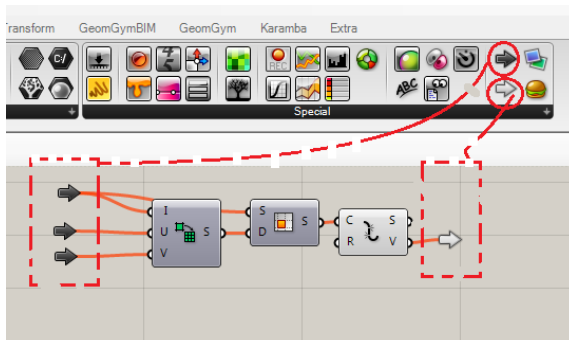# Creating Custom Components & User Object

Without Programming in Grasshopper Build 0.8.0051
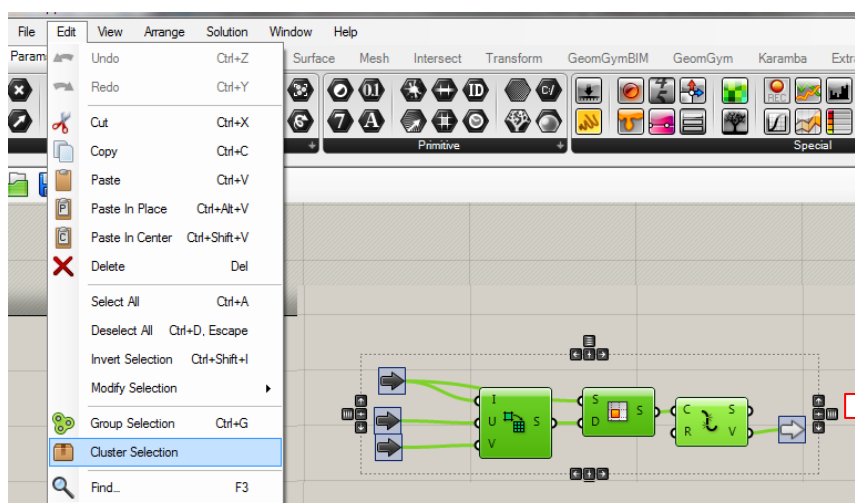
Custom components allows you to make your own components by connecting any number of grasshopper components . This is useful where are you want to build your own components (for reuse) or if you want to simplify your grasshopper based design.
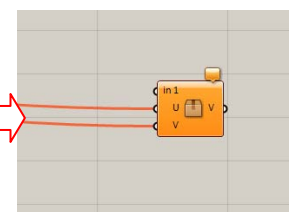
Step 1 : create your component cluster

Remember that grasshopper allows you to create programs by dragging and dropping components. Programs have inputs and outputs. Hence you need to re-structure the cluster of components as a program with clear inputs and outputs.

Step 2: Select the cluster
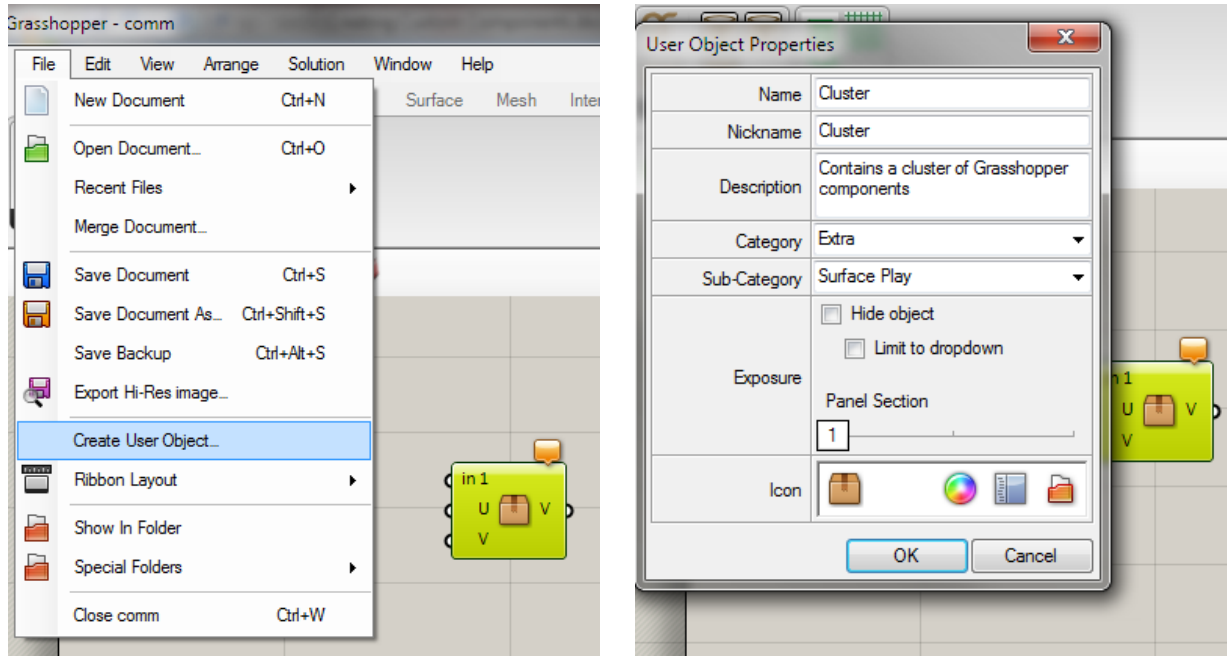

Becomes like this

You can now use this cluster like any other grasshopper component. But you cannot save the cluster as .gha component (that appear in your menu bar). To make them appear in the menu bar as components you have 2 options :

1) Program a .gha component as described. You can then place it in the Component folder. It will get there if you just drag and drop in within grasshopper.

2) Create a **User Object** out of your Cluster. These are saved as .ghuser in the user Object folder.

Step 3 : Create a User Object

You can now convert your cluster into a user object if you wish use it as a re-usable menu bound component. The user object will appear in the chosen tab and panel.

You can then choose an icon and put it on the appropriate sub category.

Thanks to David Rutten for review this, Ben Silter for posting the initial guide.