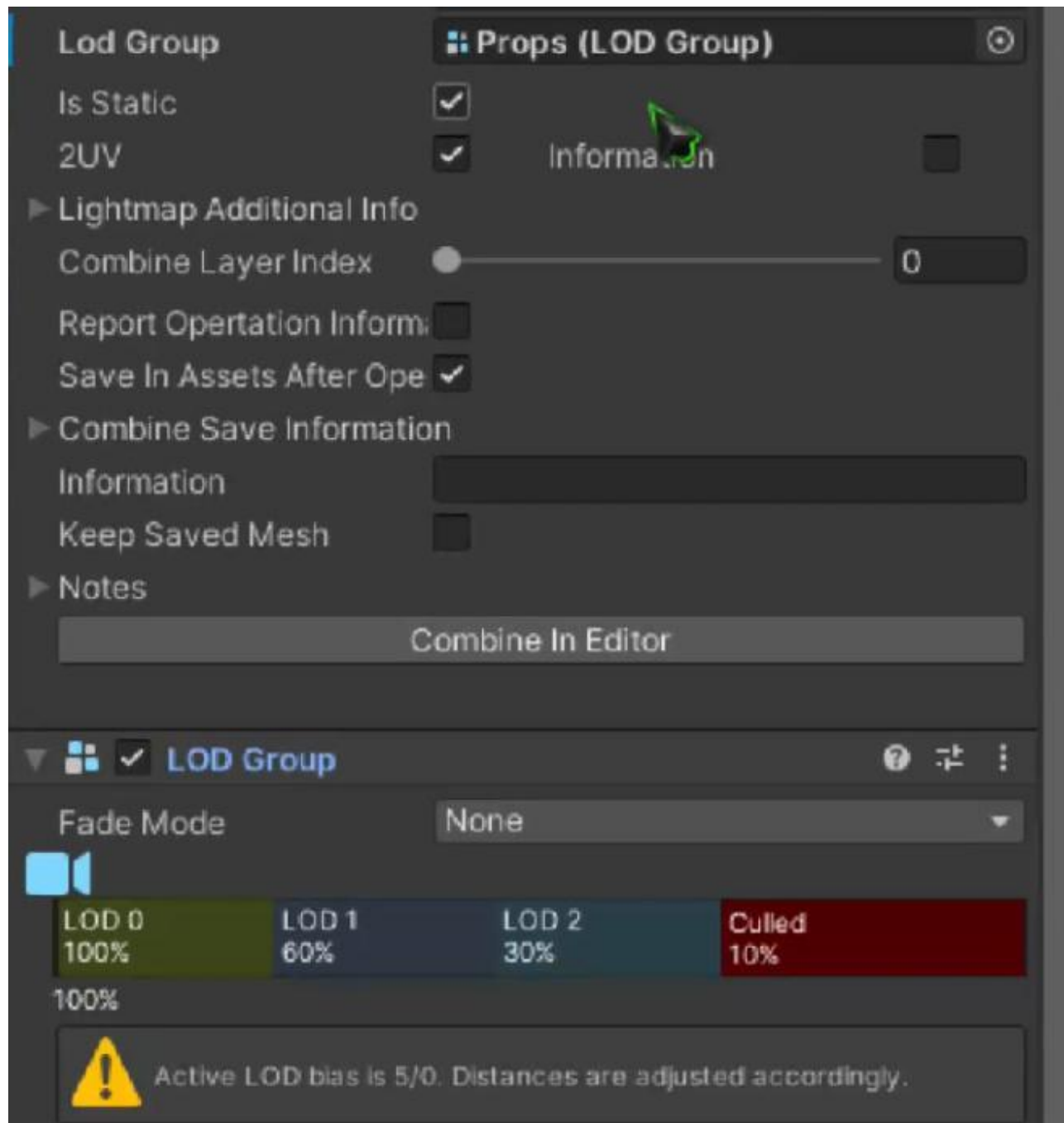
If you remember we had 3 LODs for combination.

now we have same that 3 LOD level for LOD Group.

Also add the LOD Group to LOD Group section to allow script access
it.

Right click on the script and Modified Component / Apply to prefab in order
to save the changes you've made.

C

Assets > Resources > Geometry Combiner > 👁 🎭
- ▦ Tree Addon 1-Props--152560
- ▦ Tree Addon 2-Props--152616
- ▦ Tree Addon-Props--152502

D

- ▼ Props
  - ► Bells
  - ► Gifts
  - ► Extra
  - ▼ Combined
    - Tree Addon
    - Tree Addon 1
    - Tree Addon 2
- ▼ Environment
  - ► Floor
  - ► Walls
- ▼ Lights
  - Point Light
  - Point Light (1)
  - Point Light (2)
  - Point Light (3)

A

▼ Combine Save Information

Use Custom Path ☐

Save Path:

Assets/Resources/Geometry Combiner/Scenes/Tutorial/Combined Meshes -GC-

Information

Keep Saved Mesh ☐

► Notes

Combine In Editor

B

Combine Layer Index ●————————————— 0

Report Opertation Inform: ☐

Information

Keep Saved Mesh ☐

► Notes

Return The Operation

A. Now we're all done and click on Combine In Editor button this may take a short time to combine.

B. Combine is completed, the button title changed to Return The Operation.

C. Because we activated the Save In Assets After Operation saved meshes can be found at the path shown after Save Path: in A Picture.

D.Combined game-objects can be found as children of attached script Props/Combined.
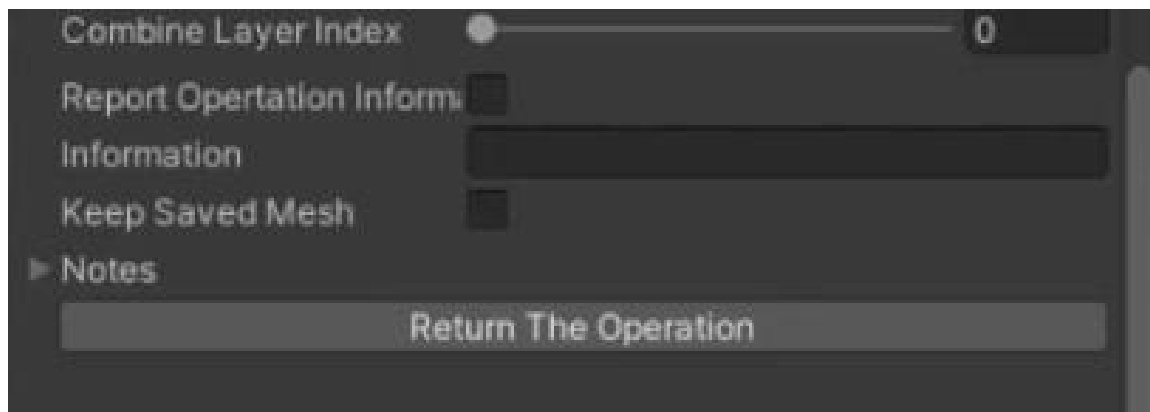
if you wanted to change anything, hit the Return The Operation to remove the combined saved meshes, created game-objects, restoring the original mesh-renderers which deactivated for combine.

And thats all, you have the combined mesh(es).

Check the youtube video tutorial link at bottom of the last page as well.

Geometry Combiner Component In Inspector

Geometry Combiner (Script)

Active ☑

Include All Childern ☐
▼ GeometryInformation
    Size   2
    ▼ Table And Stuff 0
        Name   Table And Stuff 0

        Type a partial name of the mesh(es) you shall t
        Mesh Name   L0
    ▼ Table And Stuff 1
        Name   Table And Stuff 1

        Type a partial name of the mesh(es) you shall t
        Mesh Name   L1
Lod Group   None (LOD Group)   ⊙
Is Static   ☑
2UV   ☑   Information   ☐
▼ Lightmap Additional Info
    Global Illumination Fe Lightmaps   ▼
    Lightmap Prameter   None (Lightmap Parameters) ⊙
    Lightmap Scale   ———●———————— 1
    ▼ Lightmapp (2UV) Properties
        Hard Angle   ————————●——— 88
        Pack Margin   ●—————————— 4
        Angle Error   —●————————— 8
        Area Error   ——●———————— 15
        Default (2UV) Properties
Combine Layer Index   ●—————————— 0
Report Opertation In ☑
Save In Assets After ☑
▼ Combine Save Information
Use Custom Path   ☐
Save Path:
Assets/AssetStoreTools/GG/Combined Meshes -GC-
Information
Keep Saved Mesh   ☐
▶ Notes
        Combine In Editor

[B]

Geometry Combiner (Script)

Active ☑

Include All Childern ☐
▶ GeometryInformation
Lod Group   None (LOD Group)   ⊙
Is Static   ☐
Combine Layer Index ●———————————— 0
Report Opertation Info ☐
Save In Assets After (☐
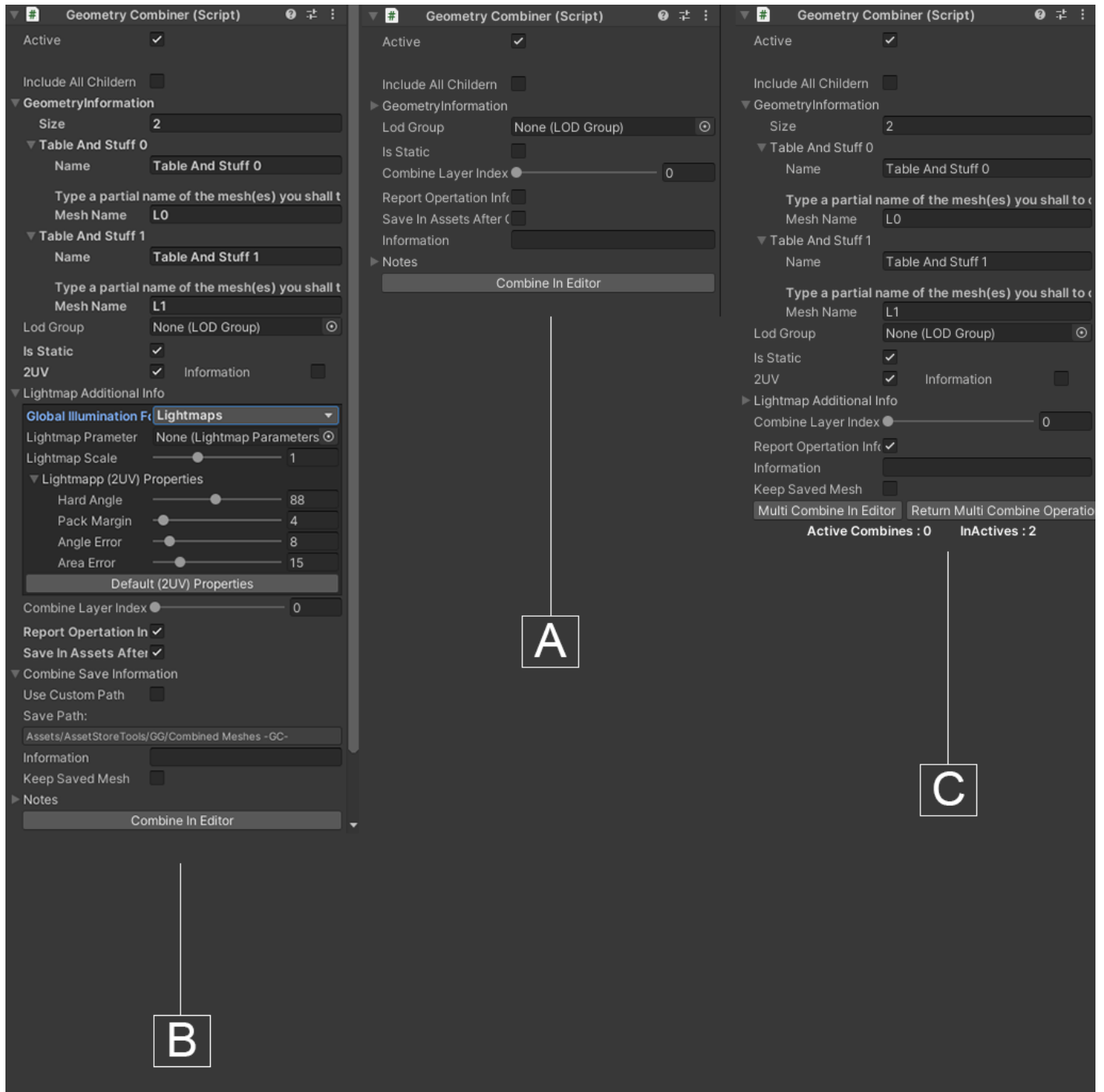Information
▶ Notes
        Combine In Editor

[A]

Geometry Combiner (Script)

Active ☑

Include All Childern ☐
▼ GeometryInformation
    Size   2
    ▼ Table And Stuff 0
        Name   Table And Stuff 0

        Type a partial name of the mesh(es) you shall to
        Mesh Name   L0
    ▼ Table And Stuff 1
        Name   Table And Stuff 1

        Type a partial name of the mesh(es) you shall to
        Mesh Name   L1
Lod Group   None (LOD Group)   ⊙
Is Static   ☑
2UV   ☑   Information   ☐
▶ Lightmap Additional Info
Combine Layer Index ●———————————— 0
Report Opertation Inf ☑
Information
Keep Saved Mesh   ☐
Multi Combine In Editor Return Multi Combine Operatio
        Active Combines : 0   InActives : 2

[C]

Inspector And Features Explanation

Active: Operation condition.

Include All Children: Combined mesh will be a mix of all children's meshes.

Geometry Information: Head of LOD combine (Info).

Lod Group (Optional To Fill): If (Include All Children) Adds the combined mesh to first LOD (explained with pictures at the bottom).

Is Static: Makes the combined mesh(es) static (active it to get more features).

**Combine Layer Index:** Set the combined mesh layer.

Report Operation Information: Reports combined mesh info after completing the entire operation at Console.

Save In Assets After Operation: Saves the combined mesh(es) in the assets as .mesh files that provides you to avoid (Instance mesh).

Information: A simple information for users to know what will get combined.

Notes: Useful notes that help you to have a neat combination.

Lod Group: If you use (Geometry Information) according to the bottom pictures you must set up LOD levels as the (Geometry Information) size to attach combined mesh(es) to it.
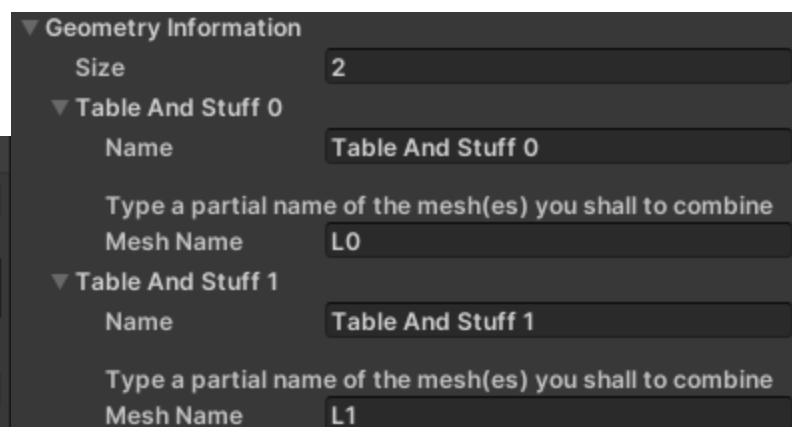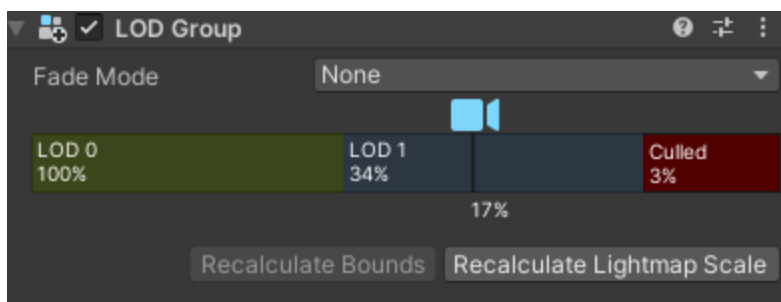
Inspector And Features Explanation

Geometry Information: Size is used to get a list of mesh(es) LOD In children, (example : mesh has 2 LODs must have 2 elements).

{

Name: ID Name of combined mesh (can be anything).

Mesh Name: Part of the name intended meshes to combine it.

}

Is Static: Active it to access the following features (Info).

[

2UV: Light-map UV,use this to avoid light-map UV override.(Editor only).

Light-map Additional Info: Provides more light-map options.(Editor only).

{

// This Parameters Change (Every) Final Combined Mesh Renderer!

Global Illumination Format: This option will change the combined (Editor only).

Mesh-Renderer/Receive Global Illumination.

{

if (Global Illumination Format) set to Lightmaps :

combined Mesh-Renderer/Receive Global Illumination = Lightmaps

if (Global Illumination Format) set to Light Probes :

{

combined Mesh-Renderer/Receive Global Illumination = Light Props

LOD Global Illumination: Activate it and click on (Information) next to it to get more info.

Light-map Parameter: The Lightmap Parameters Asset is used to store a set of values for the parameters which control Unity's Global Illumination (GI) feature. (Editor only).

Light-map Scale: Specifies the relative lightmap resolution of combine object. (Editor only).

Light-map (2UV) Properties: Second UV Generating Setting. (Editor only).

}}

Inspector And Features Explanation

Save In Assets After Operation: This option requires a prefab to access, you need to have a prefab for this game-object first.

If you don't enable this option combine mesh will be an instance. instance means, save mesh on the scene, if you use this game-object in other scenes combine mesh(es) will be corrupted! instance combine impacts on your scene, Increases size, takes a longer time to go in play mode.

Combine Save Information: Saves combined meshes in assets in the path that is shown under (Save Path :), This option requires the (Save In Assets After Operation).

Keep Saved Mesh: Option to keep (saved meshes in project files) on restoration combine.

This option comes the key while you using a duplicate of this game-object in scenes and you just want to change this game-object and keep the others. Restoring the combine without it will corrupt other mesh-filters which using the same combine mesh.

Inspector And Features Explanation

Buttons

Multi Combine In Editor: Start combine operation for selected game-objects.

Return Multi Combine Operation: Restore the combine operation of selected game-objects.

Combine In Editor: Start combine operation in the editor.

Return The Operation: Return and delete the combine process.

Restoring, reactivates the child mesh-renderers which were disabled for combine, deletes saved mesh(es) in assets or instance mesh(es).

Conclusion

-Combining meshes always is necessary to get batter performance (**Geometry Combine**r) is powerful and accurate to provide it.

-Geometry Combiner may look complex at the beginning but, is simple and easy when you understand, how it works.

-Combined mesh(es) can be found as script attached children,(Combined) called game-object is the parent of combines.

-Leave the combine button to have run-time combine.

-If you still had any sort of problems send a message for me or leave a comment in the unity assets store comment section.

-Thanks for buying, hope you have a high-performance game developing.

Email: mynexartshelp@gmail.com

Website: https://mynexartshelp.wixsite.com/home

Asset Store:https://assetstore.unity.com/publishers/41838

YouTube Channel
https://www.youtube.com/channel/UCYe6PZjc2EccvzgKRT6uu6w
(Geometry Combiner) Video Tutorial
https://www.youtube.com/watch?v=ccYgA_4arWE&t=3s