

BACK TO SCHOOL

by Ashwini, Anirudh, Brad, Mandy, Matt



BACK TO SCHOOL

MEMBERS

Ashwini Joshi, CSE
Anirudh Ganesh, CSE
Brad Pershon, CSE
Mandy Pavlich, Design
Matt De Libro, CSE

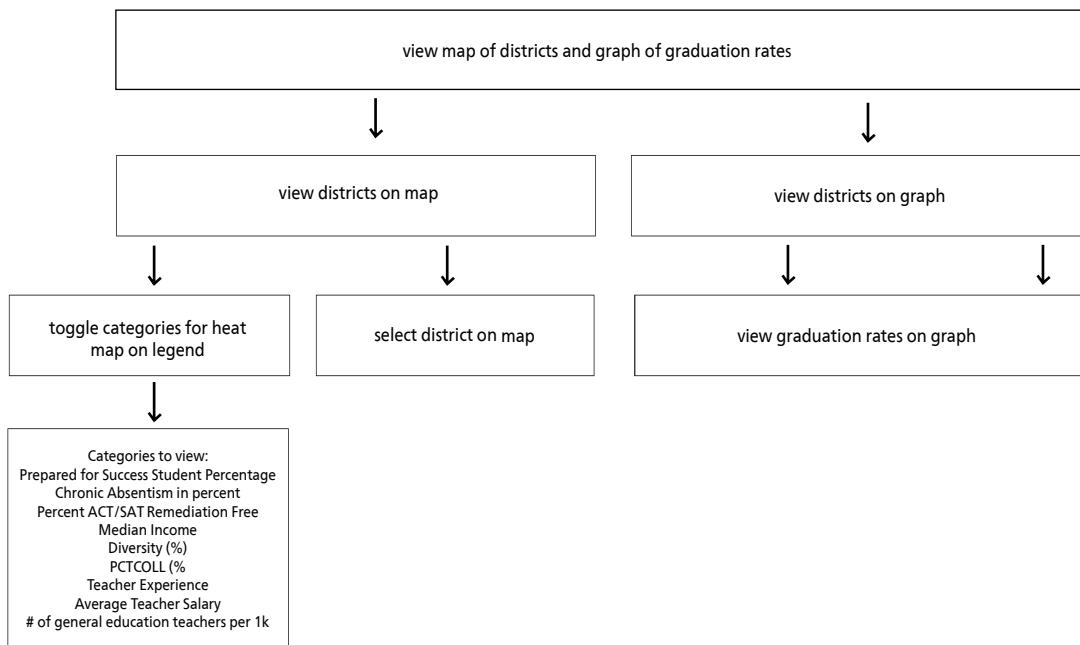
PROJECT STATEMENT

As Columbus becomes a larger metropolitan city, there still seems to be a disparity in the quality of public school education. Franklin County has 16 school districts, we look to see if location, socio-economic issues, and teacher's qualifications affect a school districts performance. Our visualization will explore what factors impact a students performance the most.

USER FLOW

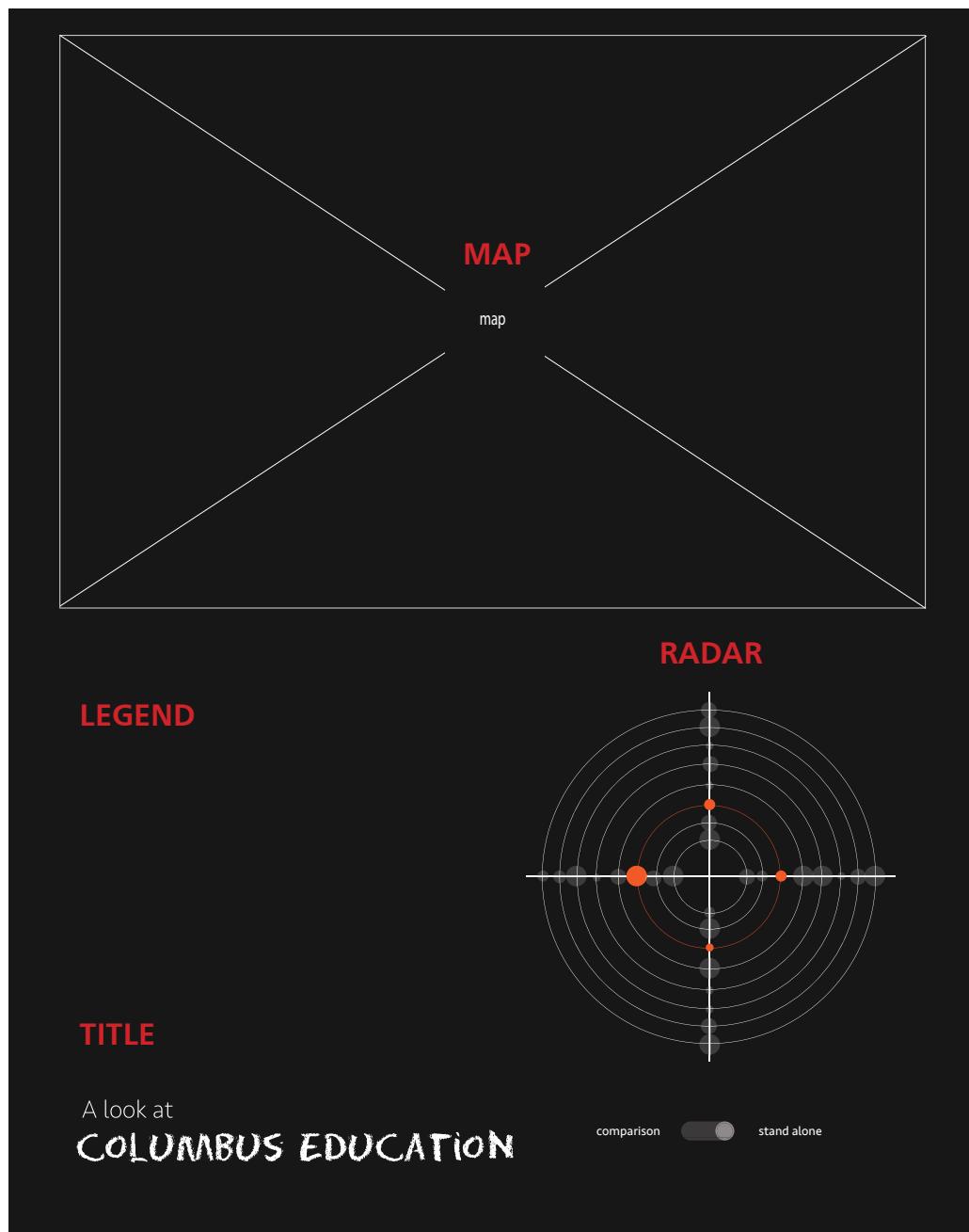
HOW IT WORKS

This versatile data visualization allows for the user to enter the data at the graduation rate radar graph, or at the comparison map of different school districts. The user is able to compare graduation rates of the districts, or compare factors that contribute to graduation rate on the map.



PROTOTYPE

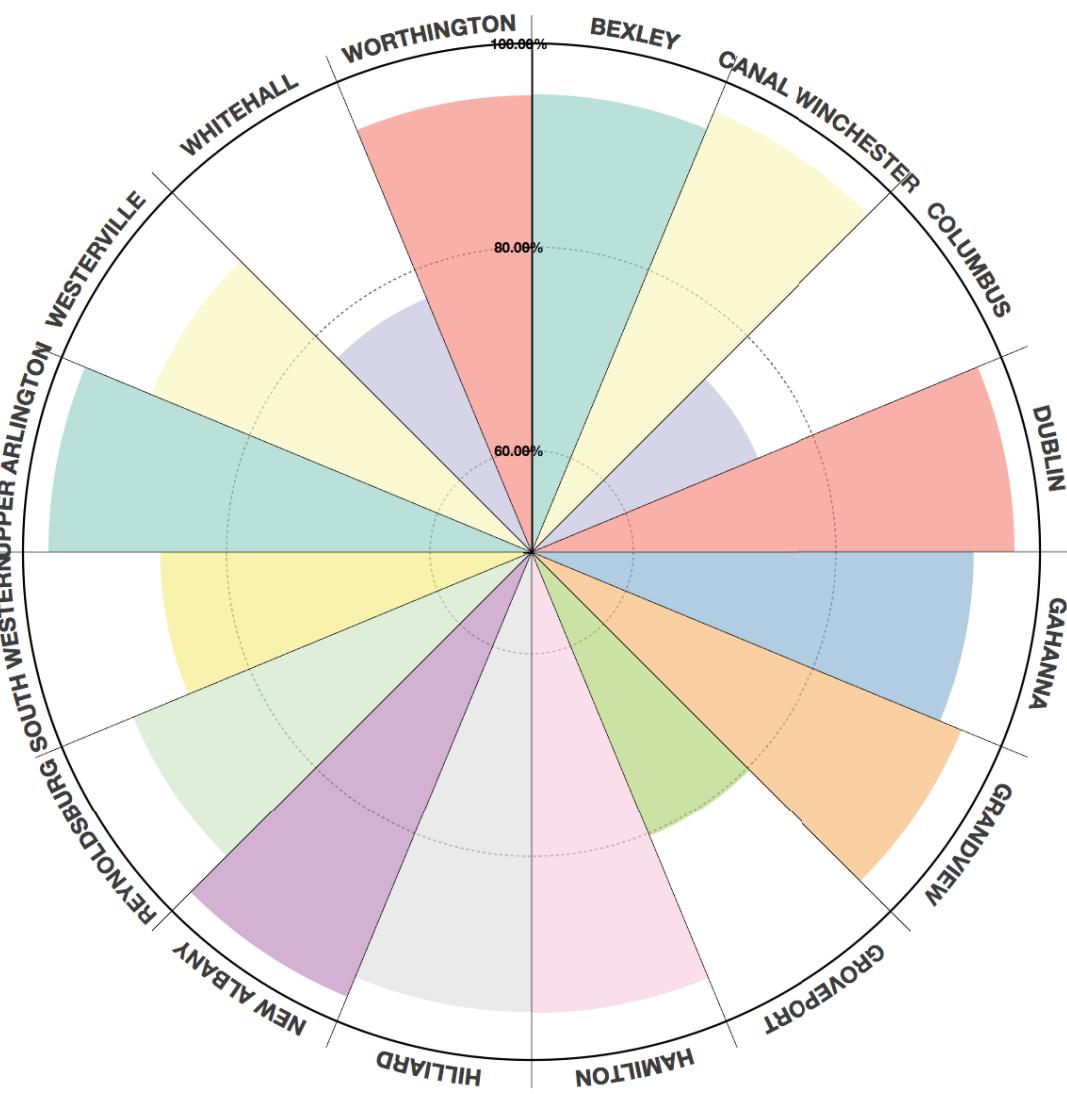
The purpose of this prototype was to lay out where each section of the data visualization would go and how each piece would interact with the overall composition.



PROTOTYPE

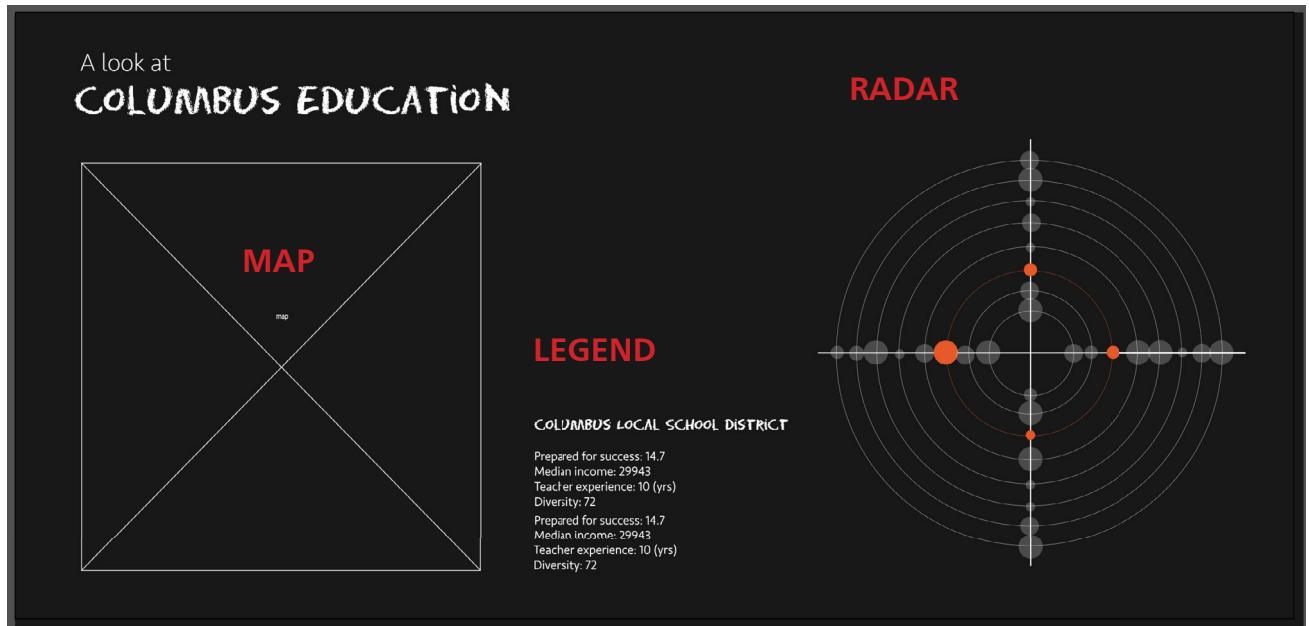
The first iteration of the radar graph, which compares graduation rates of the school districts in Columbus.

Franklin County Graduation Rate by School District



PROTOTYPE

Due to some sizing issues with readability, this new prototype layout shows the map on the left the legend in the middle, and the radar graph on the right.



SPRINTS

Sprint 0

March 27th - March 29th

Problem statement formulation - Team
Explore data - Team

Sprint 1

April 3rd - April 5th

Finalize data set - Matt, Mandy, Brad
Generate User Flow - Mandy
Prototype visualization in Illustrator - Mandy
Look into D3 map components - Anriudh, Ashwini

Sprint 2

April 10th - 19th

D3 prototype Radial Bar chart - Brad
Interactive legend - Matt
Heat map - Ashwini, Anriudh
Begin documentation - Mandy

Sprint 3

April 24 - 28th

Finalize D3 components - CSE Students
User testing - Team
Finalize report - Team

STYLE GUIDE

TITLE

A B C D E F G H I J K L
M N O P Q R S T U V W X
Y Z A

COPY

A B C D E F G H I J K L
M N O P Q R S T U V
W X Y Z
a b c d e f g h i j k l m n
o p q r s t u v w x y z

COLORS

#93278F

#B091FF

#84143F

#FF7BAC

#ED1E79

#C61300

#FF6600

#F7B21E

#FFE98F

#E2DE34

#9FC63F

#239152

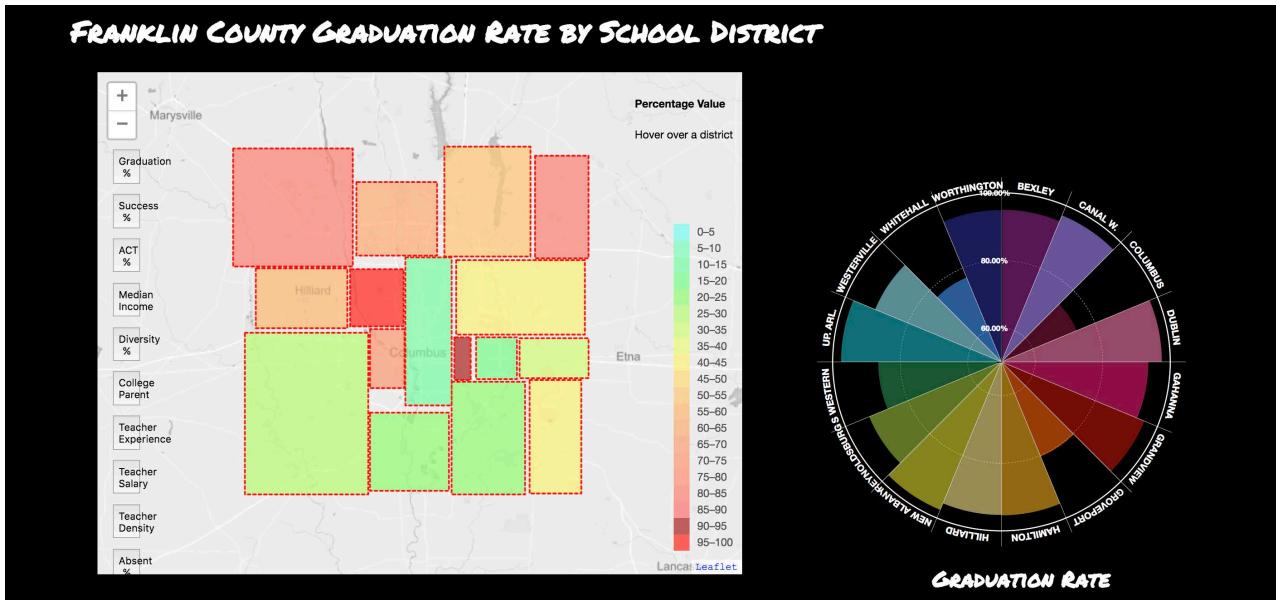
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#99ECFF

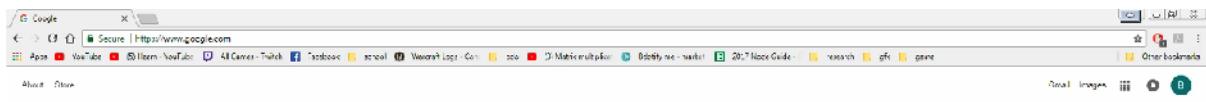
#459FFF

#2E3192

FINAL VISUALIZATION



FINAL VISUALIZATION ORZ \



Google

Google Search I'm Feeling Lucky



SOFTWARE DATA

Software packages: HTML5, Javascript, D3, Leaflet

User guide: The site has been hosted on github.io at the following link: <https://bpershon.github.io/>. If a user wishes to run the project locally they first need to launch a python web server on their system (using Anaconda prompt for example):

At the command line type:

Python 2.7: `python -m SimpleHTTPServer 8888`
Python 3: `python -m http.server 8888`

Once the service is running, go to your web browser (Chrome/Firefox) and type: `localhost:8888`. This will bring up a list of files on your system, navigate to the project download folder, once inside the folder the page should load up (if not click the `index.html` file).

Data: The data is found in the data folder, the `school-data.csv` file, it is a collection of data from the following datasets:

http://webapp2.ode.state.oh.us/similar_districts/raw_data.asp (2017)
<http://reportcard.education.ohio.gov/Pages/Download-Data.aspx> (2016-2017 -> District Data, Financial Expenditures, School Building Data)

Link to our final dataset: <https://github.com/bpershon/bpershon.github.io/blob/master/data/school-data.csv>

IN-LINE SOFTWARE DOCUMENTATION

The Franklin County School District map on the left is a heat map representation of the various factors that affect graduation rate. Clicking on a specific district will toggle the heat map for that school district on or off to make comparisons between districts easier.

The interactive legend found in the middle of the screen will update which factor is visible on the heat map.

Finally the radial bar chart on the right remains fixed on the graduation rate to compare the rates of all sixteen school districts in Columbus.

USER TESTING PLAN

TASKS FOR USER:

1. Click on % Diversity on the legend.
2. Click on Westerville Schools and Columbus City Schools.
3. Note which district has a higher diversity rate.
4. Compare Westerville and Columbus graduation rates on the graph.
5. Note which has a higher graduation rate.

Rate all tasks on a difficulty scale, with 5 being the most difficult.

RESULTS:

	User 1 Difficulty of task	User 2 Difficulty of task	User 3 Difficulty of task	User 4 Difficulty of task
Click on % Diversity on the legend.	1	1	1	1
Click on Westerville Schools and Columbus City Schools.	5	4	4	3
Note which district has a higher diversity rate.	4	3	3	2
Compare Westerville and Columbus graduation rates on graph	4	4	3	2
Note which has a higher graduation rate.	3	3	2	1
Comments?	no	N/A	Hard to tell which district is which	are districts perfect rectangles?

Average difficulty

- Task 1:** 1.0
Task 2: 4.0
Task 3: 3.0
Task 4: 3.25
Task 5: 2.25

CONCLUSION

SO WHATS THE BIG DEAL?

This tool can be used for school districts in Columbus to see if there are factors in the education system that can be improved upon to increase overall graduation rate. Some factors, such as median income, cannot really be changed by the school district, but may be correlated to the graduation rate.

CONTRIBUTIONS

Ashwini Joshi, CSE (20%)

Worked on gather data for geoJson leaflet data. Also worked on plotting the different school districts on the heat map.

Anirudh Ganesh, CSE (20%)

Worked on gather data for geoJson leaflet data. Created leaflet plug-in and worked on the html page.

Brad Pershon, CSE (20%)

Worked on selecting specific data to use in final deliverable, as well as brainstorming visualization ideas with the other team members during team meetings. Created the radial bar chart, the html page, and helped with the leaflet plug-in.

Mandy Pavlich, Design (20%)

Designed prototype to lay out where each element of the visualization will go in addition to creating a style guide for the visualization. Created the guide for user testing and the documentation for the final product.

Matt De Libro, CSE (20%)

Worked on selecting specific data to use in final deliverable, as well as brainstorming visualization ideas with the other team members during team meetings. Also worked on plotting the different school districts on the heat map.