Final Data Visualization Project

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Messaging

For this project, I decided to use a dataset that had insights how the popularity of various programming languages have changed over time. Since the start of this dataset, 2004, compared to the most recent year, 2022, there has certainly been a lot of change in what programming languages people prefer for their use cases. With this project, I wanted to provide insights of how the popularity has changed over time as well as allow for the user to drill into certain languages to see how they’ve specifically trended over time. More specifically, I’m aiming to show how one of the now most popular languages has drastically increased in popularity over the years.

Narrative Structure

Since this dataset dealt with insights that were measured over different years, I felt that it made sense to use a Drop-down story structure. The view starts off with an overview story that transitions the bar graph over the years so the user can see how each language’s popularity shifted over time as well in comparison to one another. From there, the user can then dig into the bottom view where they can use a drop-down to select their programming language of interest to see how that language in particular has trended over time with regards to its popularity. This was done while knowing the top/main view didn’t allow for a ton of interaction within it except for play, pause, and resetting it. I wanted to ensure the user had an easy opportunity to dive into their language of interest.

Visual Structure

The visual structure for this project is segmented into two different sections. The first/top section is set up in a slide-show format where the user is able to control when the slide-show starts, pauses, and resets. Within this slide-show, there are annotations that are used to highlight key points for certain years to show important trends of the data. Additionally, there is a year field at the bottom of this visual that shows the year progressing as the slide-show progresses to ensure the user can maintain easy context of what year of data they’re looking at. Additionally, there are transitions embedded in the visual that highlights when the scene is transitioning. This will hopefully ensure the user knows that the data in the visual is changing which has to do with the year incrementing.

The bottom visual is set up as a line chart that trends out a single programming language’s popularity over the past 18 years. This view is initialized with the Python language since the annotations from the top visual call that particular language out. There is a dropdown filter at the top of the visual that lets the user select their programming language of interest which will then update the graph to show that language’s popularity trended over time. When this selection is made, there is a transition associated with the update to let the user know the data is changing.

Scenes

In the top visual alone, there are technically 18 different scenes. Each year of the slide-show represents a different scene as the state of the visualization has changed with the updated dataset. These scenes are ordered in chronological order ranging from 2004 to 2022. This was done to maintain logical sense with the user as progressing through each year in order should be the easiest to understand. The progression through these scenes are initiated when the user clicks on the “Play” button at the top.

In the bottom visual, there is just 1 scene by default, but the user could technically transition themselves into a new scene by selecting a new programming language. As mentioned above, this scene is initialized with Python as the selected language because it was what the annotations in the top scene were in reference to.

Annotations

For the annotations in this graph, the template used was to have them placed in the top visual on certain, significant years as the slide-show progressed. Additionally, the graph itself is initialized with an annotation that calls out the most popular programming language in 2004 with that being Java. For the subsequent annotations, Python is of interest and is called out as its popularity rises over the years to eventually being the most popular programming language. As the slide-show progresses, the annotations are removed to ensure only they’re only displaying when applicable. Because of this set-up, there is every only a maximum of a single annotation within a single scene

Parameters

For the top visual, the main parameter within the JavaScript code is the year. When the user triggers the slide show, the year changes state (increments by one with each transition) and the dataset only reflects that current year.

For the bottom visual, the parameter is the programming language itself. The user can change the programming language selected as they’d like which will update the visual to show the popularity over time for that specific programming language.

Triggers

For the top visual, the triggers are represented by the buttons above the visual. For the slide-show to start, the user needs to click on the “Play” button which will then trigger the slide-show. The user could also press the “Pause” or “Reset” buttons during the slide show which will either stop the slide-show on the current year or restart the slide show, respectively.

For the bottom visual, the trigger is in the drop-down itself. When the user changes the drop-down value, that will trigger the visual to transition to a new state that only contains the data for the programming language selected.