LECTURE TEN
MODELING WITH GIS
What is the difference between a data model and a GIS model?
MODEL

Vector data model

Point

Line

Area
MODEL
What is the difference between spatial analysis and spatial modeling?
TYPES OF MODELS

1. Static vs Dynamic
2. Aggregate vs Individual
3. Cellular vs Objects
4. Cartographic
STATIC
DYNAMIC

\[ T_i \quad T_{i+1} \quad T_{i+2} \]

\[ T_{i+3} \quad T_{i+4} \quad T_{i+5} \]
AGGREGATE
CELLULAR
OBJECTS
CARTOGRAPHIC MODELING
OR
MAP ALGEBRA
LOCAL STATISTICS

SUM
SUBTRACT
PRODUCT
DIVIDE

EXPONENT
LOG
SQUARE ROOT
ABSOLUTE
FOCAL STATISTICS

A moving window is used to calculate a statistic in the neighborhood of each cell.

SUM
MEAN
MIN
MAX
MEDIAN
VARIANCE
ZONAL STATISTICS

Partitions input into non-overlapping blocks and calculates statistic of values within the block.

SUM
MEAN
MIN
MAX
MEDIAN
VARIANCE
AGGREGATION

- Generates a new raster with coarser resolution
- Output cells are based on a calculation of the input cells using one of the following:

  | SUM  | MEAN | MIN  | MAX  | MEDIAN |

BASED ON A CELL FACTOR
Why Model?