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Project 2 Write-Up

Project: City Services

Core Message/ Hypothesis:

* How efficient are local government services in the city of Kansas City, MO?
* Specifically, how long does it take for the local Kansas City, MO government to fix issues?
* Is the servicing time generally growing, shrinking, or plateauing over time?
* Optionally, what are some ways to improve the response times on the most commonly drawn-out types of problems?

Sources of Data/Code:

* <https://data.kcmo.org/311/311-Call-Center-Service-Requests/7at3-sxhp> for the data.
* <https://observablehq.com/@d3/streamgraph-transitions> for code on creating a Stream Graph.
* <https://scotch.io/tutorials/how-to-use-the-javascript-fetch-api-to-get-data> for code on using an API fetch with JavaScript.

Project Steps:

* Upload data from <https://data.kcmo.org> to PostgreSQL to efficiently store it (Excel couldn’t store the 1 million + records).
* Call in the data from PostgreSQL to Python for data cleansing.
  + Use the ‘DropNa’ function to drop rows that don’t contain “Days to Close”.
  + Use the ‘GroupBy’ function to group data by dates and calculate the average “Days to Close” value for each day.
  + Use some function/combination of functions in Python to extract the month & day values & create a column for them and do the same for the year values.
* Use Flask to create a route that creates a RESTful API for the data.
* Utilize the ‘Fetch API’ function in JavaScript to pull in the data to create the graph and any dropdown functionality.
  + Create a graph with the “Days to Close” (y-Axis) vs “Date” (x-Axis) values, where each curve represents a year.
    - If possible, do this by separating daily averages by category.
  + Write code to implement hover boxes with ‘Descriptive Statistics’ on each date.
  + Write code to put a dropdown menu that will allow users to select the years they want to investigate.
    - If possible, do this by separating daily averages by category.
* Publish the webpage/website onto our GitHub group page.