

Introduction to Programming II

Project Log

Project title:	Data visualization
Topic: 7	Extending the Apps
What progress have you made in this topic?	
<p>I have added four new extensions to the data visualizer: “Dangers of Coloring Chicks,” “Population of Pakistan in 2023,” “Happiest Countries in the World,” and “Food purchases 1974-201617 (Taken from Coursera).” Each extension loads a CSV file containing relevant data and uses this data to create an interactive visualization.</p>	
What problems have you faced and were you able to solve them?	
<p>All the codes were working perfectly until I added them to my main code file. The bubbles in “Happiest Countries in the World,” and “Food purchases 1974-201617” kept multiplying when switched from one extension to another. All I had to do was add an empty bubble array in each of both extension’s set up function. Another problem in “Food purchases 1974-201617” was that the buttons were not functioning, even with the recent js p5 library (note: I am using the 2019 version but once tried the newest one just for buttons), so it was replaced with a dropdown menu with the help of my teacher. Also, the bubbles in “Food purchases” would often float out of the canvas so I added center force to keep them at the center of the canvas.</p>	
What are you planning to do over the next few weeks?	
<p>Now that I’ve added all the extensions, I don’t plan on adding any more. With over 14 extensions in place, my plan is to go through each of them to improve code readability, add comments, and debug any errors. After this I will also carry out the test for stability and usability.</p>	
Are you on target to successfully complete your project? If you aren’t on target, how will you address the issue?	

Yes, I am on target to successfully complete my project, after solving the problems. The four extensions have been implemented and are functioning as expected. If any issues arise in the future, I plan to address them promptly by debugging the code, seeking help if needed, and dedicating extra time to ensure the project stays on track.

Introduction to Programming II

Project Log

Project title:	Data Visualization
Topic: 8	Code organization and debugging (Callbacks is the original name for topic 8)
What progress have you made in this topic?	
<p>I have improved the readability of the code and added comments. Additionally, I learned about a new variable declaration, <code>const</code>, and used it wherever possible. I also gained more understanding about the use of <code>push</code> and <code>pop</code> methods.</p>	
What problems have you faced and were you able to solve them?	
<p>The problem I faced involved code conflicts. For instance, when I switched from one code (or visualization) to the next, the <code>noStroke</code> setting from the previous code would be applied to the next code. I resolved this issue by using the <code>push</code> and <code>pop</code> methods, as well as the <code>destroy</code> function.</p>	
What are you planning to do over the next few weeks?	
<p>For the next few weeks, I am planning to do usability and stability testing.</p>	
Are you on target to successfully complete your project? If you aren't on target, how will you address the issue?	

Yes, I am almost on target, adding comments and improving code readability was not very challenging, however the code confliction was really challenging and there is still a little bit of confliction. I will address this issue by learning more.

Introduction to Programming II

Project Log

Project title:	Data Visualization
Topic: 9	Testing for Stability
What progress have you made in this topic?	
<p>I have conducted stability testing of all extensions by writing the code for testing in the main sketch file. I used manual profiling to measure how long a piece of code takes to run. The results showed that all extensions run smoothly between 0-5 milliseconds, with some exceptions for 'waffle charts' & 'Nutrients: 1974-2016' which sometimes take more than 5 ms. especially after it is switched continuously between different visualizations then it slows down.</p> <p>Longest time taken by (especially after switching to different visualization);</p> <ul style="list-style-type: none">-Waffle charts; 20 ms-Nutrients: 1974-2016; 9 ms <p>And I also did the test for Frames Per Second (FPS) to measure the number of frames per second the program can render. Result shows that all the sketches are rendering smoothly & efficiently between 60-59 Except for waffle charts that renders at moderate speed somewhere between 30-40, when continuously switching between different visualizations, FPS value decreases & waffle charts slows down.</p>	
What problems have you faced and were you able to solve them?	
<p>I didn't face any major problems. While the waffle charts do slow down occasionally, they are generally working perfectly. Currently, I don't have any plans to improve the speed of the waffle charts.</p>	
What are you planning to do over the next few weeks?	

Now I plan to do the last thing, which is usability testing.

Are you on target to successfully complete your project? If you aren't on target, how will you address the issue?

Yes, I am on target to successfully complete my project. The stability testing has been successful in identifying areas for improvement.

Introduction to Programming II

Project Log

Project title:	Data visualization
Topic: 10	Testing with users
What progress have you made in this topic?	
<p>I have conducted usability testing on the data visualization extensions. The feedback from users was valuable in assessing the application's usability and effectiveness. Users responded positively to the application's interactivity and the insights it provided. Users also gave great suggestions like adding trendlines for the graphs, adding flags for each country.</p>	
What problems have you faced and were you able to solve them?	
<p>Some users found the switch between different codes to be abrupt even after I fixed the issue with push and pop and with destroy function. While this wasn't a major issue, it's something that could be improved and taken into consideration for future development.</p>	
What are you planning to do over the next few weeks?	
<p>Over the next few weeks, I plan to finalize the feedback from the usability testing and start planning for improvements in the project. This includes ensuring a smooth switch between different codes and incorporating user suggestions. Based on their feedback, I will add a trendline for the Pay gap: 1997-2017, if possible. I will also attempt to include flags for different countries</p>	
Are you on target to successfully complete your project? If you aren't on target, how will you address the issue?	
<p>Yes, I am on target to successfully complete my project. The usability testing has been successful in identifying areas for improvement and suggestions. If any issues arise in the future, I plan to address them promptly by refining the code, seeking help if needed, and dedicating extra time to ensure the project stays on track.</p>	

Here is the link to the survey I made for users:

https://docs.google.com/forms/d/e/1FAIpQLScuspNgWgaiDCXvaIG58CBLdrXKgSAytguxjvBhpJHazRQ8Nw/viewform?usp=sf_link

Data Visualization

usability testing

* Indicates required question

Ease of use: On a scale of 1 to 5, how would you rate the ease of use of this data visualization? *

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Understanding: Were you able to easily understand the information presented in the data visualization? *

- ☐ Strongly Agree: The information was very clear and easy to understand.
- ☐ Agree: The information was clear and mostly easy to understand.
- ☐ Neutral: The information was somewhat clear and understandable.
- ☐ Disagree: The information was not very clear or easy to understand.
- ☐ Strongly Disagree: The information was not clear or easy to understand at all.

Navigation: Did you find it easy to navigate and interact with the data visualization? *

- ☐ Very Easy: I found it very easy to navigate and interact with the data visualization.
- ☐ Easy: I found it easy to navigate and interact with the data visualization.
- ☐ Neutral: I neither found it easy nor difficult to navigate and interact with the data visualization.
- ☐ Difficult: I found it difficult to navigate and interact with the data visualization.
- ☐ Very Difficult: I found it very difficult to navigate and interact with the data visualization.

Insights: Were you able to gain new insights from the data visualization? *

- ☐ A Lot of New Insights: I gained a lot of new insights from the data visualization.
- ☐ Some New Insights: I gained some new insights from the data visualization.
- ☐ Neutral: I neither gained nor didn't gain new insights from the data visualization.
- ☐ Few New Insights: I gained few new insights from the data visualization.
- ☐ No New Insights: I didn't gain any new insights from the data visualization.

Improvements: What improvements would you suggest for this data visualization? *

Your answer

Submit

Clear form

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Google Forms

Data Visualization

usability testing

Responses Count

* Indicates required question

Ease of use: On a scale of 1 to 5, how would you rate the ease of use of this data visualization? *

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

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Questions Responses **7** Settings

7 responses

 [View in Sheets](#) 

Accepting responses 

Summary

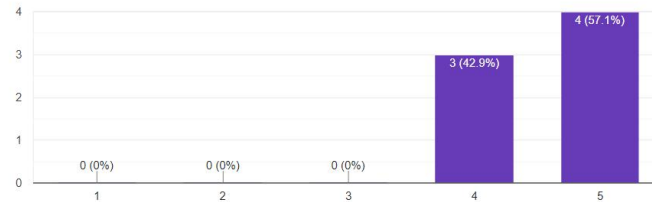
Question

Individual

Ease of use: On a scale of 1 to 5, how would you rate the ease of use of this data visualization?

 [Copy](#)

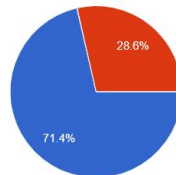
7 responses








Understanding: Were you able to easily understand the information presented in the data visualization?

 [Copy](#)

7 responses

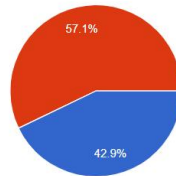







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-  Agree: The information was clear and mostly easy to understand.
-  Neutral: The information was somewhat clear and understandable.
-  Disagree: The information was not very clear or easy to understand.
-  Strongly Disagree: The information was not clear or easy to understand at all.

Navigation: Did you find it easy to navigate and interact with the data visualization?

 [Copy](#)

7 responses

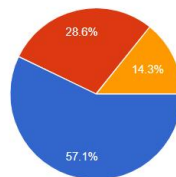







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Insights: Were you able to gain new insights from the data visualization

 [Copy](#)

7 responses



-  A Lot of New Insights: I gained a lot of new insights from the data visualization.
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Improvements: What improvements would you suggest for this data visualization?

7 responses

Looks amazing and very self explanatory

Great job, everything looks great! But there is always room for improvement

wow amazing! There was a little bit of interruption when I switched from one visualization to another, like some fonts appear misplaced when i moved to the next visualization so maybe work on that?

It was a brilliant attempt, especially, a bubble chart depicting happiest countries in the world.

Add trendlines to unearth patterns for prediction

Flags for the countries!

After viewing this data visualization, presentation is very fine and eye catching, there is always room for improvement but this is much better.