Mapping Sequence

- The purpose of the mapping sequence is to produce maps for spatial data.
- To learn about spatial clustering, for example, please consult a reference such as Geographic Information Analysis, O'Sullivan and Unwin (ISBN: 978-0470288573), chapters 7-8.

Required Packages

- classInt
- RColorBrewer
- rgeos
- spdep

Mapping_1_Original.R – plots quantile maps for a given variable

Arguments

1. **AGGREGATES** – path to folder containing final aggregated vertex tables
2. **POLYGONS** – path to folder containing polygon files
3. **MAPS** – path to folder to output maps (.png)
4. **REGIONS** – which regions have been included (same as region argument used to create final vertex tables and polygons)
5. **VARIABLE** – variable to display on map
6. **QUANTILES** – number of quantiles for data to be mapped. 10 or fewer is recommended; limited by color palette
7. **STANDARD** – 0 (false) or 1 (true) to specify whether using standard space data structures

Objectives

a. Read in final vertex tables
b. Read in polygons
c. Output .png maps based on **VARIABLE** with colors determined by **QUANTILES**

Notes

- Will output maps for as many variables as possible given columns in vertex table that match **VARIABLE**

Usage

```
Rscript Mapping_1_Original.R ../vertex_sequence/vertex_directory/final_tables
../vertex_sequence/vertex_directory/polygons maps_directory/original_maps temporal
FTP.PVC.SUVR 10 0
```

Mapping_2_Clusters.R – computes and maps Local Moran's I (Anselin) for given variable

Arguments

1. **AGGREGATES** – path to folder containing final aggregated vertex tables
2. **POLYGONS** – path to folder containing polygon files

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3. **MODELS** – path to variography summary table output from **Variography_4_Model_Summary.R**
4. **MATRICES** – path to folder containing distance matrices
5. **MAPS** – path to folder to output maps (.png)
6. **REGIONS** – which regions have been included (same as region argument used to create final vertex tables and polygons)
7. **VARIABLE** – variable for spatial cluster analysis
8. **SIGNIFICANCE** – level of significance for analysis
9. **STANDARD** – 0 (false) or 1 (true) to specify whether using standard space data structures

Objectives

a. Read in final vertex tables
b. Read in polygons
c. Output .png maps locating clusters for **VARIABLE** at given **SIGNIFICANCE**

Notes

- Weight is geostatistical—derived from variography
- Will not output results for pure nugget model
- Script does not include bivariate analysis

Usage

```
Rscript Mapping_2_Clusters.R ../vertex_sequence/vertex_directory/final_tables
../vertex_sequence/vertex_directory/polygons
../variography/variography_directory/models/summary_models.rds
../vertex_sequence/vertex_directory/distance_matrices maps_directory/local_i
temporal FTP.PVC.SUVR 0.05 0
```

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