Grasshopper

Name:	Grasshopper 0.5.0099
Produced:	McNeel and Associates, USA. Primary developers are Andrew Payne and Rajaa Issa.
Operating system:	Windows
Native filetype:	
Description:	Grasshopper is a graphical algorithm editor plug-in for Rhino .
Next version release:	
Homepage:	http://www.grasshopper3d.com/
See also:	Rhino
	Plug-in
	GC
Link:	LEARN, The Catalogue
	Official Support Post a question to Media Centre
Introduction:	Grasshopper is a graphical algorithm editor which integrates tightly with Rhino. It is primarily used when associative modelling is necessary and has a substantial popularity. This is in part due to the perceived complexity of picking up other associative software such as GC.
Primary functions:	Grasshopper¿s primary functions include: **1. Associative/Parametric (component) modelling** is Grasshoppers main use. For example, Rhino is easier to use that Grasshopper as it doesn¿t require the creation of components. However, with Rhino the model¿s history is explicit which means that if you have made your entire model and then realise that one part of it needs to be changed you must start again from scratch. The great advantage of Grasshopper¿s associative modelling is that everything is created in relation to everything else so that changes are easily implemented right up until the final model. A change to a single component x, means that all those components related to component x change/update accordingly. **2. Data feeding** in which data is fed into a component to create objects and lines etc. **3. Creating diagrams** **4. Responsive objects** are objects created which react to other objects. The user creates and specifies the relationships (the nature of the reaction) between them. **5. Scene animating** is achieved with an ¿animate¿ slider allowing the user to export sequential BMP images for a animated scene. Associative modelling can also be achieved with GC , Maya, ParaCloud, Digital Project, 3DSMax scripting and Rhino script.
Primary outputs:	Grasshopper is located within Rhino. Therefore, Grasshopper¿s outputs are the determined by Rhino.
Usability:	Most users of Grasshopper are proficient in Rhino. This means that the user can gain competency in Grasshopper relatively quickly. The Grasshopper Primer, available to download here, will aid this process. Basic knowledge in data matching, flattening etc is very important in order to use the plug-in well. This information is presented in the Primer. Grasshopper¿s interface is straight forward and visually oriented. It is a far easier interface to get around than that of GC. Users place components upon a 2D canvas and can see the result of the component on the model (in Rhino) immediately. Results are measured directly against the components placed on the canvas which facilitates experimentation. Components are grouped in functional types which aides the locating and choosing of specific components. The plug-in, being contained within Rhino, is just as interoperable as Rhino. Models can be exported from Grasshopper/Rhino to most other modelling formats so as to integrate with such industry standards as 3DSMax , AutoCAD , Illustrator amongst others. Grasshopper also integrates well with fellow Rhino plug-in Panelling Tools and indeed there is some functional overlap between the two plug-ins namely in the areas of arraying.
Strengths /weaknesses:	Over and above those strengths and weaknesses listed already, Grasshopper at present is: + + Very good with scripts, especially VB scripting and C#, both of which can extend the complexity and power of Grasshopper. - Frustrating at times because, being under constant development means that bugs are never entirely fixed. - Limiting at times due to the small range of standard (non-scripted) components. This is one good reason for getting into scripting. It will vastly increase the scope of your modelling.

Learning support:	Primary support for Grasshopper is the Grasshopper Primer which is free to download. Also, close contact between the developers of the plug-in and the user community means that bugs are usually fixed quickly. Also, plug-in upgrades are available regularly. The Grasshopper WIKI offers an excellent range of tutorials. To get you started Media Centre suggest the following tutorials: Beginner A: General Introduction 1 Beginner B: Design Reform's Intro 1 Beginner C: Design Reform's Intro 2 Beginner D: Creating a solid surface Intermediate A: Patterning Intermediate B: Data matching Intermediate C: List management Advanced A: Conditional component dispatch Advanced B: Tower tutorial 1 2 Advanced C: CNC Routing (tool paths)
Additonal:	You¿ll probably also find these interesting: Grasshopper WIKI Dimitrie Space Symmetry Structure Live Architecture Network Design Reform
References:	
External links:	
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