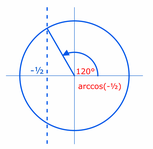
arccos

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



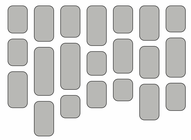
area

Returns area of a closed shape

24780.993461608887

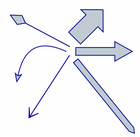
arrange

Arrange objects in tidy stacks



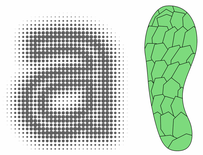
arrow

Draws an arrow with many style options



attractor

Computes minimum distance and angle from points to a shape



average

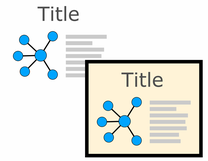
Given a list of numbers returns mean, median, mode(s), or mid-range

Index	trial	heads
0	7	2
1	4	3
2	11	3
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

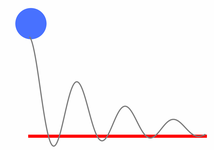


balloons

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

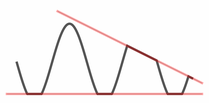
bounce

Calculate a dampening curve to create bouncing animations



bounds

Constrain values within upper and/or lower bounds



change_col

Replace a column with modified data or add new one

country	month	average sales
India	January	957.8710086389913
India	February	825.8760242439373
India	March	873.5705826240972
Brazil	January	795.3933044058705
Brazil	February	837.7907505174816
Brazil	March	599.8965595289849

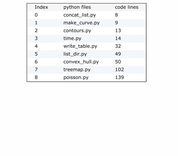
country	month	sales
India	January	958
India	February	516
India	March	874
Brazil	January	795
Brazil	February	838
Brazil	March	600

clean

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

clip

Clips to boundary restoring fill and stroke colorization

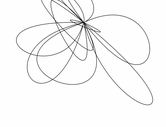


clockwise

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 - REQUIRES CONTOURS.PY

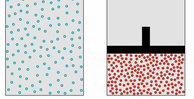
convert_date

Converts dates using Java SimpleDateFormat, REQUIRES DATEFORMAT.CLJ

Now: Thursday, March 26 8:13:19 PM
Since 1/1/19: 450d 19:13:19

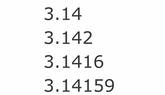
diff_list

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



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



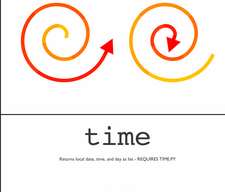
distribution

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	55.4055
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	334	345	53
India	February	232	329	139
India	March	176	124	93
Brazil	January	176	124	93
Brazil	February	147	78	80
Brazil	March	58	112	17

country	month	bananas
India	January	53
India	February	139
India	March	93
Brazil	January	93
Brazil	February	80
Brazil	March	17

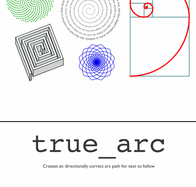
drop_last

Take all but the last item of a list

1 2 3 4 5

even_sample

Distribute points evenly across a path, curves only, or joins only

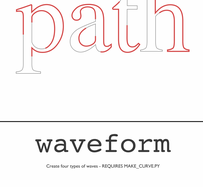


evolve

Gradually change location, size, and color of a shape based on a reference object or path

explode

Explodes path into individual lines and curves, REQUIRES MAKE_CURVE.PY



fade

Adjust alpha (0 to 100) of shapes or geometries

find_arc

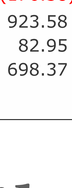
Finds an arc between two points

find_item

Returns all indices where target occurs in a source list

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!

fit_curve

Finds a curve that passes through all points in a path - REQUIRES MAKE_CURVE.PY

fragments

Returns shapes arising from intersections in a group of overlapping shapes - REQUIRES CONTOURS.PY

gear

Create 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

hexgrid

Makes hexagonal grid

indices

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

intersect

Finds intersections between a line and a path, REQUIRES MAKE_CURVE.PY and CONTOURS.PY

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	contours.py	13
3	time.py	14
4	write_table.py	32
5	list_dir.py	49
6	convex_hull.py	50
7	treemap.py	102
8	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

make_curve

Draws quadratic curve with two control points - REQUIRES MAKE_CURVE.PY

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

outer_points

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

percentage

Returns percentage as number or formatted string

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

poisson

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

precision

Rounds a floating point number to a given precision

3
3.1
3.14
3.142
3.1416
3.14159

rel_change

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

rev_dir

Reverse direction of a complex path - REQUIRES MAKE_CURVE.PY

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

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: 1.155

shutter

Creates a dynamic camera shutter

spiral

Draws different types of spirals - REQUIRES MAKE_CURVE.PY

style_text

Convert 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) - REQUIRES MAKE_CURVE.PY

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 tangent angle along a curve or path (0 to 100) - REQUIRES CONTOURS.PY AND MAKE_CURVE.PY

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 - REQUIRES MAKE_CURVE.PY

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

true_arc

Creates an directionally correct arc path for text to follow

true_spoke

Corrects text direction for text on a spoke path

waveform

Create four types of waves - REQUIRES MAKE_CURVE.PY

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"

Node Library 2.0

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