

A21: Shiny App and Mapping

For this assignment you will create your first web app. You will use the data prepared by Dr. Maxwell. This is the same data that was used in the associated lecture module; however, you will use a different subset. You will need to deliver the R App file.

1. Your app will be divided in three tabs: Data Exploration, Visualization, and Interactive Map.
2. You will experiment with the different functions of Shiny and learn how to create checkboxes and input sliders.
3. You will create an interactive map with Leaflet showing the elevation in South Atlantic States.

Grading Rubric

- The data are filtered and contain only the subregion South Atlantic states (SUB_REG == 'S Atl') with the following variables: "dem", "med_ncm", "POPULAT", and "precip". (5 points)
- The web app should include at least three tabs. The first tab will be for Data Exploration, the second tab will contain the Visualizations with ggplot2, and the third tab will be for an interactive map created with Leaflet. (10 points)
- A theme from [Bootswatch](<https://bootswatch.com/4/>) is used. (5 points)
- The user can select amongst the 9 states by clicking a checkbox group (<https://shiny.rstudio.com/reference/shiny/1.6.0/checkboxGroupInput.html>). (5 points)
- Multiple choices are possible in the three tabs. (5 points)
- The base interactive map will be zoomed on the West Virginia extent. (5 points)
- The data explorer tab shows, as selected, the data from West Virginia. (5 points)
- The Visualization tab plots three separate graphs based on the selected data. (10 points)
- The Interactive map allows the user to select multiple states and one variable ("dem"). (5 points)
- The elevation is selected by the user with sliderInput(). (<https://shiny.rstudio.com/reference/shiny/0.14/sliderInput.html>). Min and max elevation are specified, and the default value is set at 200. (10 points)
- The Observe function is used to modify the map. (10 points)
- A legend for elevation is included. (5 Points)
- Up to 20 points will be rewarded based on the overall design of the interactive web app, both UI and code. (20 Points)