

Visualizing Durham Public Schools

Allyson Ashekun, Drew Greene, Patience Jones, Rhea Tejwani



Methods

Data Collection
Collect data using data mining and web scraping.

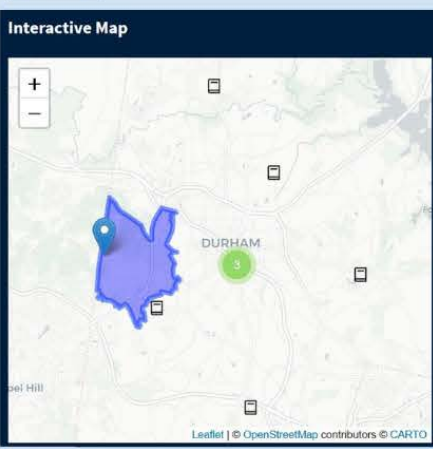
Visualize Spatial Data
Display spatial data as markers on map using the Leaflet R Package.

Visualize School Stats
Present school statistics as graphs using the GGPlot R Package.

Design Homepage
Design an eye-catching introductory homepage using the Shiny R Package.

Deploy App
Deploy app for public use using a Shiny Server.

Spatial Data



GeoJson files obtained from Durham Open Data are used to display the shapes of the school zones on the interactive map.

Latitudinal and longitudinal data obtained from various sources like Durham Open Data and Google Maps are used to display specific variables as markers on the interactive map.

Unique icons are given to each marker to enhance the readability of the map. Icon clustering is enabled to preserve the readability of selections with many markers.

School Statistics

School statistics were collected from sources including Durham Compass, NC School Report Card, the NCDPI website, and more. Users can select a measurement using a drop-down menu. If applicable, the Durham County average is provided.



Background

Our work continues upon the progress made by a Bass Connections team between Duke and NCCU focused on understanding the community school model, a way of approaching schools as the center of the community. We are looking at how Durham universities can equitably partner with the school system.

Objectives

The goal of our project is to provide a comprehensive resource about the Durham Public School system aimed at those entering the schools as preservice teachers, volunteers, etc. To do this, we created an interactive R Shiny dashboard to display school statistical data and geospatial mapped data.

Context & Resources

Context and resources are provided to give users more insight into particular variables. When a user chooses a variable, additional information about the data is given, as well as definitions, quick links, and social implications.

Context & Resources

Students of color are more susceptible to harsher punishments in schools. Black students are subject to higher disciplinary actions compared to their white peers. A reason for this is racial bias leading to the overpolicing of Black students, fueling the **school-to-prison pipeline**¹.

Below are articles on In-School Suspensions and the School-to-Prison Pipeline:
[Racial Bias in School Discipline](#)
[School-to-Prison Pipeline](#)

¹ **school-to-prison pipeline**: the overly disproportionate policing of minority students, often from low-income households, that leads to higher punishments including ISS, OSS (out-of-school suspension), juvenile detention, etc.



Future of the Dashboard

