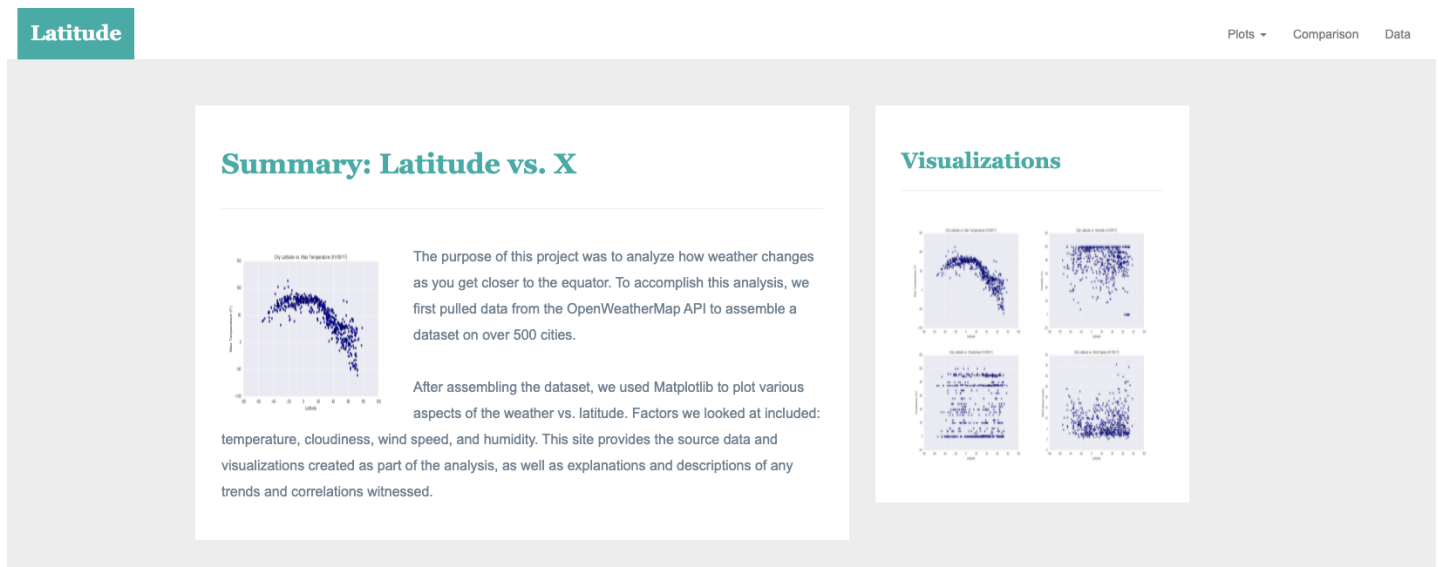# Module 11 Challenge

Start Assignment

Due Dec 14 by 11:59pm   **Points** 100   **Submitting** a text entry box or a website url

Background

Data becomes more powerful when you share it with others! That's because people can use your data only if they can access it. So, you'll use HTML and CSS to create a dashboard featuring the Latitude vs. X analysis of weather.

Before You Begin

1.   Create a new repository for this project called `Web-Design-Challenge`. **Do not add this assignment to an existing repository**.

2.   Clone the new repository to your computer.

3.   Inside your local Git repository, add the following:

   - Three folders named `assets`, `Resources` and `visualizations`.

     NOTE

     You'll later add your CSS and image files to the `assets` folder. You'll add the CSV file containing the data for your website to the `Resources` folder. You'll add the HTML pages that display your visualizations to the `visualizations` folder.

   - An `index.html` file in the main folder.

NOTE

You'll later edit this file to be the landing page that a user first encounters when reviewing your submission.

- Inside the `assets` folder, two more folders named `css` and `images`.

NOTE

You'll use these folders to store your CSS assets and image assets, respectively.*

4. Push the changes from Steps 1–3 to GitHub.

5. Deploy your `index.html` file to GitHub Pages.

NOTE

By deploying this empty HTML file to GitHub Pages now, you'll find that it automatically refreshes as you build your pages. You can then review the updates with each push that you make to GitHub.

Files

Download the following files to help you get started:

Module 11 Challenge files ⤳

Instructions

Create a website by using either the visualizations that you created for your Python-APIs Challenge or the weather data and images that are provided for this Challenge. To do so, use the considerations and website requirements that the following subsections describe. Also, ensure that your repository has regular commits and a descriptive `README.md` file.

NOTE

As you build this dashboard, you'll create a page for each plot and a way to navigate among these pages. These pages should contain the visualizations and the descriptions. You'll also create two more pages. One will be a landing page that provides a comparison of all the plots. The other will be a page that presents the data used to build the plots.

Considerations

- Be aware that you must use Bootstrap. This includes using the Bootstrap `navbar` component for the header on every page, the Bootstrap grid for responsiveness on the comparison page, and the Bootstrap `table` component for the data page.

- Be aware that you must deploy your website to GitHub Pages, and that as a result, the website must work at a live, publicly accessible URL.

- Make sure to use a CSS media query that uses Bootstrap and/or `@media` for the navigation bar.

- Make sure that your website works at all window widths.

- Feel free to take some liberties with the visual aspects, but keep the core functionality the same as the instructions describe. (For example, keep the comparison visualizations on the comparison page.)

Website Requirements

The overall requirements for your website are as follows:

- Your website must consist of seven pages.

- At the top of every page, your website must have a navigation bar.

- Your website must be deployed to GitHub Pages.

Next, we'll describe these requirements in detail.

Your website must consist of seven pages as follows:

- A **landing page** that contains the following elements:

    - An explanation of the project.

    - A link to each visualization page. For these, a sidebar should contain a preview image of each visualization. Clicking an image should take the user to that visualization.

- Four **visualization pages**, stored in the `visualizations` folder, each with the following elements:

    - A descriptive title and a heading tag.

    - The visualization for the selected comparison (latitude vs. max temperature, latitude vs. humidity, latitude vs. cloudiness, or latitude vs. wind speed). The images that these pages display should be stored in the `assets/images` folder.

    - A paragraph describing the visualization and its significance.

- A **comparisons page** that does the following:

    - Contains all the visualizations on the same page so that people can easily compare them.

    - Uses a Bootstrap grid for the visualizations. This grid must contain two visualizations across a medium or large screen and one visualization across an extra-small or small screen.

- A **data page** that displays a responsive table containing the data that the visualizations use, as follows:

    - The table must be a Bootstrap `table` component.

    - The data must come from either exporting or converting the CSV file to HTML. To do so, try using a tool that you already know: Pandas. Pandas has a `to_html` method that generates an HTML table from a Pandas DataFrame. To learn more, see **pandas.DataFrame.to_html** ⤷ in the official Pandas documentation.

    Note: Whether you use your own CSV file or the one provided, you should also upload the CSV file you used with your submission. This way your data page can be compared with the CSV file by your grader.

At the top of every page, your website must have a navigation bar that does the following:

- Contains the name of the site on the left side of the navigation bar, allowing users to return to the landing page from any page.

- Contains a drop-down menu, named Plots, on the right side of the navigation bar that contains a link to each visualization page.

- Provides two more text links on the right side: Comparisons, which links to the comparisons page, and Data, which links to the data page.

- Is responsive (via media queries). Note that the navigation bar must resemble the one in the screenshots in the **Navigation Bar** section. In particular, notice the background color change.

Your website must be deployed to GitHub Pages:

- As a result, the website must work at a live, publicly accessible URL. Save this URL for your later submission.

Bonus

For extra challenges (but no additional points), you may wish to try any or all of the following:

- Use the same requirements but a different dataset to make it your own.

- Use the same requirements, but add a Bootstrap theme to customize your website. To do so, you can use a tool like **Bootswatch** ▱ .

- Add extra visualizations.

- Use meaningful glyphicons next to the links in the navigation bar.

- On every visualization page that has an active state, add visualization navigation, as shown in the following images in the Screenshots section.

Screenshots

This section contains screenshots of each page, at various screen widths, that you must create. Keep in mind that these screenshots are intended as a guide. You can meet the requirements without exactly matching your pages to the screenshots.

Landing Page

-

Summary: Latitude vs. X

The purpose of this project was to analyze how weather changes as you get closer to the equator. To accomplish this analysis, we first pulled data from the OpenWeatherMap API to assemble a dataset on over 500 cities.

After assembling the dataset, we used Matplotlib to plot various aspects of the weather vs. latitude. Factors we looked at included: temperature, cloudiness, wind speed, and humidity. This site provides the source data and visualizations created as part of the analysis, as well as explanations and descriptions of any trends and correlations witnessed.
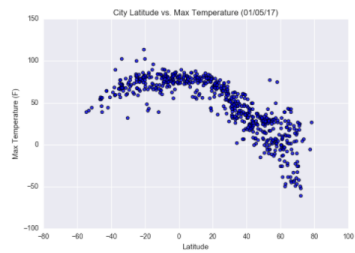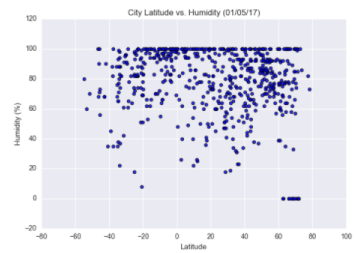
Visualizations
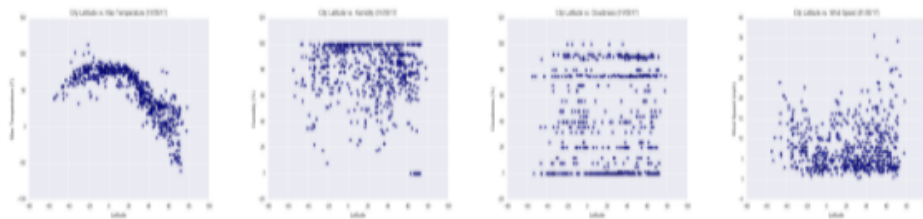
- [OBJ]

Comparisons Page

Comparison: Latitude vs X

Click any plot to get an in-depth analysis.

vs. Max Temperature

City Latitude vs. Max Temperature (01/05/17)

vs. Humidity

City Latitude vs. Humidity (01/05/17)

vs. Cloudiness

City Latitude vs. Cloudiness (01/05/17)

vs. Wind Speed

City Latitude vs. Wind Speed (01/05/17)

Comparison: Latitude vs X

Click any plot to get an in-depth analysis.

vs. Max Temperature

City Latitude vs. Max Temperature (01/05/17)

vs. Humidity

City Latitude vs. Humidity (01/05/17)

Data Page

-
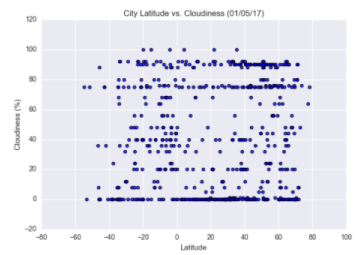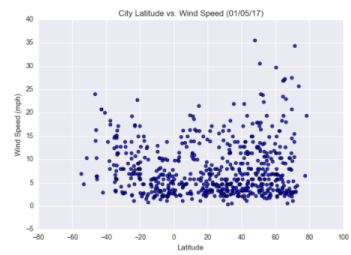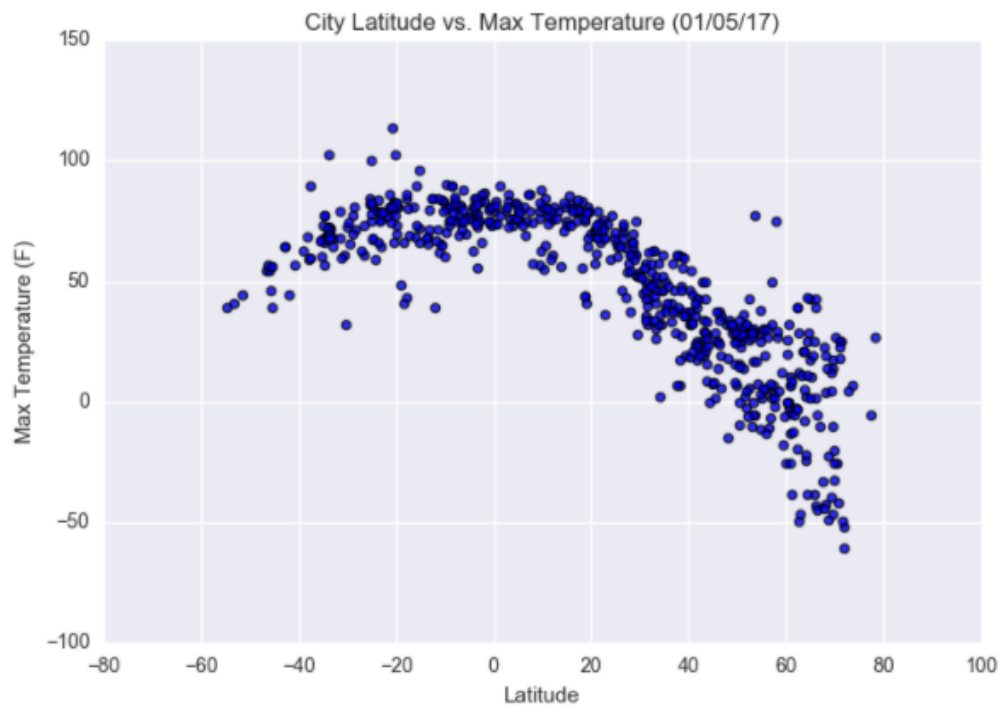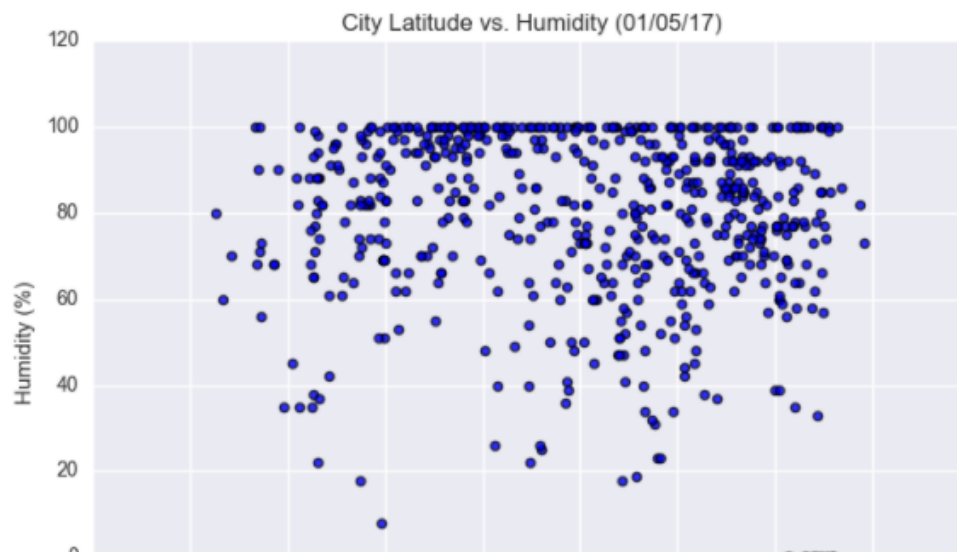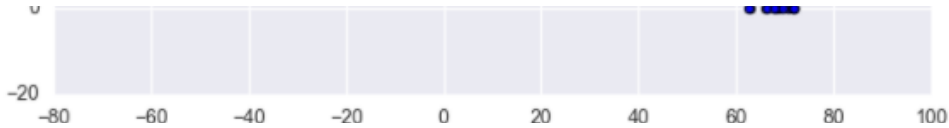
Data

The following table includes all of the data used for plotting during this project.

City_ID	City	Cloudiness	Country	Date	Humidity	Lat	Lng	Max Temp	Wind Speed
0	jacareacanga	0	BR	1528902000	62	-6.22	-57.76	89.60	6.93
1	kaitangata	100	NZ	1528905304	94	-46.28	169.85	42.61	5.64
2	goulburn	20	AU	1528905078	91	-34.75	149.72	44.32	10.11
3	lata	76	IN	1528905305	89	30.78	78.62	59.89	0.94
4	chokurdakh	0	RU	1528905306	88	70.62	147.90	32.17	2.95
5	martyush	92	RU	1528905306	94	56.40	61.89	55.03	9.33
6	hobart	20	AU	1528902000	87	-42.88	147.33	44.60	8.05
7	broken hill	0	AU	1528905311	88	-31.97	141.45	44.50	7.31
8	harnosand	0	SE	1528903200	44	62.63	17.94	60.80	13.87
9	tuatapere	0	NZ	1528905312	100	-46.13	167.69	38.92	3.40
10	puerto ayora	90	EC	1528902000	69	-0.74	-90.35	77.00	13.87
11	havre-saint-pierre	75	CA	1528902000	58	50.23	-63.60	53.60	19.46
12	punta arenas	0	CL	1528902000	100	-53.16	-70.91	35.60	9.17
13	tasiilaq	75	GL	1528901400	60	65.61	-37.64	39.20	2.24
14	chapais	40	CA	1528902000	38	49.78	-74.86	59.00	10.29
15	avarua	40	CK	1528902000	56	-21.21	-159.78	73.40	10.29
16	hofn	75	IS	1528902000	87	64.25	-15.21	51.80	8.05
17	yukamenskoye	92	RU	1528905315	98	57.89	52.24	56.65	10.22
18	khandbari	80	NP	1528905315	67	27.38	87.21	44.59	1.39

-

Latitude

Data

The following table includes all of the data used for plotting during this project.

| City_ID	City	Cloudiness	Country	Date
0	jacareacanga	0	BR	1528!
1	kaitangata	100	NZ	1528!
2	goulburn	20	AU	1528!
3	lata	76	IN	1528!
4	chokurdakh	0	RU	1528!
5	martyush	92	RU	1528!
6	hobart	20	AU	1528!
7	broken hill	0	AU	1528!
8	harnosand	0	SE	1528!
9	tuatapere	0	NZ	1528!
10	puerto ayora	90	EC	1528!
11	havre-saint-pierre	75	CA	1528!
12	punta arenas	0	CL	1528!
13	tasiilaq	75	GL	1528!
14	chapais	40	CA	1528!
15	avarua	40	CK	1528!
16	hofn	75	IS	1528!
17	yukamenskoye	92	RU	1528!

Visualization Pages

Max Temperature

As expected, the weather becomes significantly warmer as one approaches the equator (0 Deg. Latitude). More interestingly, however, is the fact that the southern hemisphere tends to be warmer this time of year than the northern hemisphere. This may be due to the tilt of the earth at the time of the year this data was gathered.

Visualizations

Max Temperature
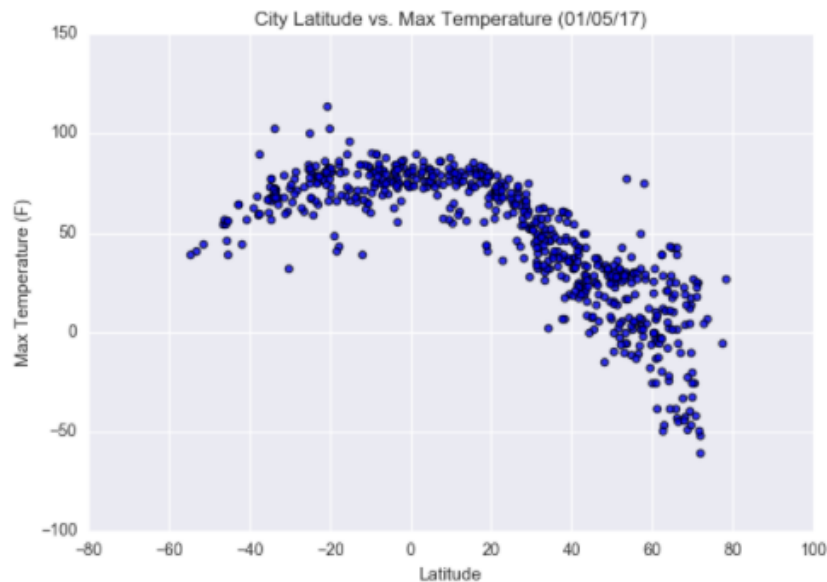
As expected, the weather becomes significantly warmer as one approaches the equator (0 Deg. Latitude). More interestingly, however, is the fact that the southern hemisphere tends to be warmer this time of year than the northern hemisphere. This may be due to the tilt of the earth at the time of the year this data was gathered.
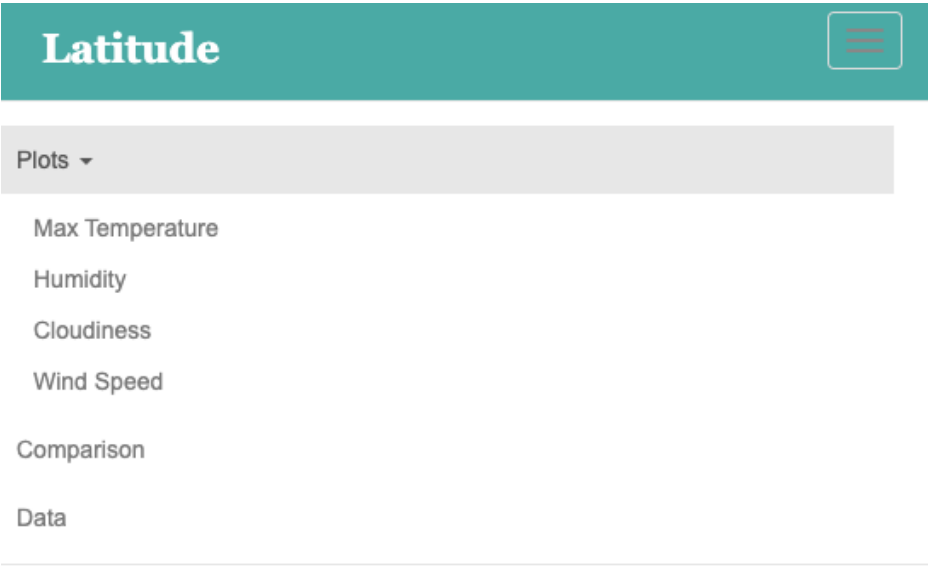
Visualizations

Navigation Bar
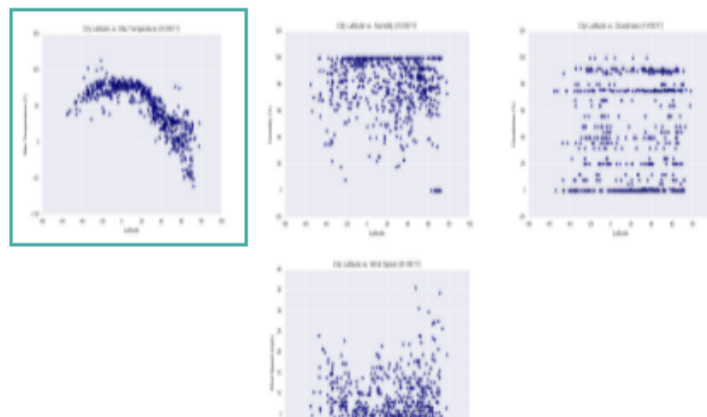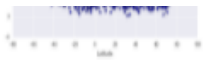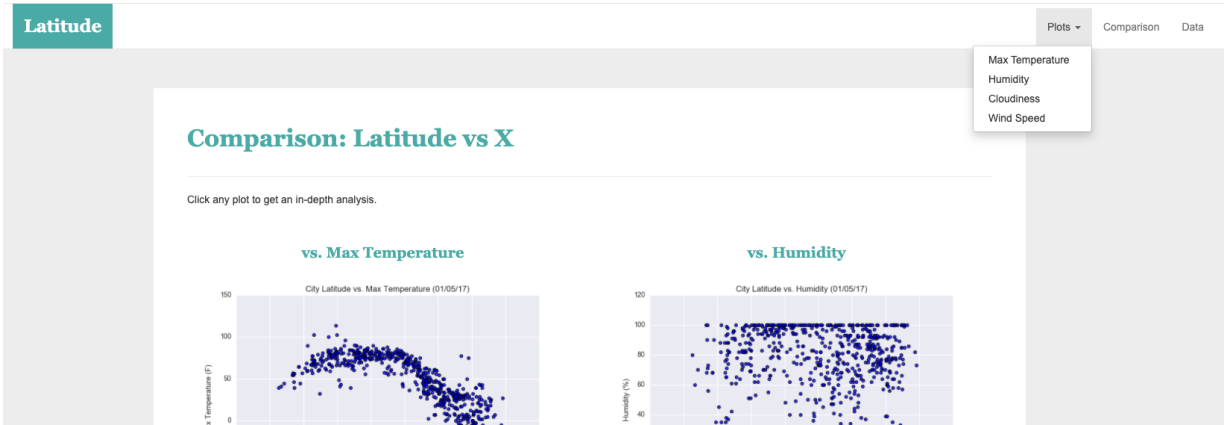
Requirements

Landing Page (10 points)

To receive all points, your landing page must have all of the following

- A sidebar section with images of each plot that all load (2 points)
- Sidebar images link to their respective pages (2 points)
- Bootstrap grid used correctly to separate sections (2 points)
- Page is responsive when the window is reduced in size (2 points)
- Includes a couple of paragraphs of an overview for this project (2 points)

Visualization Pages (40 points)

To receive all points, you must have a visualization page for each of the following

- latitude vs. max temperature (10 points)

- latitude vs. humidity (10 points)

- latitude vs. cloudiness (10 points)

- latitude vs. wind speed (10 points)

The point breakdown for each page follows below.

To receive all points, every visualization page must have all of the following

- A descriptive title and a heading tag (1 point per page)

- A section with the regular-sized visualization image, with the image correctly loading (1 point per page)

- A sidebar section that displays a smaller version of all the visualization images (2 points per page)

- All sidebar visualization images link to their respective pages (1 point per page)

- Includes a paragraph of text describing the plot (1 point per page)

- Uses Bootstrap grid to separate sections (2 points per page)

- Page is responsive when the window is reduced in size (2 points per page)

Comparison Page (6 points)

To receive all points, your comparison page must have all of the following

- All Images load (1 point)

- All labels are correct (1 point)

- Images are responsive (2x2 on large screens and 4x1 on small screens) (3 points)

- All images link to their respective visualization page (1 point)

Data Page (8 points)

To receive all points, your data page must have all of the following

- No rows missing from the CSV data file (2 points)

- The table uses Bootstrap table class(es) (1 point)

- The table is responsive and stays inside a container when the page is reduced in size (2 points)

- The table has all 10 columns (The following columns must be included but may be in a different order or named differently: City_ID, City, Country, Date, Latitude, Longitude, Cloudiness, Humidity, Max Temperature, Wind Speed) (2 points)

- The CSV data file used to produce the data page is included in the submission on GitHub in a `Resources` folder (1 point)

Navbar (16 points)

To receive all points, your navbar must have all of the following

- The name of the site is on the left side of the navigation bar and links to the landing page (1 point)

- All links work and direct to the correct page (2 points)

- Navbar has a working dropdown with links to plot pages (4 points)

- Navbar is on every page (3 points)

- Navbar collapses when the window is reduced in size and button works to make nav reappear (4 points)

- Uses Bootstrap navbar class (2 points)

File Organization and Structure (10 points)

To receive all points, your files must include the following structure

- Visualization pages (cloudiness.html, humidity.html, temp.html, and wind.html) are stored within a `visualizations` folder (2 points)

- An `assets` folder contains the `css` and `images` folders (2 points)

- CSS file(s) are stored within the `css` folder (2 point)

- Images are stored within the `images` folder (2 points)

- index.html, comparison.html, and data.html are stored in the parent directory (2 points)

Deployment and Submission (10 points)

To receive all points, you must

- Submit a link to a GitHub repository that's cloned to your local machine and contains your files (2 points)

- Use the command line to add your files to the repository (2 points)

- Include appropriate commit messages in your files (2 points)

- Deploy the website to GitHub Pages (4 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 and the URL of your deployed website 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

OpenWeatherMap.org. (2012). Current weather and forecast. Retrieved from **https://openweathermap.org/** ⬀ .