Activity -6 Data Visualization

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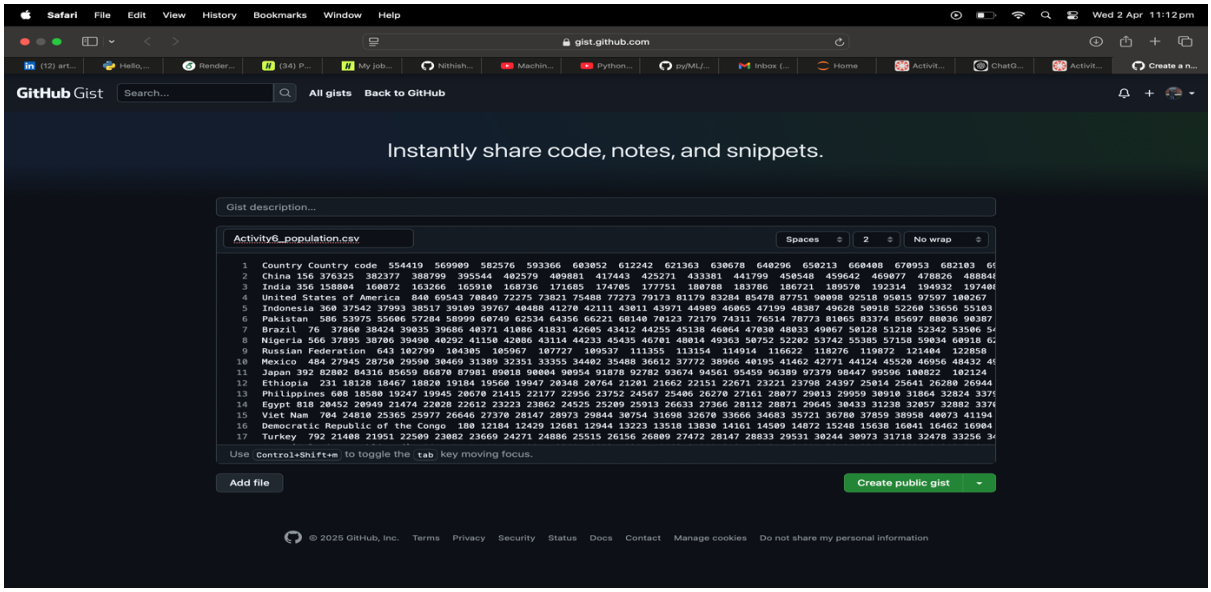
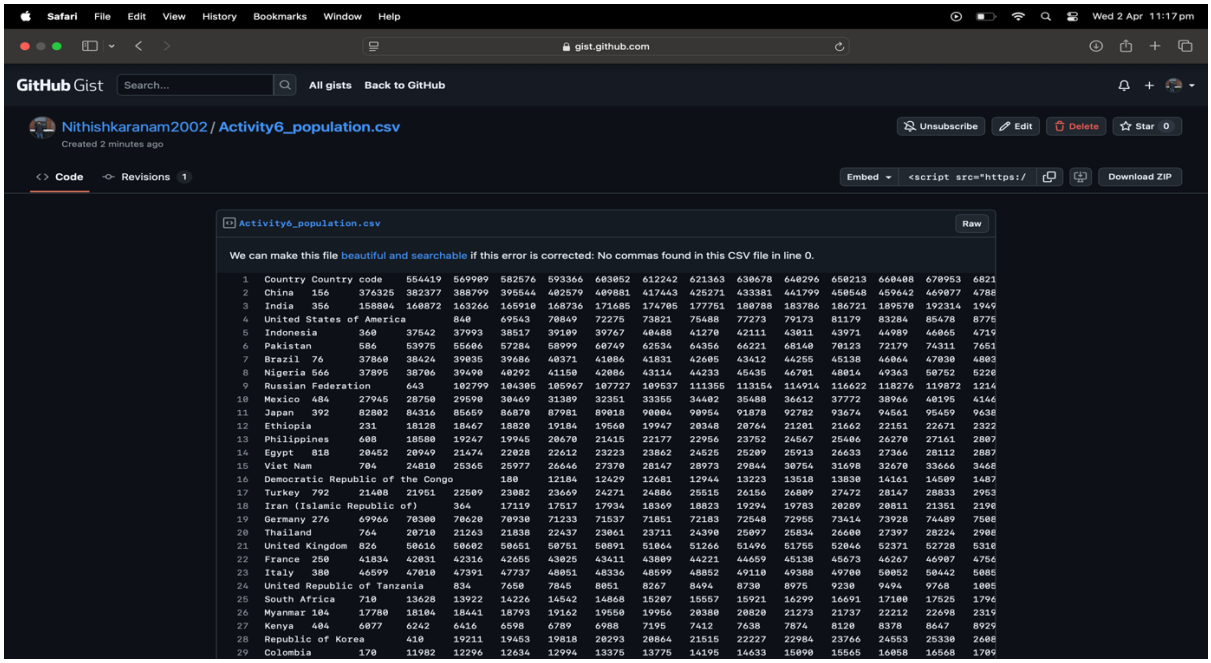
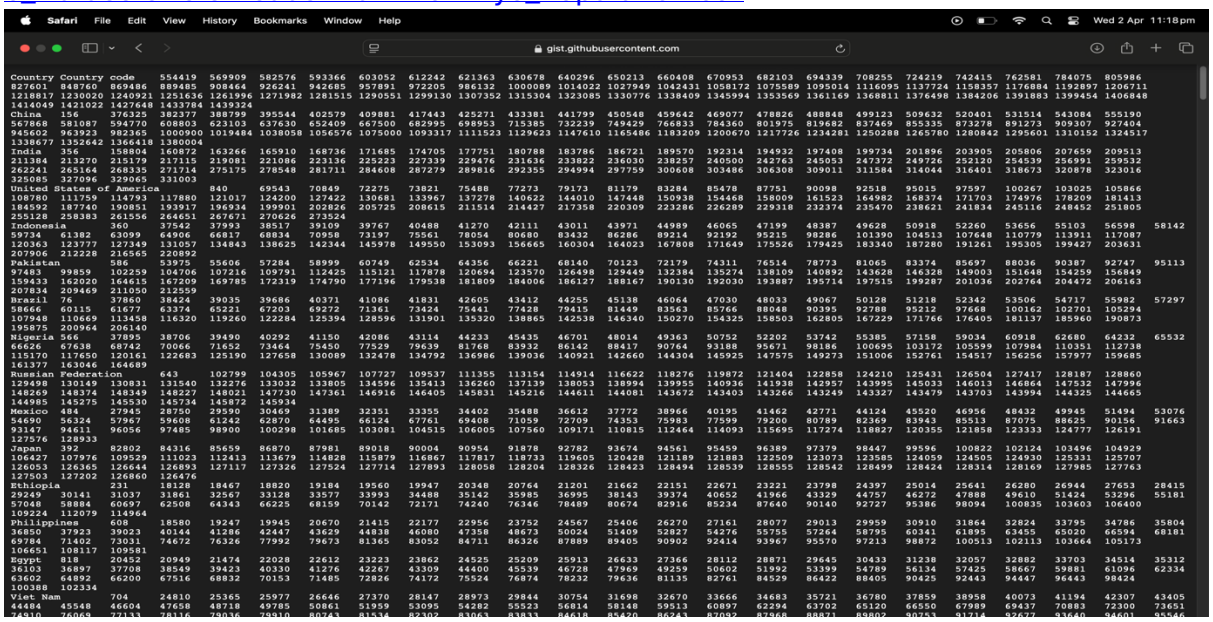
Task -1 I have created a file in the github and uploaded the Activity6_Population.csv and bubblechart.csv and named the files as **Activity-6_Datasets** which is be available in my github , the link is present below https://github.com/Nithishkaranam2002/Activity-6_Datasets



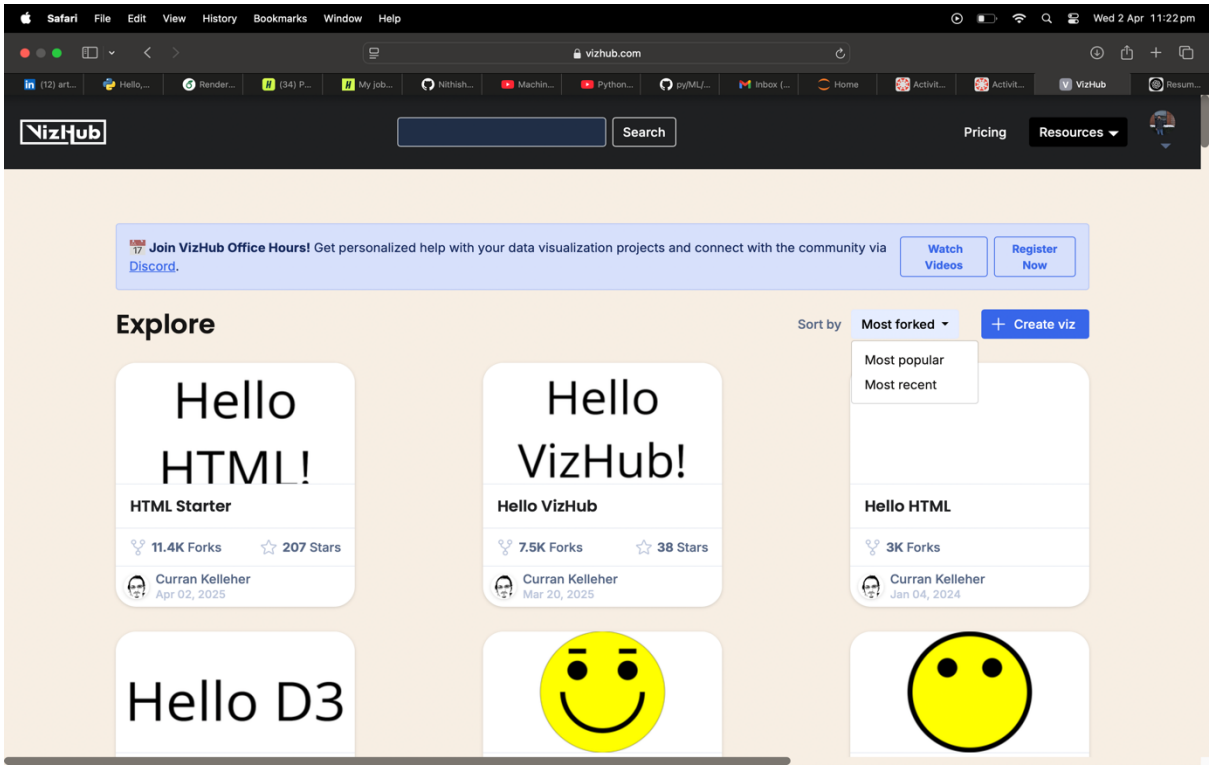
I clicked on the Raw data and copied the link of the Raw data and then commit the changes , the link to the raw data is https://raw.githubusercontent.com/Nithishkaranam2002/Activity-6_Datasets/refs/heads/main/Activity6_Population.csv
Which latter I have added in my useData.js in order to fetch the data



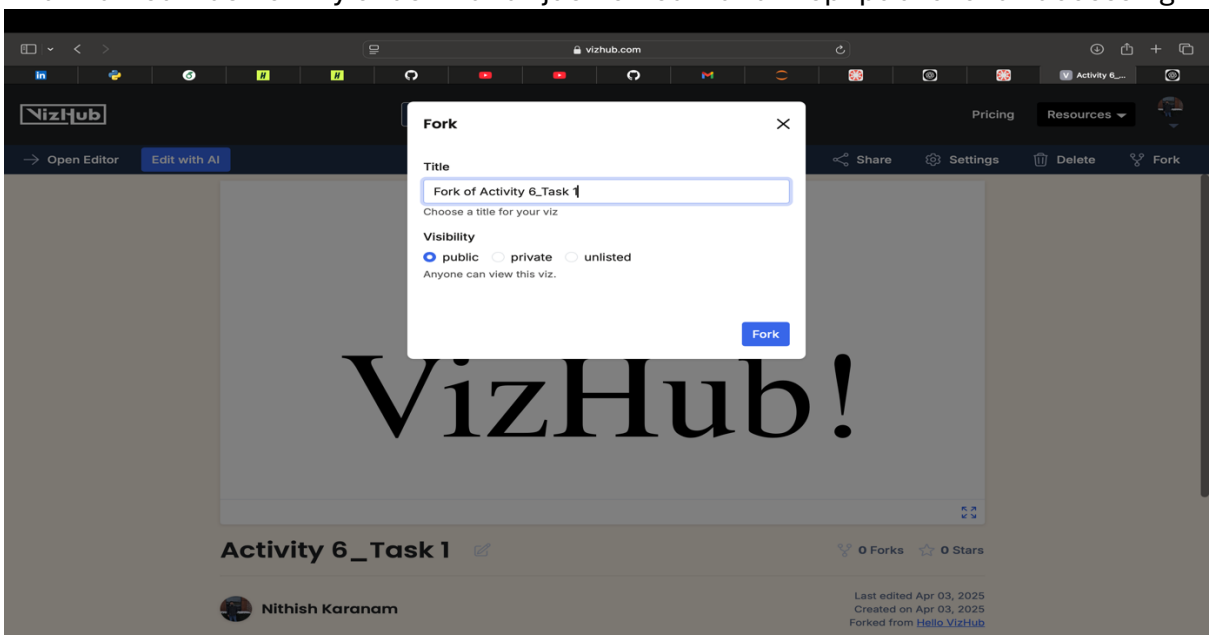
https://raw.githubusercontent.com/Nithishkaranam2002/Activity-6_Datasets/refs/heads/main/Activity6_Population.csv



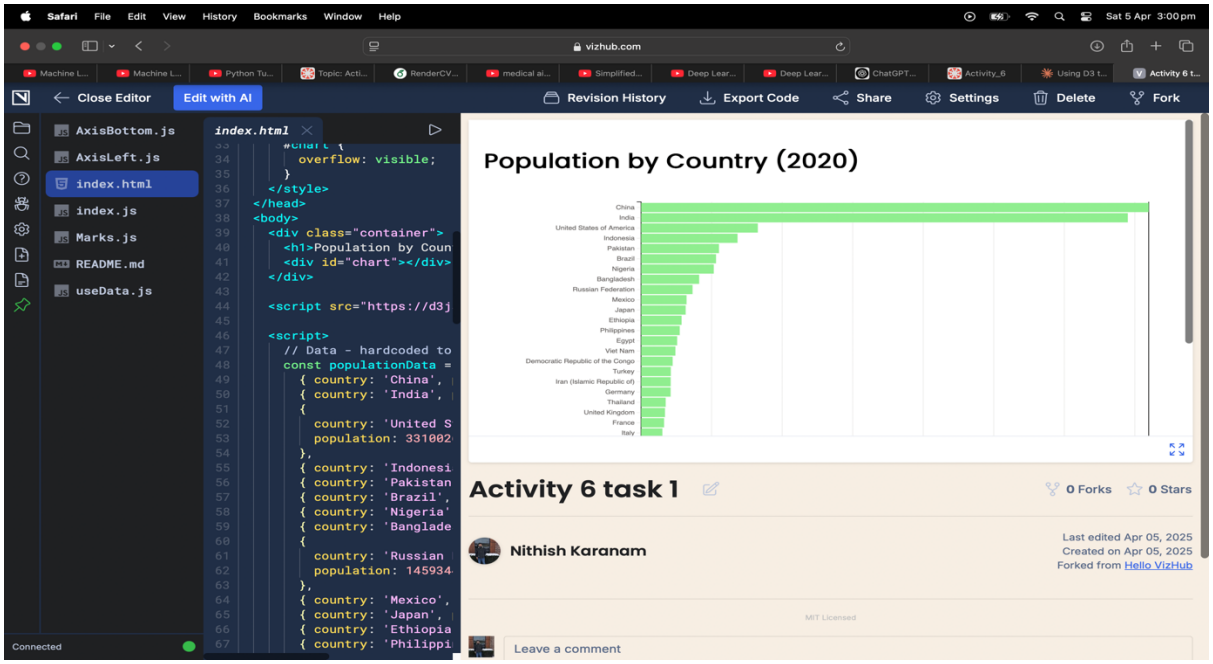
Then I opened the vizhub and selected the most forked one with the Hello VizHub! In oreded to fork that one



And I named it as Activity 6 Task 1 and I just forked it and I kept public for all accessing it



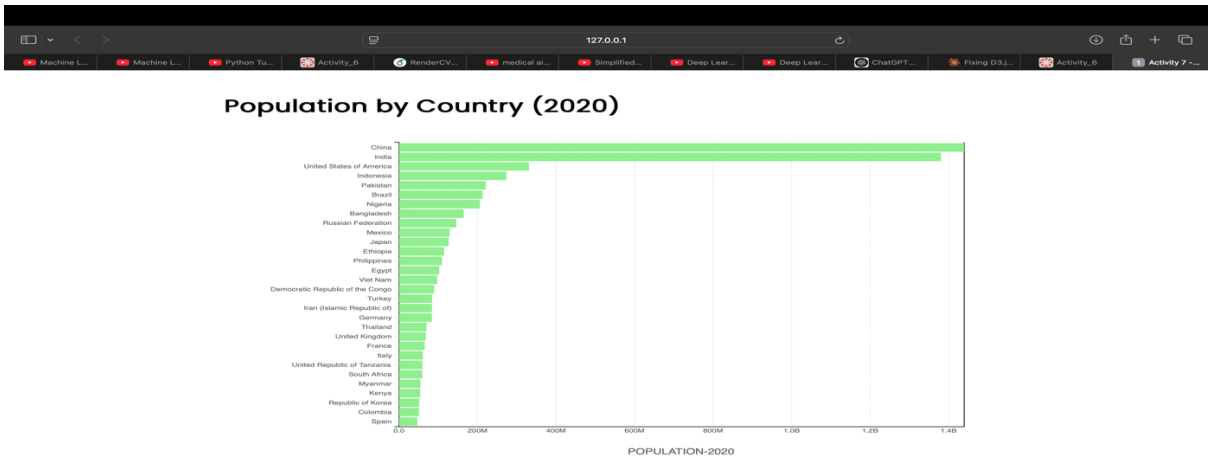
Here is the visualization of the data population by country (2020) , which I have provided the link of it



this is the link of the code in my Vizhub

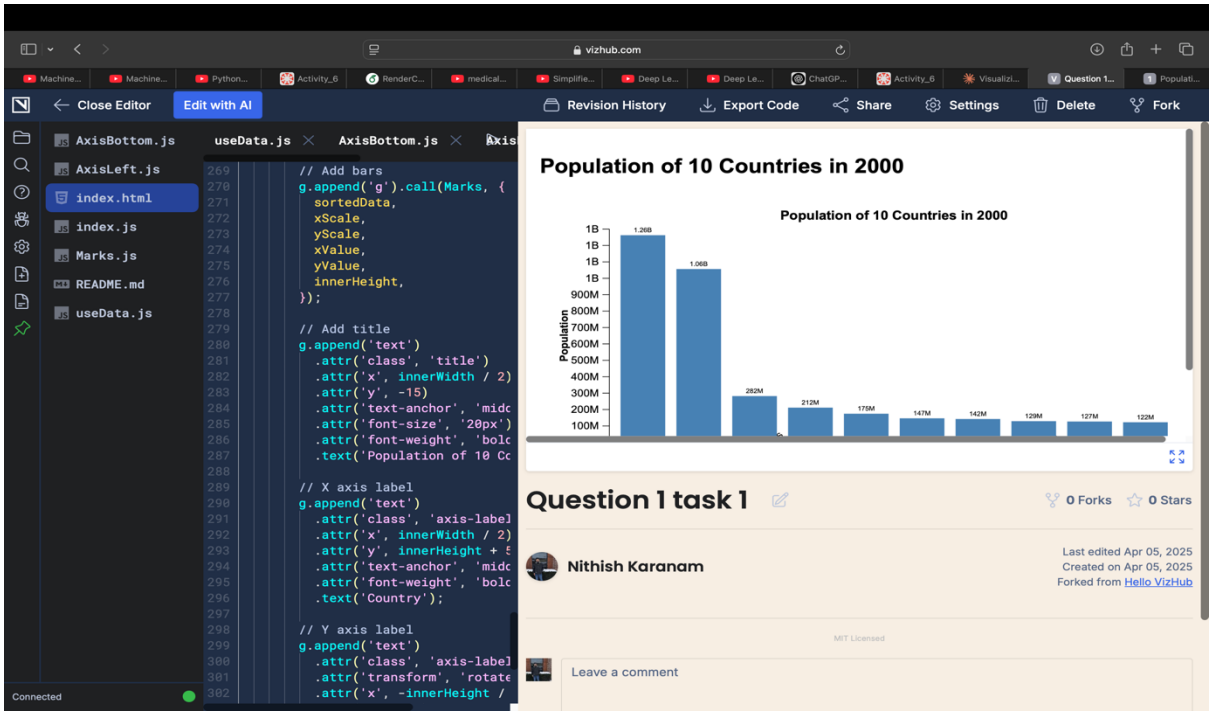
https://vizhub.com/Nithishkaranam2002/7a21d14531b84f11bb7c7de3d514dd70

The Visualization is shown here :

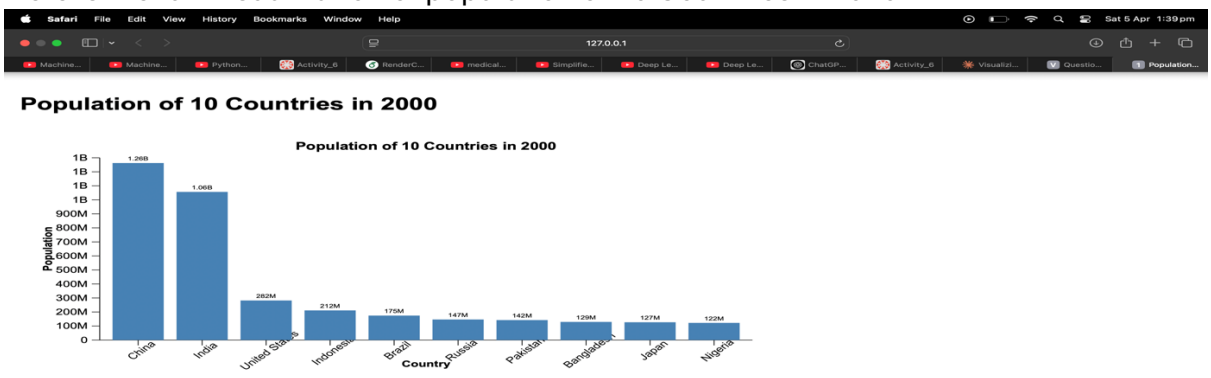


Task 1 : Question-1: For this assignment, I made a bar chart from the “Activity6_population” dataset showing populations of 10 countries in 2000. Visualization was made by using D3.js. The chart has a single bar for a country, with the country's height representing its population. The country names are shown on the x-axis, while the y-axis has the populations in millions and billions in order for it to be easily read. The chart has a title and axis label so it can also be clear, in addition to being more informative. From doing this assignment, I learned how to use D3 in data binding, in setting up the scales in order to position, as well as in the formatting of numbers so they can be easily read. It showed me how the data can be shown in a simple, as well as interactive, way through data visualization principles.

https://vizhub.com/Nithishkaranam2002/6e1e77bb90314050ba0d116155156174

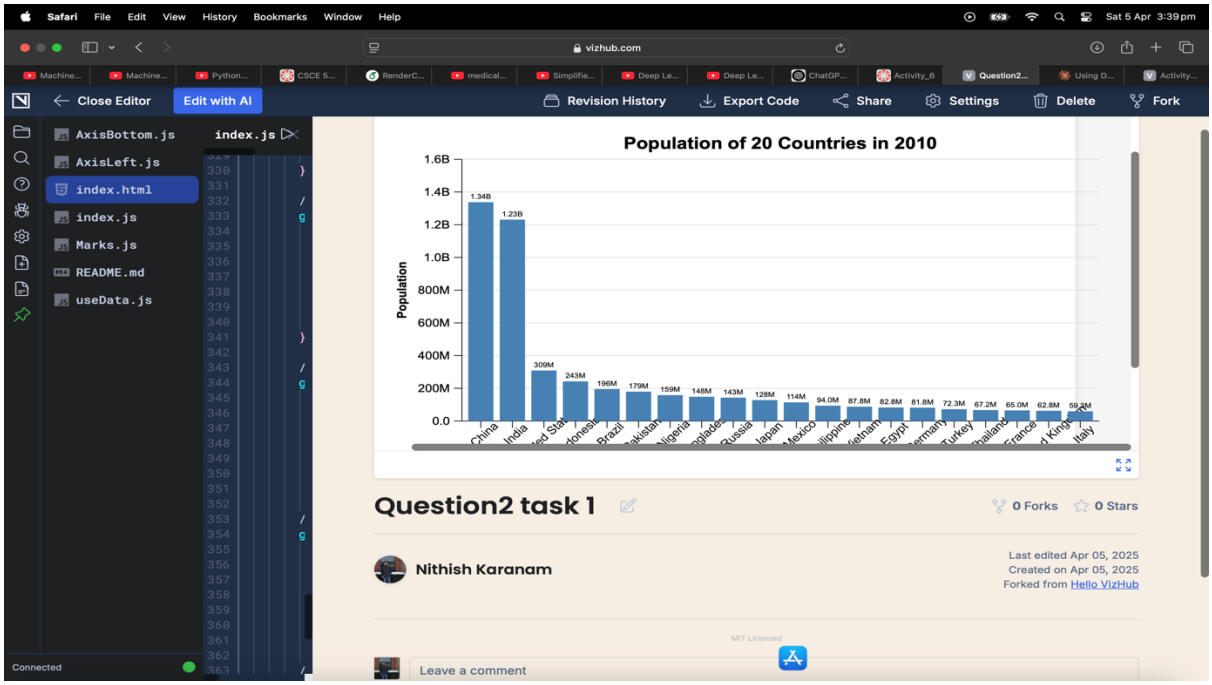


Here is the full Visualization of population of 10 Countries in 2020 :

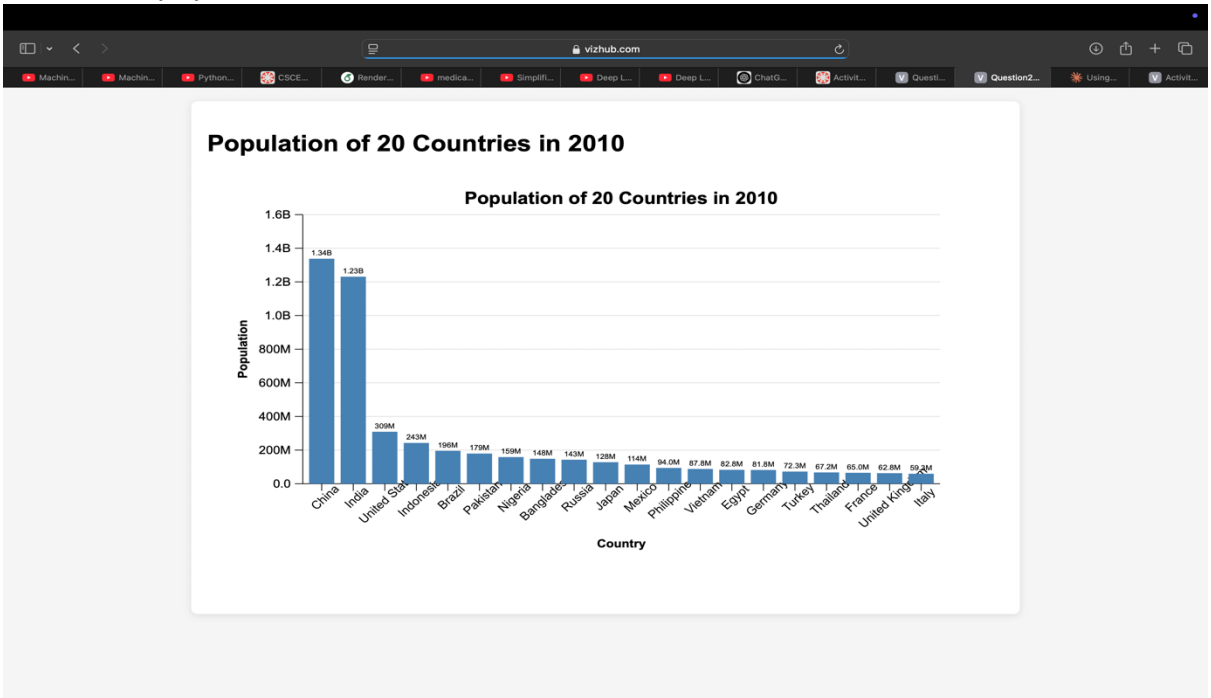


task 1 -Question 2 : I created a bar chart from the “Activity6_population” data set to display the population of 20 countries in the year 2010 for this project. The data was displayed in D3.js, with one country represented by a single bar and the size of the country's population represented by the length of the bar. The country names were displayed in the middle axis, while their populations were shown in the y-axis in a legible style in millions and billions. It was also accompanied by a chart headline and axis label for clear display. From doing this project, I was able to understand how a larger data set would be handled, size up the axes accordingly, and position all the country names in the chart. It also improved my skills in producing legible data presentations in a responsive style in D3.js. Below is the link

https://vizhub.com/Nithishkaranam2002/f35e9a1c684944189973c77ceeb93ab9



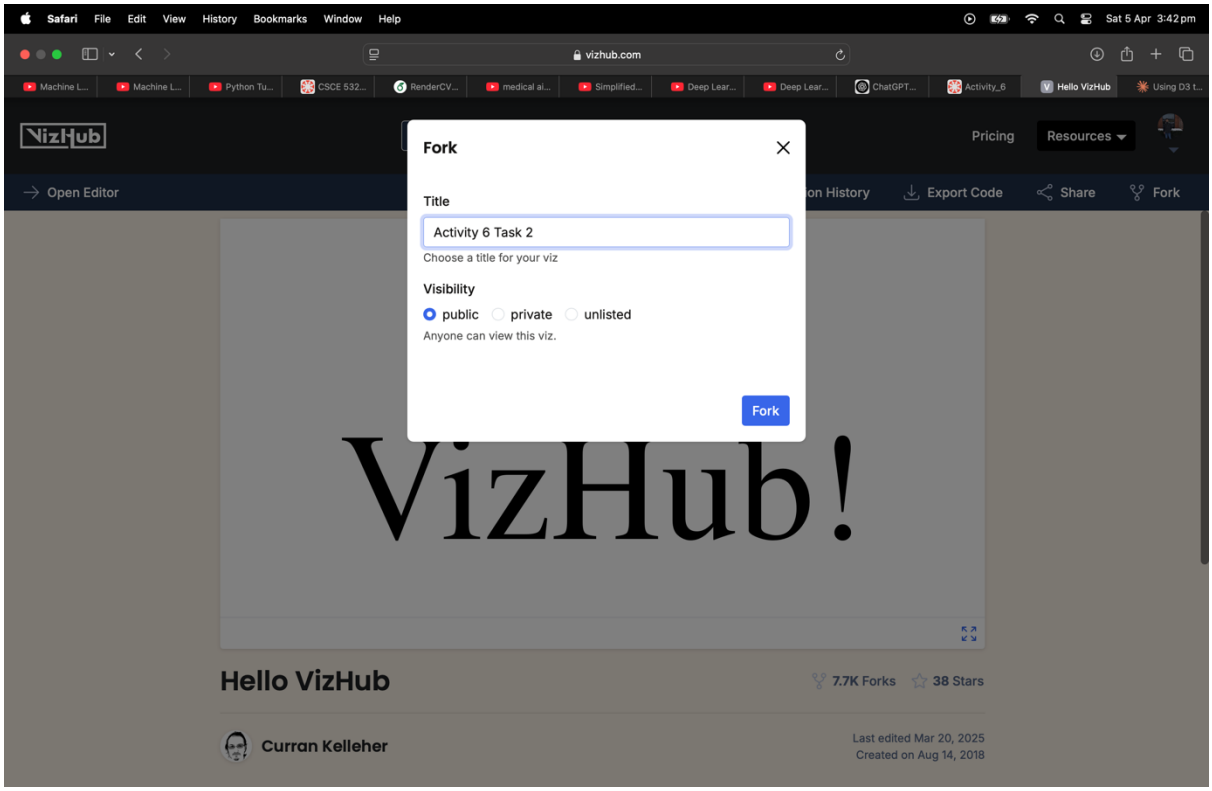
Here is the population of 20 Countries in 2010:



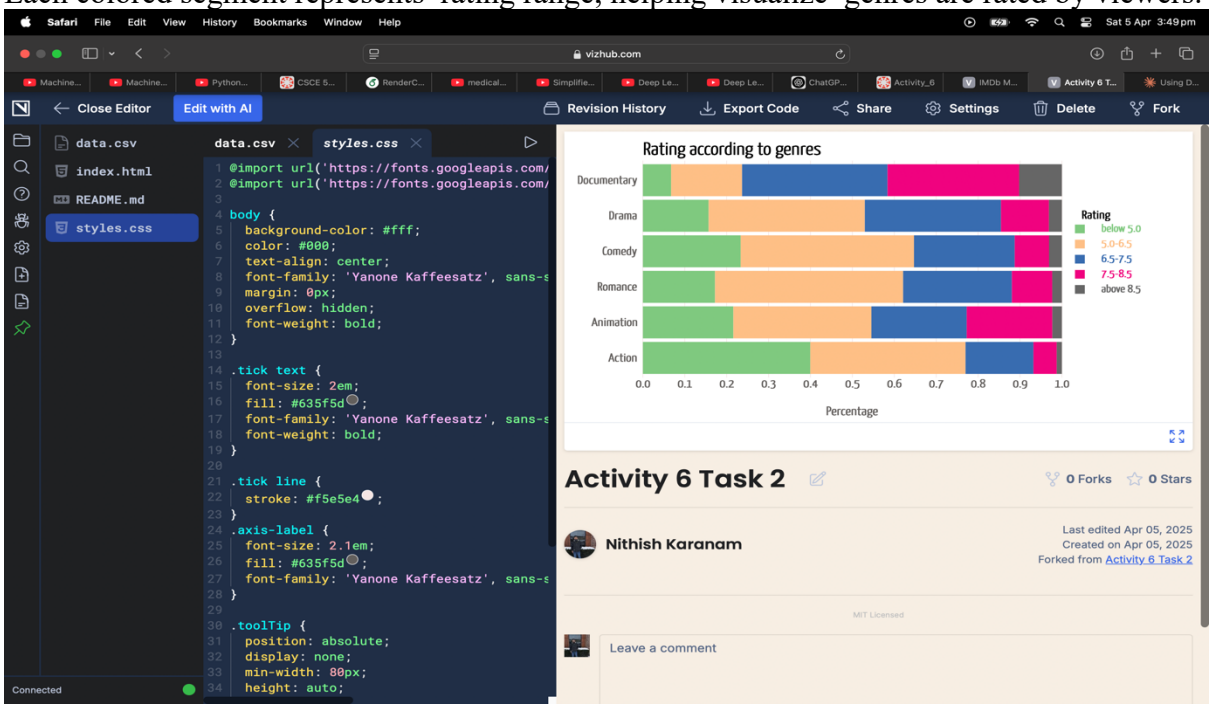
Task -2:

I have created the vizhub for the Task 2 also and named it as Activity 6 Task 2 and fork it

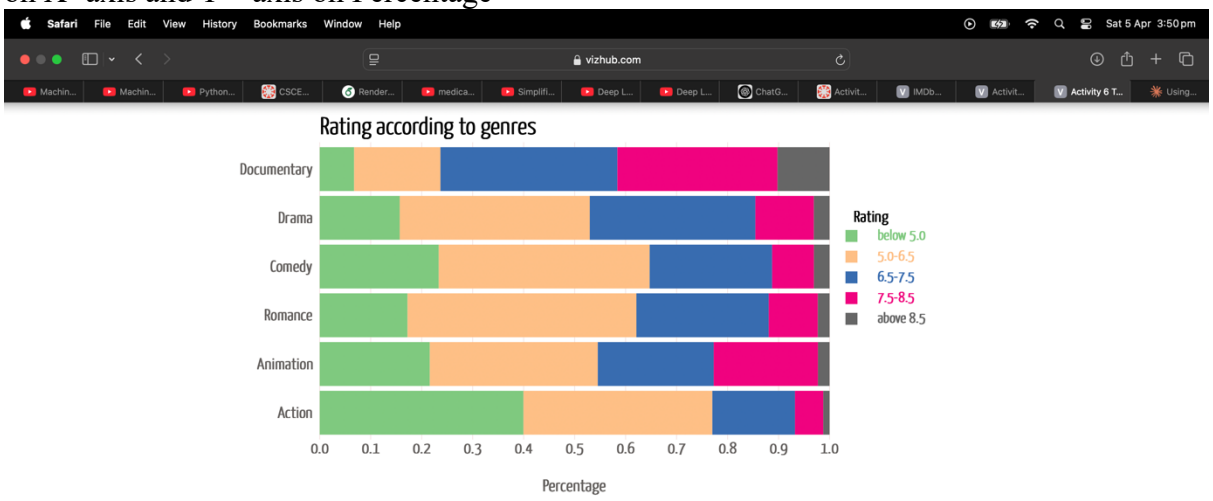
Link : https://vizhub.com/Nithishkaranam2002/3e0992a406ed44f495082a8b51a852d1



This stacked bar chart shows the distribution of IMDb movie ratings across different genres. Each colored segment represents rating range, helping visualize genres are rated by viewers.

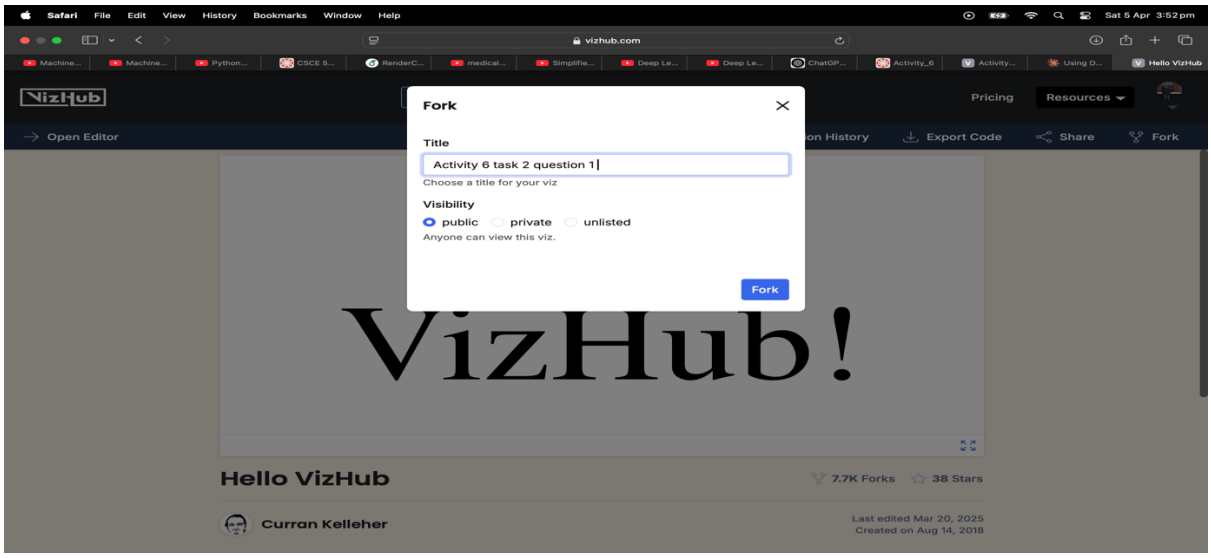


Here is the Full Visualization of the graph with the Rating according to genres with Ratings on X- axis and Y – axis on Percentage

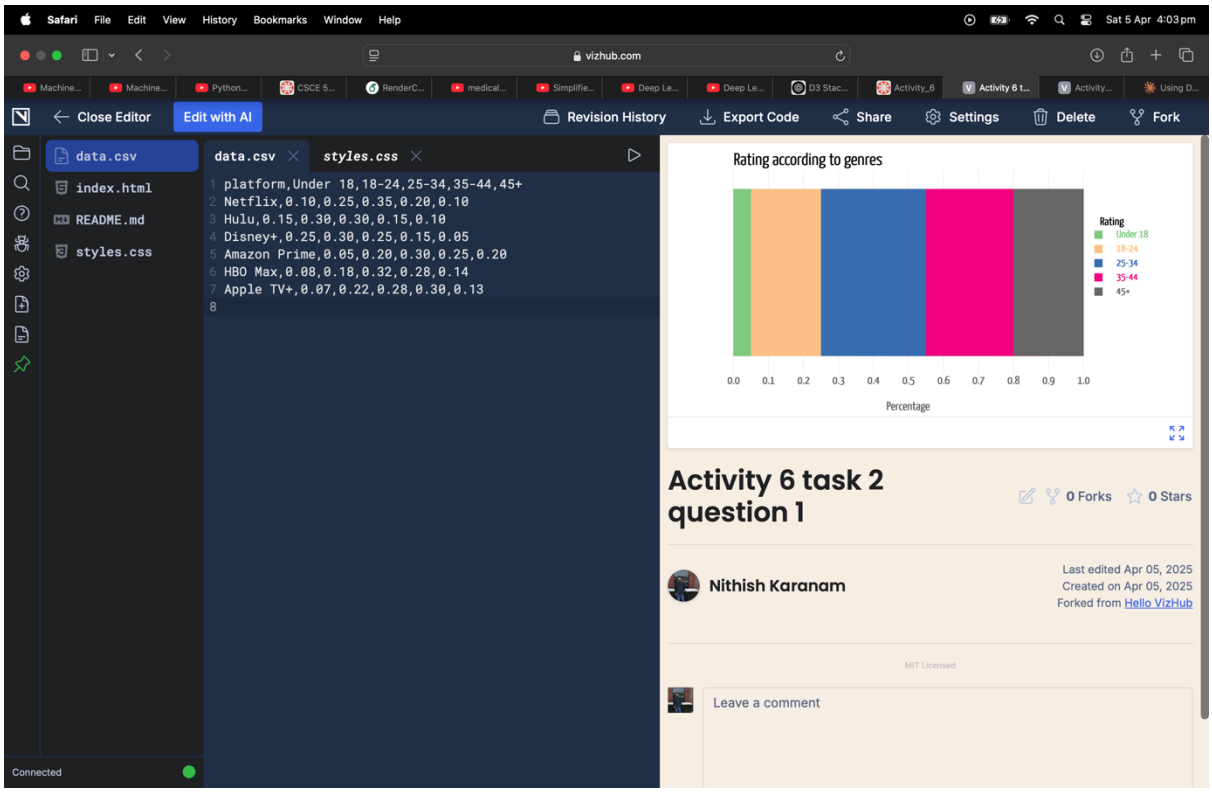


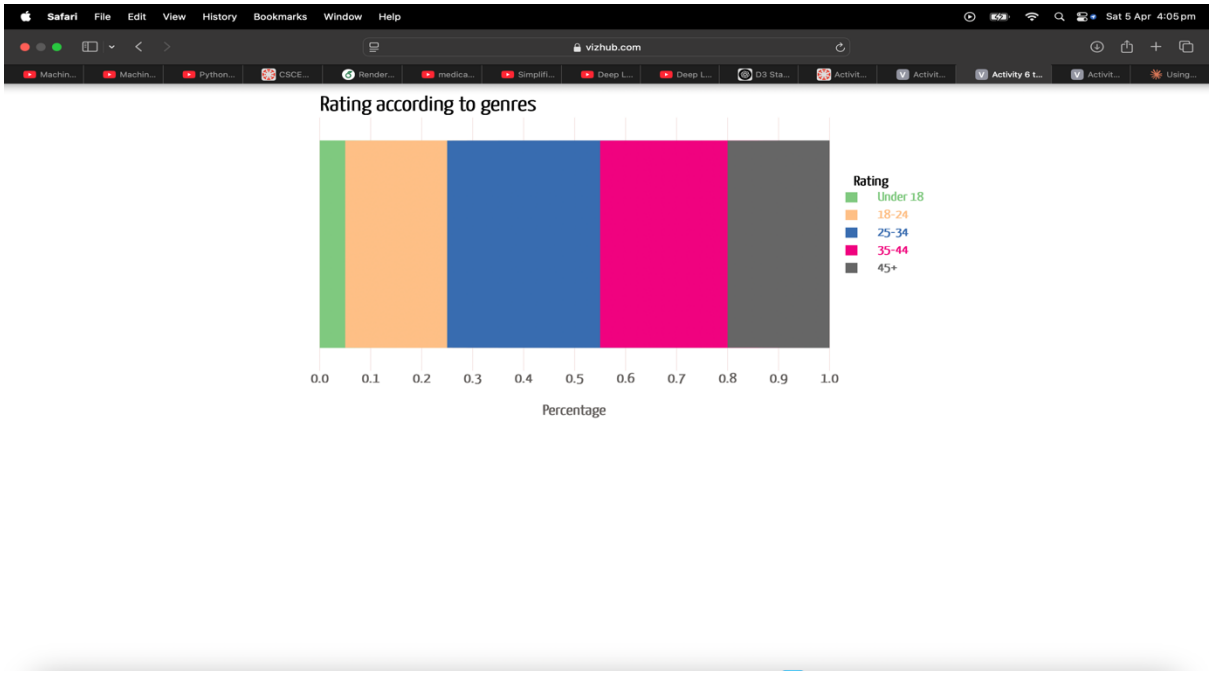
Task -2 Question 1 : I have created the title in named Activity 6 task 2 question 1 and forked

Link : https://vizhub.com/Nithishkaranam2002/7b8e05340e1746e7823e82961cc78b5f



The data I used and created a file called data.csv in which I have entered the data in it





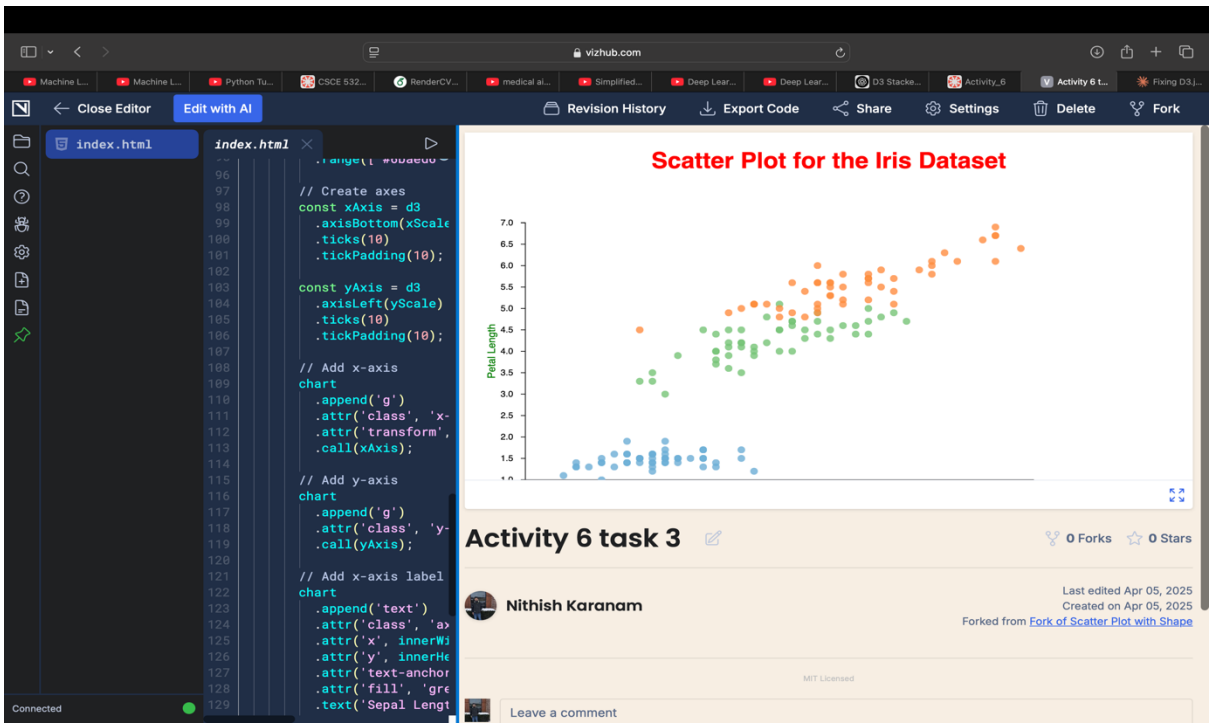
Data Description
For this exercise, we've arranged a stacked bar plot of proportion of viewers across groups of age for several streaming services. The services we've worked with are Hulu, Disney+, Amazon Prime, HBO Max, and Apple TV+. The groups of age we've used are Under 18, 18–24, 25–34, 35–44, and 45+. The values are proportion values (between 0 and 1) for distribution of each of these platform's user base across groups. The data provides us with age-group-wise following of several streaming services

Visualization Summary:
I made a stacked bar chart in D3.js, where all the platforms are horizontal bars. The bars are divided into colored sections, with each section showing the percentage of viewers within a given age group. The axis labels, legend for age groups, and percentage value tooltips are all placed within the chart. The names of the streaming outlets are placed along the y-axis, while the percentage scale from 0.0 through 1.0 is placed along the x-axis.

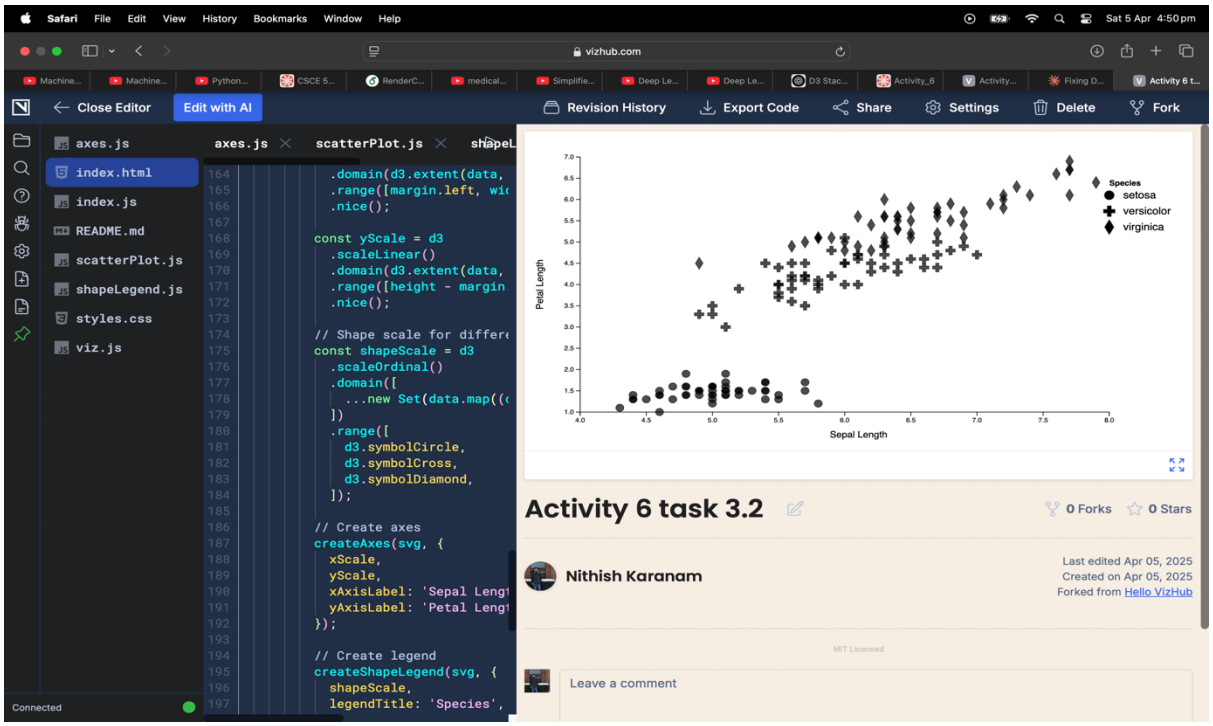
Chart Analysis
Across the diagram, we can observe:
These two services enjoy strong viewership within the segments of people aged 25-34 and 18-24.
Disney+ has the highest percentage of viewers in the Under 18 audience, in line with its child-targeted programming.
Both Apple TV+ and HBO Max draw proportionately more viewers in the older age ranges (35-44 years, 45+ years), which suggests an older audience.
Amazon Prime also demonstrates a good proportion in every age group with a rise in viewers in middle-aged groups. This visualization allows for the comparison of how streaming services appeal to various age groups and offers information that might be valuable for marketing, content strategy, or targeting an audience.

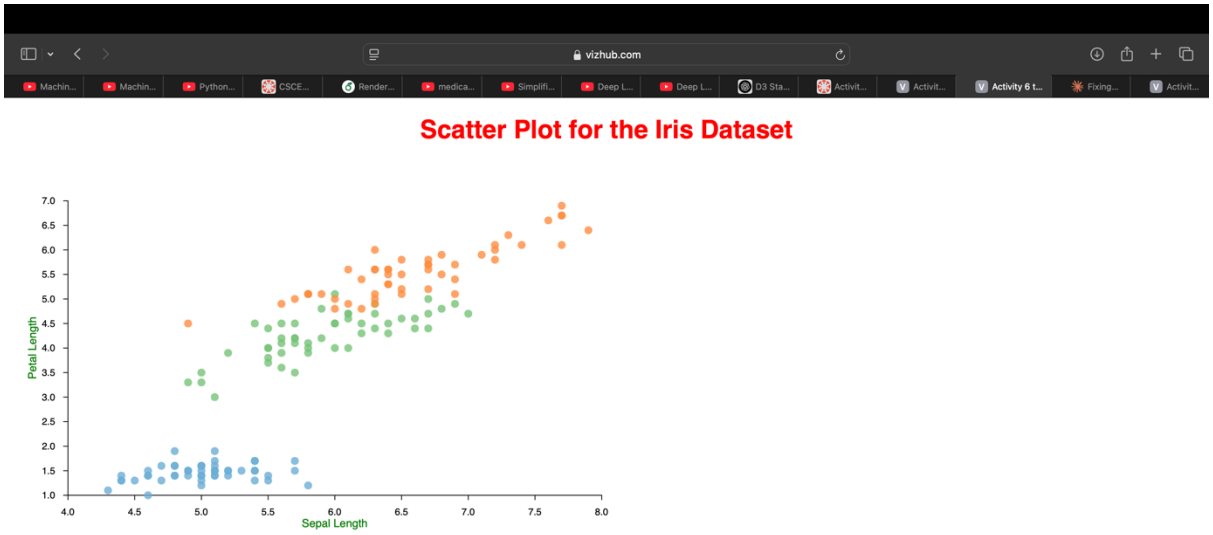
Task - 3 - Scatter Plot

3.1 Link : https://vizhub.com/Nithishkaranam2002/382c2ff57e994b42b7a310a9fea5b25a



3.2 link : https://vizhub.com/Nithishkaranam2002/3e750ff8b577419191ed05fdff226588




vizhub.com
Scatter Plot for the Iris Dataset
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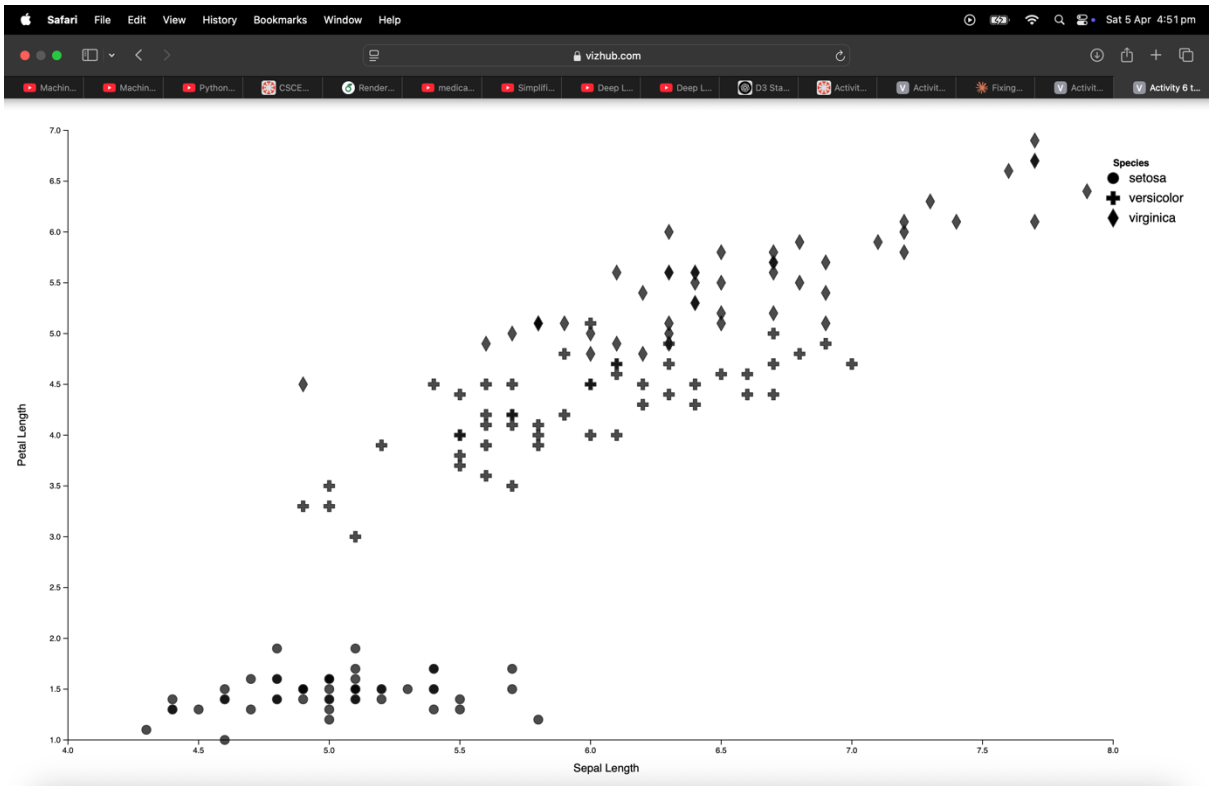
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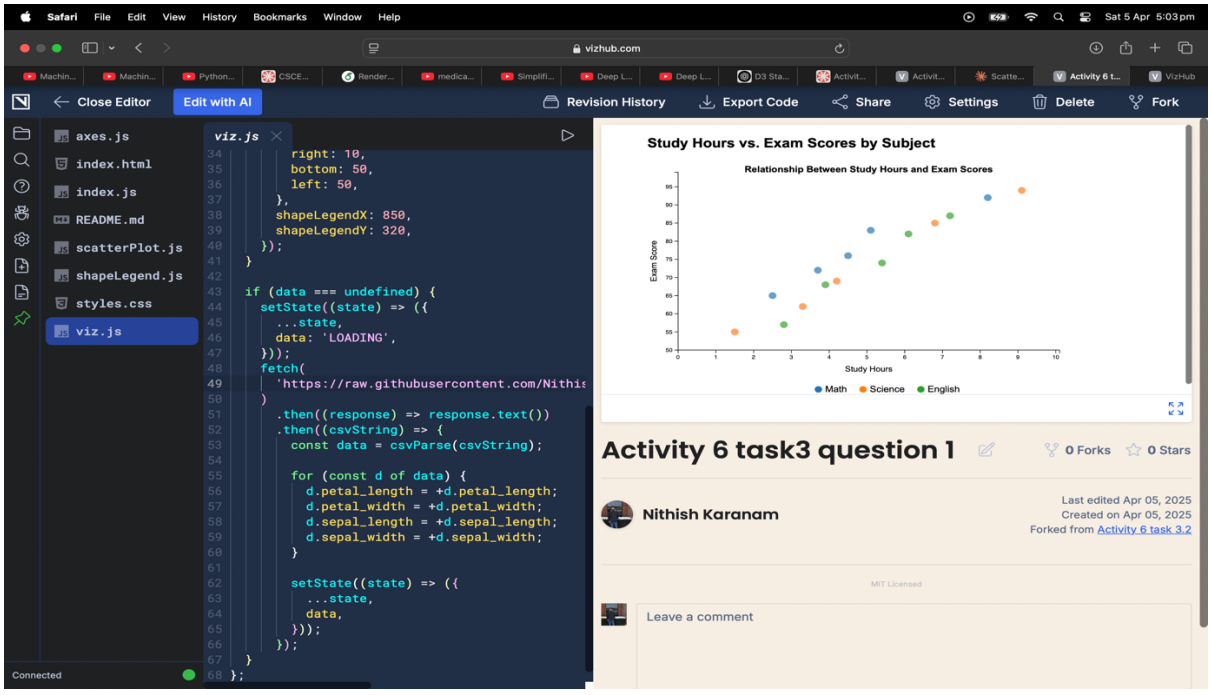
Task – 3 Question 1 :
Data set link I used : https://raw.githubusercontent.com/Nithishkaranam2002/Activity-6_Datasets/refs/heads/main/studyData.js

Vizhub link : https://vizhub.com/Nithishkaranam2002/ede601d20a3f409ab021de15f5360ff3

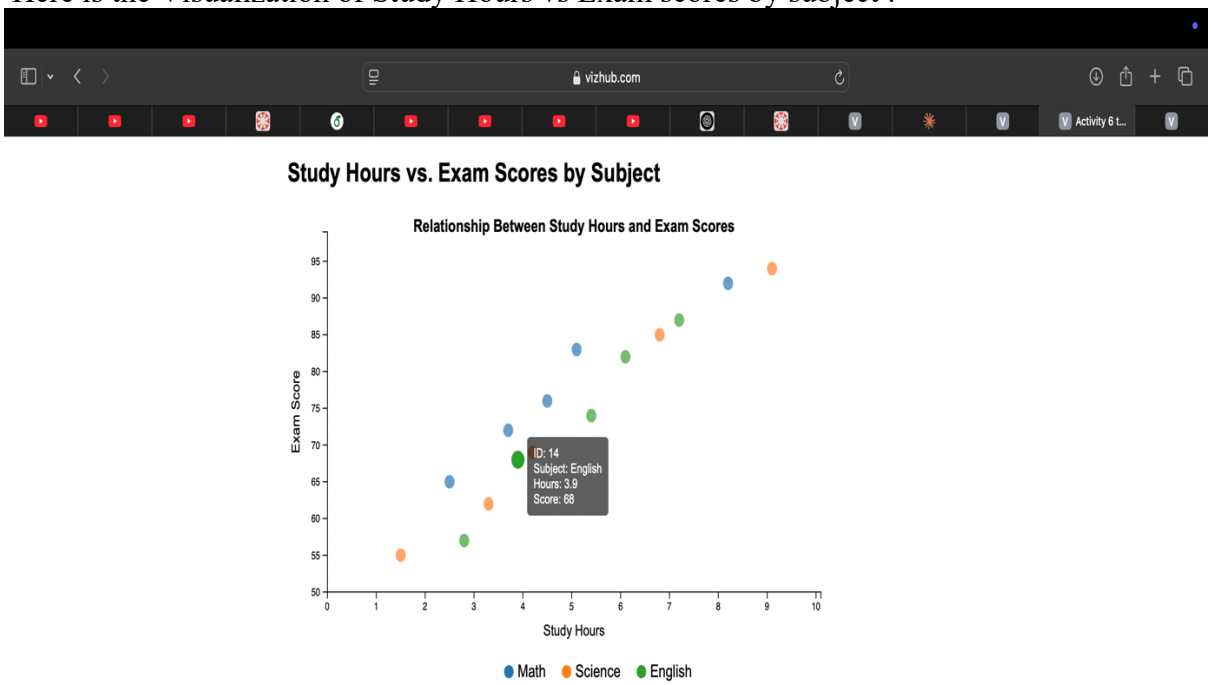
Data Explanation:
For this project, I created a scatter plot from a data set of study time and scores of three subjects: Math, Science, and English. There are numerous students in the data set, and I am plotting the data point per student as the number of study hours a student spent and the test score he/she achieved in the subject. I used the subject as a third variable so that each point was differentiated by color, as this would make it more convenient visually when viewing trends per subject.

Visualization Summary:
I made the scatter plot with D3.js. The y-axis has study hours, while the x-axis has exam scores. Each of the dots in the plot corresponds to the student. Color represents the subject of the exam: Math by orange, Science by green, English by blue, etc. I've also put in axis labels ("Study Hours" and "Exam Score") and a legend to make the color coding clear. This improved the readability of the chart and kept the data well separated

Chart Analysis:
The scatter plot can easily show a direct relationship between study time and exam scores. The students who study more hours are also scoring better in all three subjects. There is a slight difference, though — in Math, for example, they would be scoring slightly lower for the same study hours when contrasted with English. Cross-subject performance trends can easily be contrasted by this visualization and trends such as steady progress through more study time can be identified.



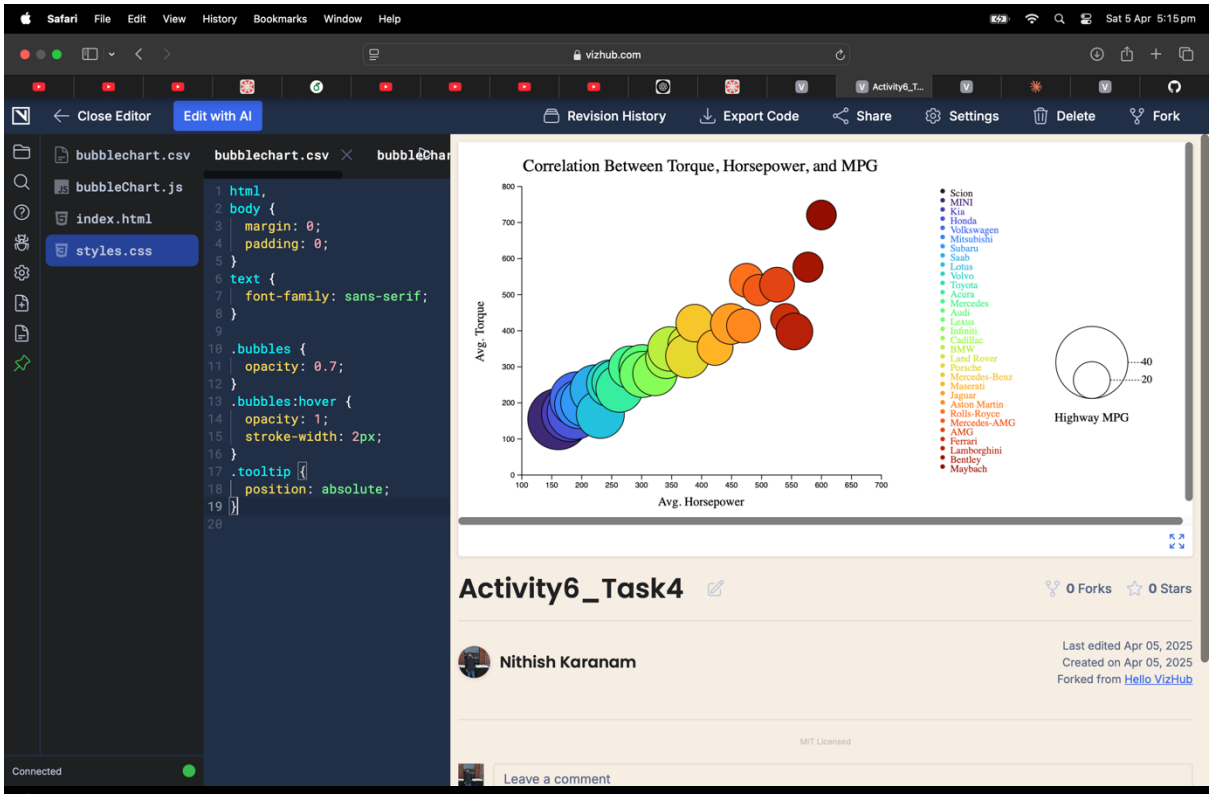
Here is the Visualization of Study Hours vs Exam scores by subject :

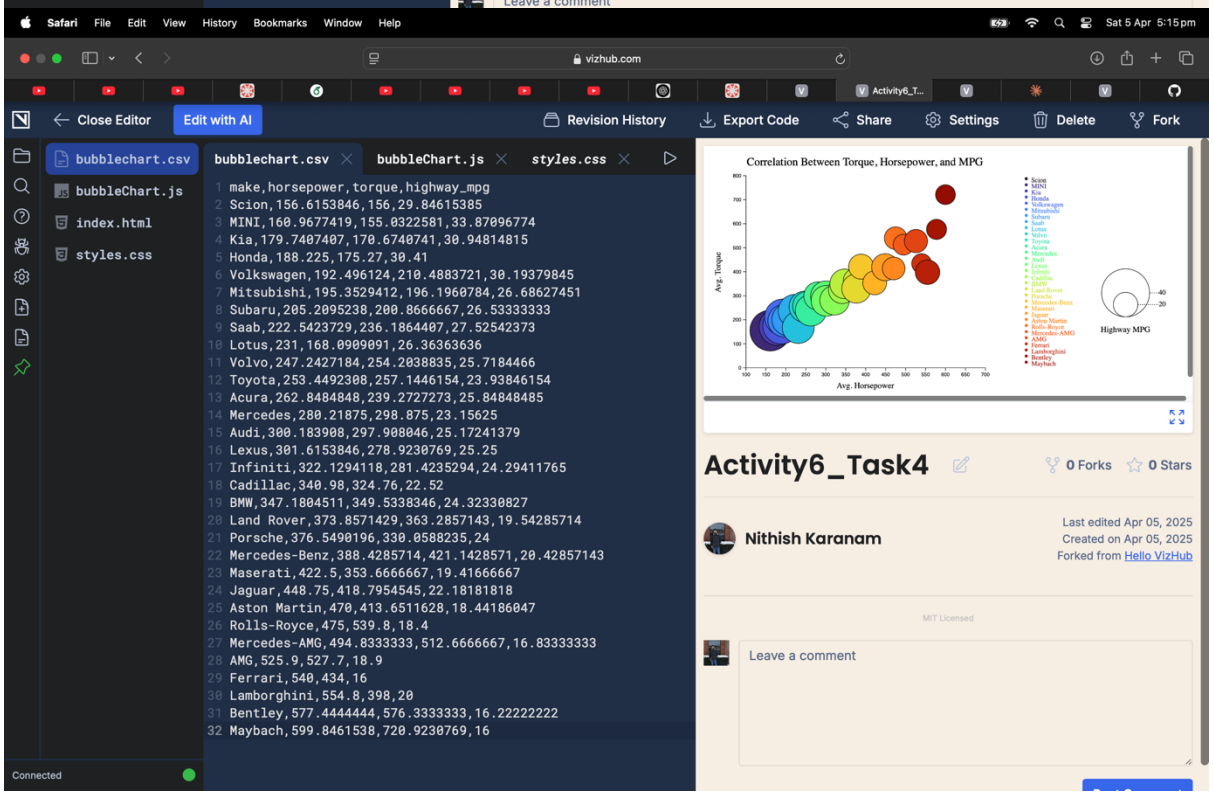


Task -4 : Bubble Chart:

Link : https://vizhub.com/Nithishkaranam2002/c45b39f593074f61abbcf7c319a901fa

This bubble chart shows the relationship between average horsepower, average torque, and highway MPG of different car brands. The size of each bubble represents fuel efficiency, while colors distinguish the car brands





Tak 4 : Question 1:

Vizhub link: https://vizhub.com/Nithishkaranam2002/3875d6d853cd470e959832e0dc6f0a5c

Data Description:
For this exercise, I created a bubble chart from a data set of the major tech companies such as Apple, Microsoft, Amazon, Alphabet, and several others.
The data set has three major metrics for each of the companies:

1.Total Annual Revenue in billions of USD

2.Profit Margin (%)

3.Number of Employees (in thousands)

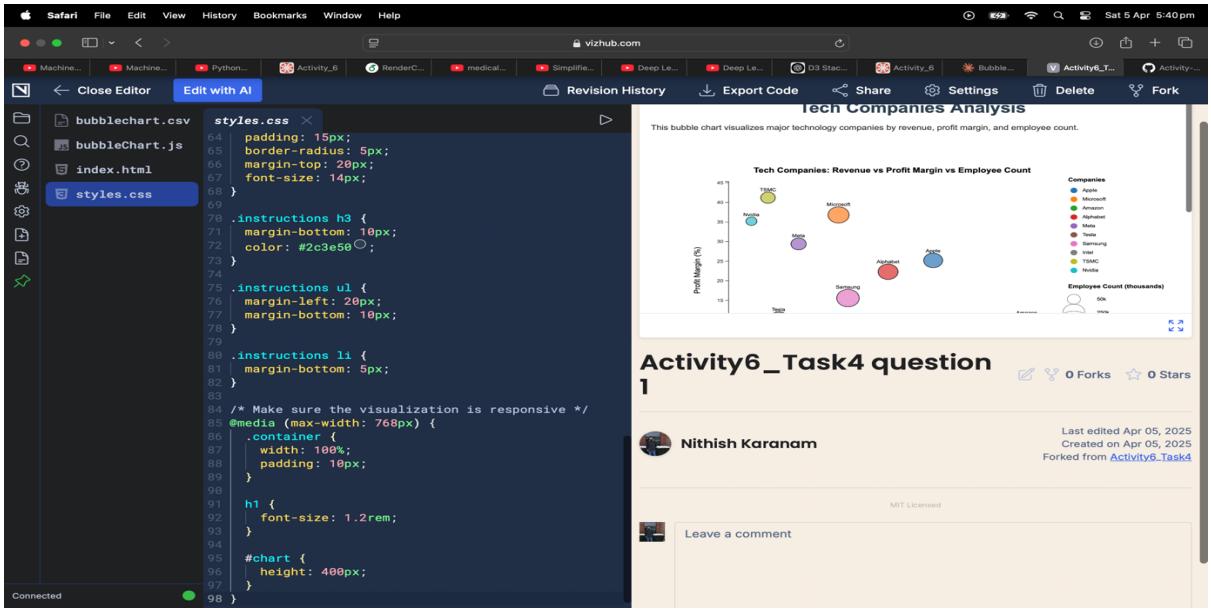
Each dot is a single firm, showing its employment and financial numbers in graphical terms.

Visualization Summary:
I made a bubble chart in D3.js where:

The y-axis is each firm's annual revenue. The y-axis shows the profit margin.
The size of the bubble corresponds with the number of staff members (larger bubbles represent more staff members).
The color of every bubble signifies the firm (a legend is provided).
I also placed proper axis labels, a title, a description of the chart, and a helpful legend explaining the components in the chart. On hover, additional information is revealed regarding the firm details.

Chart Analysis
From this table, we can see:Amazon generates the most revenue and has the biggest workforce but has less profit margin.

Two of the most profitable, though lower-revenue, companies are TSMC and Microsoft. Apple and Alphabet both enjoy strong revenue with strong margins. These two companies earn good revenues but relatively lower margins. This bubble chart is a simple but dynamic way of comparing firms by size of firm versus performance financially. This helps visualize how some firms become highly profitable with more streamlined staff, while firms become highly revenue-driven but with lower margins.



Here is the final visualization :