

MapCalc Operations (draft 6/00)

...advanced grid-based analysis of mapped data

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Analyze-- *Creates a map of the simple or weighted average, standard deviation and other descriptive statistics of two or more maps.*

Clump-- *Assigns new values to contiguous groups of cells within each map category.*

Cluster-- *Identifies spatial groupings (clusters of similar data) from a stack of maps.*

Compare-- *statistically analyzes map coincidence for significant difference and outputs a summary table.*

Composite-- *Creates a map summarizing values from one map that coincide with the categories of another.*

Compute-- *Creates a map as the mathematical or statistical function of two or more maps.*

Configure-- *Assigns new values characterizing the shape of the area associated with each category.*

Copy-- *Creates a new map by copying an old map.*

Correlate-- *Identifies correlation among maps and outputs a principal components summary table.*

Cover-- *Creates a new map where transparent values of the top map replace the values on the previous (bottom) map or stack of maps.*

Crosstab-- *Generates a spatial coincidence table of two maps.*

Describe-- *Creates a tabular summary of the contents (legend) of a map.*

Drain-- *Creates a map indicating the number of steepest paths (optimal path density) from a set of locations along a surface.*

Export-- *Generates a data file of map information in a variety of formats for transfer to other programs.*

Import-- *Assigns values to cells defined by data files of map information in a variety of transfer formats.*

Import_Table-- *Assigns values to cells defined by the columns in a standard data base file (.dbf).*

Interpolate-- *Creates a continuous surface from point data.*

Intersect-- *Creates a map that assigns new values to pairwise combinations of values on two maps.*

Orient-- Creates a map indicating aspect along a continuous surface.

Point-- Assigns values to individual cells.

Profile-- Creates a map indicating the cross-sectional profile along a continuous surface.

Radiate-- Creates a map indicating areas that are visible from locations specified on the “viewers map.”

Regress-- Generates a multiple regression equation and statistics for a stack of maps.

Relate-- Creates a map of similarity for a specified location(s) on a stack of maps to all other locations within a map area.

Renumber-- Assigns new values to the categories of a map.

Scan-- Creates a map summarizing the values that occur within the vicinity of each cell.

Size-- Assigns new values according to the size of the area associated with each map category.

Slice-- Assigns new values by dividing the range of values on a map into specified intervals (contouring).

Slope-- Creates a map indicating the slope (1st derivative) along a continuous surface.

Span-- Creates a map indicating the narrowness within areas associated with each category of a map.

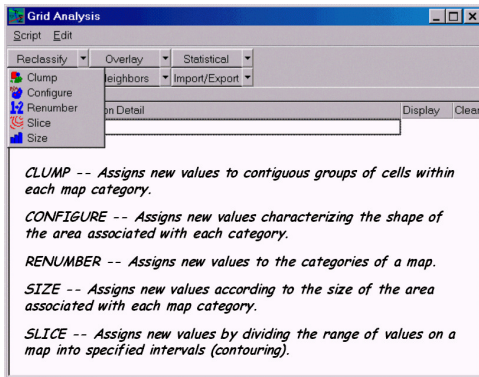
Spread-- Creates a map indicating the shortest effective distance from specified cells to all other locations.

Stream-- Creates a map identifying the steepest downhill route along a surface (optimal path).

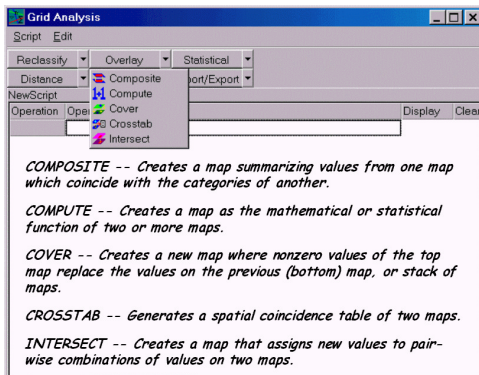
Tabulate-- Generates a standard data base file (.dbf) containing cell values for a set of maps.

Varray— Primitive-level procedure for handling data.

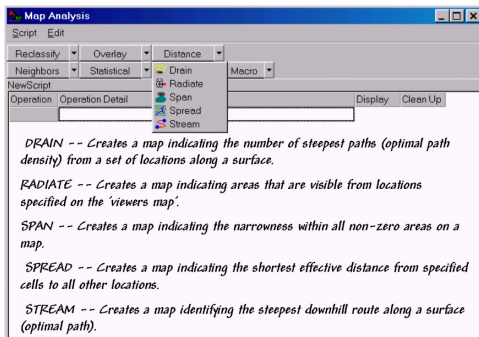
Listing of Operations by Functional Group



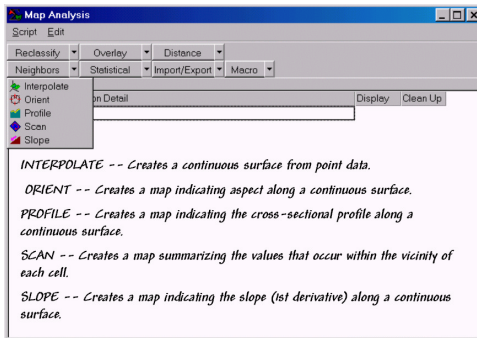
Reclassify Operations— New values are assigned as a function of the initial value, size, shape, or contiguity of each map category on a map.



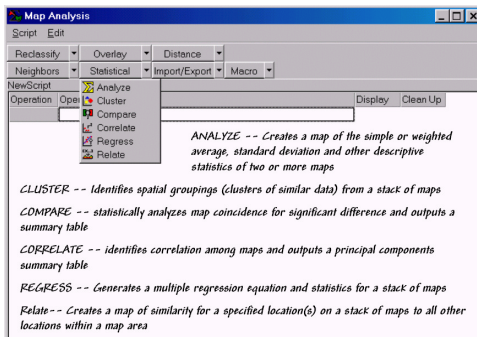
Overlay Operations— New values are assigned as a function of the independent values associated with each map location or categories on two or more existing maps.



Distance Operations— New values are assigned as a function of the simple or effective distance, optimal movement, narrowness, or visual connectivity among map locations.



Neighborhood Operations— New values are assigned as a function of the independent values within a specified distance and direction around each map location.



Statistical Operations— New values and summary tables/statistics/equations are calculated using a variety of descriptive and predictive statistical procedures.