

Rob Arch

Introductory

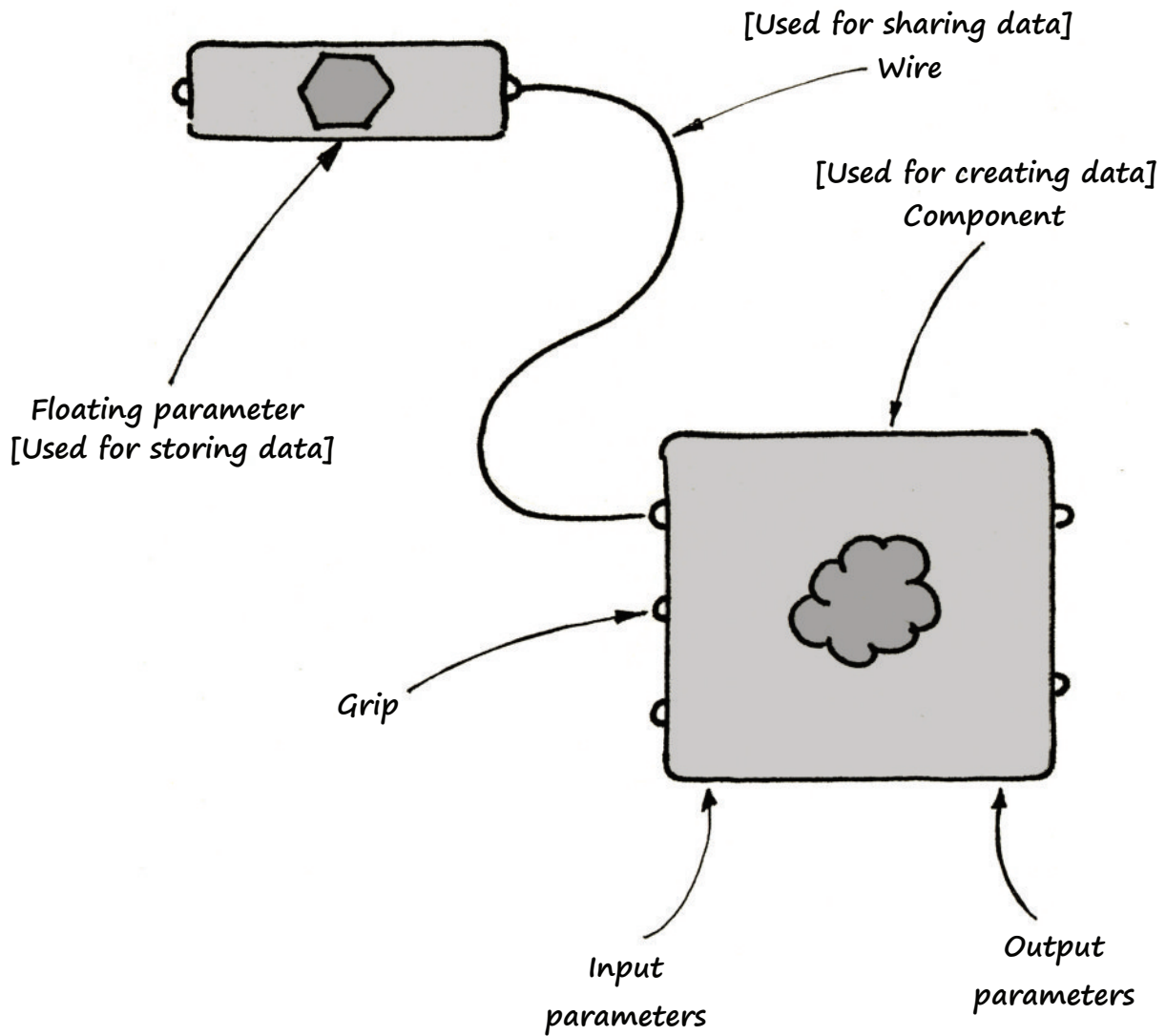
Workshop

for

Grasshopper®

Vienna 2012

Grasshopper Glossary



Notes:

Assignment #1

The algorithm:

1. Draw a line.
2. Divide into segments.
3. Draw another line.
4. Divide into segments.
5. Connect division points with lines.

Optional steps:

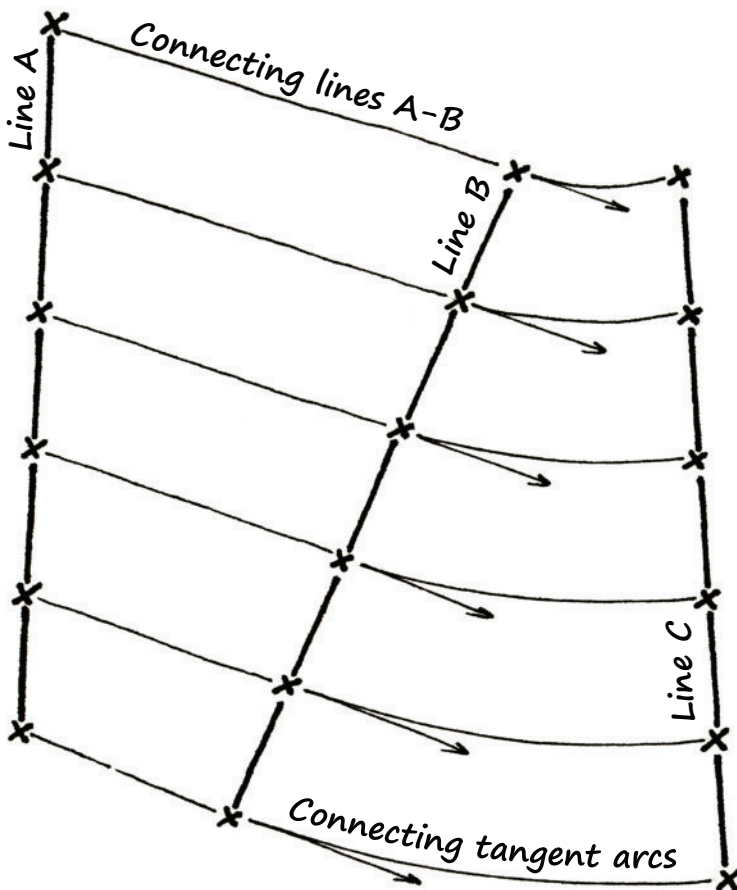
6. Draw a third line.
7. Divide into segments.
8. Connect all three division sets with arcs.

-or-

Create tangent arcs between the existing lines and the new points.

Useful components & parameters:

- Line parameter
- Divide Curve
- Slider
- Line 2Pt
- Arc 3pt
- Arc SED
- Vector parameter



Notes:

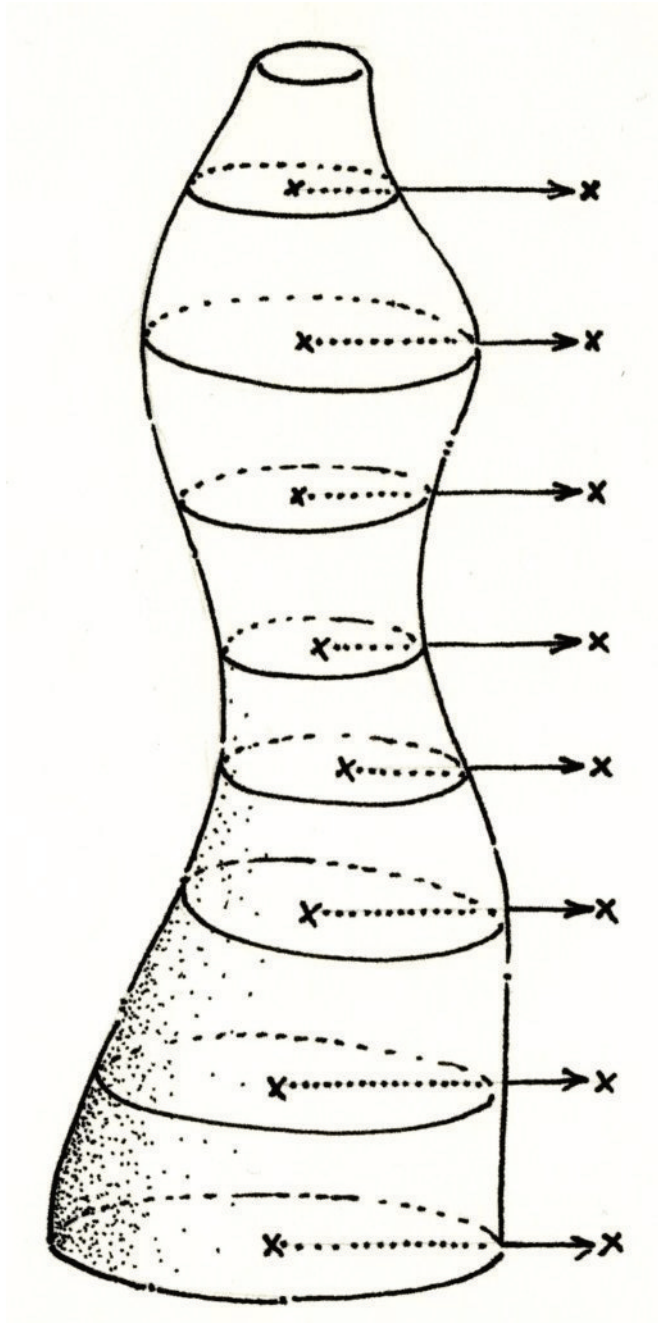
Assignment #2

The algorithm:

1. Import a Brep
2. Create horizontal sections representing floors.
3. Get the area of each floor section.
4. Draw the area next to each section.

Optional steps:

5. Format the area string to only contain a single decimal and to include a square unit symbol.
6. Gather all sections and area texts into a flat grid.

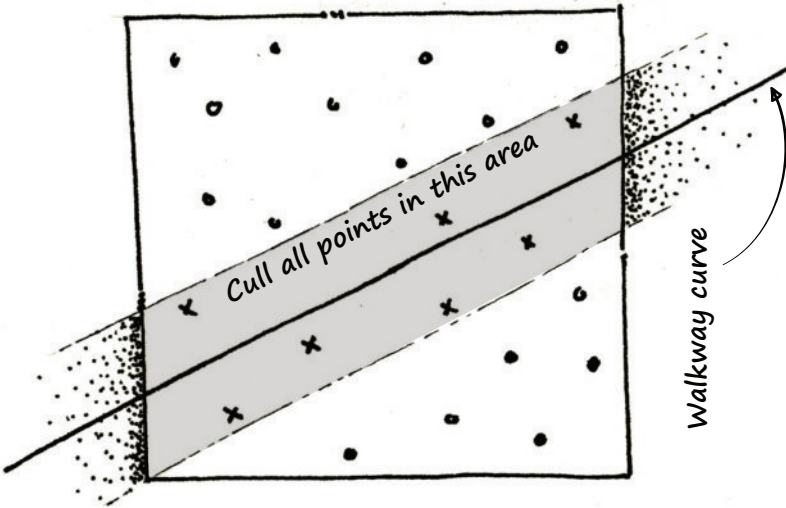


Useful components & parameters:

- Brep parameter
- Contour / Contour (Ex)
- Area
- Text Tag
- Text Tag 3D
- Format
- Expression
- Square Grid
- Shortest List

Notes:

Assignment #3

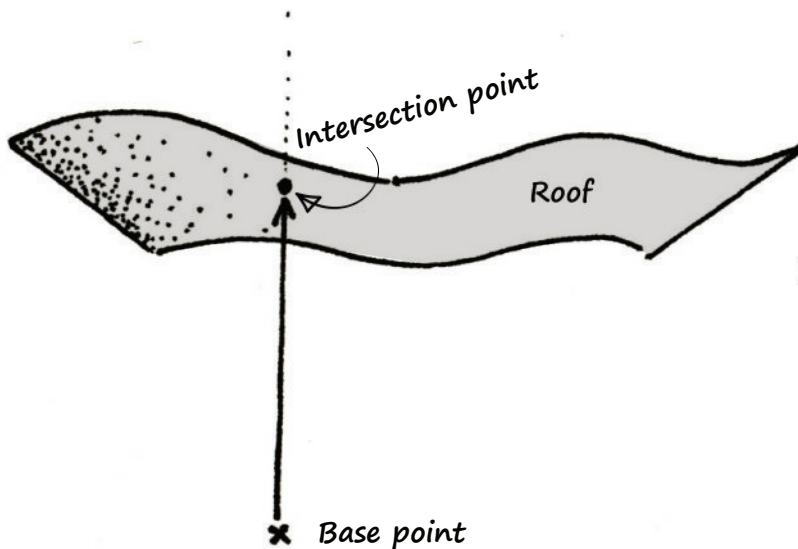


The algorithm:

1. Create a collection of 2D points
2. Create one or more walk-way curves.
3. Cull all points that are near any of the curves.
4. Create vertical line segments representing columns.

Optional steps:

5. Intersect each line segment with a roof shape.
6. Create columns that reach from the ground to the roof.



Useful components & parameters:

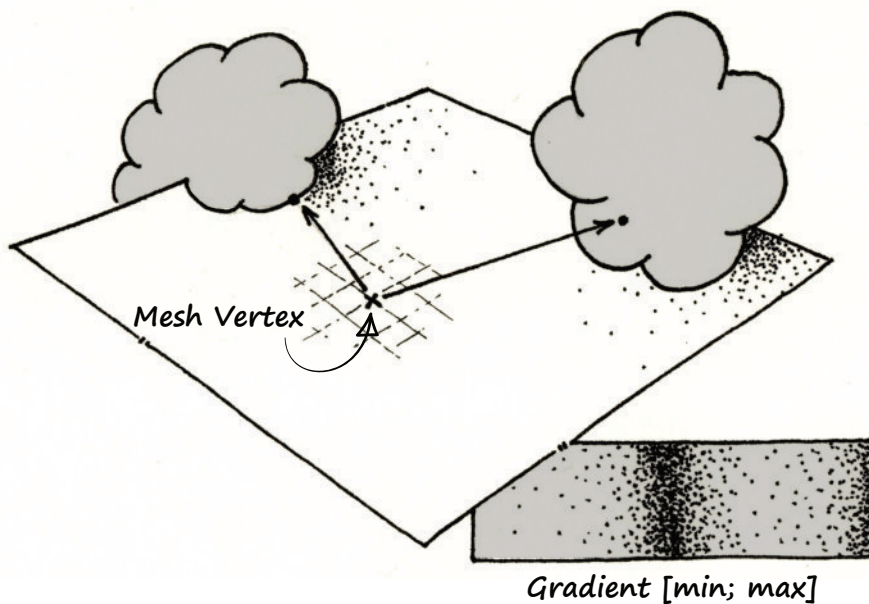
- Grid (Square, Rectangular, Hexagon)
- Populate 2D
- Curve CP
- Pull Point
- Larger Than
- Cull Pattern
- Line / Line SDL
- Brep|Line Intersection

Notes:

Assignment #4

The algorithm:

1. Import or create a mesh
2. Decompose the mesh into individual vertices (i.e. mesh points)
3. Measure some property of each point.
4. Map properties onto a Gradient
5. Apply gradient colours to the mesh.

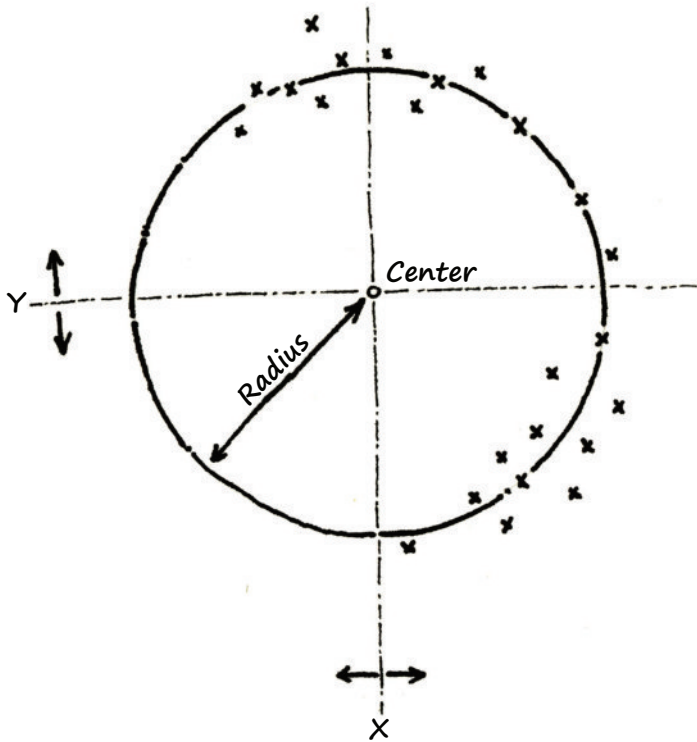


Useful components & parameters:

- Mesh / Mesh Plane / Mesh Brep
- Decompose Mesh
- Gradient
- Remap Numbers
- Mesh Colours
- Bounds
- Blur Mesh

Notes:

Assignment #5

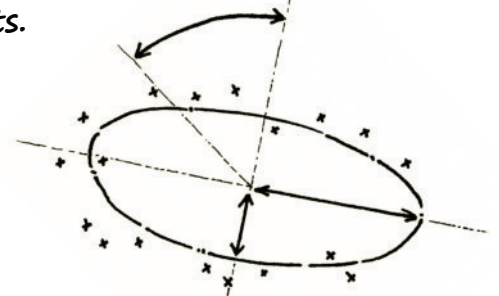


The algorithm:

1. Define a circle with 3 sliders (x, y & radius)
2. Define a collection of points.
3. Measure the total distance from the circle to all points.
4. Use Galapagos to minimize this distance.

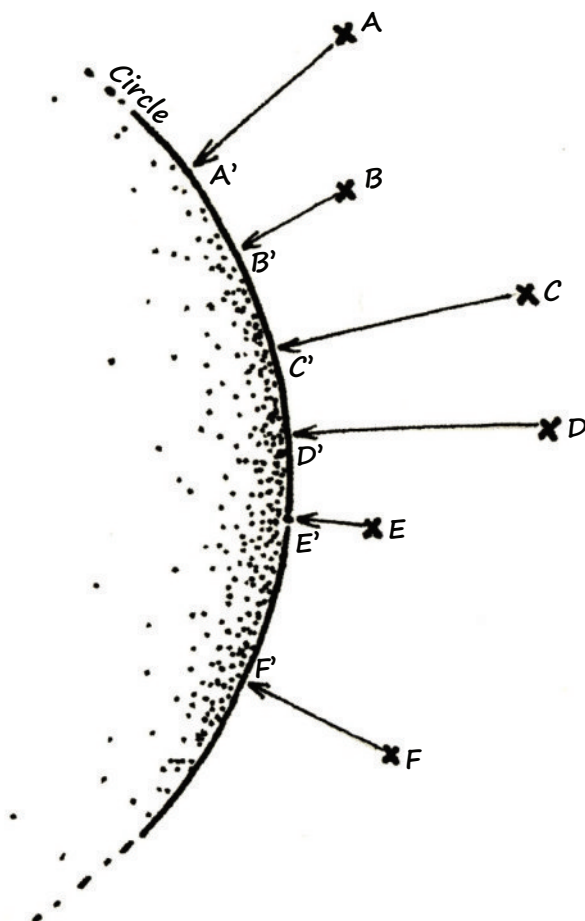
Optional steps:

5. Replace the circle with an ellipse defined by five sliders (x, y, radius 1, radius 2 & rotation)
6. Use Galapagos to minimize the distance between the ellipse and the points.



Useful components & parameters:

- Slider
- XY Plane
- Circle
- Curve CP
- Mass Addition
- Galapagos
- Rotate
- Ellipse



Notes:

Notes: