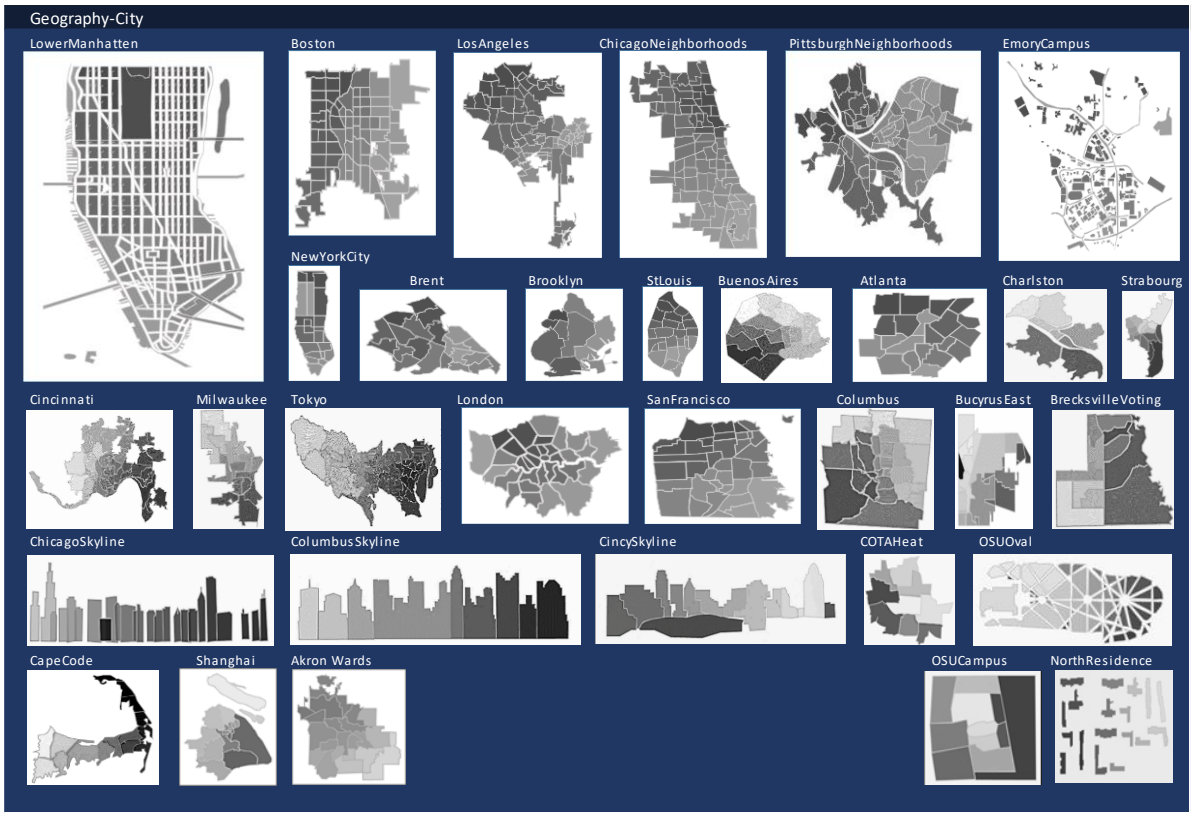
# Blackbelt Ribbon heatmap library (as of Jan 2024)

## Geography-Global

WorldMap

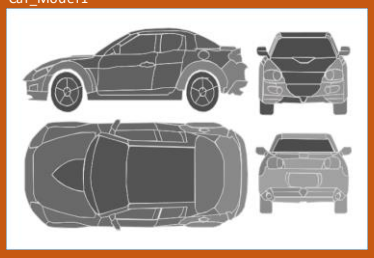
Europe

EastAfrica

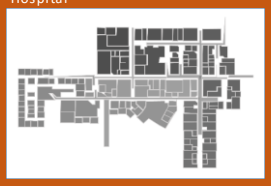
NorthernHemis

## Blueprints

Car_Model1



Hospital



TallahasseeMall

TheShoe

Mask_Hockey

Stadium

RocketShip

Lamborghini

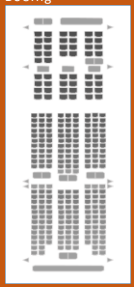
Camera

Shoe

Building2

BaseballSpray

Boeing



Jet1

OhioUnion

Citi Field Mets

Computer

Shoe2

RotaryPhone

AirplaneProts

Flights

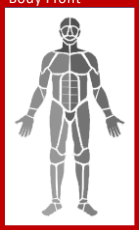
Keyboard Map

Airplane2

AWingStarfighter

## Anatomy

Body-Front



Body-Back

Heart

Frog

Footprints

Lungs

Brain

Bird

Butterfly

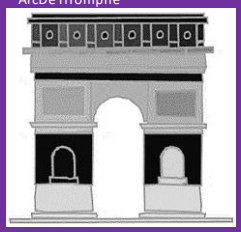
Eye

## Artwork

EagleSalmon

Tiger

ArcDeTriomphe



Brutus

OSULogo


NapoleonD

## Blackbelt Ribbon functions

| | | |
|---|---|---|
| **ExtractURL** | <See Chapter 3> | E.g. =ExtractURL(G5) |
| Provides the address of the first hyperlink associated with a cell. | | Parameters:<br>• Range of cell in which hyperlink exists |
| **PathLength** | <See Chapter 3> | E.g. =PathLength(P2:R21, TRUE) |
| Calculates the total path distance along a sequence of points of any number of dimensions. | | Parameters:<br>• Your full data range of observations without headers<br>• TRUE if individual records are in each row, and dimensions are by column |
| **PolyPtsExtract** | <See Chapter 3> | E.g. =PolyPtsExtract(""Shape4"","P1"") |
| Extracts all the pairs coordinates of a drawn polygon and stores these in a newly created text box. | | Parameters:<br>• The name of the drawn polygon for extract<br>• Name of the destination cell for later text box transfer |
| **PolyPtsBuild** | <See Chapter 3> | E.g. =PolyPtsBuild(""P1"",0.5) |
| Draws a new polygon using paired data starting in a cell, assuming two columns of data and multiple rows. | | Parameters:<br>• Name of the upper left cell in the paired data set<br>• Relative size of the polygon to be drawn; 1 = Original |
| **PoissonInvBB** | <See Chapter 4> | E.g. =PoissonInvBB(4) |
| Generates a Poisson distributed random number, given a mean. Optional input for percentage, or random. | | Parameters:<br>• Mean value of the Poisson distribution<br>[Optional] Percentile of value desired from distribution |
| **HistoricalInvBB** | <See Chapter 4> | E.g. =HistoricalInvBB(c2:c8,d2:d8) |
| Generates a historically distributed random number, given an array of events and their probabilities. | | Parameters:<br>• Range of events for which you have probability data<br>• Range of probabilities for these events (summing to 1)<br>• [Optional] Percentile of value desired from distribution") |
| **Stdevif** | <See Chapter 5> | E.g. =Stdevif(j4:j25,""Low"",m4:m25) |
| Delivers the standard deviation of a set of cells subject to a criteria, consistent with AverageIF. As of 2022, allows the final parameter to be a multicolumn range for analysis. | | Parameters:<br>• Vertical Range of data that will be examined by criteria<br>• Criteria to be checked against for data use<br>• Range of cells that might contain values to include in calculation of standard deviation |
| **Percentileif** | <See Chapter 5> | E.g. =Percentileif(j4:j25,""Low"",m4:m25,0.25) |
| Delivers the value at the percentile of a set of cell, subject to a criteria, consistent with AverageIF. As of 2022, allows the final parameter to be a multicolumn range for analysis. | | Parameters:<br>• Vertical Range of data that will be examined by criteria<br>• Criteria to be checked against for data use<br>• Range that might contain values to include in extraction of percentile value<br>The percentile level sought for the value to be returned;<br>e.g. 0 = Min, 1 = Max, 0.5 = Median |
| **Bivariate** | <See Chapter 5> | E.g. =Bivariate(0.5,0.5,X12,X13,Y12,Y13,-0.2) |
| Delivers the bivariate distribution frequency at a coordinate pair, given both means, stdevs and correlation. | | Parameters: • X coordinate • Y coordinate<br>• X Mean • Y Mean • X Standard Deviation<br>• Y Standard Deviation • X-Y Correlation |
| **AdjustColors** | <See Chapter 5> | E.g. =Percentileif(A1,Rand(),""Auto-updating"") |
| Adjusts the colors of a HeatMapper generated polygon set, based on header and left column cell colors and 2nd column values. | | Parameters:<br>• Upper left cell of associated HeatMapper data series<br>• Either a fixed value, reference or Rand() depending of updating preferences<br>• What content/notes this cell should present to the user") |
| **CompSearch_TSP** | <See Chapter 6> | E.g. =CompSearch_TSP(D$4:E13) |
| Comprehensively examines all N! sequences of N X-Y points, and provides best, worst and the option to view all other sequences encountered. | | Parameters:<br>• Range of X-Y coordinate pairs<br>• [Optional] Output cell for transfer of all sequences from textbox to spreadsheet<br>• [Optional] Whether the textbox is equipped with an auto-extract macro |
| **NearestNext_TSP** | <See Chapter 6> | E.g. =NearestNext_TSP(D$4:E13, Z1, TRUE) |
| Applies the Nearest-Next heuristic to examine N*(N+1)/2 sequences of N X-Y points, and provides best and worst encountered, and the option to view all other sequences encountered. | | Parameters:<br>• Range of X-Y coordinate pairs<br>• [Optional] Output cell for transfer of all sequences from textbox to spreadsheet<br>• [Optional] Whether the textbox is equipped with an auto-extract macro |
| **FurthestNext_TSP** | <See Chapter 6> | E.g. =FurthestNext_TSP(D$4:E13, Z1, TRUE) |

| | |
|---|---|
| Applies the Furthest-Next heuristic (opposite of Nearest-Next) to examine N*(N+1)/2 sequences of N X-Y points, and provides best and worst encountered, and the option to view all other sequences encountered. | Parameters:<br>• Range of X-Y coordinate pairs<br>• [Optional] Output cell for transfer of all sequences from textbox to spreadsheet<br>• [Optional] Whether the textbox is equipped with an auto-extract macro |

## New functions as of 2024 *(along with expansions on Percentileif and Stdevif)*

| | | |
|---|---|---|
| **AlphaNums** | <New 2022> | E.g. =AlphaNums(G5,1) |
| Takes a string of characters and returns only the letters and/or numbers (with spaces) of that string. | | Parameters:<br>• Full string containing numbers, letters and other characters<br>• [Optional] 0=Both Numbers and Letters, 1=Just Letters, -1=Just Numbers |
| **TermCount** | <New 2024> | E.g. =TermCount(B2:B100,” “) |
| Provides a sorted nx2 array of unique terms and their count, drawn from a selected range of cells. | | Parameters:<br>• Full array of cells with one or more delimited (separated) terms per cell<br>• The term delimiter, such as a space, comma, or semicolon, etc. (e.g., “;”) |
| **VFilters** | <New 2022> | E.g. =Vfilters(""e"", D5:D34, 0, 4, 3) |
| Provides the full multi-column content of rows matching a criteria. {Contributed by Andy Ebenstein 2022} | | Parameters:<br>• Filtering criteria; Rows beginning with this content will be returned in detail<br>• Source range of data to be filtered<br>• Member of a comma delimited list of column indices to be returned (1st index=0)<br>[Optional] Additional members of the above defined list |
| **HFilters** | <New 2022> | E.g. =Hfilters(""2010"", D5:D34, 0, 4, 3) |
| Provides the full multi-row content of columns matching a criteria. {Contributed by Andy Ebenstein 2022} | | Parameters:<br>• Filtering criteria; Rows beginning with this content will be returned in detail<br>• Source range of data to be filtered<br>• Member of a comma delimited list of column indices to be returned (1st index=0)<br>[Optional] Additional members of the above defined list |
| **MultiAvgif** | <New 2022> | E.g. = MultiAvgif(C12:C120, “Operations”, D12:F120) |
| Delivers the average of a set of cells subject to a criteria. Consistent with AverageIF, but allowing multicolumn range as a final range for averaging. | | Parameters:<br>• Your full data range of observations without headers<br>• Criteria to be checked against for data use<br>• Range of cells that might contain values to include in calculation of average |
| **Linreg** | <New 2022> | E.g. = Linreg(F48:F73,B48:E73,1,B47:E47) |
| Provides linear regression results as per LINEST, but with original arrangement of X-variables, labels and t-tests of significance of coefficients. | | Parameters:<br>• Your full data range of Y-values, without headers<br>• Your fill range of X-values, without headers<br>• Optional array of X-variable names (headers) |
| **StepwiseByAIC** | <New 2023> | E.g. = StepwiseByOLS(G2:G376,A2:F376,1,A1:F1) |
| Provides stepwise results for the inclusion of predictor variables in OLS regression, based on AIC contributions (strongest contributors listed on top). | | Parameters:<br>• Your full data range of Y-values, without headers<br>• Your fill range of X-values, without headers<br>• Your range of X-variable names (headers) |
| **FindZip** | <ZipTranslate Add-in 2022> | E.g. = FindZip(43210) |
| Takes a given US Zip Code and returns the city, county and state associated. | | Parameters:<br>• The Zip Code of interest |
| **FindIPaddress** | <ZipTranslate Add-in 2022> | E.g. = FindIPaddress(149.142.201.252) |
| Takes a given IP Address and returns the Zip Code (or other district code), city, region, country and latitude/longitude. | | Parameters:<br>• The IP Address of interest<br>{* Note that limits exist on the number of IP Address translations per day} |