

## 12.1.2 Inspect a Plotly.js Chart

**Roza** is raring to start her project. She knows that she wants to create engaging and dynamic charts. It's her task to identify the best way to share her information with her audience.

Her first step is to master the basics of Plotly. For example, if she can create a basic chart in Plotly, she can build on her knowledge to create more advanced ones. Furthermore, she needs to identify the types of charts she can create with Plotly. Knowing the available options will enable her to select an appropriate visualization type for a dataset.

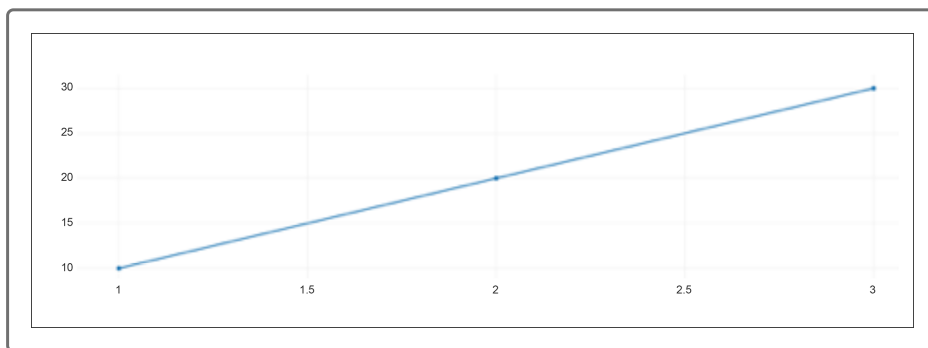
Throughout her journey, Roza will keep in mind how to best convey data to her volunteers and other researchers. For volunteers who are interested in selling their bacteria to Improbable Beef, what is the best way to visualize the types of bacteria that colonize their bellies? Some of them will be suitable for synthetic beef production, while others will not. Learning to use Plotly will be an important first step.

Let's begin!

To get started, download the data you'll need for this project. Click the following link to download `index.html` and `plot.js`.

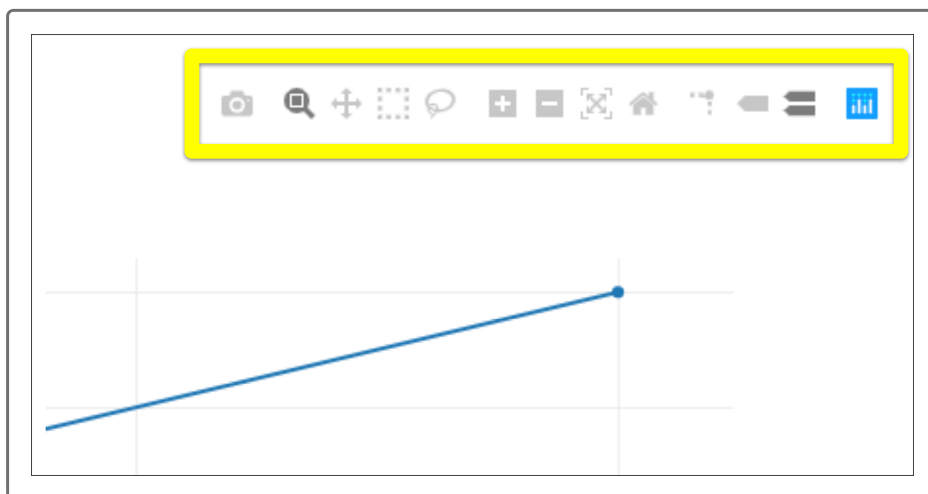
[Download the data files](https://2u-data-curriculum-team.s3.amazonaws.com/dataviz-online/module_12/data-12-1-2-resources.zip) [\(https://2u-data-curriculum-team.s3.amazonaws.com/dataviz-online/module\\_12/data-12-1-2-resources.zip\)](https://2u-data-curriculum-team.s3.amazonaws.com/dataviz-online/module_12/data-12-1-2-resources.zip)

Open `index.html` in your browser. You should see the following chart:\



This is a simple line chart with three data points. Notice that gridlines are supplied automatically.

Next, place your mouse over the top right corner of the chart, and you'll see the following menu appear. It has options such as zoom, zoom out, and pan. This menu also comes with the Plotly library and will be available for every visualization you create.



Next, open `index.html` in VS Code. You should see the following code.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="ie=edge">
  <title>Basic Charts</title>
  <script src="https://cdn.plot.ly/plotly-latest.min.js"></script>
</head>
<body>
  <div id="plotArea"></div>
  <script src="plots.js"></script>
```

```
</body>  
</html>
```

Let's break the code down:

- The first `<script>` tag links to a file called `plotly-latest.min.js`, which is downloaded from an online host. This file contains the JavaScript code that makes up the Plotly library. Such a link is called a CDN.
- CDN stands for Content Delivery Network. In short, a CDN provides links to downloadable resources, such as Plotly library code. An alternative to using CDNs is to download the file and use it locally, but using this particular CDN ensures that the most up-to-date version of Plotly is always delivered.
- The `<div>` with the ID `plotArea` refers to the `div` in which the chart will be displayed. You can also give the `div` another `id` of your choice.
- The second `<script>` tag refers to the file named `plots.js`, which contains the JavaScript code.

Open `plots.js`. You will see the following line of code.

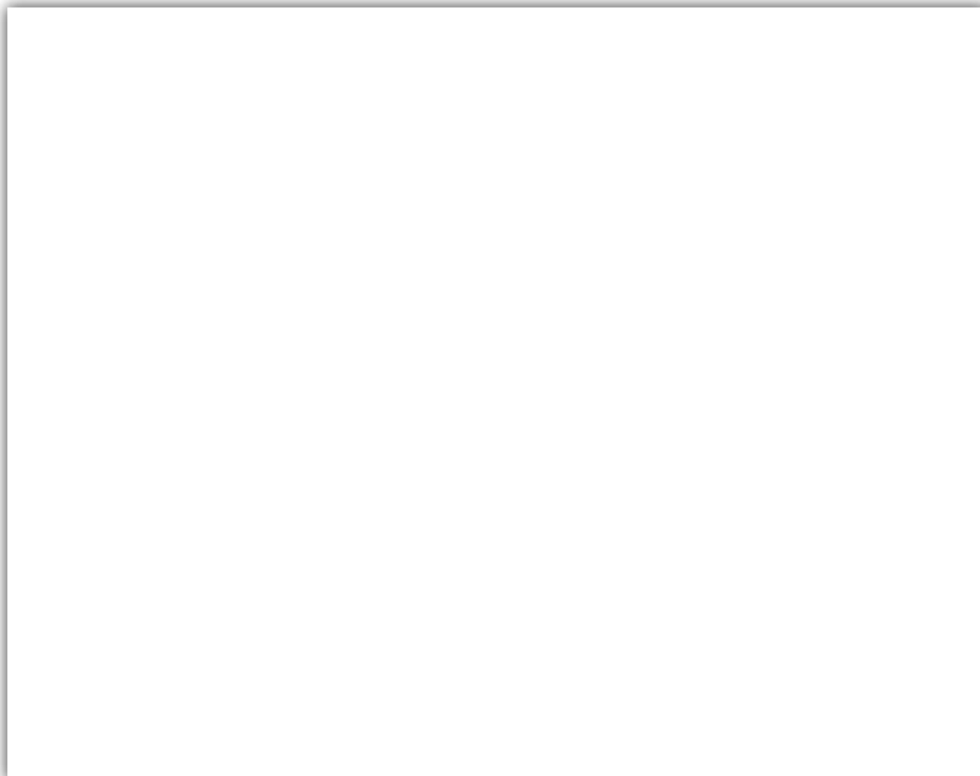
```
Plotly.newPlot("plotArea", [{x: [1,2,3], y:[10,20,30]}]);
```

A chart was created with a single line of code! The `Plotly.newPlot()` method creates a new chart, as its name indicates. This method has two arguments:

1. The first argument in `Plotly.newPlot()` is `"plotArea"`. Recall that this corresponds to the ID of the `<div>` tag in the HTML document.
2. The second argument is an array, as indicated by the square brackets. Inside the array is an object, as notated by the curly brackets, in which values of `x` and `y` are specified. The `x` and `y` values are contained inside arrays as well.

**IMPORTANT**

The formatting matters in Plotly! Make sure that your data is enclosed inside an outer array.



**SKILL DRILL**

Open VS Code and use Plotly to create a line chart of your own.

Play around with the `div` ID, the JavaScript file name, and the data array. Then verify the results by opening `index.html` with your browser. You should see a chart. If the chart doesn't render, try opening the developer/debugging console.

Make sure that you are comfortable with creating a line chart with Plotly before moving on.

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