

Javascript: Background & Tools

Background & Tools

- Define what JavaScript is, where it can be used, and how it came to be
- Describe the evolution of JavaScript and how it has changed rapidly
- Show messages using `alert` and `console.log`
- Include a script in an HTML file

What is Javascript?

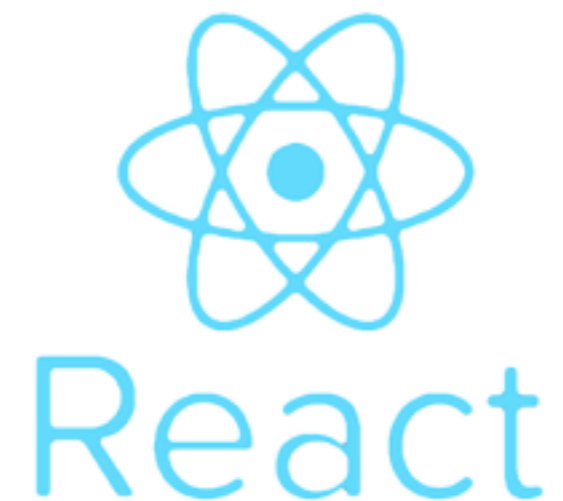
- A programming language that can be used in many contexts:
 - Front End
 - Back End
 - Desktop
 - IoT

What is Javascript? - Front End

- A programming language that is essential for web development.
- For a web page you interact with, JavaScript provides the action on the page:
 - Change the status of a button when it is clicked on
 - Create a chat window at the bottom of your screen
 - Create a web-based game



jQuery

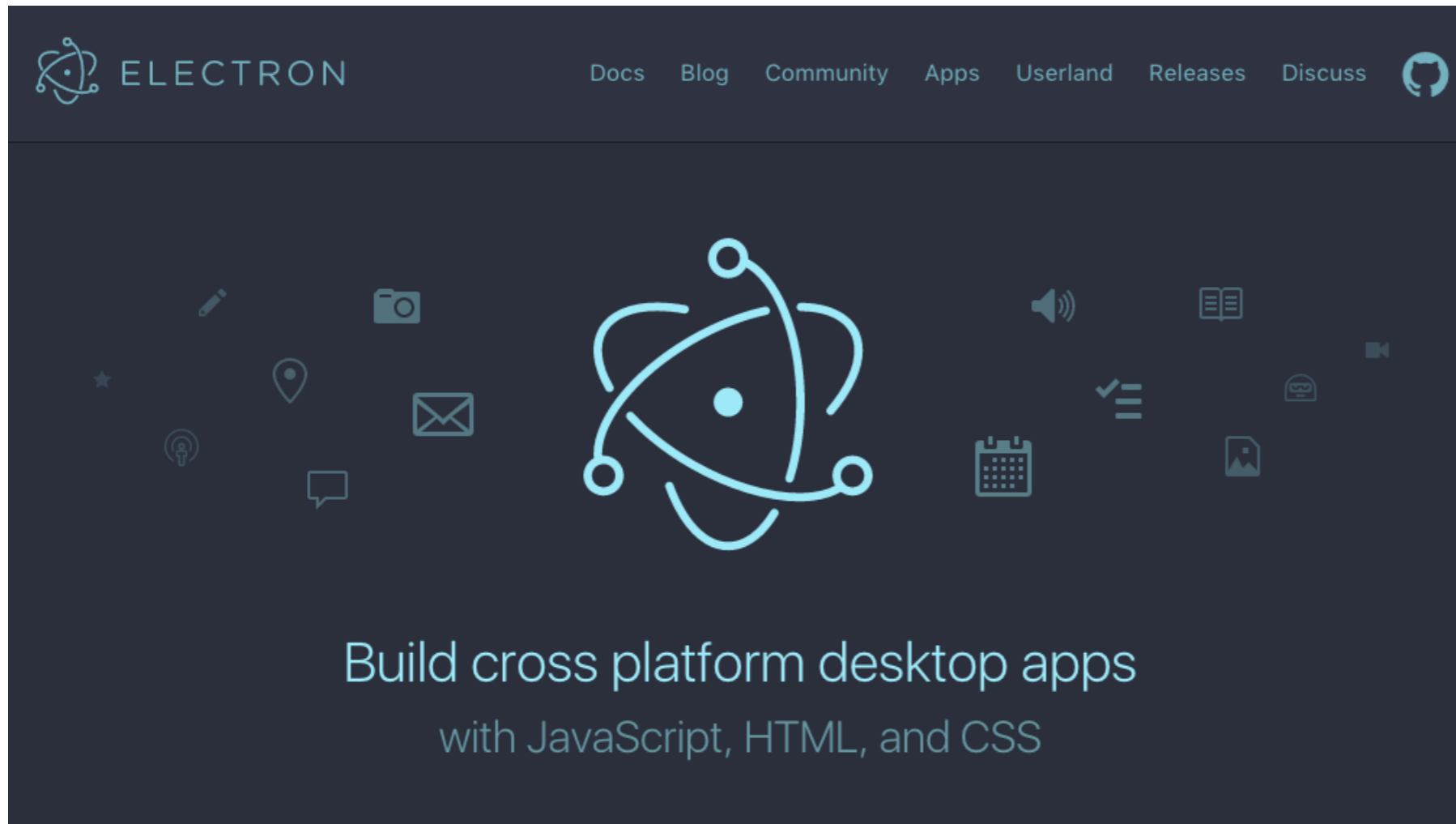


What is Javascript? - Back End

- Javascript can also be used independently of the browser.
- Using a javascript library called *node.js*, it can be used to develop web applications - the so called 'back end':
- These applications enable users to:
 - sign up / log in
 - support forms
 - send/retrieve information to/from databases
 - communicate with other applications



What is Javascript? - Desktop



- Standalone Applications that run on a workstation.
- Typically provide Graphic User Interface capabilities
- Project Electron: a framework for building desktop apps

What is Javascript? - IoT

- Run on embedded devices, communicate with sensors, robotics, monitor environment....



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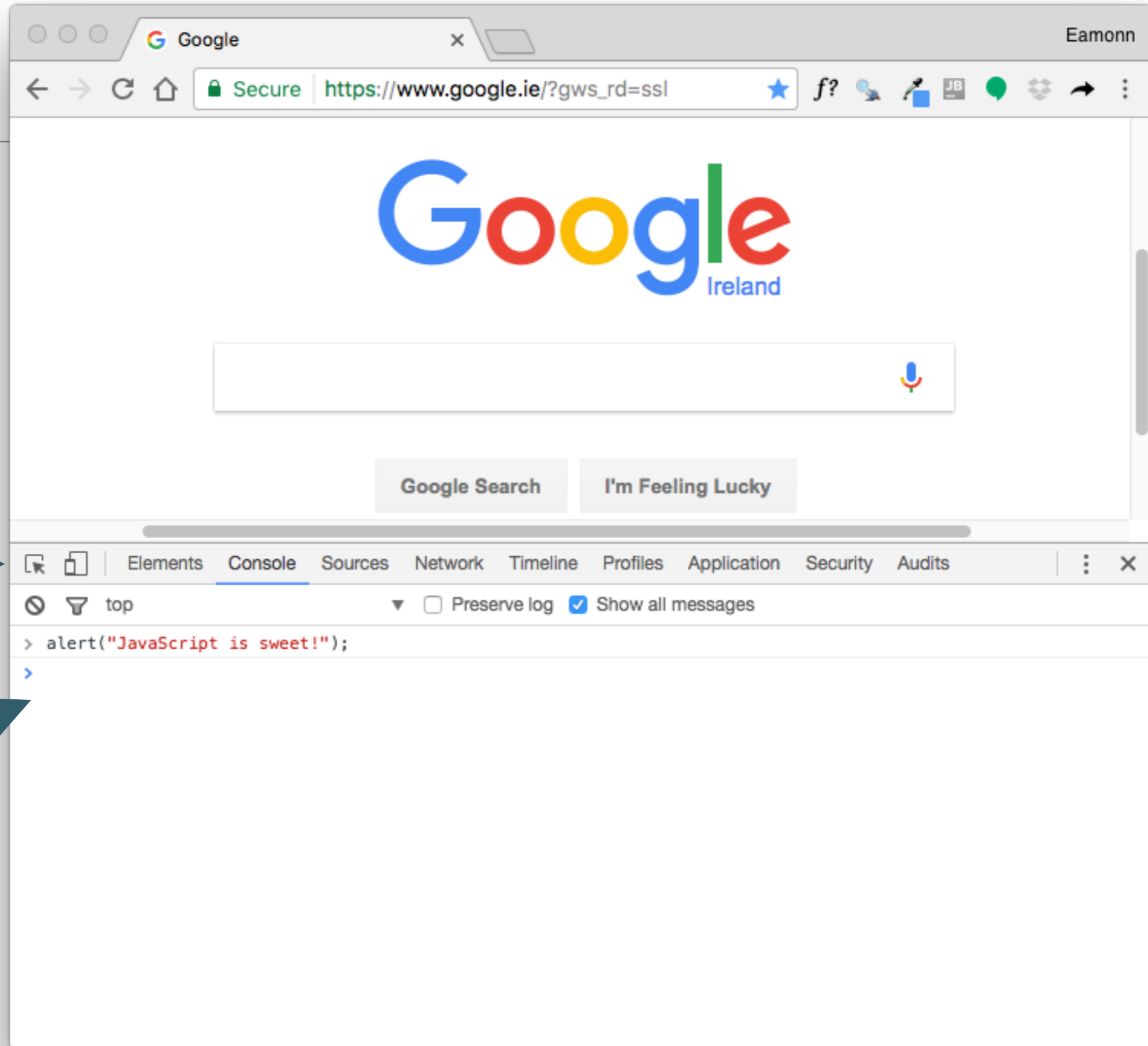
A stylized illustration of a white robot with a red sensor on its forehead, saluting with its right hand. The robot has a segmented body and a helmet-like head.

Javascript Origins

“JavaScript, not to be confused with Java, was created in 10 days in May 1995 by Brendan Eich, then working at Netscape and now of Mozilla. JavaScript was not always known as JavaScript: the original name was Mocha, a name chosen by Marc Andreessen, founder of Netscape. In September of 1995 the name was changed to LiveScript, then in December of the same year, upon receiving a trademark license from Sun, the name JavaScript was adopted. This was somewhat of a marketing move at the time, with Java being very popular around then.”

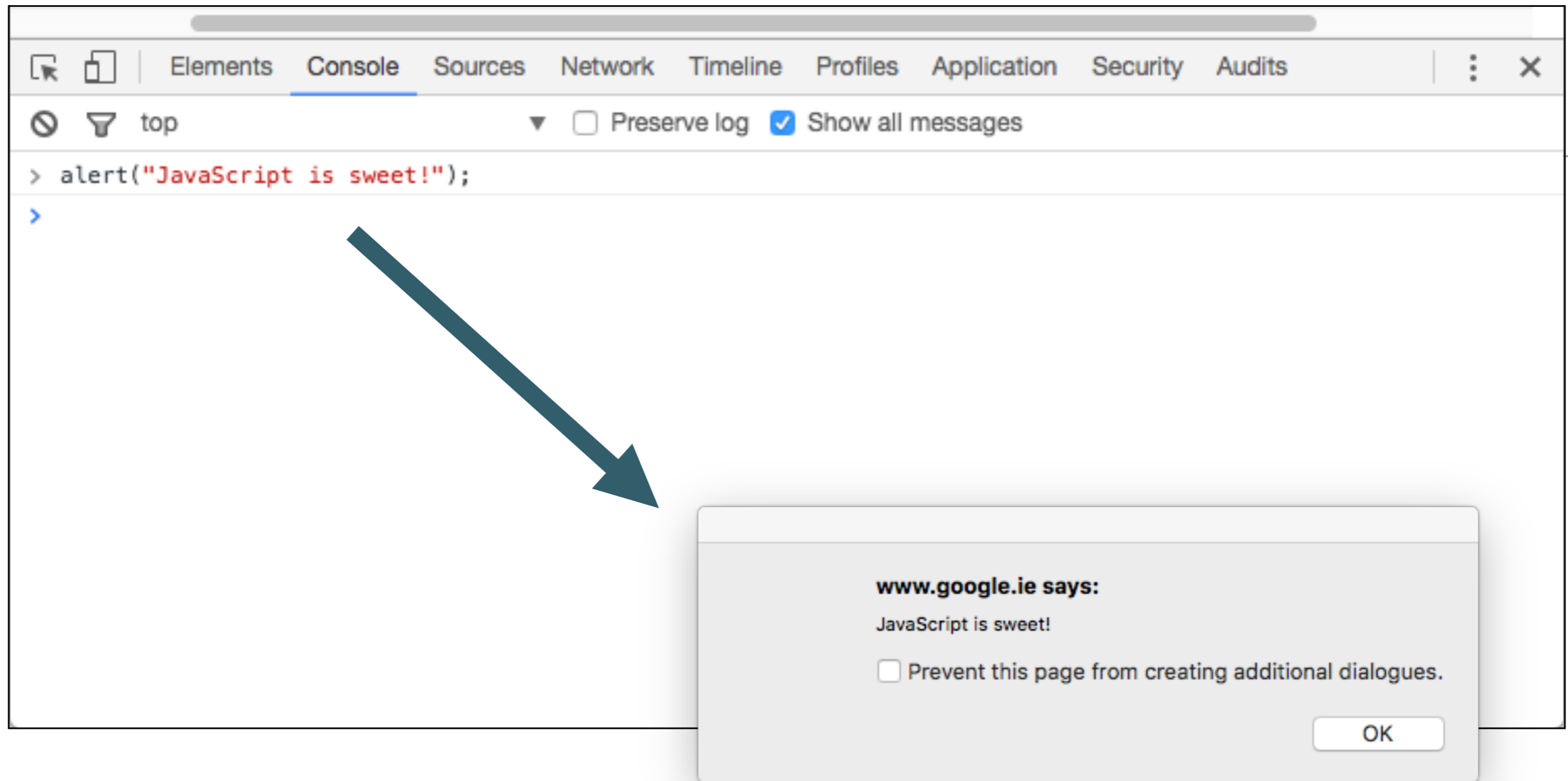


Javascript in a Browser



- Javascript console

- Javascript program Fragment

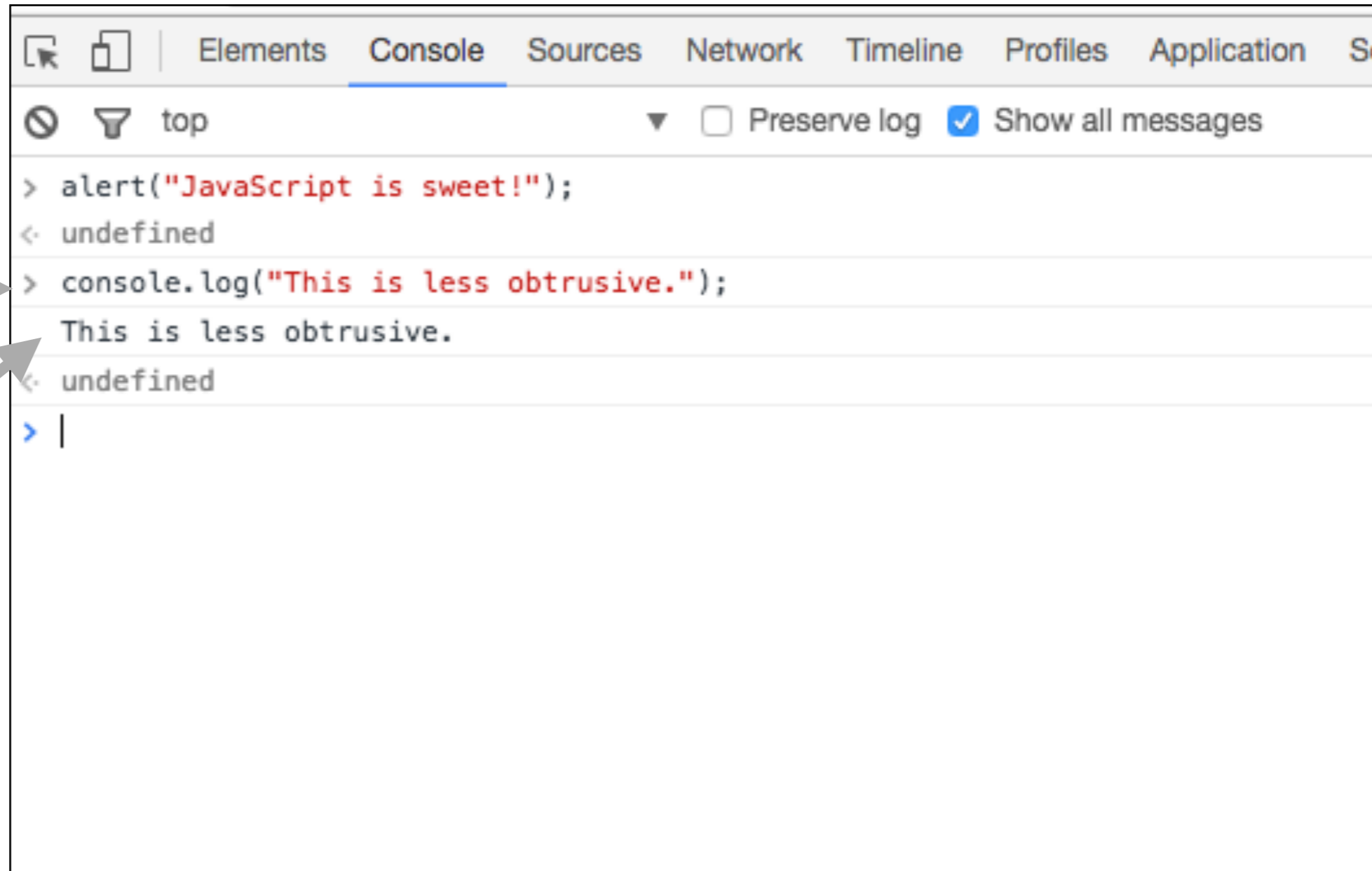


- alert causes dialog window to appear...

console.log

javascript
fragment

output of
console.log
function



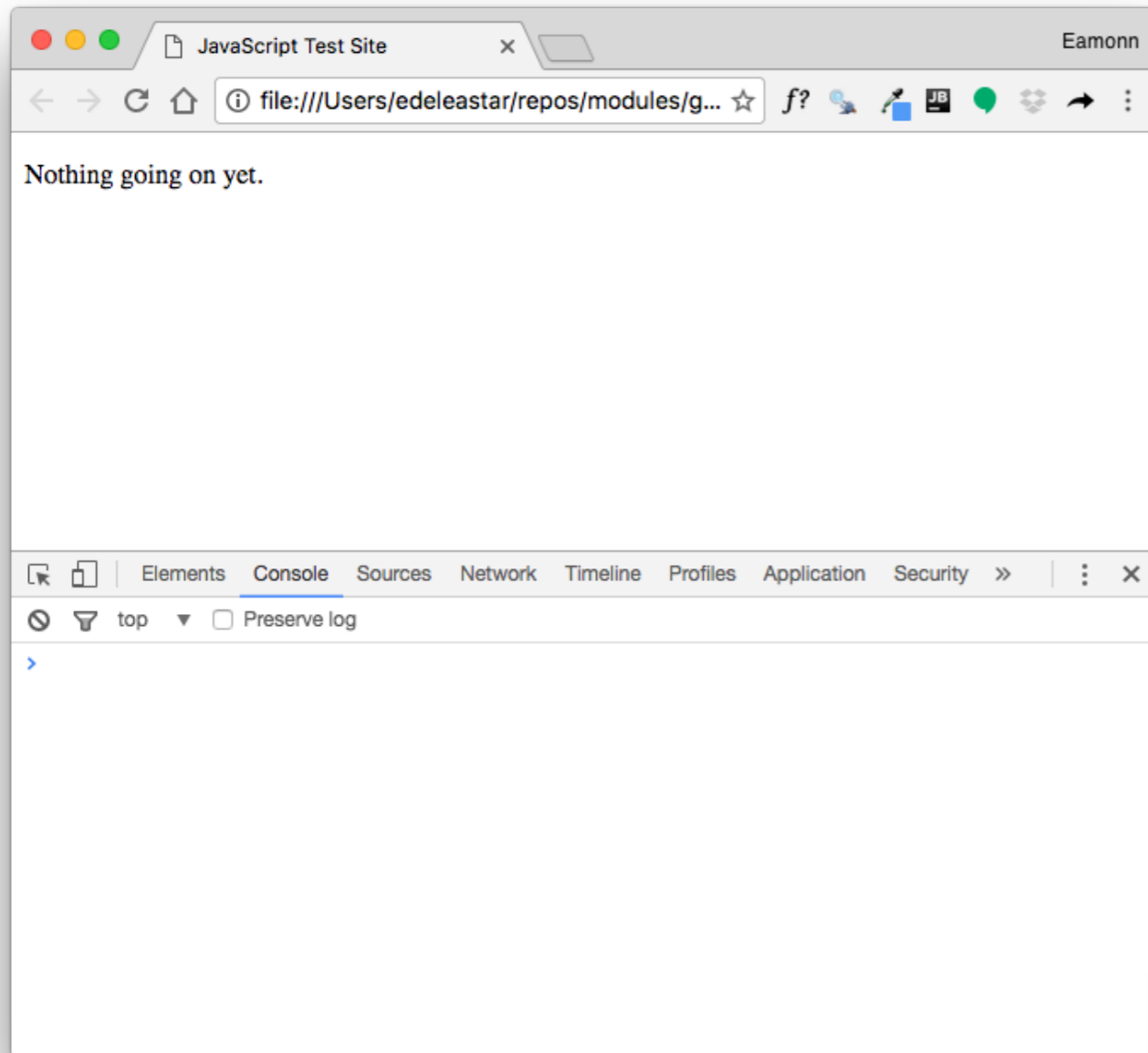
The screenshot shows a browser's developer console with the 'Console' tab selected. The console contains the following code and output:

```
> alert("JavaScript is sweet!");  
< undefined  
> console.log("This is less obtrusive.");  
This is less obtrusive.  
< undefined  
> |
```

Annotations with arrows point from the text on the left to the corresponding parts in the console: 'javascript fragment' points to the `console.log` line, and 'output of console.log function' points to the string `"This is less obtrusive."`.

Running Javascript from a Web Page

inded.html



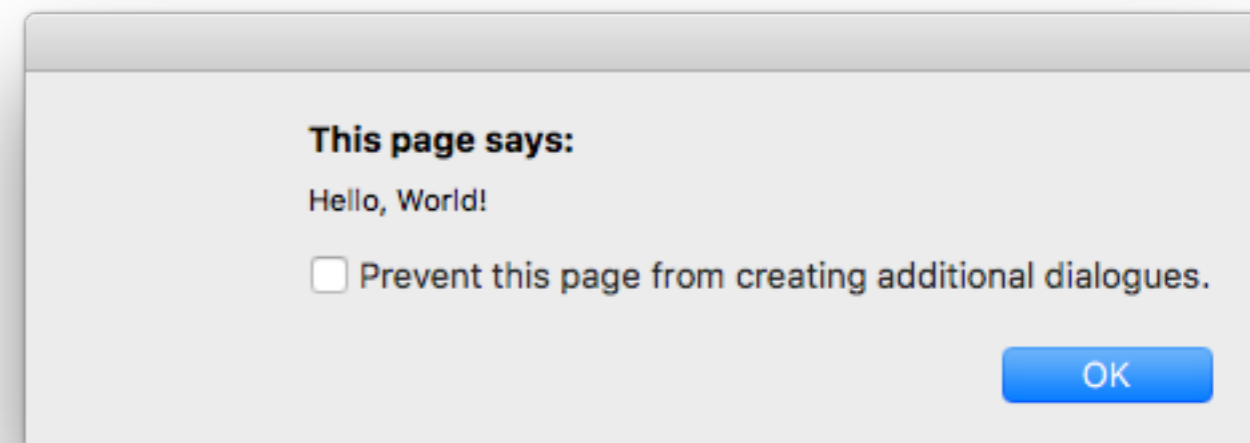
```
<!DOCTYPE html>
<html>
  <head>
    <title>JavaScript Test Site</title>
    <script>

      alert("Hello, World!");

    </script>
  </head>
  <body>

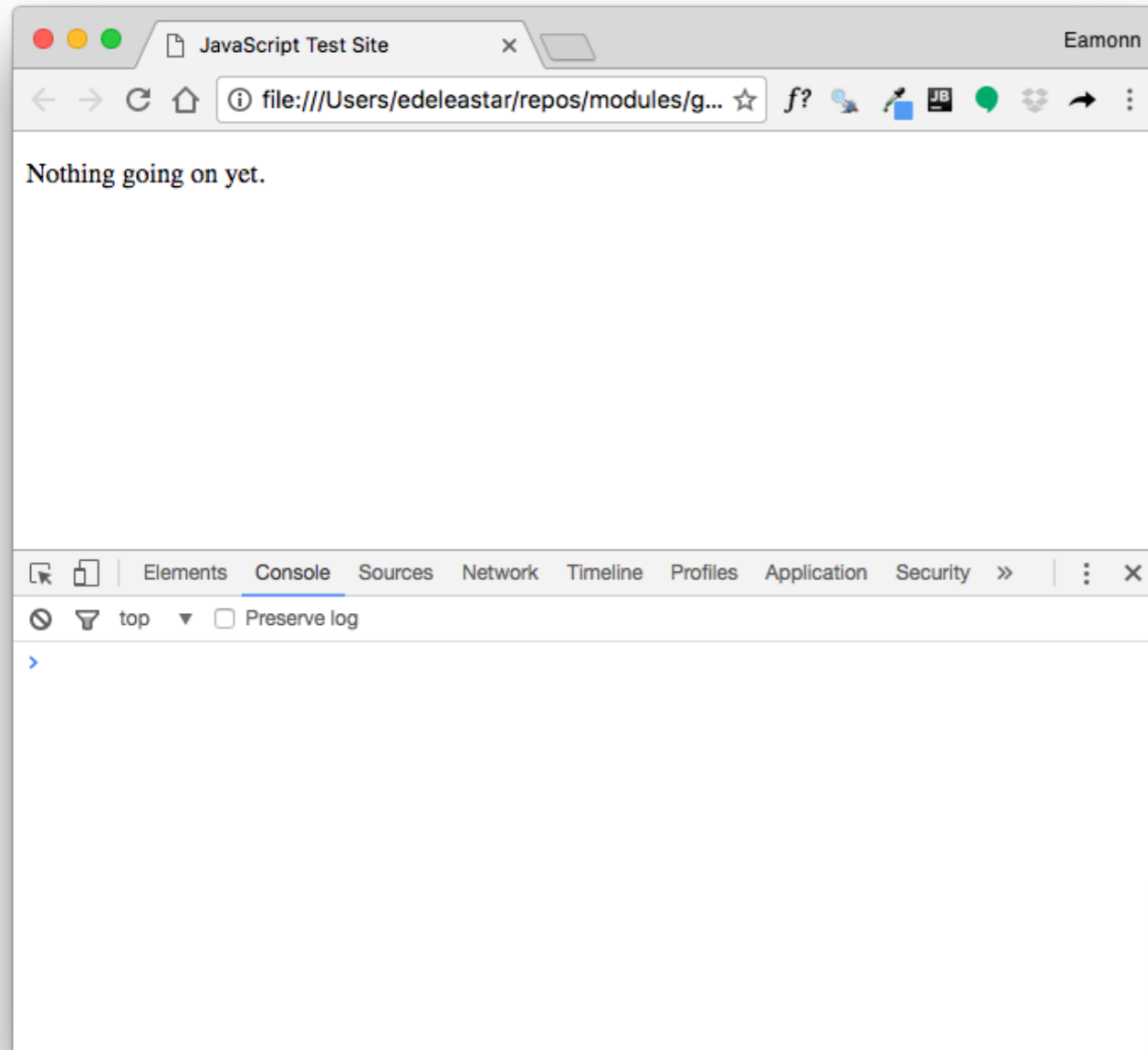
    <p>Nothing going on yet.</p>

  </body>
</html>
```



External Javascript File

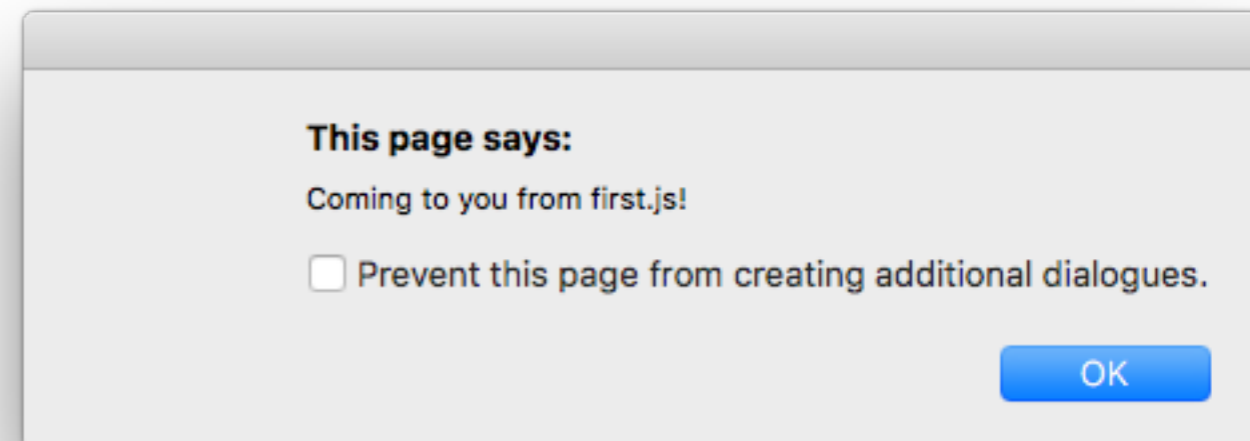
inded.html

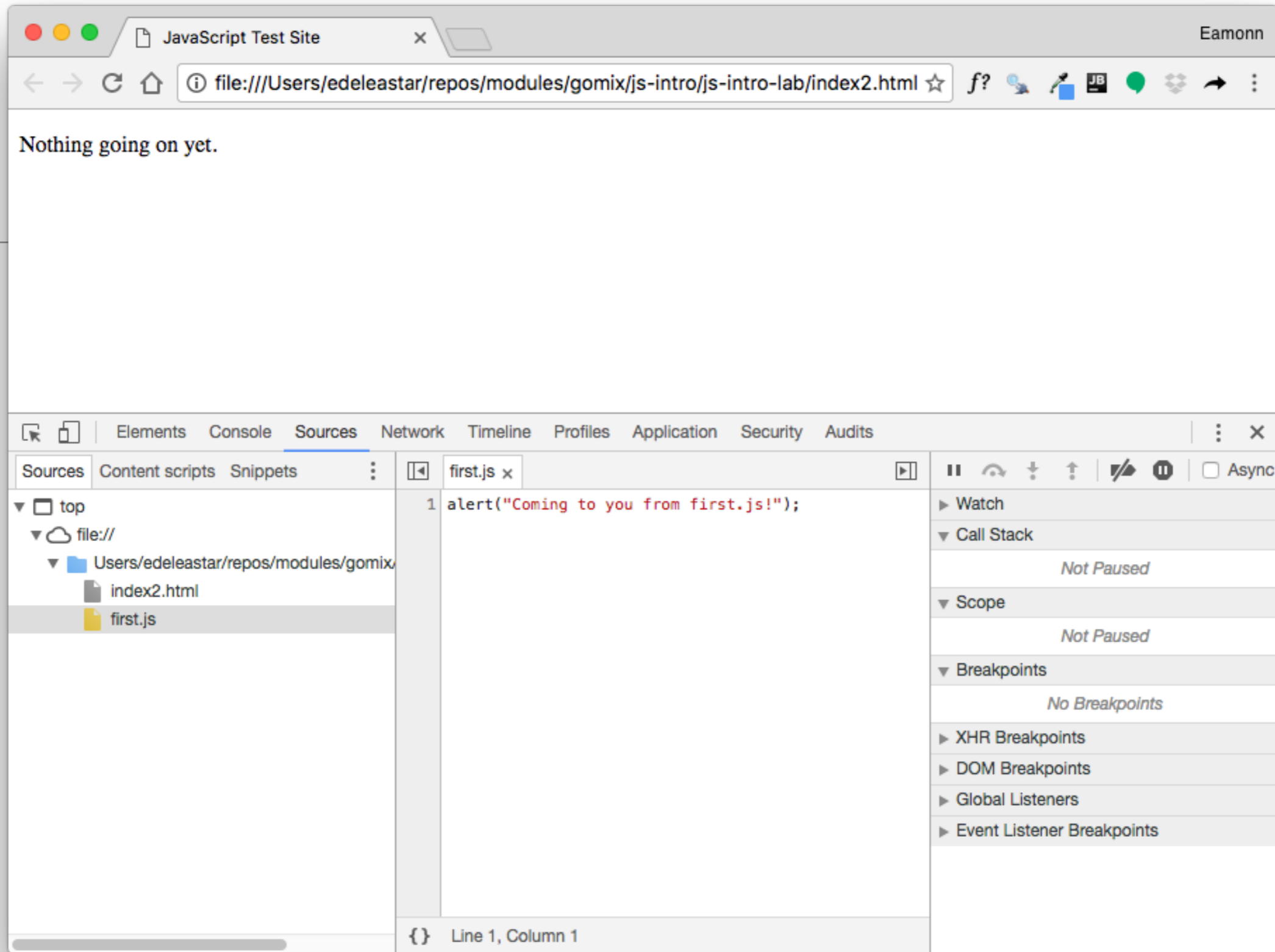


```
<!DOCTYPE html>
<html>
  <head>
    <title>JavaScript Test Site</title>
    <script src="first.js"></script>
  </head>
  <body>
    <p>Nothing going on yet.</p>
  </body>
</html>
```

first.js

```
alert("Coming to you from first.js!");
```





- Chrome tools enable external scripts to be examined in detail, stopped, started and inspected