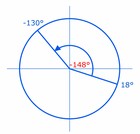
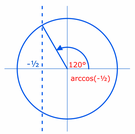
Node Library 2.3

by John Cartan ~ Free for use without restrictions

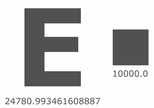
arc_measure
Returns degrees between start and end angles



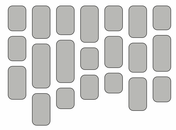
arccos
Given value between -1 and 1 returns arccosine in radians or degrees



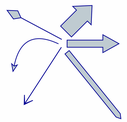
area
Returns area of a closed polygon



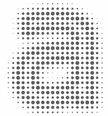
arrange
Arrange objects in tidy stacks



arrow
Draws an arrow with many style options



attractor
Computes minimum distance and angle from points to a shape

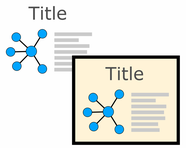


average
Given a list of numbers returns mean, median, mode(s), or mid-range

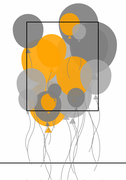
Index	trial	heads
0	7	2
1	4	3
2	11	2
3	2	5
4	9	5
5	10	5
6	0	6
7	3	6
8	6	6
9	8	7
10	1	8
11	5	8

Mean: 5.33
Median: 5.5
Mode(s): 5,6
Mid-range: 5.0

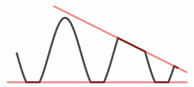
backdrop
Add a colored backdrop behind content



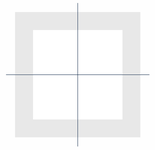
balloons
Draws a bunch of balloons, colored randomly if no colors are supplied



bounds
Constrain values within upper and/or lower bounds



canvas
Returns a white rectangle with width and height of current canvas - REQUIRES CANVAS.PY

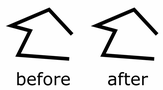


change_col
Replace a column with modified data or add new one

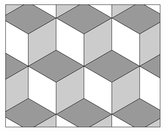
country	month	average sales
India	January	516.9833333333333
India	February	516.4857142857143
India	March	473.47500265309574
Brazil	January	791.3925490980766
Brazil	February	837.7907501574816
Brazil	March	769.8903501048589

country	month	sales
India	January	558
India	February	516
India	March	473
Brazil	January	795
Brazil	February	838
Brazil	March	600

clean
Removes duplicate consecutive points in a path - fixes some artifacts in PNG exports



clip
Clips to boundary restoring fill and stroke colorization



clockwise
Returns true if points in a path are in clockwise order

colors
Returns a range of colors

concat_list
Concatenates a list of strings into a single string - REQUIRES CONCAT_LIST.PY

a ago all and and are brought
conceived continent created
dedicated equal fathers forth
four in liberty men nation new
onto our proposition score
seven that the this to years

contours
Separates path into distinct contours

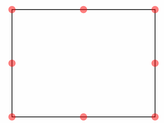
convert_base
Convert value from one base to another - REQUIRES CONVERT_BASE.PY

101010 --> 42
42 --> 2A
1be15dc --> hello

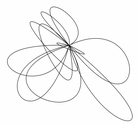
convert_date
Converts dates using Java SimpleDateFormat - REQUIRES DATEFORMAT.CLJ

Now: Wednesday, May 26 9:57:45 PM
Since 1/1/19: 876d 20:57:45

corner
Returns a corner or midpoint in the boundary of a shape



curve
Draws quadratic curve with two control points



diff_list
Given lists A and B, returns items in A but not B, B but not A, or in both

List A: apples, oranges, kiwis, carrots
List B: apples, kiwis, carrots, grapefruit, bananas

A not B: oranges
B not A: grapefruit, bananas
A and B: apples, kiwis, carrots

diff_table
Given tables A and B, returns rows with items in A but not B, B but not A, or both A and B

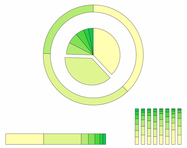
Fruit: apples, oranges, kiwis, carrots
Fruit: apples, kiwis, carrots, grapefruit, bananas

Fruit: oranges
Fruit: grapefruit, bananas
Fruit: apples, kiwis, carrots

distribution
Makes distribution table from a source table, key, and range of possible values

heads	total
0	2
1	9
2	47
3	114
4	211
5	224
6	228
7	117
8	36
9	10
10	2

donut
Create a donut, pie, or stacked bar chart



draw_table
Draw a table similar to the data view of the input table

Index	word	letters	width
0	every	5	65.2852
1	good	4	55.6055
2	boy	3	40.8398
3	does	4	54.0703
4	fine	4	42.5391

drop_cols
Drop or keep a subset of columns

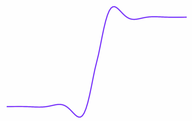
country	month	apples	oranges	bananas
India	January	394	349	93
India	February	112	329	130
India	March	230	220	127
Brazil	January	195	216	55
Brazil	February	147	74	90
Brazil	March	38	112	17

country	month	bananas
India	January	93
India	February	130
India	March	127
Brazil	January	55
Brazil	February	90
Brazil	March	17

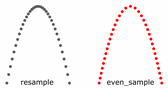
drop_last
Take all but the last item of a list

1 2 3 4
5

easing
Applies selected easing function to produce changing values over time



even_sample
Distributes points evenly across a path, curve only, or points only - REQUIRES CONTOURS.PY



explode
Explodes path into individual lines and curves

fade
Adjust alpha (0 to 100) of shapes or geometries

find_arc
Finds an arc between two points

find_item
Returns all indices where target occurs in a source list

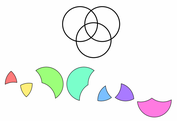
red
blue
green
blue
yellow

find_radius
Finds radius of a polygon with a given side length

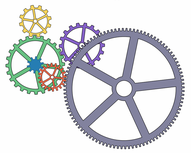
find_substr
Returns all indices of target substring within source string

That is a **bold** assertion!

fragments
Returns shapes arising from intersections in a group of overlapping shapes



gear
Creates an adjustable, working gear



grid_plus
Create a grid of points sized by cell width and height with options for a limit and different orders

1	2	3	4
5	6	7	8
9	10	11	

hexgrid
Makes hexagonal grid

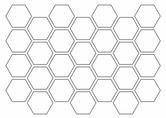
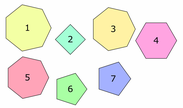


image
Opens an image file and returns sample or masked portion as a pixel group

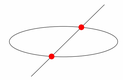
Dimensions: 220.0 x 220.0
Pixels: 38,032
Pixel size: 1.0

indices
Returns a list of indices to enumerate items in the input list

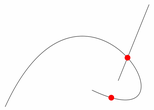


intersect
Finds intersections between a line and a path

intrsct_circle
Finds intersections between a line and an ellipse



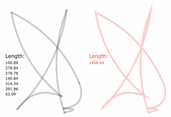
intrsct_curve
Finds intersections between a line and a cubic bezier curve



intrsct_line
Finds intersection between two lines

is_closed
Returns true if path is closed; paths with multiple contours treated as closed

join
Join a list of paths into a single seamless path



join_contours
Join contours into a single path - REQUIRES CONTOURS.PY

list_files
Given folder path returns top level files in that folder - REQUIRES LIST_DIR.PY

Index	python files	code lines
0	concat_list.py	8
1	make_curve.py	9
2	double.py	10
3	contours.py	13
4	time.py	14
5	canvas.py	17
6	write_table.py	32
7	list_dir.py	49
8	convex_hull.py	50
9	convert_base.py	51
10	nodelist.py	79
11	treemap.py	102
12	image.py	107
13	poisson.py	139

list_folders
Given folder path returns top level subfolders - REQUIRES LIST_DIR.PY

FOLDERS
non-empty folder
empty folder

FILES
non-empty folder/text file.txt

mask
Returns segments of background path occluded by foreground shape

merge_table
Merges two tables

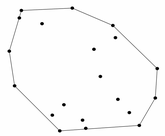
animal	color	number
cat	red	0.0
dog	blue	1.0
penguin	green	2.0

weight	height
146.19	4.39
48.11	1.44
127.48	3.82

animal	color	number	weight	height
cat	red	0.0	146.19	4.39
dog	blue	1.0	48.11	1.44
penguin	green	2.0	127.48	3.82

node_card
Creates specification card for each Nodebox node - REQUIRES NODELIST.PY

outer_points
Returns the points which form a boundary enclosing the rest - REQUIRES CONVEX_HULL.PY

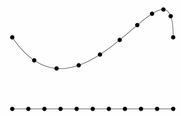


parabola
Create parabola curve for y = Ax^2 + Bx + C for x between X1 and X2

percentage
Returns percentage as number or formatted string

24.05%
33.32%
38.52%
55.04%
59.75%
63.74%
73.10%

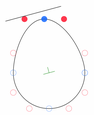
point_in_path
Calculate a point between beginning and end of a path



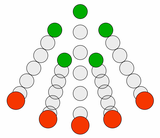
precision
Rounds a floating point number to a given precision

3
3.1
3.14
3.142
3.1416
3.14159

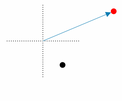
push_pull
Moves a subset of path's control points to alter its shape



rearrange
Move a list of objects to a list of new positions over time



rel_change
Given start point A and end point B returns B-A, the point needed to translate A to B



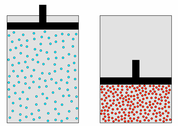
reshape
Gradually reshape one polyline path into another

rev_dir
Reverse direction of a complex path

running_start
A running total that starts with the first value

value	running total
73	73
24	97
64	161
55	216
60	276
33	309
39	348
98	446

scatter_evenly
Generate evenly spaced points within a rectangular area - REQUIRES POISSON.PY



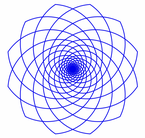
secs
Returns clock time in seconds since last call; use trigger to measure elapsed time - REQUIRES TIME.PY

Seconds needed to draw a polygon with one million sides:
1.594

seg_display
Display numbers and hex values as a seven-segment display

shutter
Creates a dynamic camera shutter

spiral
Draws different types of spirals



stack_tight
Arrange shapes tightly together in horizontal or vertical stacks

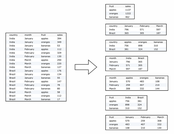
style_text
Converts markup text into a list of styled word paths

Four score and *seven years* ago, our **fathers** brought forth ~onto this continent~ a new nation, **conceived in ~liberty~** and dedicated to the *~proposition~* that all men are created ***~equal.~***

Four score and *seven years* ago, our **fathers** brought forth onto this continent a new nation, **conceived in liberty** and dedicated to the ***proposition*** that all men are created ***equal.***

sub_path
Returns a portion of a complex path between two positions (0 to 100)

sum_cols
Make summary table categorized by row with totals across multiple existing columns



summarize
Make summary table with totals categorized by row and optionally partitioned into columns

tangent
Returns precise tangent angle at any position (0 to 100) along a path

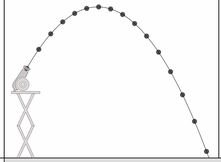
this_or_that
If which is 0 choose this, if which is 1 choose that

470.65
(176.38)
923.58
82.95
698.37

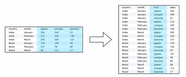
time
Returns local date, time, and day as list - REQUIRES TIME.PY

trace
Traces outline of a closed path

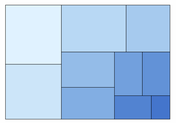
trajectory
Create a trajectory curve for a projectile with given angle, velocity, height, and gravity



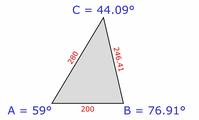
transpose
Turn a set of columns into a new dimension



treemap
Given list of values and bounding rect, returns a treemap at position of rect - REQUIRES TREEMAP.PY



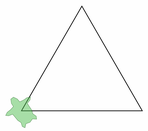
triangle
Create a triangle by supplying three values, including at least one side



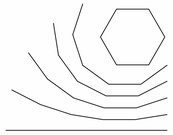
true_arc
Creates an directionally correct arc path for text to follow

true_spoke
Corrects text direction for text on a spoke path

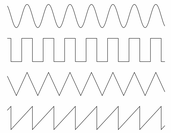
turtle_drive
Move a pointer around a polyline path



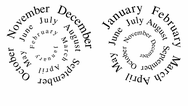
unwind
Unwind a polyline path into a line or segmented curve



waveform
Create four types of waves

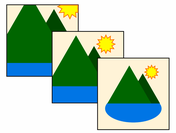


wind_letters
Winds letters around a spiral



write_table
When triggered writes table to csv file and returns "file saved" - REQUIRES WRITE_TABLE.PY

FRUIT	COLOR
apple	red
orange	orange
banana	yellow

"file saved"

zoom
Smoothly zoom into or out of content