

Debugging Javascript

Witty Subtitle

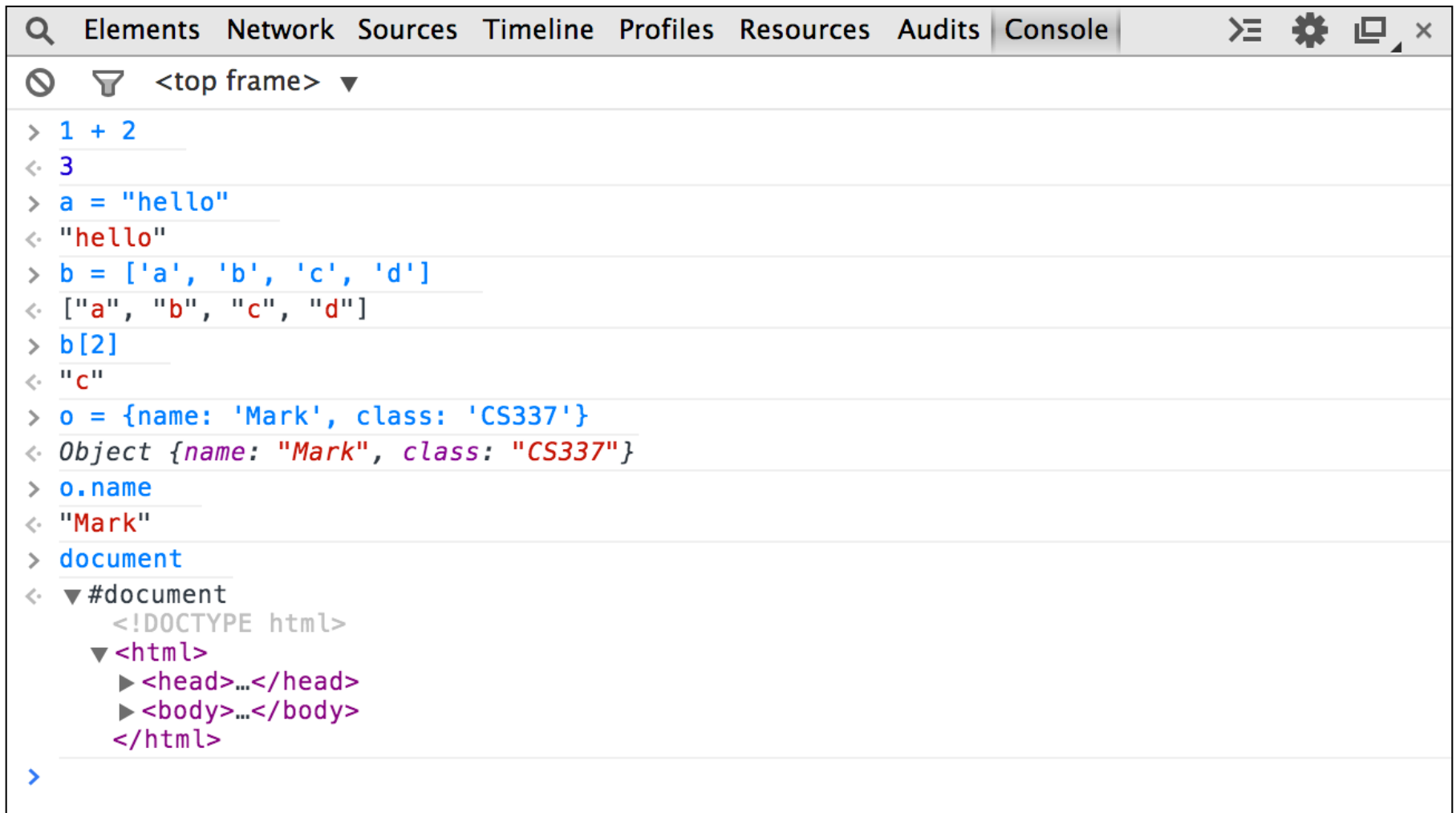
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<https://arizona.app.box.com/fischer-uaweb>

Javascript In A Browser

- REPL
 - Read-Eval-Print Loop
- All major browsers have a Javascript REPL system in the console

Javascript In A Browser



The screenshot shows a web browser's developer console with the 'Console' tab selected. The console displays a series of JavaScript commands and their corresponding outputs. The commands include arithmetic operations, string assignments, array creation and access, object creation and property access, and a reference to the document object. The outputs show the results of these operations, such as the number 3, the string 'hello', an array of strings, the string 'c', an object with name and class properties, the string 'Mark', and a detailed view of the document object structure.

```
> 1 + 2
< 3
> a = "hello"
< "hello"
> b = ['a', 'b', 'c', 'd']
< ["a", "b", "c", "d"]
> b[2]
< "c"
> o = {name: 'Mark', class: 'CS337'}
< Object {name: "Mark", class: "CS337"}
> o.name
< "Mark"
> document
< #document
  <!DOCTYPE html>
  <html>
    <head>...</head>
    <body>...</body>
  </html>
>
```

Documentation

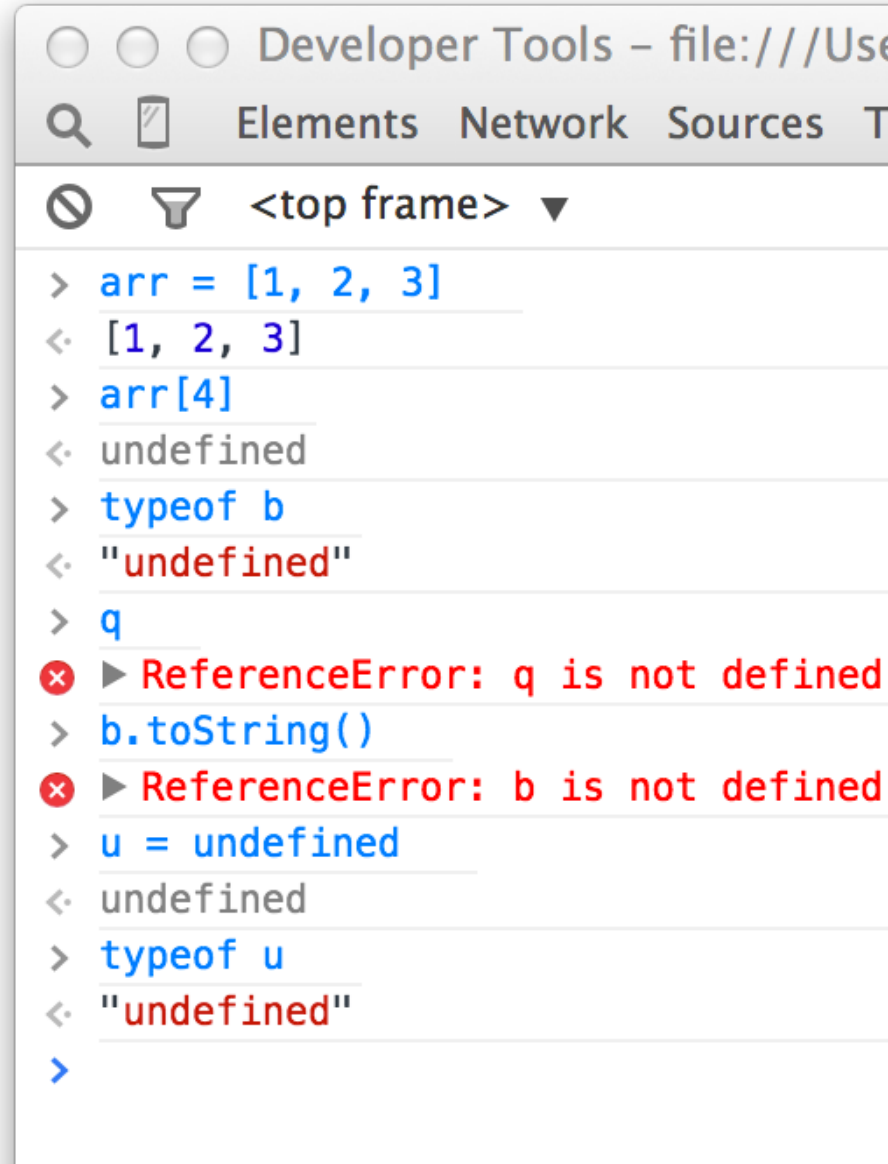
http://ecma262-5.com/ELS5_HTML.htm

<https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference>

undefined

developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/undefined

- Javascript has a special value for things that are not defined: **undefined**
- Out of bounds requests
- Un-initialized variables
- **undefined** is a property of the *global object*. Its type is undefined.



```
Developer Tools - file:///Use
Elements Network Sources T
<top frame> ▼
> arr = [1, 2, 3]
< [1, 2, 3]
> arr[4]
< undefined
> typeof b
< "undefined"
> q
✖ ▶ ReferenceError: q is not defined
> b.toString()
✖ ▶ ReferenceError: b is not defined
> u = undefined
< undefined
> typeof u
< "undefined"
>
```

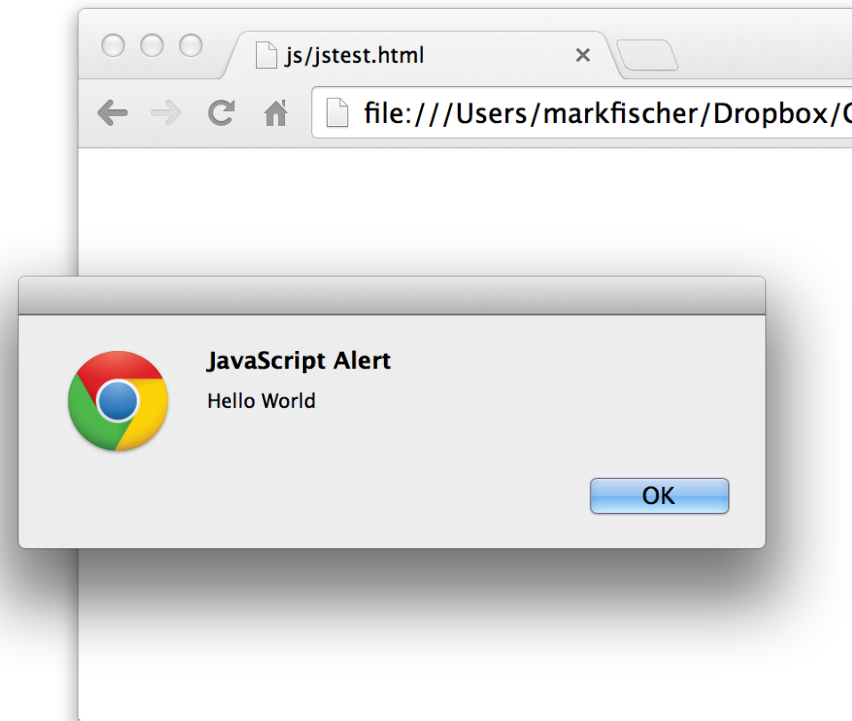
Basic I/O

- Alerts
- Log to Console
- Confirms
- Prompt
- DOM Manipulation
- Debugger
- No Direct Local File I/O!

alert()

```
alert("Hello World");
```

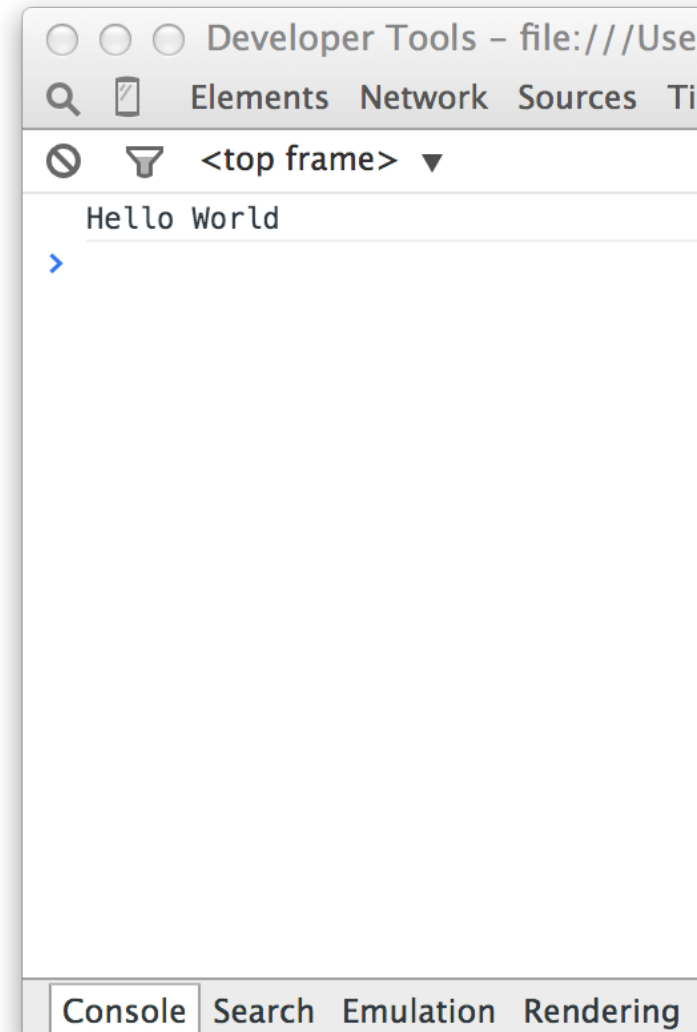
- Display a modal dialog box with the specified text.
- Pauses execution of Javascript until dialog is dismissed.



console.log()

```
console.log("Hello World");
```

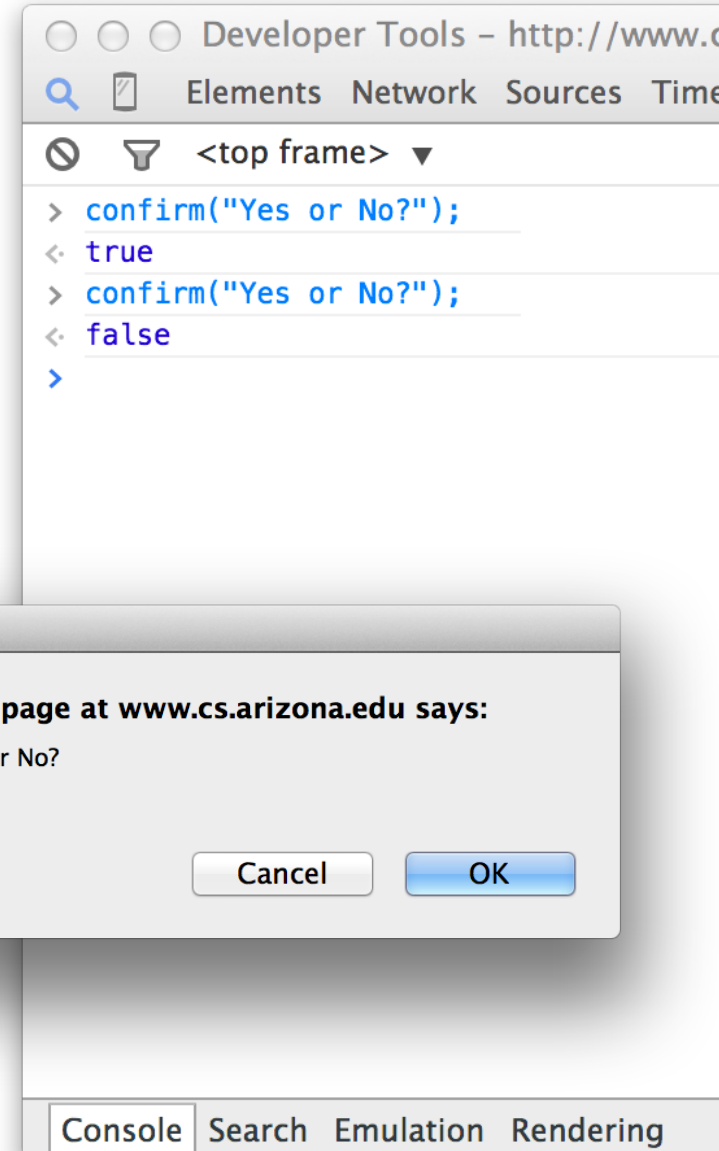
- Quick way to get some debugging out.
- Doesn't block execution, so usually a better choice for debugging and testing than **alert()**.



confirm()

```
confirm("Yes or No?");
```

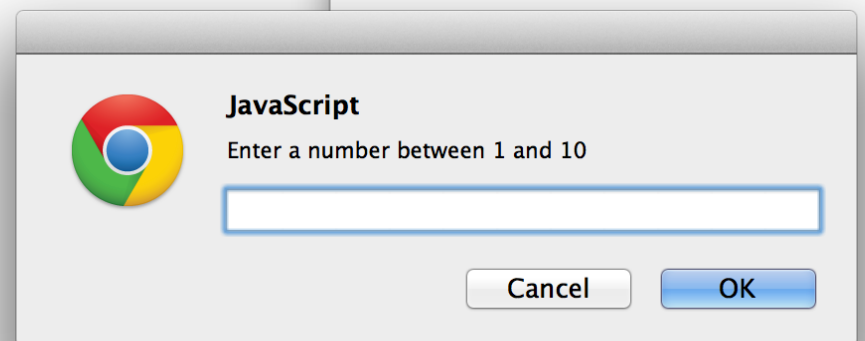
- Ask for a **true** or **false** response from the user.



prompt()

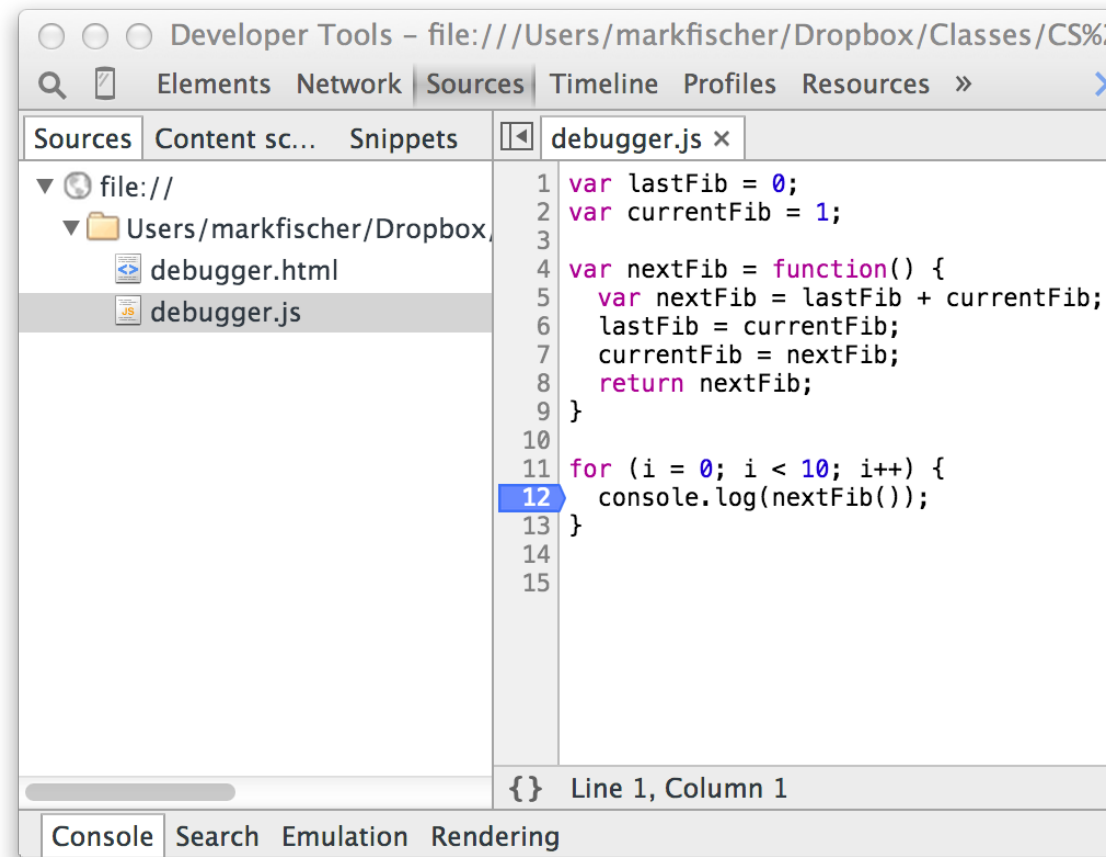
```
prompt("Enter a number between 1 and 10");  
console.log(i);
```

- Ask for user input as a text string.



Debugger

- Most browsers have a full featured interactive debugger built in.
- Breakpoints, watched expressions, step through execution, etc.
- Example.



Debugging Examples

- Step through debugger
- Breakpoints
- Final Exam!
- jQuery debugging
- iOS browser