Module 14 Challenge

Start Assignment

Due Jan 12, 2023 by 11:59pm **Points** 100 **Submitting** a text entry box or a website url

Background

In this assignment, you will build an interactive dashboard to explore the **Belly Button Biodiversity dataset (http://robdunnlab.com/projects/belly-button-biodiversity/)**, which catalogs the microbes that colonize human navels.

The dataset reveals that a small handful of microbial species (also called operational taxonomic units, or OTUs, in the study) were present in more than 70% of people, while the rest were relatively rare.

Before You Begin

1. Create a new repository for this project called `belly-button-challenge`. *Do not add this Challenge to an existing repository*.
2. Clone the new repository to your computer.
3. Inside your local git repository, copy the files from in the `StarterCode` folder contained within the Module 14 Challenge zip file. i.e. `index.html`, `samples.json`, and the `static` folder.

   NOTE

   You will not be required to access the samples.json file locally, but it is provided for reference.

4. Push the above changes to GitHub.
5. Deploy the new repository to GitHub Pages.

Files

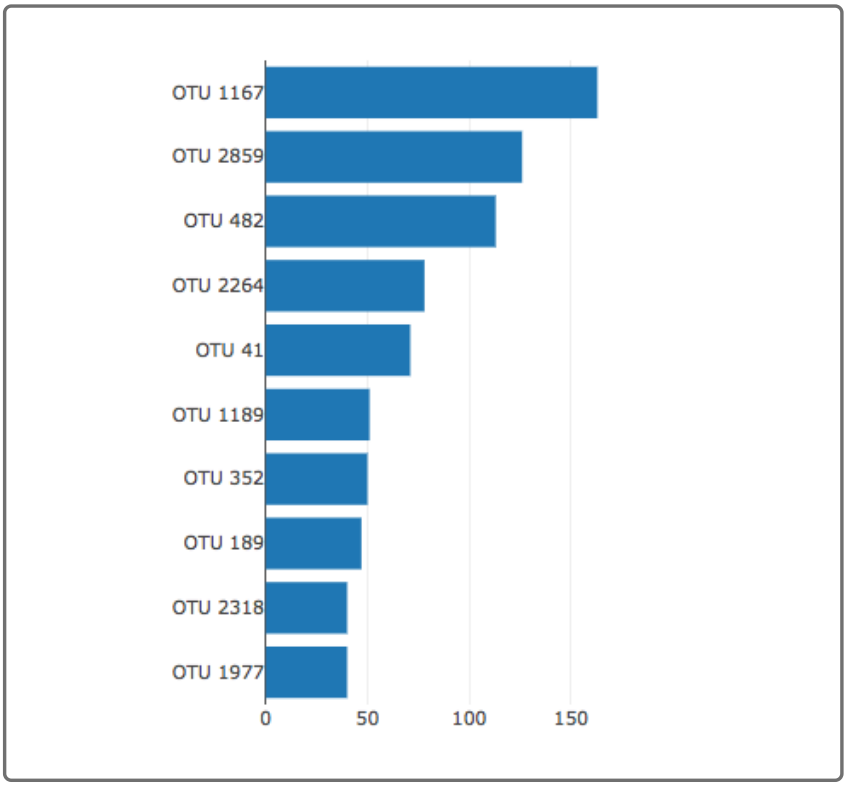
Download the following files to help you get started:

Module 14 Challenge files (https://static.bc-edx.com/data/dl-1-1/m14/lms/starter/Starter_Code_v1.zip)

Instructions

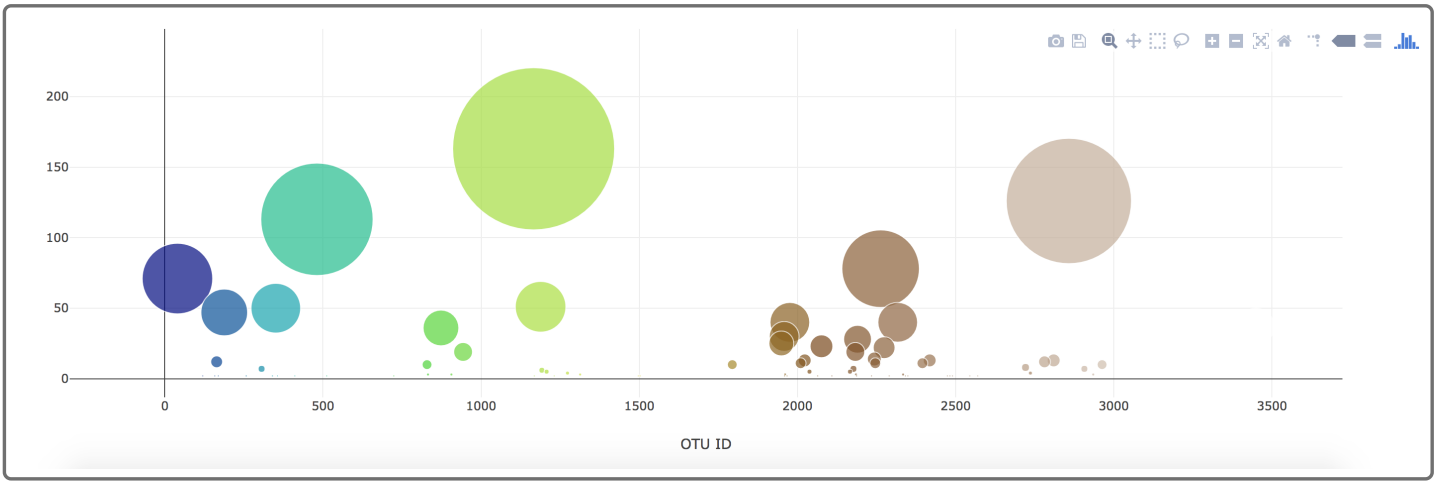
Complete the following steps:

1. Use the D3 library to read in `samples.json` from the URL `https://2u-data-curriculum-team.s3.amazonaws.com/dataviz-classroom/v1.1/14-Interactive-Web-Visualizations/02-Homework/samples.json`.
2. Create a horizontal bar chart with a dropdown menu to display the top 10 OTUs found in that individual.
   - Use `sample_values` as the values for the bar chart.
   - Use `otu_ids` as the labels for the bar chart.
   - Use `otu_labels` as the hovertext for the chart.



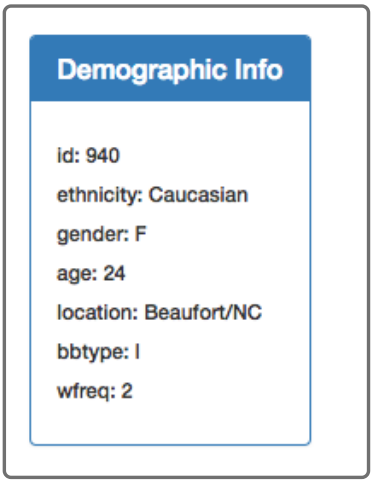
3. Create a bubble chart that displays each sample.

   - Use `otu_ids` for the x values.
   - Use `sample_values` for the y values.
   - Use `sample_values` for the marker size.
   - Use `otu_ids` for the marker colors.
   - Use `otu_labels` for the text values.

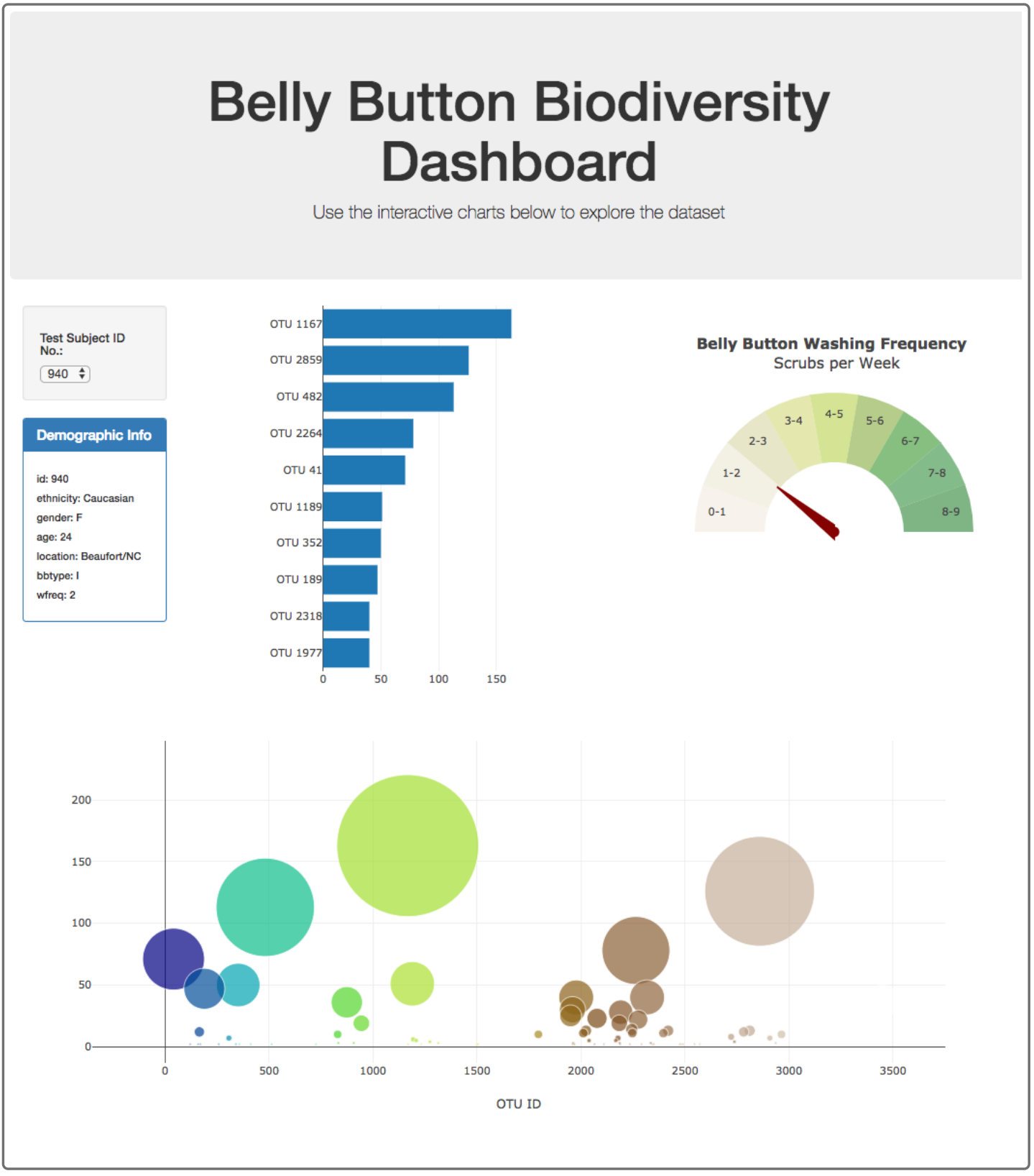


4. Display the sample metadata, i.e., an individual's demographic information.

5. Display each key-value pair from the metadata JSON object somewhere on the page.



6. Update all the plots when a new sample is selected. Additionally, you are welcome to create any layout that you would like for your dashboard. An example dashboard is shown as follows:



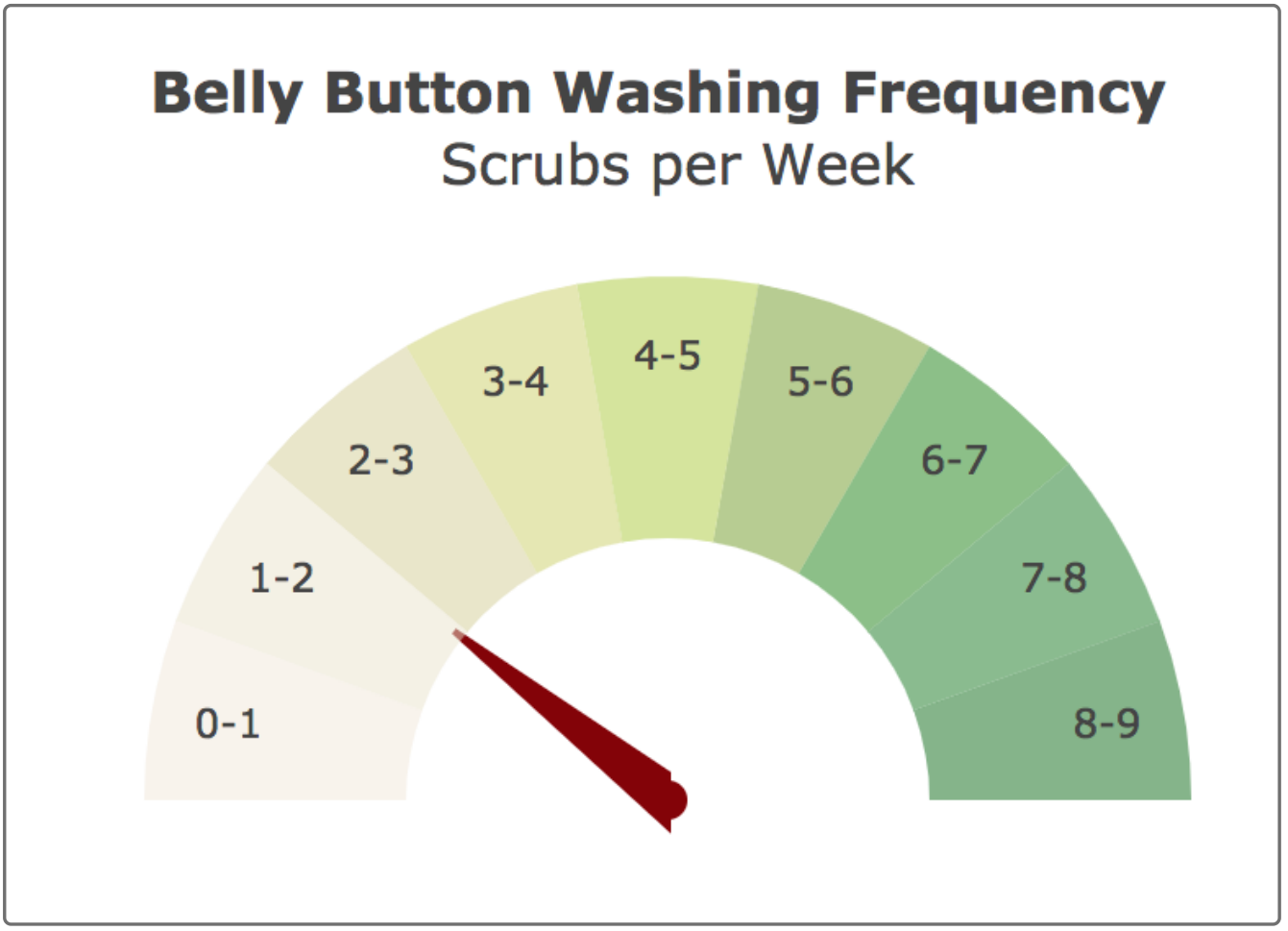
7. Deploy your app to a free static page hosting service, such as GitHub Pages. Submit the links to your deployment and your GitHub repo. Ensure that your repository has regular commits and a thorough README.md file

Advanced Challenge Assignment (Optional with no extra points earning)

The following task is advanced and therefore optional.

- Adapt the Gauge Chart from https://plot.ly/javascript/gauge-charts/ (https://plot.ly/javascript/gauge-charts/) to plot the weekly washing frequency of the individual.

- You will need to modify the example gauge code to account for values ranging from 0 through 9.
- Update the chart whenever a new sample is selected.



Hints

- Use `console.log` inside of your JavaScript code to see what your data looks like at each step.
- Refer to the **Plotly.js documentation** (https://plot.ly/javascript/) when building the plots.

Requirements

Bar Chart (30 points)

- Chart initializes without error (10 points)
- Chart updates when a new sample is selected (5 points)
- Chart uses Top 10 sample values as values (5 points)
- Chart uses `otu_ids` as the labels (5 points)
- Chart uses `otu_labels` as the tooltip (5 points)

Bubble Charts (40 points)

- Chart initializes without error (10 points)
- Chart updates when a new sample is selected (5 points)

- Chart uses `otu_ids` for the x values (5 points)
- Chart uses `otu_ids` for marker colors (5 points)
- Chart uses `sample_values` for the y values (5 points)
- Chart uses `sample_values` for the marker size (5 points)
- Chart uses `otu_labels for text values (5 points)

Metadata and Deployment (30 points)

- Metadata initializes without error (10 points)
- Metadata updates when a new sample is selected (10 points)
- App Successfully Deployed to Github Pages (10 points)

Grading

This assignment will be evaluated against the requirements and assigned a grade according to the following table:

Grade	Points
A (+/-)	90+
B (+/-)	80–89
C (+/-)	70–79
D (+/-)	60–69
F (+/-)	< 60

Submission

To submit your Challenge assignment, click Submit, and then provide the URL of your GitHub repository for grading.

NOTE

You are allowed to miss up to two Challenge assignments and still earn your certificate. If you complete all Challenge assignments, your lowest two grades will be dropped. If you wish to skip this assignment, click Next, and move on to the next Module.

Comments are disabled for graded submissions in BootCamp Spot. If you have questions about your feedback, please notify your instructional staff or your Student Success Manager. If you would like to resubmit your work for an additional review, you can use the Resubmit Assignment button to upload new links. You may resubmit up to three times for a total of four submissions.

References

Hulcr, J. et al. (2012) *A Jungle in There: Bacteria in Belly Buttons are Highly Diverse, but Predictable*. Retrieved from: http://robdunnlab.com/projects/belly-button-biodiversity/results-and-data/ (http://robdunnlab.com/projects/belly-button-biodiversity/results-and-data/)