**#15 Belly Button Biodiversity**

![Bacteria by filterforge.com](Images/bacteria\_by\_filterforgedotcom.jpg)

In this assignment, you will build an interactive dashboard to explore the [Belly Button Biodiversity DataSet](http://robdunnlab.com/projects/belly-button-biodiversity/).

## Step 1 - Plotly.js

Use Plotly.js to build interactive charts for your dashboard.

\* Create a PIE chart that uses data from your samples route (`/samples/<sample>`) to display the top 10 samples.

\* Use `sample\_values` as the values for the PIE chart

\* Use `otu\_ids` as the labels for the pie chart

\* Use `otu\_labels` as the hovertext for the chart

![PIE Chart](Images/pie\_chart.png)

\* Create a Bubble Chart that uses data from your samples route (`/samples/<sample>`) to display 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

![Bubble Chart](Images/bubble\_chart.png)

\* Display the sample metadata from the route `/metadata/<sample>`

\* Display each key/value pair from the metadata JSON object somewhere on the page

\* Update all of the plots any time that a new sample is selected.

\* You are welcome to create any layout that you would like for your dashboard. An example dashboard page might look something like the following.

![Example Dashboard Page](Images/dashboard\_part1.png)

![Example Dashboard Page](Images/dashboard\_part2.png)

**## Step 2 - Heroku**

Deploy your Flask app to Heroku.

\* You can use the provided sqlite file for the database.

\* Ask your Instructor and TAs for help!

- - -

## Advanced Challenge Assignment (Optional)

The following task is completely optional and is very advanced.

\* Adapt the Gauge Chart from <https://plot.ly/javascript/gauge-charts/> to plot the Weekly Washing Frequency obtained from the route `/wfreq/<sample>`

\* You will need to modify the example gauge code to account for values ranging from 0 - 9.

\* Update the chart whenever a new sample is selected

![Weekly Washing Frequency Gauge](Images/gauge.png)

- - -

**## Flask API**

Use Flask API starter code to serve the data needed for your plots.

\* Test your routes by visiting each one in the browser.

- - -

## Hints

\* Don't forget to `pip install -r requirements.txt` before you start your server.

\* 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.

- - -

### Copyright

Data Boot Camp © 2018. All Rights Reserved.