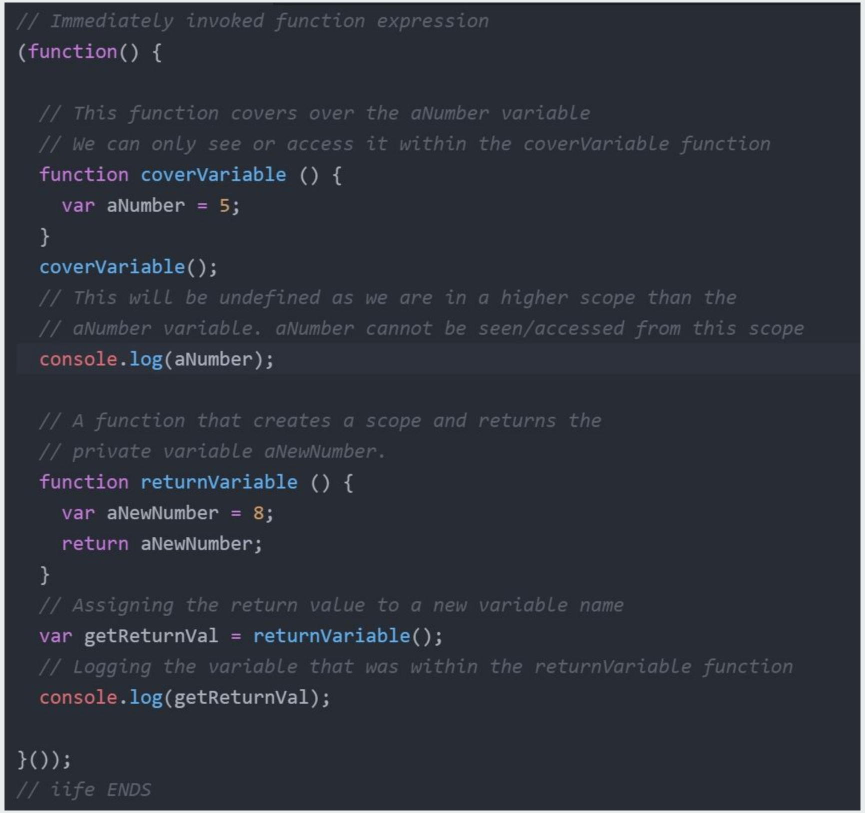
Foundation Coding -
Week 5: return, bootstrap ui, APIs, Mapbox

return

The return value stops the execution of a function and can return a value from that function.

The return statement allows us to make functional programming expressive. You can escape, enter and create new scopes with return.

Return allows us to access privately scoped variables and values.

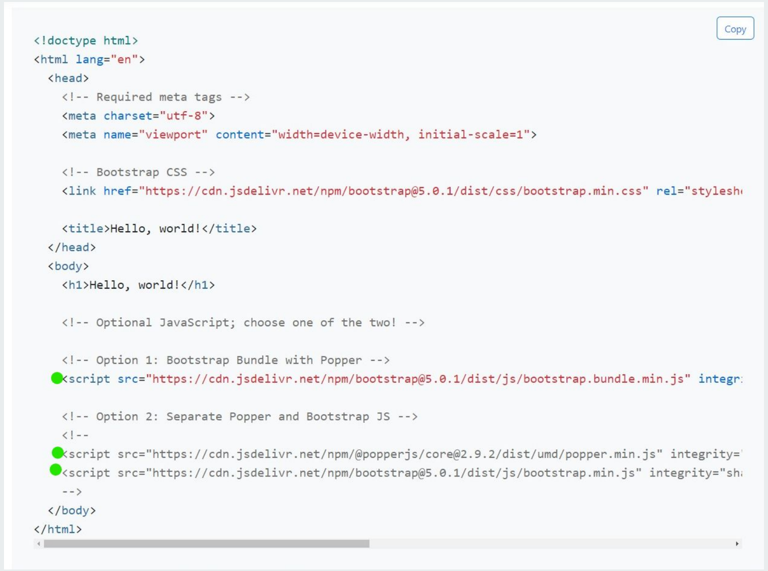


```
// Immediately invoked function expression
(function() {

  // This function covers over the aNumber variable
  // We can only see or access it within the coverVariable function
  function coverVariable () {
    var aNumber = 5;
  }
  coverVariable();
  // This will be undefined as we are in a higher scope than the
  // aNumber variable. aNumber cannot be seen/accessed from this scope
  console.log(aNumber);

  // A function that creates a scope and returns the
  // private variable aNewNumber.
  function returnVariable () {
    var aNewNumber = 8;
    return aNewNumber;
  }
  // Assigning the return value to a new variable name
  var getReturnVal = returnVariable();
  // Logging the variable that was within the returnVariable function
  console.log(getReturnVal);

}());
// iife ENDS
```

Bootstrap UI

Bootstrap has a great user interface library. This includes *modals, tooltips, toasts and popovers.*

When using some bootstrap user interface, you will need to plugin both the css and required javascript files.



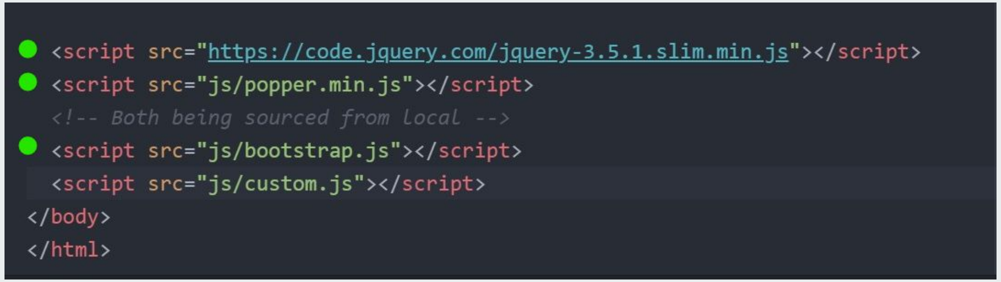
Copy

```
<!doctype html>
<html lang="en">
  <head>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">

    <!-- Bootstrap CSS -->
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.1/dist/css/bootstrap.min.css" rel="styleshe

    <title>Hello, world!</title>
  </head>
  <body>
    <h1>Hello, world!</h1>

    <!-- Optional JavaScript; choose one of the two! -->

    <!-- Option 1: Bootstrap Bundle with Popper -->
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.1/dist/js/bootstrap.bundle.min.js" integr

    <!-- Option 2: Separate Popper and Bootstrap JS -->
    <!--
    <script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/popper.min.js" integrity="
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.1/dist/js/bootstrap.min.js" integrity="sh
    -->
  </body>
</html>
```

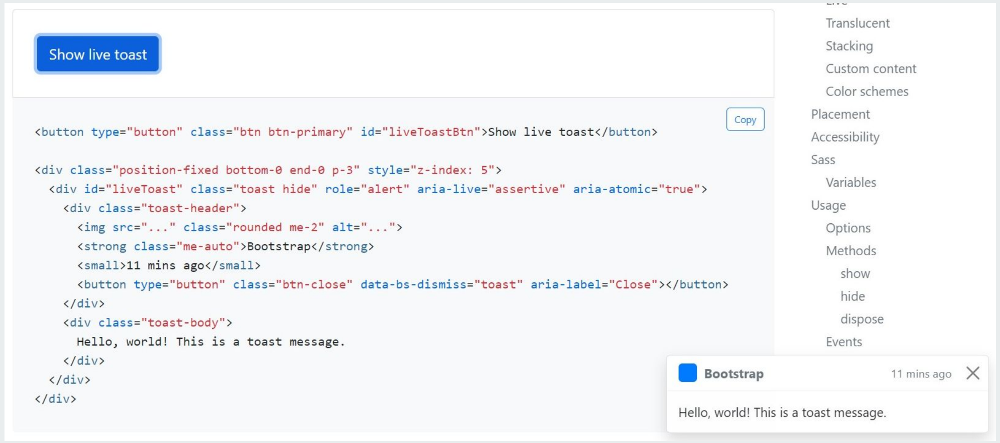
Bootstrap UI

Bootstrap will also require jQuery if you wish to use any of the UI .js components.

Some versions of Bootstrap have a bundle file, some require up to 4 libraries to be plugged in: *bootstrap.css, jQuery, popper.js and bootstrap.js.*



```
  <script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>
  <script src="js/popper.min.js"></script>
  <!-- Both being sourced from local -->
  <script src="js/bootstrap.js"></script>
  <script src="js/custom.js"></script>
</body>
</html>
```



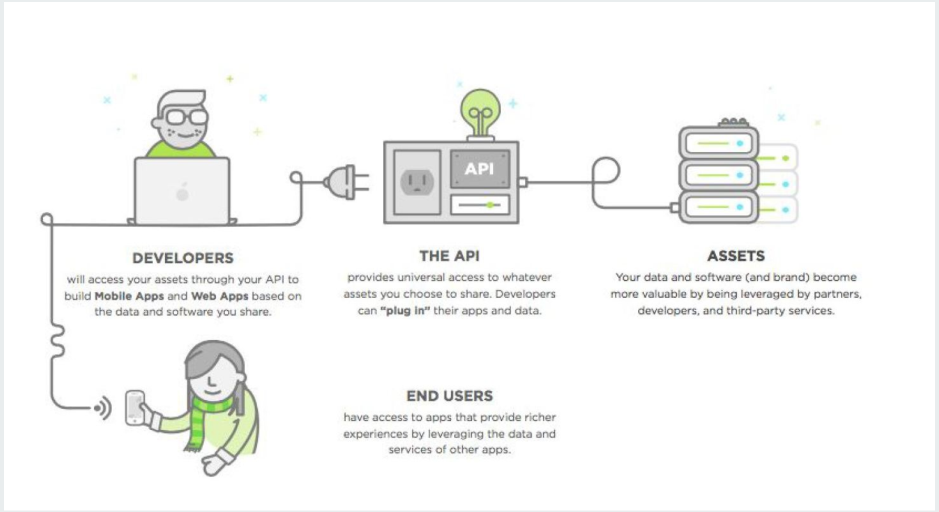
```
<button type="button" class="btn btn-primary" id="liveToastBtn">Show live toast</button>

<div class="position-fixed bottom-0 end-0 p-3" style="z-index: 5">
  <div id="liveToast" class="toast hide" role="alert" aria-live="assertive" aria-atomic="true">
    <div class="toast-header">
      <img src="..." class="rounded me-2" alt="...">
      <strong class="me-auto">Bootstrap</strong>
      <small>11 mins ago</small>
      <button type="button" class="btn-close" data-bs-dismiss="toast" aria-label="Close"></button>
    </div>
    <div class="toast-body">
      Hello, world! This is a toast message.
    </div>
  </div>
</div>
```

Bootstrap 11 mins ago

Hello, world! This is a toast message.

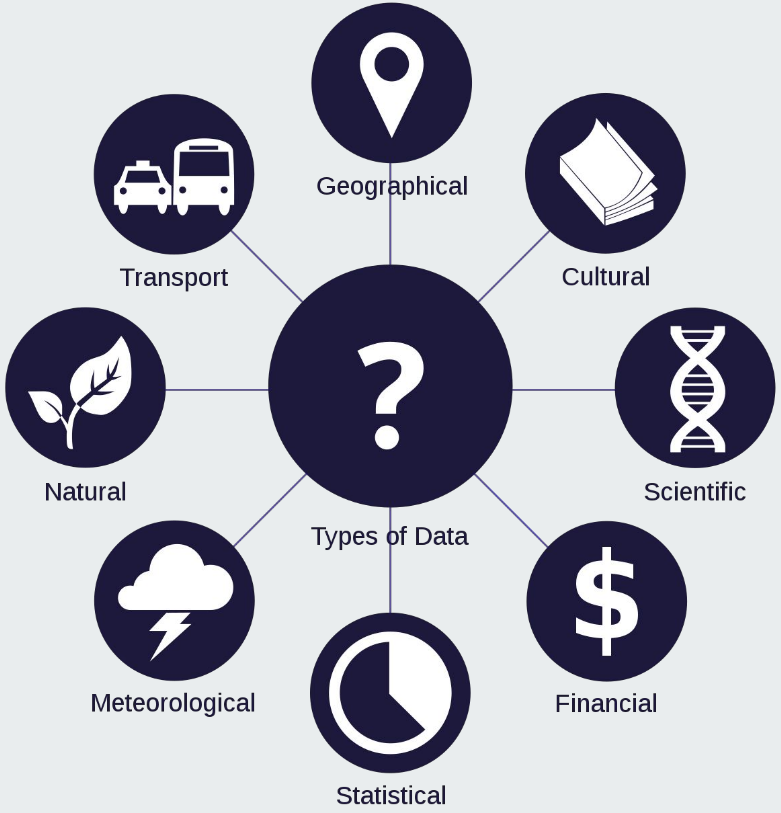
A.P.I

A.P.I stands for application programming interface. APIs provide data and methods that allow us to deliver content rich applications.


API
DEVELOPERS
will access your assets through your API to build **Mobile Apps** and **Web Apps** based on the data and software you share.
THE API
provides universal access to whatever assets you choose to share. Developers can **"plug in"** their apps and data.
ASSETS
Your data and software (and brand) become more valuable by being leveraged by partners, developers, and third-party services.
END USERS
have access to apps that provide richer experiences by leveraging the data and services of other apps.

A.P.I

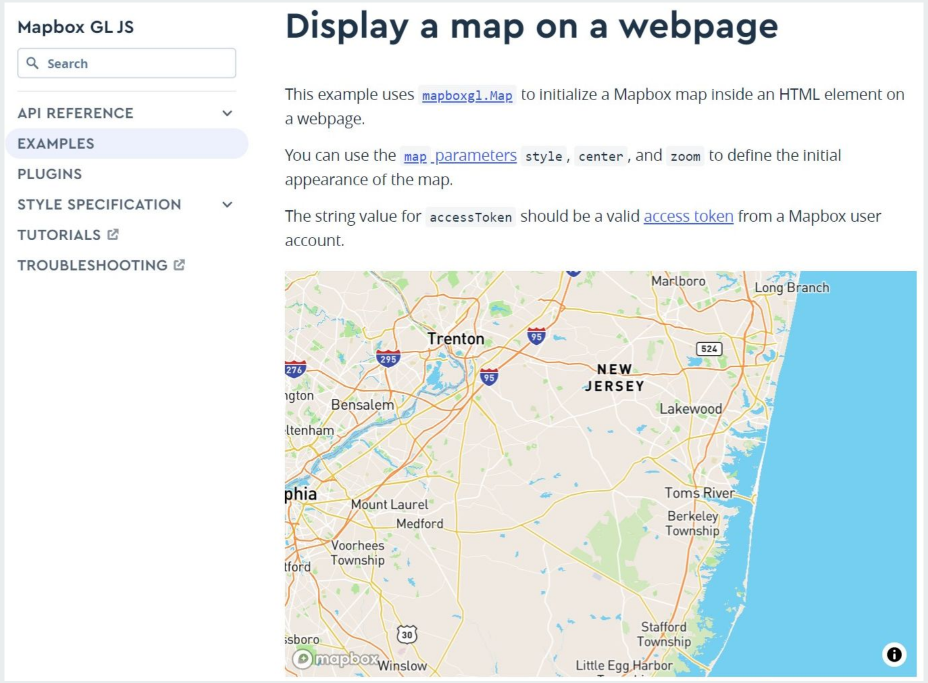
With A.P.I's we can provide up to date weather information, the latest financial info, an instagram feed, this week's star signs, the latest shots from a NASA satellite, or an interactive map.



Mapbox

For our Summative we have the option to use any relevant A.P.I.

In class we learn to use Mapbox. Mapbox is a massive mapping ecosystem that can provide visual, location and graphical information.



Display a map on a webpage

This example uses `mapboxgl.Map` to initialize a Mapbox map inside an HTML element on a webpage.

You can use the `map` parameters `style`, `center`, and `zoom` to define the initial appearance of the map.

The string value for `accessToken` should be a valid access token from a Mapbox user account.

References:

https://www.w3schools.com/jsref/jsref_return.asp

https://getbootstrap.com/docs/5.0/getting-started/introduction/

https://docs.mapbox.com/mapbox-gl-js/example/simple-map/

Images referenced from Duckett:
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http://javascriptbook.com/