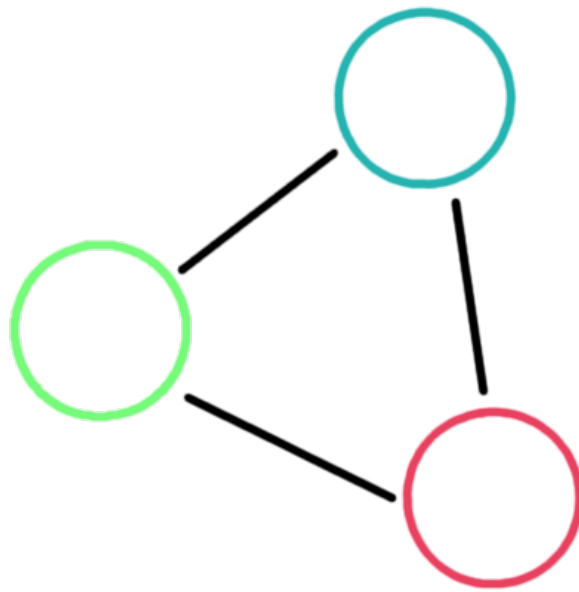


# ProjectDesigner+ Documentation

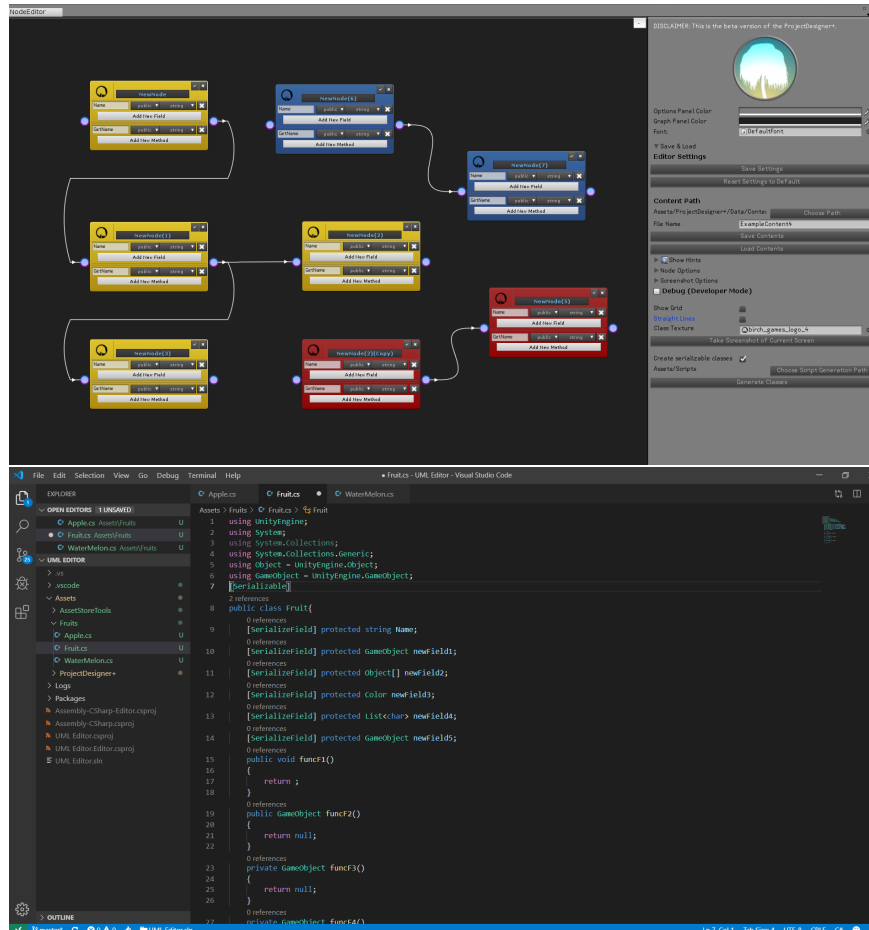
November 15, 2019



# 1 Description

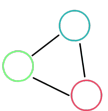
Project Designer+ is an editor tool that lets you plan and design your Unity3D projects before-hand. Create all of your classes, relations between them and automatically generate all of the scripts in an appealing node-based editor window.

## 2 ProjectDesigner+ Images



(a) Save&Load Options

Figure 1: Pictures from ProjectDesigner+



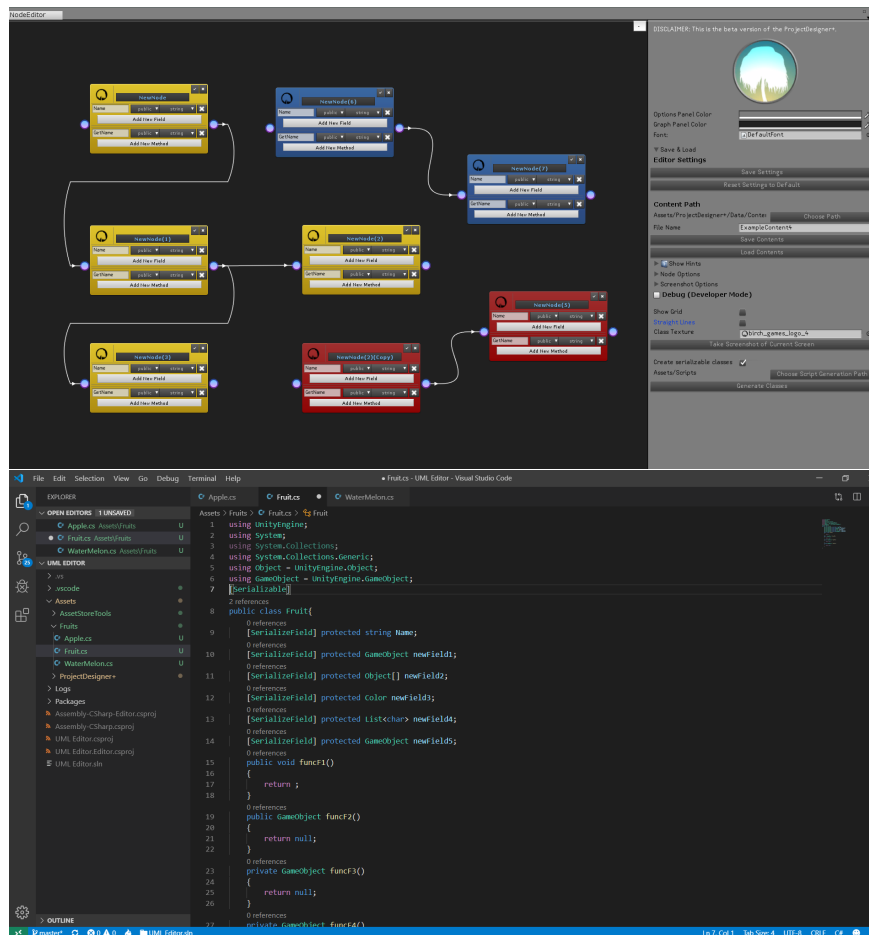
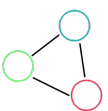


Figure 2: Pictures from ProjectDesigner+



### 3 Features of ProjectDesigner+

What are the features of ProjectDesigner+?

- Customizable nodes
- Customizable fields and methods
- Auto-script generation (and serializable classes)
- Take screenshots
- Save/load
- Undo/Redo
- Curved or straight connection lines
- Inheritance and association nodes
- Snapping
- Can create groups
- Can copy nodes and groups
- Can add group comments and descriptions

### 4 About development

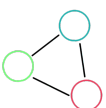
ProjectDesigner+ is currently in a stable beta version. We are actively developing it for more features and performance. If you have any suggestions or concerns, please contact us at [connect@birchgames.com](mailto:connect@birchgames.com)

### 5 Known issues

- Editor window tabs are not visible, due to manually drawn "fake" editor window.
- Screenshots sometimes have white lines between sections.
- Selection rectangle sometimes appear where it shouldn't.
- Overall performance can be improved.

### 6 Planned Features

- Interface nodes. We are planning to make C# interfaces easy to define and use.
- Enum nodes. For easily editing and using C# enums, we are planning to add them to the editor.
- Class descriptors.
- More keywords like abstract, readonly, static etc.



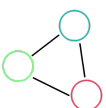
## 7 How to Use?

### 7.1 Creating Nodes and Groups

First open the 'ProjectDesigner+/New Graph' from 'Window' tab on Unity Editor. Right click on grids and select 'Add New Node'. This will create a basic node with one field and one method. Once you add multiple nodes, you can multi-select them, right click and press 'Create a Group from selected nodes'. This will add a group box around selected nodes that will scale as you move nodes along. We recommend adding similar nodes in a group. Because when auto-script generation works, it will create scripts under 'rootPath/GroupName' folder



Figure 3: Basic Node



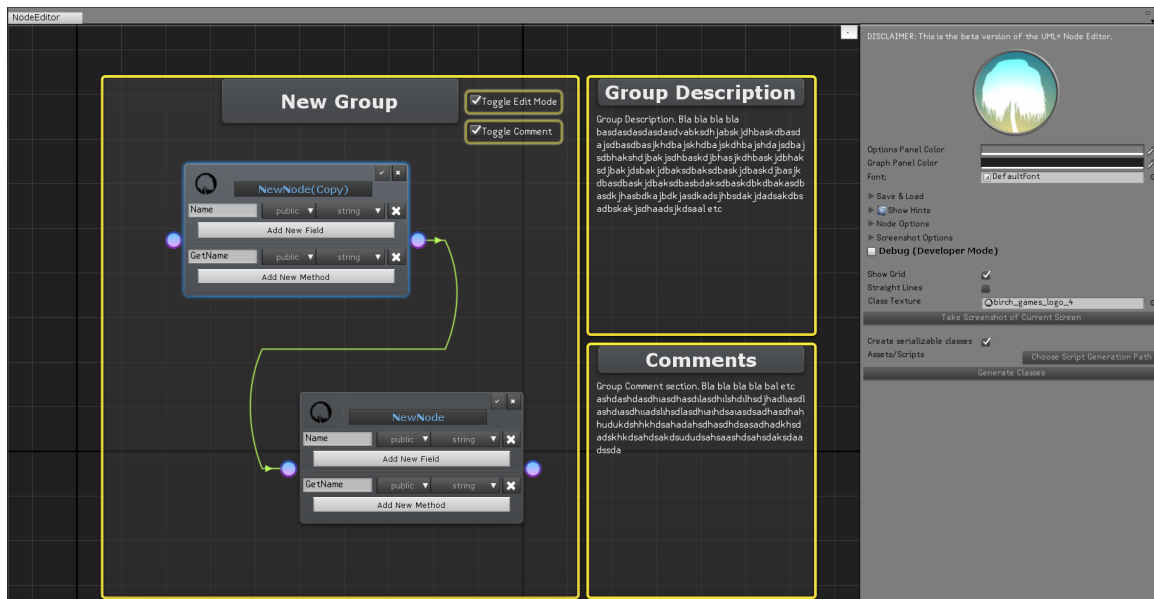


Figure 4: Simple group with comment and description box

You can edit a group name by toggling on 'Toggle Edit Mode'. Also, when it's turned on you can edit group description and comment boxes. To hide comment and description boxes, click on 'Toggle Comment'.

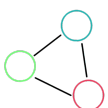
## 7.2 Customizing Nodes

ProjectDesigner+ nodes are highly-customizable. You can change any 'non-derived' node's color. Just click on class icon - a birch tree - for default. There are several color options: Red, Green, Sea Green, Blue, Orange, Gray and Yellow. Keep in mind, derived nodes will also derived node color, representing the relation. Another node customization is to change 'Class Texture' in options panel. This will override node icon.

## 7.3 Adding New Fields And Methods

To add new a field just click on 'Add New Field' on nodes. This will create a basic field with protection level of 'public', variable type of 'GameObject' with the variable name of 'newField', ultimately becoming 'public GameObject newField' in a cs file. You can add as many as fields as you want. Here are the the field types you can add in a node:

- string
- int
- float
- bool
- char
- Color
- GameObject
- Object
- Quaternion
- Vector3
- Vector2



Also, you can add array or list types of all of them. Apart from that, ProjectDesigner++ will detect all of the nodes in your graph and add them as field type. Again, they will have array and list types as well.

This process will be repeated in method section, except this time field types will represent 'return type' of the function. ProjectDesigner+ will create functions that will not throw any compiler errors by assigning default return value. Eg. for custom classes function will have 'return null;' line.

## 7.4 Connecting Nodes

There are two ways to connect nodes eg. classes. First way is to press on a 'output circle' of a node, drag the appearing line anywhere and select 'Create New Node Here'. Second way is to drag the line to another nodes 'input circle'. This will create a connection between the nodes.

There are two type of possible connection types, first one represents inheritance and second one represents association.

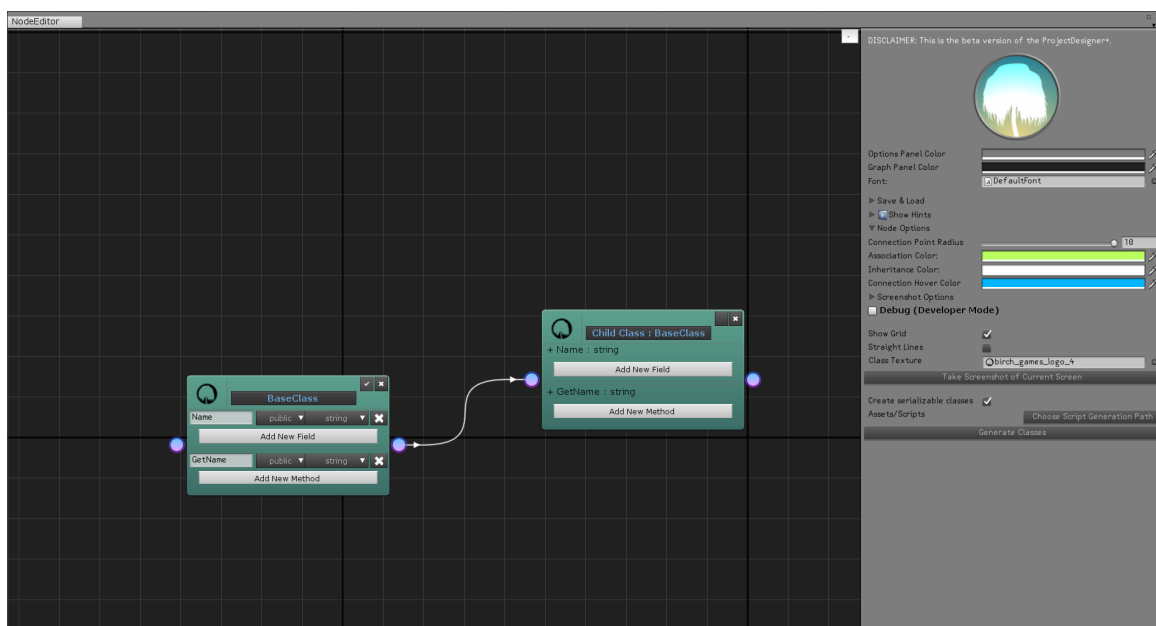


Figure 5: An inheritance connection

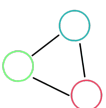
As you can see in ??, child node will show the inherited class name in the header section.

## 7.5 Options Panel

You can use the Options Panel for editing properties of the editor and Saving&Loading contents. Options Panel consist of 4 sections, and one main section.

### 7.5.1 Editor Options

- Options Panel Color : Color of the options panel.
- Graph Panel Color : Color of the graph background.
- Default Font : Default font to use.



### 7.5.2 Save&Load

- Save Settings : You can save editor settings using this panel. You only need to use this if you are having problems with auto-save. Ideally editor should save settings on closing.
- Reset Settings to Default : You can reset all settings to predefined values using this button.
- Content Path : Choose where editor contents will be saved.
- File Name : Name of the content save file.
- Save Contents : Save current contents of the editor to a file.
- Load Contents : Load contents from a file to the editor.

### 7.5.3 Show Hints

- You can display hints for the editor here.

### 7.5.4 Node Options

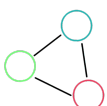
- Connection Point Radius : Maximum mouse distance to an input/output point to be clickable.
- Association Color : Connection line color between associated nodes.
- Inheritance Color : Connection line color between nodes that have inheritance relations.
- Connection Hover Color : What color connection will be when mouse is over them.

### 7.5.5 Screenshot Options

- Screenshot Sensitivity : Time interval between each screenshot take. Increase this value if you have blank sections on final screenshot.
- Save Path : The folder where screenshots will be saved.
- File Name : Name of the screenshot file.
- Override File : If screenshot file with a same name exists, override it. If this options is not checked, new file will have a number attached to it.
- Crop Blank Parts : This is for exluding unused space from screenshots. CURRENTLY NOT WORKING!

### 7.5.6 Quick Acces Panel

- Show Grid : Toggle display grid on/off.
- Straight Lines : Toggle line curves on/off.
- Class Texture : Texture to display at the header of nodes.
- Take Screenshot of the Current Screen : Take screenshot of the current contents and save as png.
- Create Serializable Classes : Toggle enable/disable serializable attributes when creating scripts.
- Choose Script Generation Path : Root path for generated scripts.
- Generate Scripts : Create C scripts based on the node graph. And save them on the chosen path.





## 7.6 Auto-Script Generation

Autos-script generation will let you create all of the nodes/classes in the selected folder. Keep in mind ProjectDesigner+ will include inheritance behaviour in classes. Generated classes won't throw any compiler errors.

If a node is not in any group, it will be created in 'root'. You can change root in the options panel by clicking on button named 'Choose Script Generation Path'. Also, if you want to make serializable classes, click on 'Create serializable classes' option on the options panel.

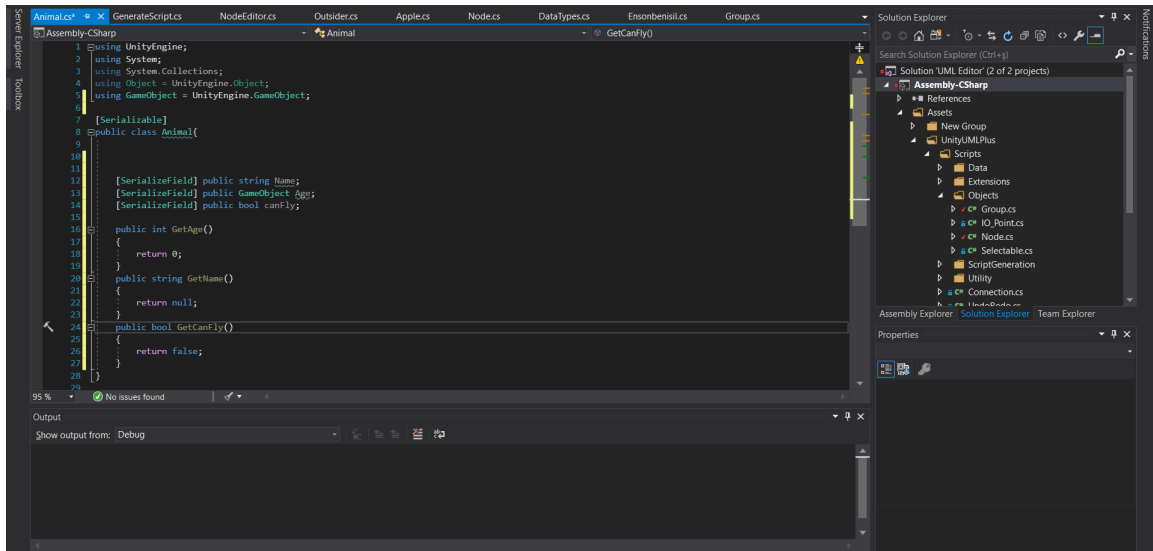
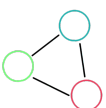


Figure 6: A class created by ProjectDesigner+

## 7.7 How to Take Screenshots

To take a screenshot of the whole editor, just click on 'Take Screenshot of Current Screen' button. This will create a 5000x5000 png file of the editor window. You can change save direction of the screenshot in options panel, under 'Screenshot Options'.



For any problem, feature request, advice reach us:

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[furkancaglayan15@hotmail.com](mailto:furkancaglayan15@hotmail.com)

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