Introduction to R Scripting with ArcGIS

Overview

This package consists of four tutorials that deal with integrating the statistical programming language R with ArcGIS for Desktop. Several concepts are covered which include configuring ArcGIS with R, writing basic R scripts, writing R scripts that use ArcGIS data and functionality, and constructing R Tools for use within ArcGIS Pro or ArcGIS Desktop. It is recommended that the tutorials are completed in the following order.

1. **Getting Started with the R-ArcGIS Bridge:**
   - Installing and setting up R and RStudio
   - Installing the R-ArcGIS Bridge
   - Installing and loading third-party R packages
   - Extract sample data
   - Running basic R script tools from an ArcGIS toolbox

2. **R Scripting Basics:**
   - Using R Integrated Development Environments (RStudio Desktop)
   - Writing expressions and executing commands in R
   - Working with basic objects and data types in R
   - Importing and subsetting data in R

   Note: *The R Scripting Basics tutorial can be considered optional by anyone that is already well-versed in the R programming language, and familiar with RStudio Desktop or an equivalent IDE for developing R code*

3. **R-ArcGIS Scripting:**
   - Reading/writing ArcGIS datasets using the `arcgisbinding` package
   - Working with ArcGIS datasets in R
   - Manipulating and analyzing spatial data in R

4. **Building an R Script Tool:**
   - Creating and debugging R scripts designed for use as script tools by ArcGIS applications
   - Creating and configuring script tools in an ArcGIS toolbox to execute R code
   - Integrating R script tools into Model Builder workspaces

Data Sources

- City of Toronto: https://www1.toronto.ca/wps/portal/contentonly?vgnextoid=1a66e03bb8d1e310VgnVCM10000071d60f89RCRD
- Toronto Police Service: http://data.torontopolice.on.ca/pages/ksi

- Statistics Canada:
  http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/index-eng.cfm

Production Date

The Education and Research Group at Esri Canada makes every effort to present accurate and reliable information. The Web sites and URLs used in this tutorial are from sources that were current at the time of production, but are subject to change without notice to Esri Canada.

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