










CGA Shape Grammar Reference



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Operations









Geometry Creation

			
<u>i(insert)</u>	<u>extrude</u>	<u>envelope</u>	<u>taper</u>
			
<u>roofGable</u>	<u>roofHip</u>	<u>roofPyramid</u>	<u>roofShed</u>
			
<u>innerRect</u>			


Geometry Subdivision

			
<u>split</u>	<u>comp</u>	<u>offset</u>	<u>setback</u>
			
<u>shapeL</u>	<u>shapeU</u>	<u>shapeO</u>	<u>scatter</u>

Geometry Manipulation

			
<u>cleanupGeometry</u>	<u>convexify</u>	<u>deleteHoles</u>	<u>reverseNormals</u>
			
<u>setNormals</u>	<u>mirror</u>	<u>reduceGeometry</u>	<u>trim</u>




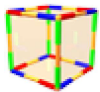

Texturing

 texture	 setupProjection	 projectUV	 translateUV
 scaleUV	 normalizeUV	 tileUV	 rotateUV
 deleteUV			


Transformations

 t (scope translate)	 translate	 s (scope size)	 r (scope rotate)
 rotate	 center		





Scope

 alignScopeToAxes	 alignScopeToGeometry	 rotateScope	 setPivot
 mirrorScope			

Flow Control

 pop	 push	 NIL	
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Attributes

 set	 color	 report	 print
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Shape Attributes

Shape Attributes are properties of the current shape. They can always be read (like functions) and some of them can be set with the [set](#) operation.

comp	initialShape	material	pivot
scope	seedian	split	trim

Builtin Functions

Functions always return a value and do not alter the current shape (with the exception of probability functions which change the state of the shape's random number generator).

Math Functions

abs	acos	asin	atan
atan2	ceil	cos	exp
floor	isinf	isnan	ln
log10	pow	rint	sin
sqrt	tan		

Probability Functions

p	rand		
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Conversion Functions

bool	float	isnull	sel
str			

String Functions

count	find	len	substring
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Geometry Functions

geometry.area	geometry.angle	geometry.{du dv}	geometry.isClosedSurface
geometry.isConcave	geometry.isInstanced	geometry.isOriented	geometry.isPlanar
geometry.isRectangular	geometry.nEdges	geometry.nFaces	geometry.nHoles
geometry.nVertices	geometry.{uMin uMax vMin vMax}	geometry.volume	

File Functions

fileExists	fileSearch		
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Asset and Image Functions

assetInfo	assetsSortRatio	assetsSortSize	imageInfo
imagesSortRatio			

Occlusion Functions

inside	overlaps	touches	
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Miscellaneous Functions

convert	getGeoCoord	getTreeKey	print
Simple Types Operations			

Other Keywords

attr	const	import	style
version			

CGA Utility Functions Library

String Utility Functions

findFirst	findLast	getPrefix	getRange
getSuffix	replace		

String List Utility Functions

Stringlists are a series of strings stored inside one string. The elements are separated by a semicolon (;). The data type is "string", thus it is not any real type of array as used in other scripting languages.

listAdd	listClean	listCount	listFirst
listIndex	listItem	listLast	listRandom
listRange	listRemove	listRemoveAll	listRetainAll
listSize	listTerminate		

File, Asset and Image Utility Functions

assetApproxRatio	assetApproxSize	assetBestRatio	assetBestSize
assetFitSize	fileBasename	fileDirectory	fileExtension
fileName	fileRandom	imageApproxRatio	imageBestRatio

Color Utility Functions

colorRamp			
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Miscellaneous Information

CGA Changelog	Annotations	Asset Search	Builtin Assets
Texturing	Euler Angles		

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