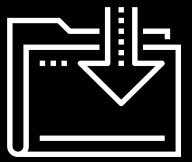
Functional Programing for Data Processing

Data Boot Camp

Lesson 14.2



Class Objectives

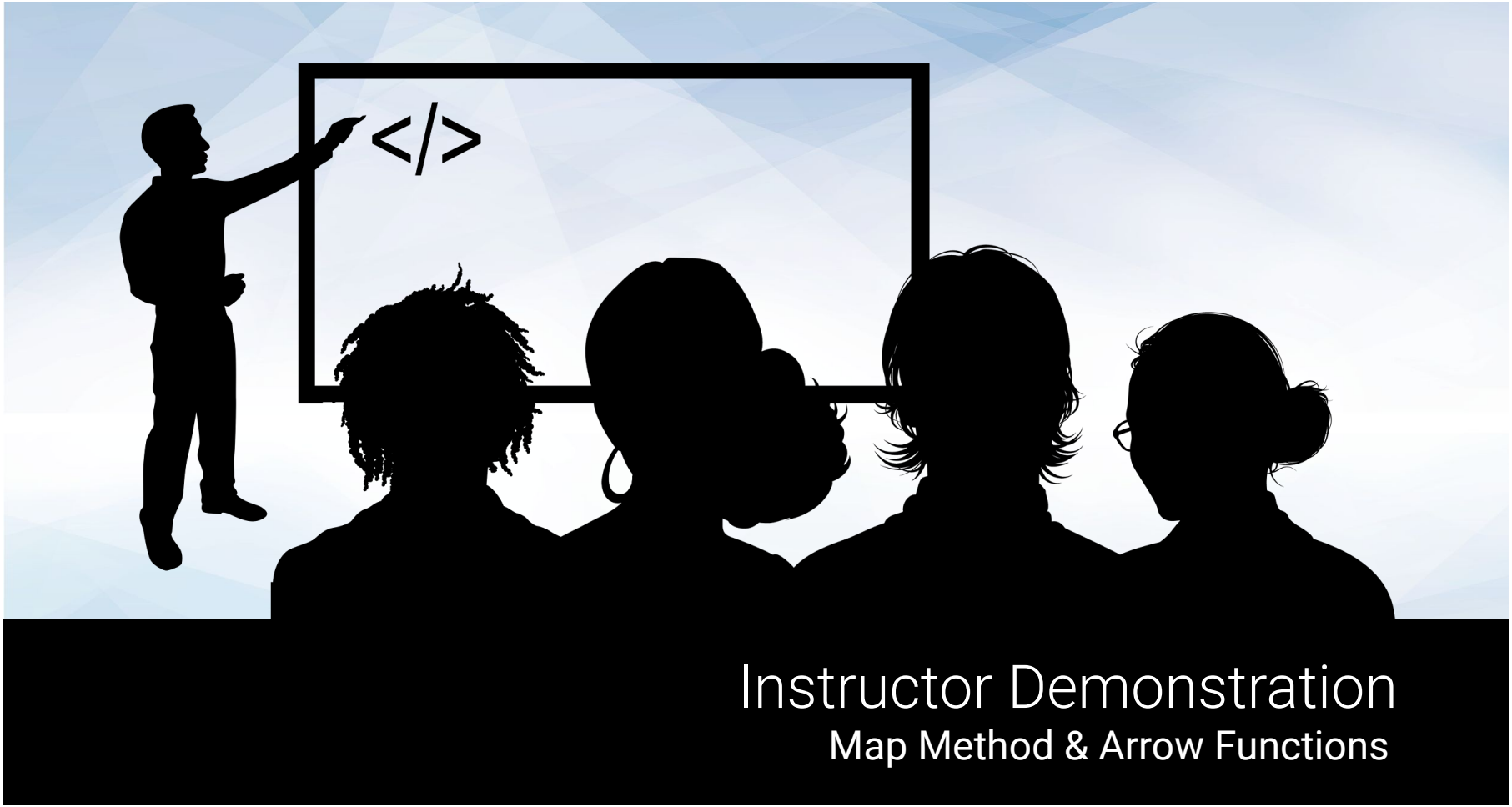
By the end of this lesson, you will be able to:

Apply map and filter to parse data.

Create and use arrow functions to simplify code.

Use `filter()` and arrow functions to manipulate and filter datasets.

Use ES6 JavaScript methods.



Instructor Demonstration

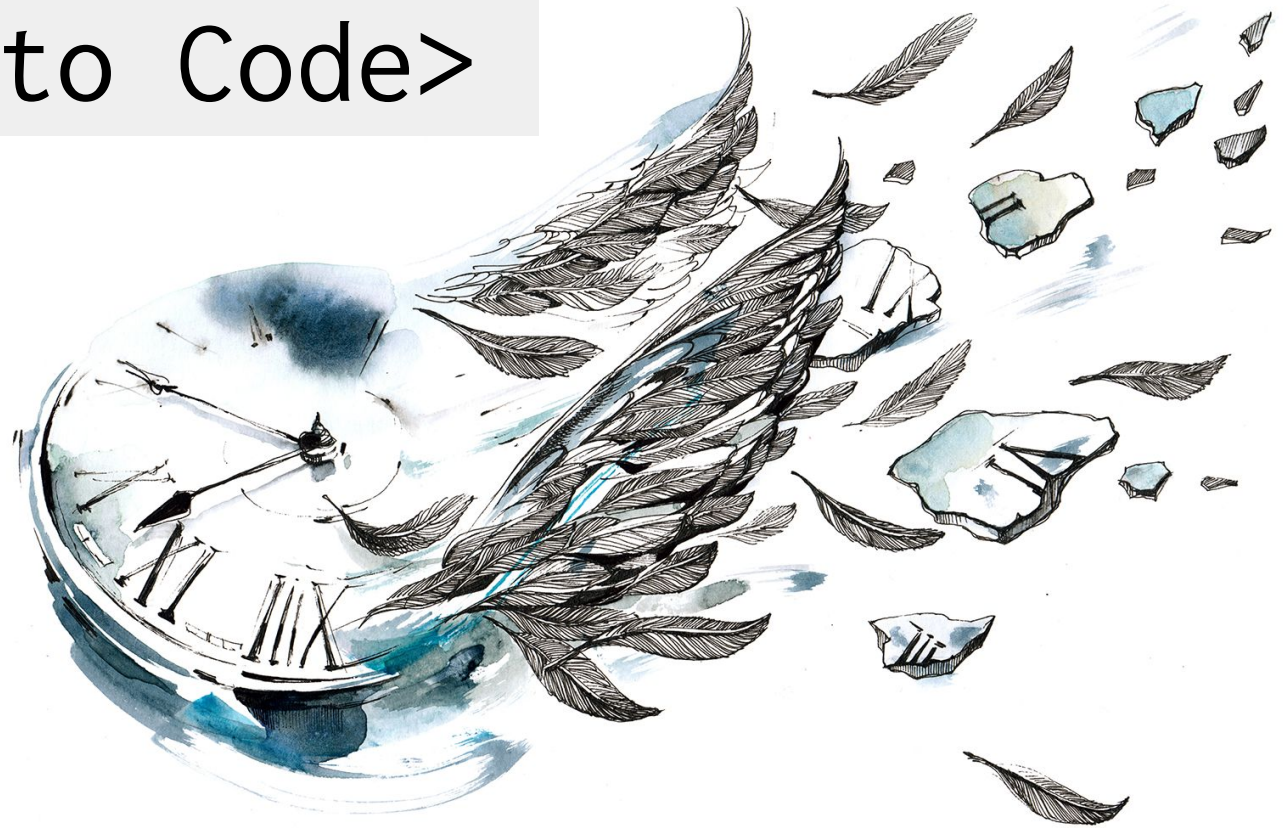
Map Method & Arrow Functions

What is the `map()` method?

`map()`

- A method that creates a new array with the results of calling a function for every element array.
- A method that calls the provided function in order and once for each element in an array.

<Time to Code>

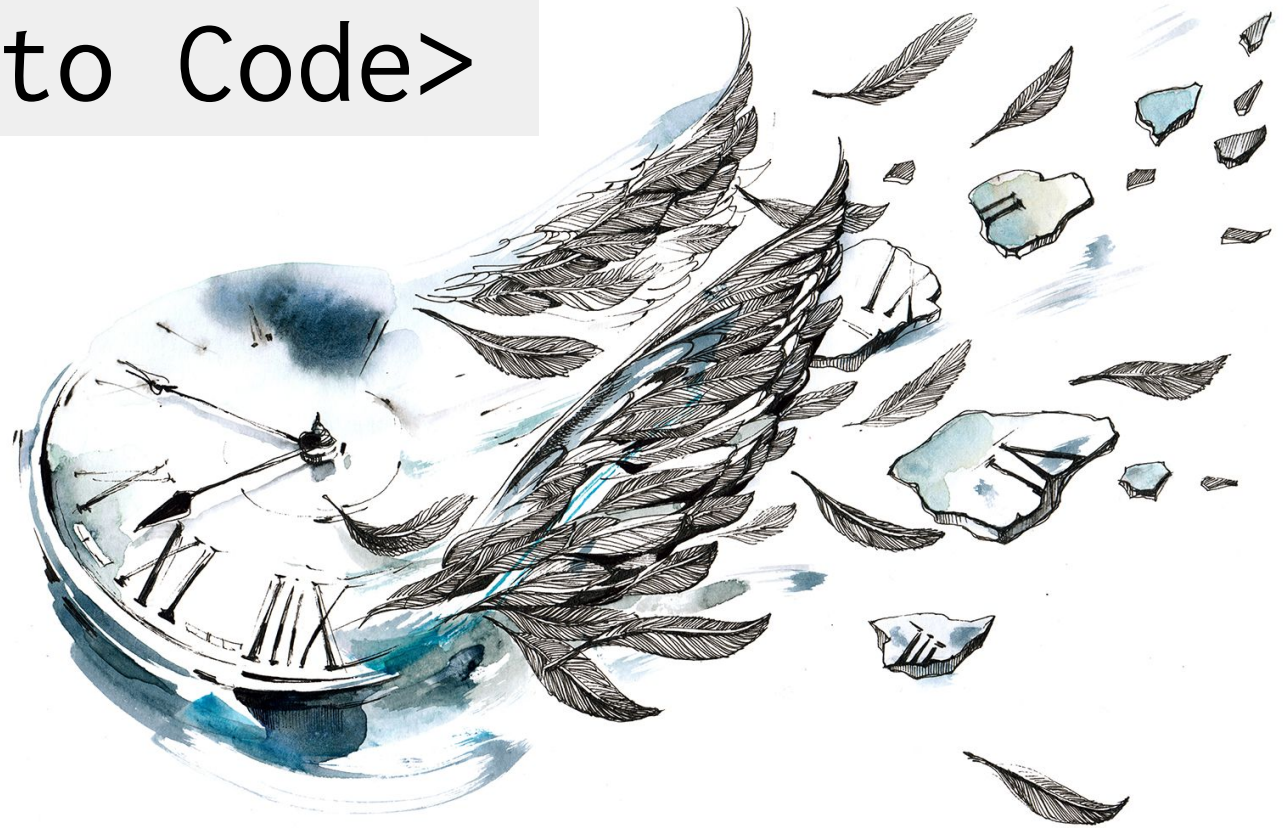


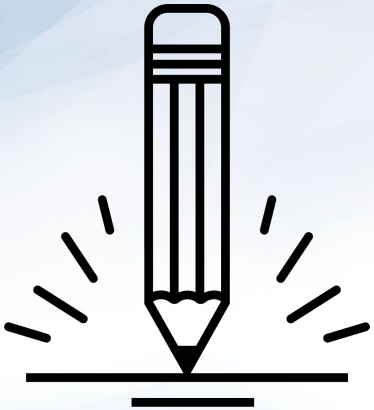
What are `arrow functions` ?

=>

- The arrow function is an alternative way to write functions in JavaScript.
- It was introduced in ES6 and allow us to write shorter functions syntax.

<Time to Code>





Activity: Mapping

In this activity, you will create arrays using the `map` function of names with the given princess dataset.

Suggested Time:
15 Minutes

Instructions:

Activity: Mapping

➔ **Dataset**:

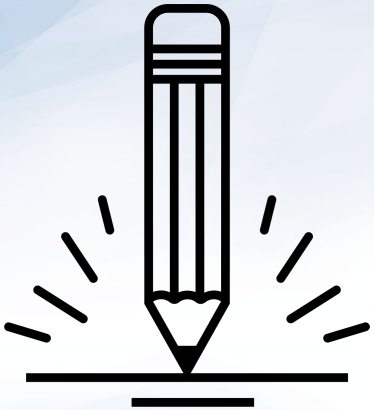
```
princesses = [
    { name: "Rapunzel", age: 18 },
    { name: "Mulan", age: 16 },
    { name: "Anna", age: 18 },
    { name: "Moana", age: 16 }
  ];
```

1. Create an array of just the names from the princesses array.
2. Create an array of strings for each princess name, follow by a colon, followed by their age.

- **Bonus:**
  - Create the array of strings using an arrow function instead.

- **Hint:**
  - Don't forget to use dot notation to access the values for the object keys.

Let’s Review



Activity: Mapping with Plotly

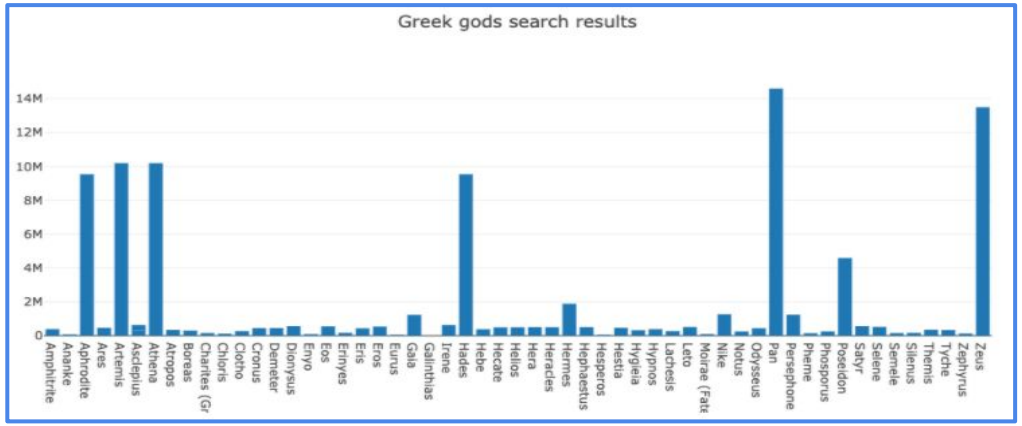
In this activity, you will create an array of Greek god search results using the `map` function and plotly with the data.js dataset.

Suggested Time:
15 Minutes

Instructions:

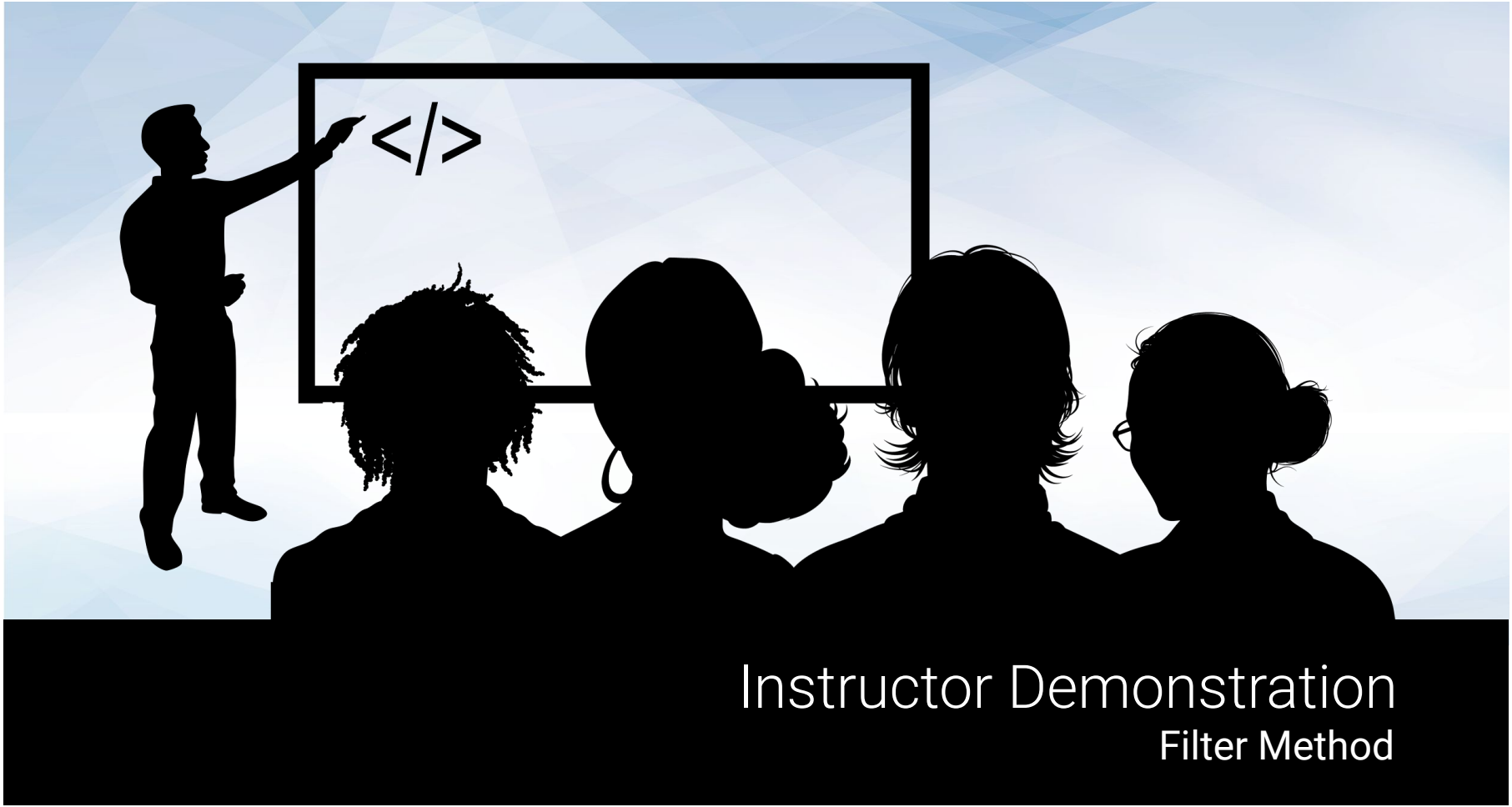
Activity: Mapping with Plotly

1. Create an array of Greek god names from the data.js dataset.
2. Create an array of Greek god search results from the data.js dataset.
3. Create a Plotly bar chart with names on the x axis and search results on the y axis, for example:



- **Hint:**
  - Open the console to see the dataset store in the variable `data`.

Let's Review



Instructor Demonstration

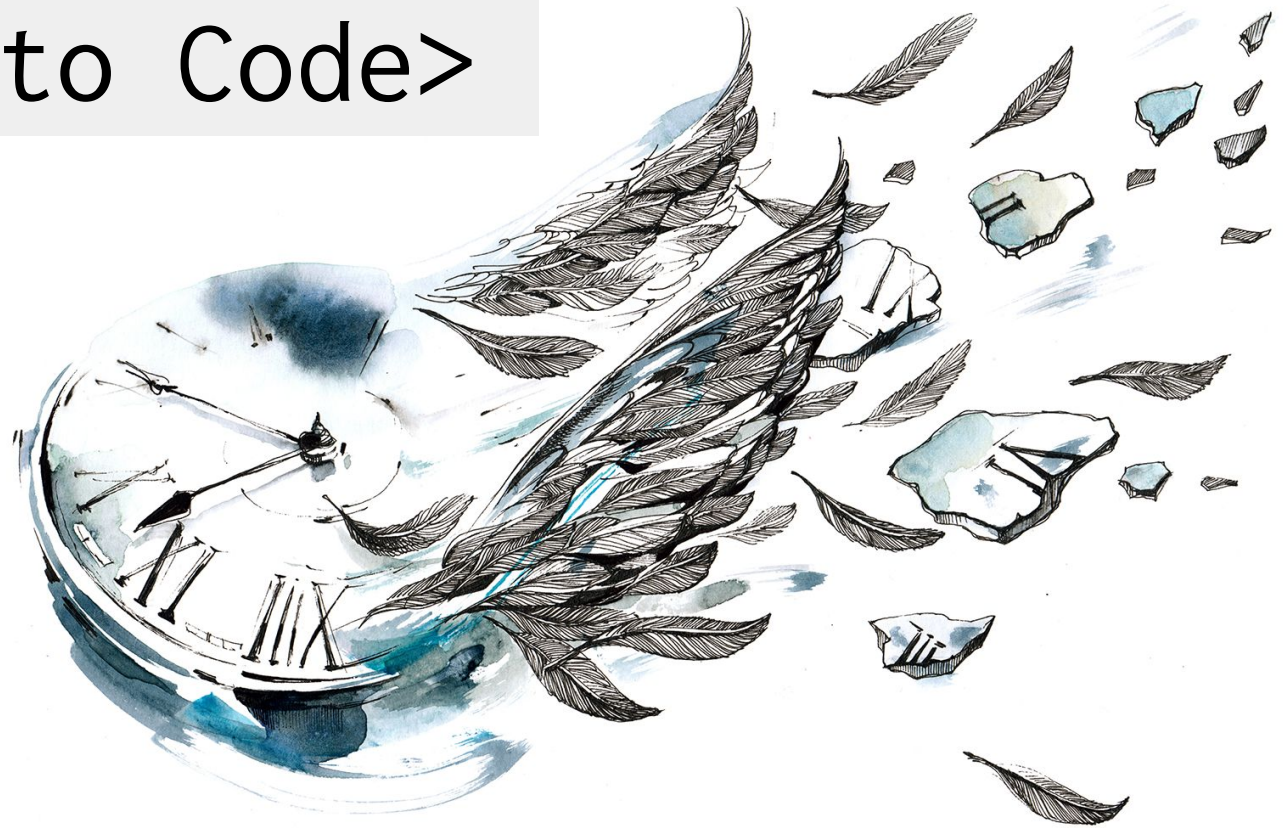
Filter Method

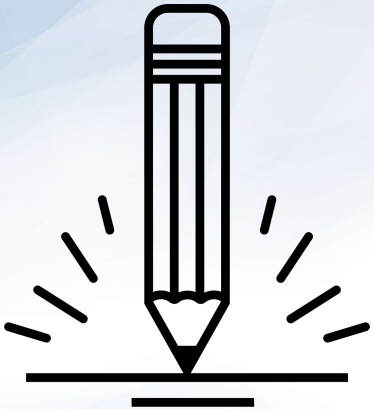
What is the `filter()` method?

`filter()`

- A method that creates an array with elements that pass a test provided as a function.

<Time to Code>





Activity: Filtering

In this activity, you will create a custom function using `filter()` to return the players who made the team and how many there were.

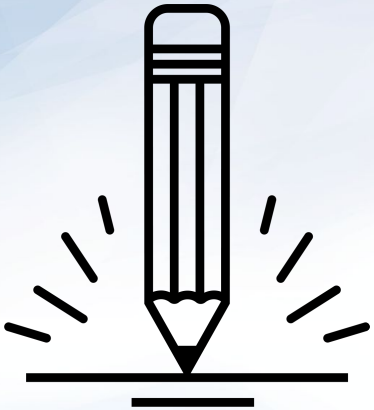
Suggested Time:
15 Minutes

Instructions:

Activity: Filtering

1. Create a custom function to return players who made the team.
2. Determine how many players made the cut.

Let's Review



Activity: Filtering with Plotly

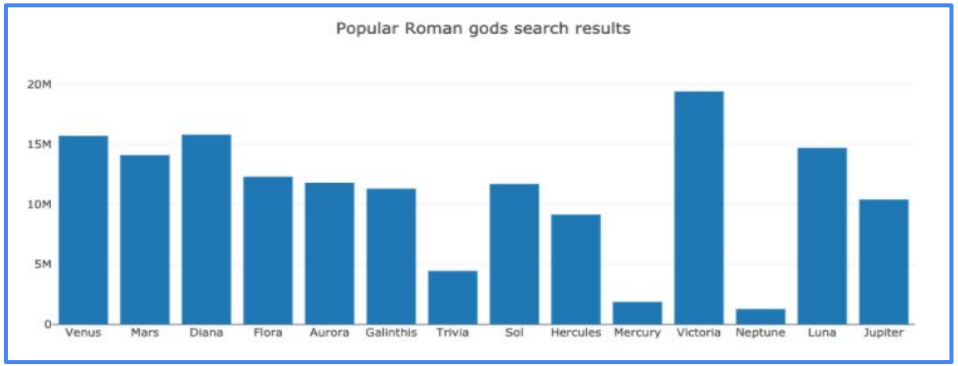
In this activity, you will create an array of popular Roman god search results using the `filter` function with the data.js dataset.

Suggested Time:
15 Minutes

Instructions:

Activity: Filtering with Plotly

1. Create a custom function to return Roman gods with more than 1 million search results.
2. Create an array of Roman god names from the filtered data.
3. Create an array of Roman god search results from the filtered data.
4. Create a Plotly bar chart with names on the x axis and search results on the y axis. For example:



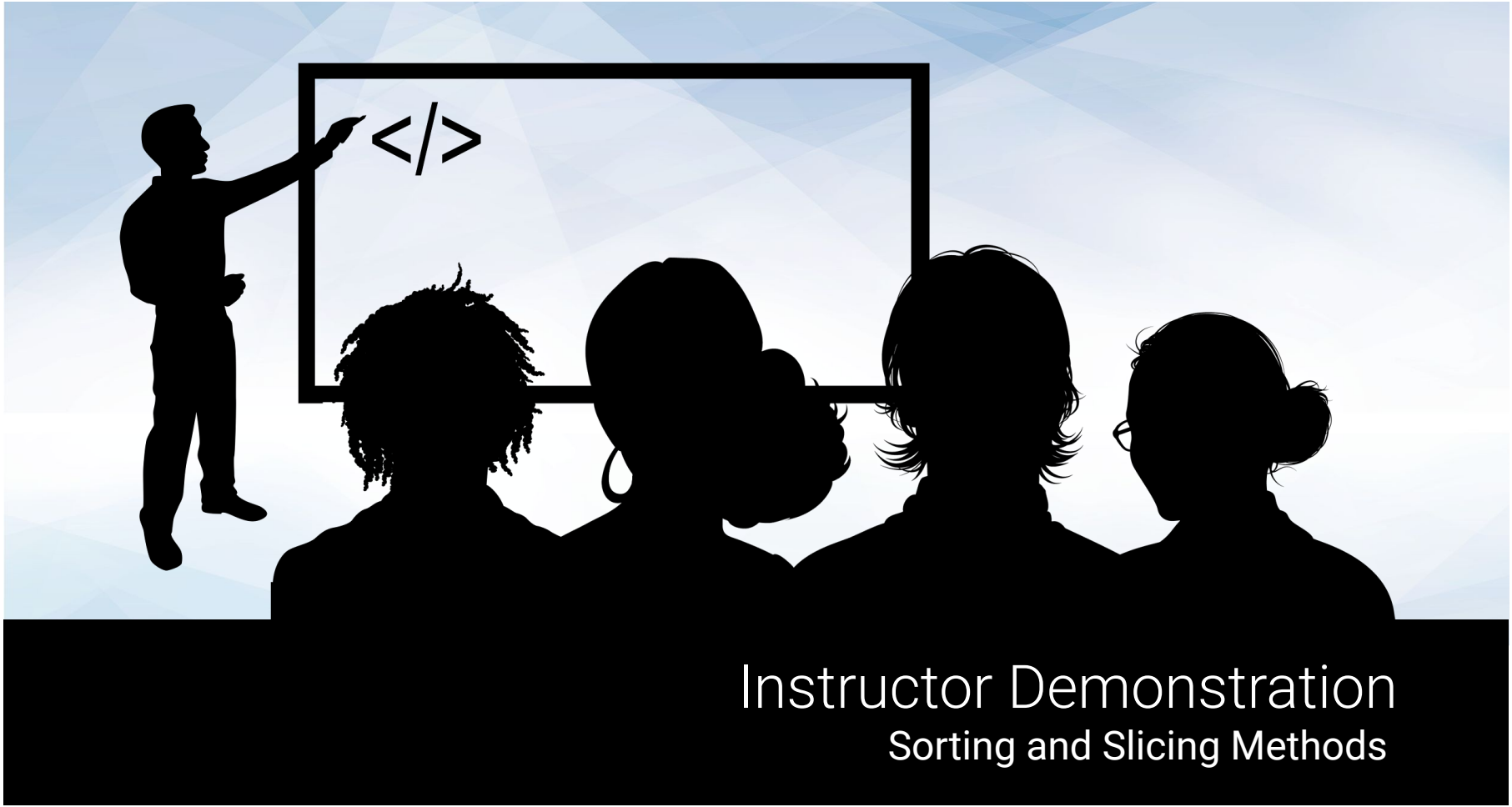
- **Hint:**
  - Open the console to see the dataset store in the variable `data`.

Let's Review

Countdown timer

15:00

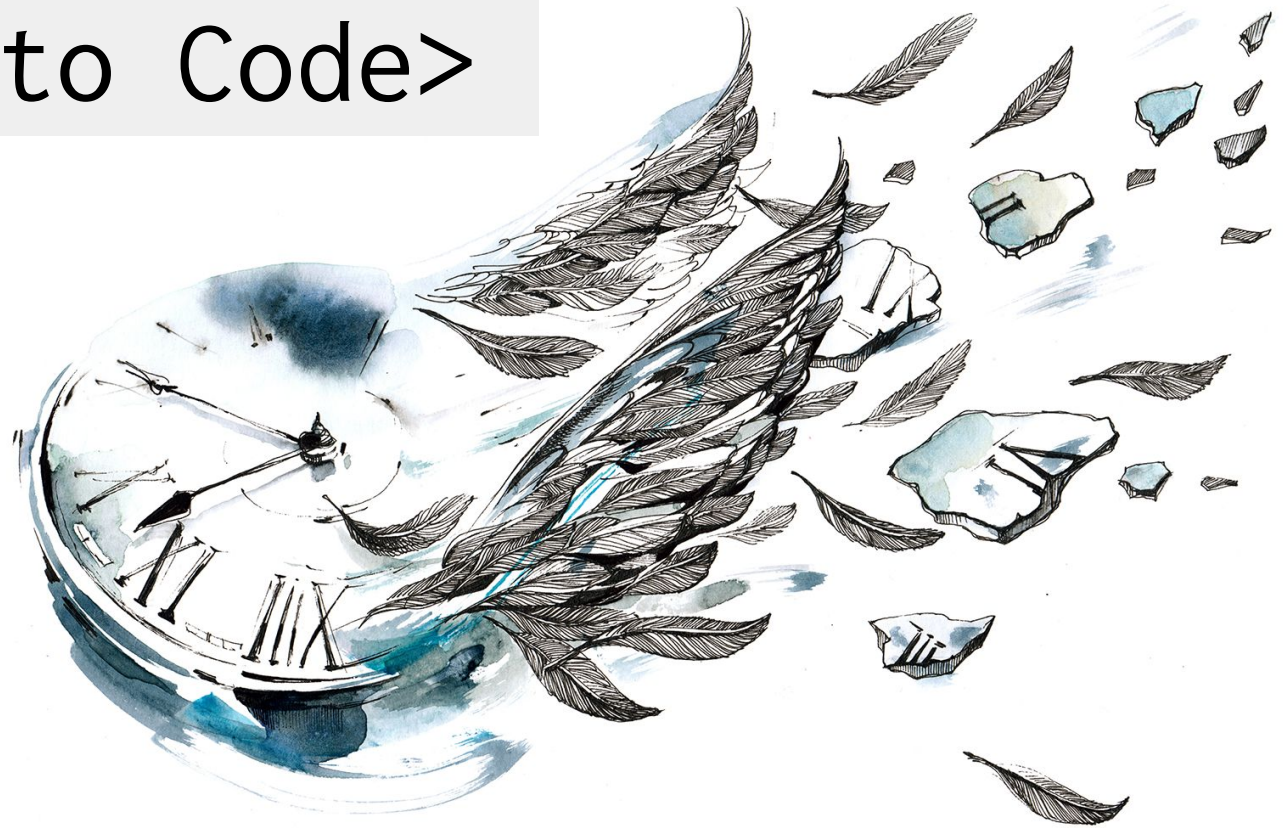
(with alarm)

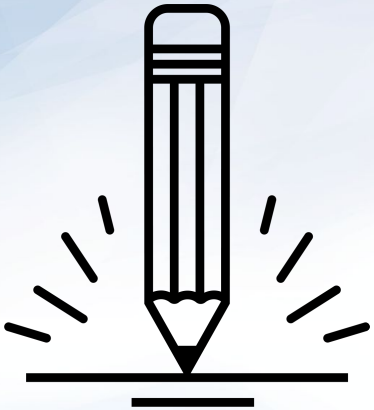


Instructor Demonstration

Sorting and Slicing Methods

<Time to Code>





Activity: Sorting and Slicing

In this activity, you will sort, slice and reverse the given array.

Suggested Time:
15 Minutes

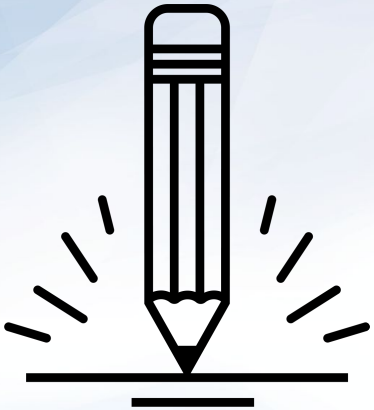
Instructions:

Activity: Sorting and Slicing

```
numArray = [9.9, 6.1, 17.1, 22.7, 4.6, 8.7, 7.2];
```

1. Sort the array in descending order and assign the results to a variable.
2. Sort the array in ascending order using an arrow function.
3. Slice the first five elements of the sorted ascending array, assign to a variable.
4. Reverse the array order.

Let's Review



Activity: Sorting and Slicing with Plotly

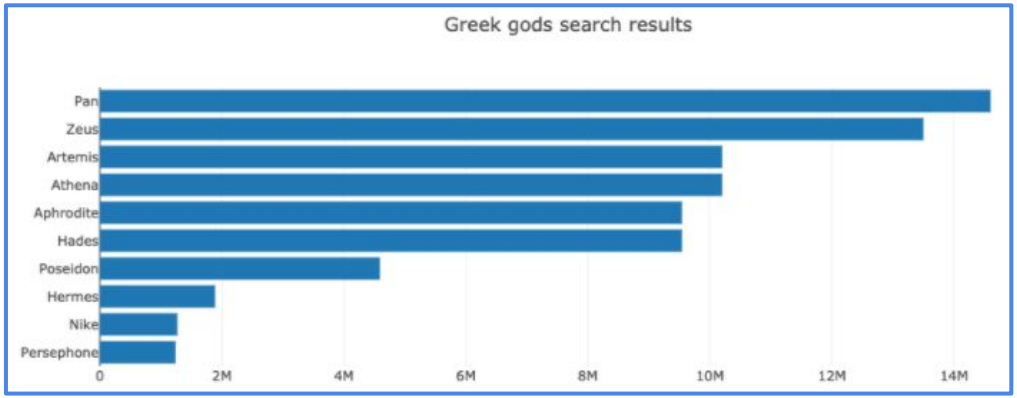
In this activity, you will sort, slice and reverse the data.js dataset to build a horizontal bar chart of the top 10 Greek god search results.

Suggested Time:
15 Minutes

Instructions:

Activity: Sorting and Slicing with Plotly

1. Sort the data by Greek search results in descending order.
2. Slice the first 10 objects of the array for the plot.
3. Reverse the array to accommodate for Plotly's horizontal bar chart defaults.
4. Create a Plotly bar chart with names on the x axis and search results on the y axis. For example:



- **Hint:**
  - See the plotly documentation to research how to make a bar chart horizontal.

Let's Review