5 Framework Tool: www.opencrimapping.org

Opencrimemapping.org is a framework tool designed to showcase some simple examples of what can be accomplished by using the framework presented in this paper. The framework tool is built with an open-source toolkit. Thematic map examples are presented to the user to help take some of the guesswork out of producing interactive maps. Opencrimemapping.org also gives users the ability to make selections to see how changes in a part of the framework of a map displays the information differently.

\par The framework tool was developed mainly with the open-source language R. R is an open-source language that is used for statistical computing, R compiles and runs on both Windows, MacOS, and multiple UNIX platforms \footnote{What is R, <https://www.r-project.org/about.html>}. R is used in this framework tool to gather, clean, display and deploy Opencrimemapping.org. Maps were built with the combination of R functions and compiled code, or packages put together by developers at Leaflet. Opencrimemapping.org is deployed out to the web with the package called Shiny.

\par The Leaflet package for R is an open-source JavaScript library for interactive maps\footnote{Leaflet for R, <https://rstudio.github.io/leaflet/>}. Leaflet gives the R user the ability to create interactive maps. The Leaflet package also connects users with different map providers to so users can have different base maps available to use when creating interactive thematic maps. The developers of Leaflet included functions that worked with Shiny for deployment and user interface (UI).

\par Opencrimemapping.org’s Leaflet maps are published by the Shiny package in R. Shiny allows R users to use a web framework to build web applications with an open-source R package\ footnote{Shiny Server: Easy R Web Apps, https://www.rstudio.com/products/shiny/}. The Shiny package enables R users to deploy web applications without prior knowledge of Hypertext Markup Language (HTML), Cascading Style Sheet (CSS), or JavaScript. Shiny is also used to create a user interface on some of the maps in Opencrimemapping.org so that users can toggle between time, or basemaps.