pm-01: Final Project Topic Pitch

This is an individual assignment

Purpose:

The purpose of this assignment is to identify potential final project ideas that interest you, and to help you decide who you would like to work with on the final project.

Tasks:

Start a document for this assignment. Anything you are asked to turn in for the tasks below should be recorded in this document. Responses for each task should start on a new page of the document.

Please review the Project Overview document and our in-class project discussions for a refresher on final project expectations. The requirements listed there must be met unless you have explicit approval from the instructor to do a differentiated project.

1. Identify an Area of Interest (1 point)

Ideally your final project will be relevant to your research, career, public, or personal interests. Find an area you are interested in to focus your exploration. Ensure that there are real challenges in this area that could be aided with data visualization.

2. Identify a Use Case (15 points)

Within your area of interest, identify a specific use case where a visualization tool could be of service. Put yourself in the shoes of a potential user of your visualization tool and imagine a use case yourself. For example, if you are interested in public transit, you might put yourself in the shoes of a rider *or* operator and imagine a visualization tool that could be helpful to *one* of those people. Be specific about the intended user and scenario for your visualization tool. You should have a clear picture of the situation(s) in which your tool would be used and who would be using it.

Once you settle on a use case, record it in your document under the heading “Use Case”. Your use case must describe 1 specific scenario in which your visualization would be used, and include a description of who would be using the tool. Your use case should be 1 - 2 paragraphs long. Below is an example of a use case for a tool called CAVA. Your use case does not need to be this detailed but should similarly describe a specific scenario in which your visualization tool could be used and the user of the tool.

> *To demonstrate the value of column augmentation for insight generation, we present a usage scenario in which CAVA is integrated into a typical workflow for the popular visual analytics tool, Tableau. Suppose a political scientist wants to study the factors that lead to armed conflict. They download the Armed Conflict Location & Event Data Project (ACLED) dataset for April 2018, which contains 2,279 records of armed conflicts across many different countries and dates [61]. Initially, they load the data into Tableau to analyze relationships between countries, event types, and fatalities stemming from armed conflict. They see no clear pattern that emerges as they find it difficult to visually group countries without more data.*
>
> *They load their dataset into CAVA to look for additional attributes that may be relevant to event types. When the system is first loaded, the user sees a list of the attributes in the uploaded table in Figure 2-A. They also can see the first five rows of the data below in Figure 2-D.*

The political scientist believes there might be economic metrics that effect the types and severity of conflicts, so they click the related attributes button next to "Country" in Figure 2-A. The system returns a list of related attributes found by scraping Wikidata, as seen in Figure 2- B (T1). The user scans through the list of related attributes, looking for information about the countries' economies. They see that Wikidata holds the nominal GDP per capita for each country. The user adds this attribute to the dataset. While looking for economic data, the user also notices additional interesting attributes for analysis and joins them for future analysis, including the max inflation rate, minimum life expectancy, the type of government, and the mean Human Development Index (T3).

The user loads this next iteration of the dataset into Tableau, and generates various visualizations including the event types and fatality numbers with their newly-discovered attributes. As can be seen in Figure 4, grouping event types by nominal GDP per capita reveals a trend that certain event types, like Remote violence and Battle - No change of territory, appear to have more severe fatalities in countries that have lower nominal GDP per capita. In contrast, other event types like Battle - Government regains territory and Battle - Non state actor overtakes territory don't seem to be very different between high nominal GDP per capita countries and low ones. The additional visual analysis enabled by the added attribute, nominal GDP per capita, has led the user to new hypotheses that can then be further explored. This usage scenario demonstrates how the integration of column augmentation into a traditional insight generation pipeline can unlock new analyses in-situ.

Excerpt from Cashman et al. 2020: https://dylancashman.github.io/public/docs/cava.pdf

3. Prepare Your Pitch (4 points)

Draft a pitch for your project. Your pitch should focus on convincing your classmates that your area of interest is important and relevant, and that you have given thought to a clear use case and end user. The main goal of these pitches is for you to clearly communicate to others what you are interested in working on and to get them excited about your topic of choice. Add your pitch to your document.

You will give a live pitch of your project to the class. Each student will have 2 minutes for their pitch. Be sure to clearly state your name before your pitch! Note that due to time limitations students will not be able to use slides for their pitches. However, students are welcome to use notes and/or bring physical visual aids like posters.

After all students have given their pitches, the remainder of class will be reserved for students to start forming project groups. Groups will consist of 4 students. If you really like another student's project pitch, go talk to them and see if they want to work on the final project together. You are welcome to abandon your project idea for another person's or to combine multiple project ideas into a new one.

Pitches will be made in a random order determined by the teaching staff.

Submission:

Save your document as a PDF and submit it on Gradescope. **Be sure to assign questions to pages appropriately when you submit.**