

## Rhino Command Line (RCL)

<https://www.rhino3d.com>  
<https://www.rhino3d.com/tutorials>

## Rhino Script Editor (RSE) Documentation

<https://developer.rhino3d.com/guides/rhinopython/>  
<https://developer.rhino3d.com/guides/rhinopython/primer-101/>  
Also see rhinoscriptsyntax documentation in Rhino Python Editor

## Python 3.0 Documentation

<https://docs.python.org/3/>  
<https://www.py4e.com>

### RSE Libraries and Modules

import **rhinoscriptsyntax** as rs

### RSE Point, line, surface, geometry

rs.AddPoint()  
rs.AddPoints()  
rs.AddSrfPt()  
rs.AddLine()  
rs.AddCurve()  
rs.AddCircle()  
rs.AddRectangle()  
rs.AddPlanarSrf()  
rs.AddEllipse()  
rs.AddPipe()  
rs.AddBox()  
rs.AddCone()  
rs.AddSweep1()  
rs.AddSweep2()

SPACE FOR ADDITIONAL NOTES

### RCL Point, line, surface, geo.

point  
  
line  
curve  
circle  
rectangle  
  
ellipse  
pipe  
box  
cone  
sweep1  
sweep2

### RCL - Transformations

move  
rotate  
scale  
mirror

### RCL - Transformations

rs.RotateObject()  
rs.ScaleObject()  
rs.MoveObject()  
rs.MirrorObject()

SPACE FOR ADDITIONAL NOTES

### RCL - Miscellaneous

extend  
loft  
offset  
  
extrude

### RSE - Selection and Input

rs.GetString()  
rs.GetInteger()  
rs.GetReal()  
rs.GetObject()  
rs.GetObjects()  
rs.PointCoordinates()

### RSE - Miscellaneous

rs.ExtendCurve()  
rs.AddLoftSrf()  
rs.OffsetCurve()  
rs.OffsetSurface()  
rs.ExtrudeSurface()  
rs.AddTextDot()  
rs.ObjectColor()  
rs.CopyObject()  
rs.DeleteObject()  
rs.HideObject()  
rs.EnableRedraw()  
  
rs.CurvePerpFrame()  
rs.WorldXYPlane()  
rs.ReverseCurve()  
rs.RebuildSurface()  
rs.JoinCurves()

Optional loop controls: if,  
else, elif, break, continue

### RSE - Vectors

rs.PointAdd()  
rs.VectorCreate()  
rs.VectorUnitize()  
rs.VectorAngle()  
rs.VectorScale()  
rs.VectorCreate()  
rs.VectorLength()

### RSE - Line, Curve and Surface Evaluation

rs.Distance()  
rs.DivideCurve()  
rs.CurveMidPoint()  
rs.CurveAreaCentroid()  
rs.CurveStartPoint()  
rs.CurveEndPoint()  
rs.CurveClosestPoint()  
rs.CurveDomain()  
rs.BrepClosestPoint()  
  
rs.PointClosestObject()  
rs.CurveDomain()  
rs.SurfaceDomain()  
rs.SurfaceNormal()  
rs.SurfaceAreaCentroid()  
rs.EvaluateSurface()  
rs.PlaneFromNormal()  
rs.DistanceToPlane()  
rs.PlaneFromPoints()

### Python Libraries and Modules

import **random** as rnd

### Operators, Comparators and Conditions

+ - \* / // % \*\*  
< > <= >= == !=  
in not in and & |

### Basic Operations

min()  
max()  
len()  
range()  
rnd.random()  
print() -> outputs text to the  
console in rhino's python editor

### Dictionary Operations

.get()  
.values()  
.keys()  
.items()

### List Operations

.append()  
.pop()  
.sort()

### Function Definition

```
def functionName(p1,p2):
    statement block/operation
    return resultValue
    (default is None if return not
```

### Loop Statement

```
def functionName(p1,p2):
    statement block/operation
```

### Conditional Loop

```
while condition:
    statement block
```

### Class Construction:

```
class ClassName():
    def __init__(self, P1, P2):
        self.p1 = P1
        self.p2 = P2
    see Function Definition
```