OpenSCAD CheatSheet

Syntax

```
var = value;
module name(…) { … }
name();
function name(…) = …
name();
include <….scad>
use <….scad>
```

2D

```
circle(radius | d=diameter)
square(size,center)
square([width,height],center)
polygon([points])
polygon([points],[paths])
```

3D

```
sphere(radius | d=diameter)
cube(size)
cube([width,depth,height])
cylinder(h,r|d,center)
cylinder(h,r1|d1,r2|d2,center)
polyhedron(points, triangles, convexity)
```

Transformations

```
translate([x,y,z])
rotate([x,y,z])
scale([x,y,z])
resize([x,y,z],auto)
mirror([x,y,z])
multmatrix(m)
color("colorname")
color([r, g, b, a])
hull()
minkowski()
```

Boolean operations

```
union()
difference()
intersection()
```

Modifier Characters

```
*   disable
!   show only
#   highlight
%   transparent
```

Mathematical

```
abs
sign
sin
cos
tan
acos
asin
atan
atan2
floor
round
ceil
ln
len
log
pow
sqrt
exp
rands
min
max
```

Functions

```
lookup
str
search
version
version_num
norm
cross
parent_module(idx)
```

Other

```
echo(…)
for (i = [start:end]) { … }
for (i = [start:step:end]) { … }
for (i = […,…,…]) { … }
intersection_for(i = [start:end]) { … }
intersection_for(i = [start:step:end]) { … }
intersection_for(i = […,…,…]) { … }
if (…) { … }
assign (…) { … }
import("….stl")
linear_extrude(height,center,convexity,twist,slices)
rotate_extrude(convexity)
surface(file = "….dat",center,convexity)
projection(cut)
render(convexity)
children([idx])
```

Special variables

```
$fa minimum angle
$fs minimum size
$fn number of fragments
$t  animation step
```

Links

- Official website
- Manual
- MCAD library
- Other links