

Advancing FOCUS

Glen R. Goodwin



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arei.net



github.com/arei







STUPENDUS

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Does it work well?

- Does it work well?
- Does it meet the needs of the developers?

- Does it work well?
- Does it meet the needs of the developers?
- Could it do more to be better?

FOGUS

Q



Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store

Interaction

Help About Wikipedia Community portal Recent changes Contact page

Tools

What links here Related changes Upload file Special pages Permanent link Page information Wikidata item

Print/export

Cite this page

Article

Talk

Read

Edit

View history

Search Wikipedia

Not logged in Talk Contributions Create account Log in

Focus (computing)

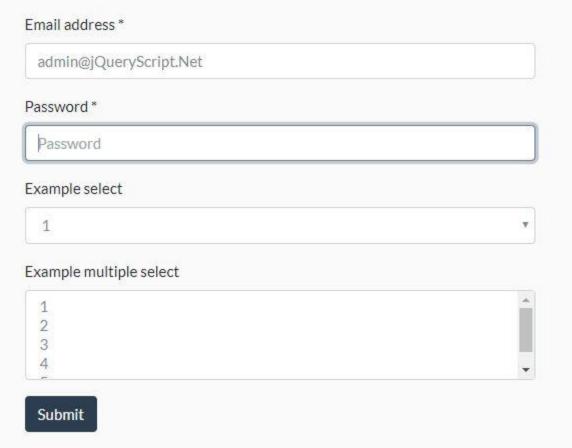
From Wikipedia, the free encyclopedia

In computing, the **focus** indicates the component of the graphical user interface which is selected to receive input. Text entered at the keyboard or pasted from a clipboard is sent to the component which has the focus. Moving the focus away from a specific user interface element is known as a **blur** event in relation to this element. Typically, the focus is withdrawn from an element by giving another element the focus. This means that focus and blur events typically both occur virtually simultaneously, but in relation to different user interface elements, one that gets the focus and one that gets blurred.

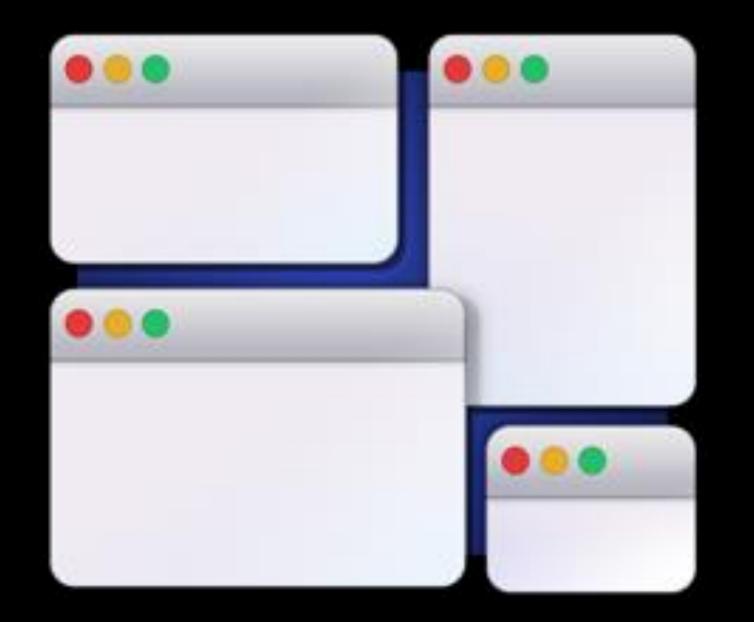
The concept is similar to a cursor in a text-based environment. However, when considering a graphical interface, there is also a mouse pointer involved. Moving the mouse will typically move the mouse pointer without changing the focus. The focus can usually be changed by clicking on a component that can receive focus with the mouse. Many desktops also allow the focus to be changed with the keyboard. By convention, the Tab key is used to move the focus to the next focusable component and fighther to the previous one. When graphical interfaces were first introduced, many computers did not have mice, so this alternative was necessary. This feature makes it easier for people that have a hard time using a mouse to use the user interface. In certain circumstances, the arrow keys can also be used to move focus.

Contents [hide]

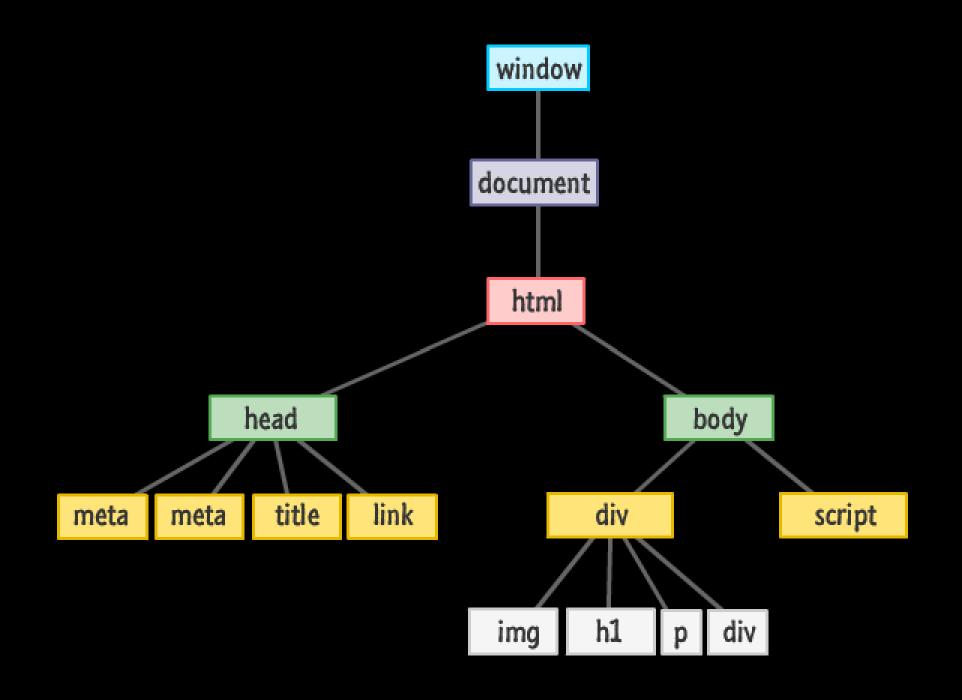
- 1 Window focus
 - 1.1 Click to focus
 - 1.2 Focus follows pointer
 - 1.3 Sloppy focus
- 2 Focus models used by X11 window managers
- 3 Intra-window component focus
- 4 See also
- 5 References
- 6 Notes











document.activeElement





Operating System



Application (Browser)



Tab/Window



Document



Element

Properties document.activeElement

Methods
element.focus()
element.blur()

Events
focus
blur
focusin
focusout

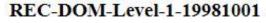
Properties document.activeElement

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← → C



Document Object Model (DOM) Level 1 Specification

Version 1.0

W3C Recommendation 1 October, 1998

This version

http://www.w3.org/TR/1998/REC-DOM-Level-1-19981001

http://www.w3.org/TR/1998/REC-DOM-Level-1-19981001/DOM.ps

http://www.w3.org/TR/1998/REC-DOM-Level-1-19981001/DOM.pdf

http://www.w3.org/TR/1998/REC-DOM-Level-1-19981001/DOM.tgz

http://www.w3.org/TR/1998/REC-DOM-Level-1-19981001/DOM.zip

http://www.w3.org/TR/1998/REC-DOM-Level-1-19981001/DOM.txt Latest version

http://www.w3.org/TR/REC-DOM-Level-1

Previous versions

http://www.w3.org/TR/1998/PR-DOM-Level-1-19980818

http://www.w3.org/TR/1998/WD-DOM-19980720

http://www.w3.org/TR/1998/WD-DOM-19980416

http://www.w3.org/TR/WD-DOM-19980318

http://www.w3.org/TR/WD-DOM-971209

http://www.w3.org/TR/WD-DOM-971009

WG Chair

Lauren Wood, SoftQuad, Inc.

Editors

Vidur Apparao, Netscape

Steve Byrne, Sun

Mike Champion, ArborText

Scott Isaacs Microsoft

Interface HTMLSelectElement

The select element allows the selection of an option. The contained options can be directly accessed through the select element as a collection. See the <u>SELECT element definition</u> in HTML 4.0.

IDL Definition

```
interface HTMLSelectElement : HTMLElement {
 readonly attribute DOMString
                                           type;
          attribute long
                                          selectedIndex;
          attribute DOMString
                                          value;
 readonly attribute long
                                          length;
 readonly attribute HTMLFormElement
                                          form;
 readonly attribute HTMLCollection
                                          options;
          attribute boolean
                                          disabled;
          attribute boolean
                                          multiple;
           attribute DOMString
                                          name;
          attribute long
                                          size;
          attribute long
                                          tabIndex;
                           add(in HTMLElement element,
 void
                               in HTMLElement before);
                           remove(in long index);
 void
 void
                           blur();
 void
                           focus();
```

Attributes

type

The type of control created.

selectedIndex

The ordinal index of the selected option. The value -1 is returned if no element is selected. If multiple options are selected, the index of the first selected option is returned.

value

The current form control value.

length

The number of options in this SELECT.



Not really Glen...

But pretend it is and he's as dashing as international heart-throb **Brian Posehn...**

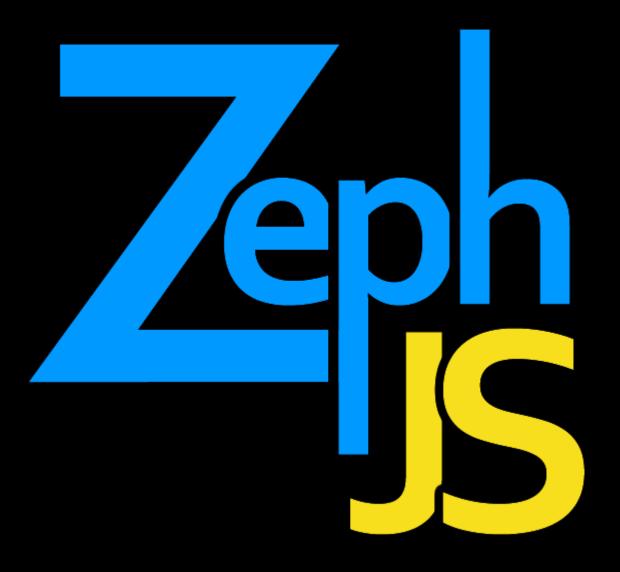
Username

Username must:

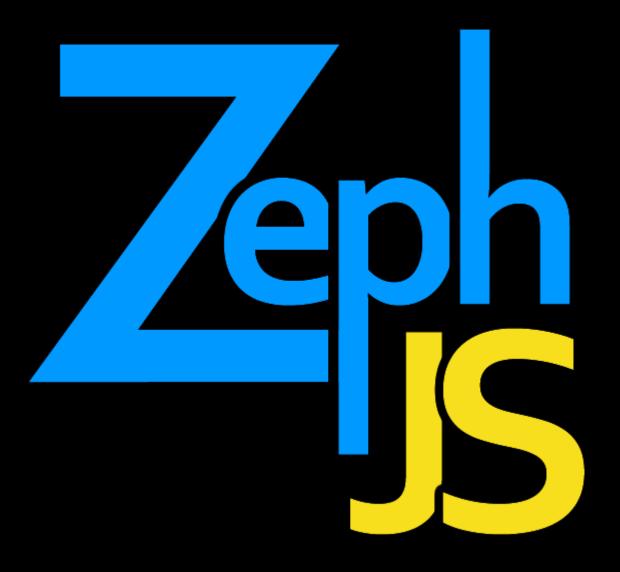
- begin with a letter.
- be lowercase.
- only contain letters A-Z or numbers 0-9.



```
import {ZephComponents,html,onEventAt} from "ZephJS";
ZephComponents.define("my-user-field",()=>{
  html(`
     <div class="wrapper">
       <input class="field" type="text"></input>
     </div>
  `);
  onEventAt("input","keyup",(element,content,event)=>{
     if (event.keyCode===13) {
       ??????????????
  });
```



zephjs.com



zephjs.com

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import {ZephComponents,html,onEventAt} from "ZephJS";
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```
}
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```

<u>Properties</u>

document.activeElement

Methods

element.focus()

element.blur()

Events

focus

blur

focusin

focusout

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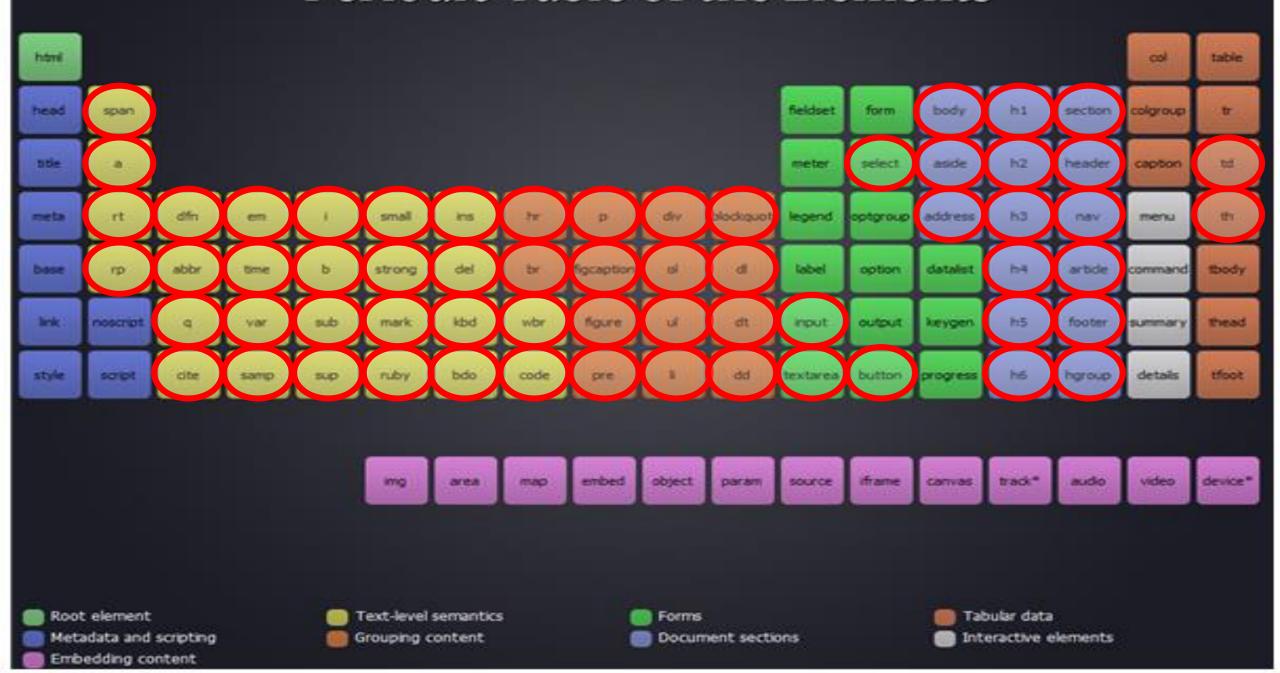
















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<input tabindex="0"> within ::shadow[tabindex="-1"]

<input tabindex="2"> within ::shadow[tabindex="-1"]

<input tabindex="-1"> within ::shadow[tabindex="0"]

<input tabindex="0"> within ::shadow[tabindex="0"]

<input tabindex="2"> within ::shadow[tabindex="0"]

<iframe src="..." tabindex="-1"> without focusable content

<html> within <iframe src="..."> with focusable content

<html> within <iframe src="..." tabindex="-1">

<body> within <iframe src="..." tabindex="-1">

<html> within <iframe src="..." tabindex="-1">

<input> within <iframe src="..." tabindex="-1">

<input tabindex="1"> within <iframe src="...">

<iframe src="..." style="visibility: hidden">

ciframe src="..." style="visibility: hidden"> <iframe src="_" style="display: none">

<input tabindex="1"> within <iframe src="..." tabindex="-1">

<html> within <iframe src="..." style="visibility: hidden">

<body> within <iframe src="..." style="visibility: hidden":</pre>

<input> within <iframe src="..." style="visibility: hidden";</pre>

<body> within <iframe src="..." style="display: none">

<html> within <iframe src="..."> within <details>

<body> within <iframe src="..."> within <details>

<iframe src=".."> without focusable content

<iframe src="..."> with SVG document

<html> within <iframe src="...">

<body> within <iframe src="...">

<input> within <iframe src="...">

<input tabindex="-1"> within

<iframe src="..."> within <details>

<iframe src="_"> with focusable content

::shadow[tabindex="0"]

<input tabindex="1"> within ::shadow within ::shadow[tabindex="-1"]

<input tabindex="1"> within ::shadow within ::shadow[tabindex="0"]

Shadow DOM							
Element	Expected	Chrome	Microsoft Edge	Firefox	IE	Opera	Safari

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§ 6.4 Focus

6.4.1 Introduction

This section is non-normative.

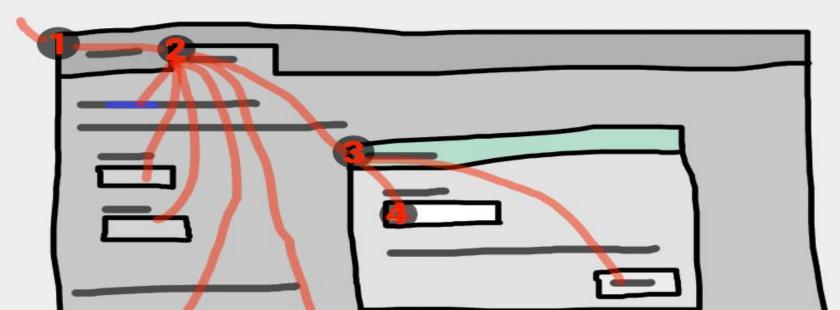
An HTML user interface typically consists of multiple interactive widgets, such as form controls, scrollable regions, links, dialog boxes, browser tabs, and so forth. These widgets form a hierarchy, with some (e.g. browser tabs, dialog boxes) containing others (e.g. links, form controls).

When interacting with an interface using a keyboard, key input is channeled from the system, through the hierarchy of interactive widgets, to an active widget, which is said to be <u>focused</u>.

Example

Consider an HTML application running in a browser tab running in a graphical environment. Suppose this application had a page with some text controls and links, and was currently showing a modal dialog, which itself had a text control and a button.

The hierarchy of focusable widgets, in this scenario, would include the browser window, which would have, amongst its children, the browser tab containing the HTML application. The tab itself would have as its children the various links and text controls, as well as the dialog. The dialog itself would have as its children the text control and the button.



- Elements that have their tabindex focus flag set, that are not actually disabled, that are not expressly inert, and that are either being rendered or being used as relevant canvas fallback content.
- The shapes of area elements in an image map associated with an img element that is being rendered and is not expressly inert.
- The user-agent provided subwidgets of elements that are being rendered and are not actually disabled or expressly inert
- The scrollable regions of elements that are being rendered and are not expressly inert.
- The viewport of a Document that is in a browsing context and is not inert.
- Any other element or part of an element, especially to aid with accessibility or to better match platform conventions.

- Elements that have their tabindex focus flag set, that are not actually disabled, that are not expressly inert, and that are either being rendered or bourg uses as relevant canvas fallback content.
- The shapes of area elements in an image man acsociated with an image element, that is veing rescienced and is not expressly inert.
- The user ager i provided subwidgets of elements that are being rendered and are not actually discussed an expression in ert
- The scrollable regions of elements that are being rendered and are not expressly nert.
- The viewport of a Document that is in a browsing context and is not inert.
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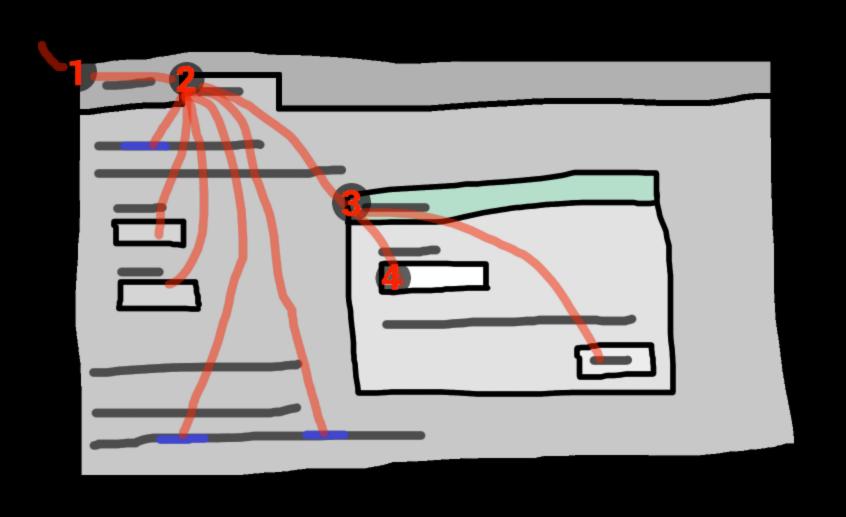
No way to automatically advance (or reverse) focus

No way to automatically advance (or reverse) focus

No way to determine what is focusable

No way to automatically advance (or reverse) focus

No way to determine what is focusable







- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()

- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()

- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()
- ✓ .trap()

- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()
- ✓ .trap()
- ✓ .order()

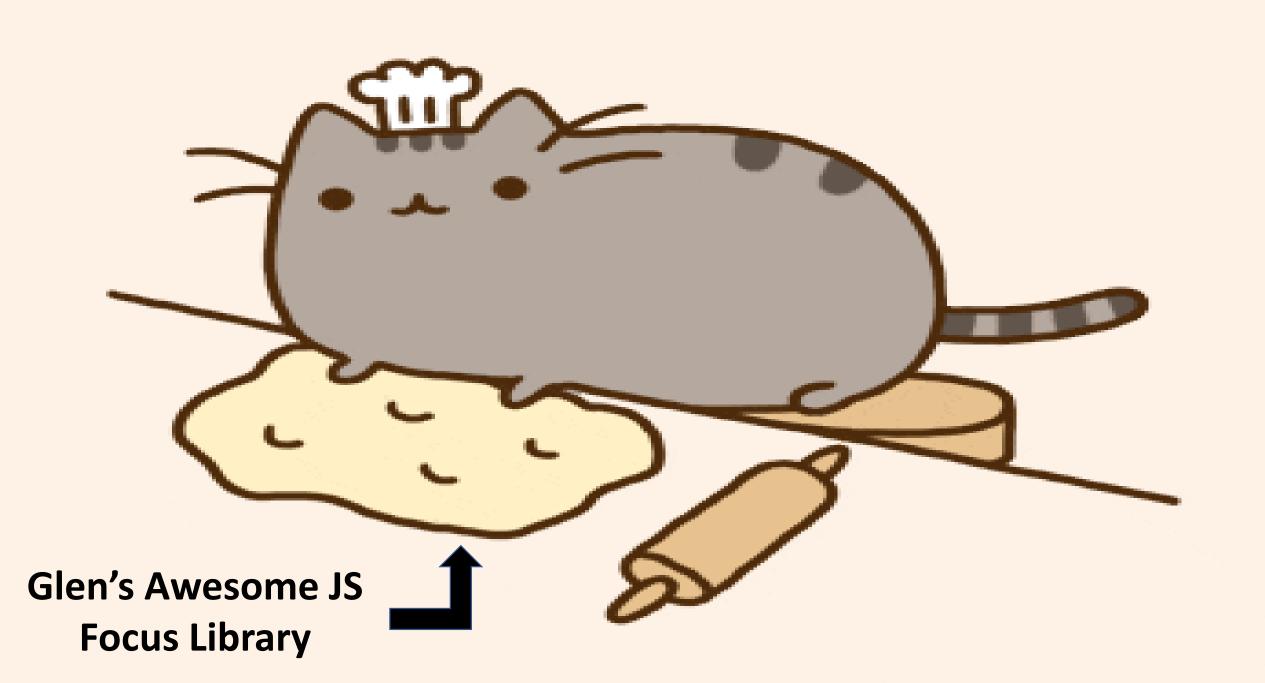
- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()
- ✓ .trap()
- ✓ .order()

- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()
- ✓ .trap()
- ✓ .order()
- ✓ .previousActiveElement
- ✓ .history

- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()
- ✓ .trap()
- ✓ .order()
- ✓ .previousActiveElement
- ✓ .history
- ✓ .autofocus(e)

- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()
- ✓ .trap()
- ✓ .order()
- ✓ .previousActiveElement
- ✓ .history
- ✓ .autofocus(e)

- ✓ .isFocusable(e)
- ✓ .forward()
- ✓ .backward()
- ✓ .trap()
- ✓ .order()
- ✓ .previousActiveElement
- ✓ .history
- ✓ .autofocus(e)



tabbable

build passing

SEEKING CO-MAINTAINERS! Continued development of this project is going to require the work of one or more dedicated co-maintainers (or forkers). If you're interested, please comment in this issue.

Returns an array of all* tabbable DOM nodes within a containing node. (* "all" has some necessary caveats, which you'll learn about by reading below.)

The following are considered tabbable:

- <button> s
- <input> S
- <select> S
- <textarea> S
- <a> s with href or xlink:href attributes
- <audio> s and <videos> s with controls attributes

window.focusManager











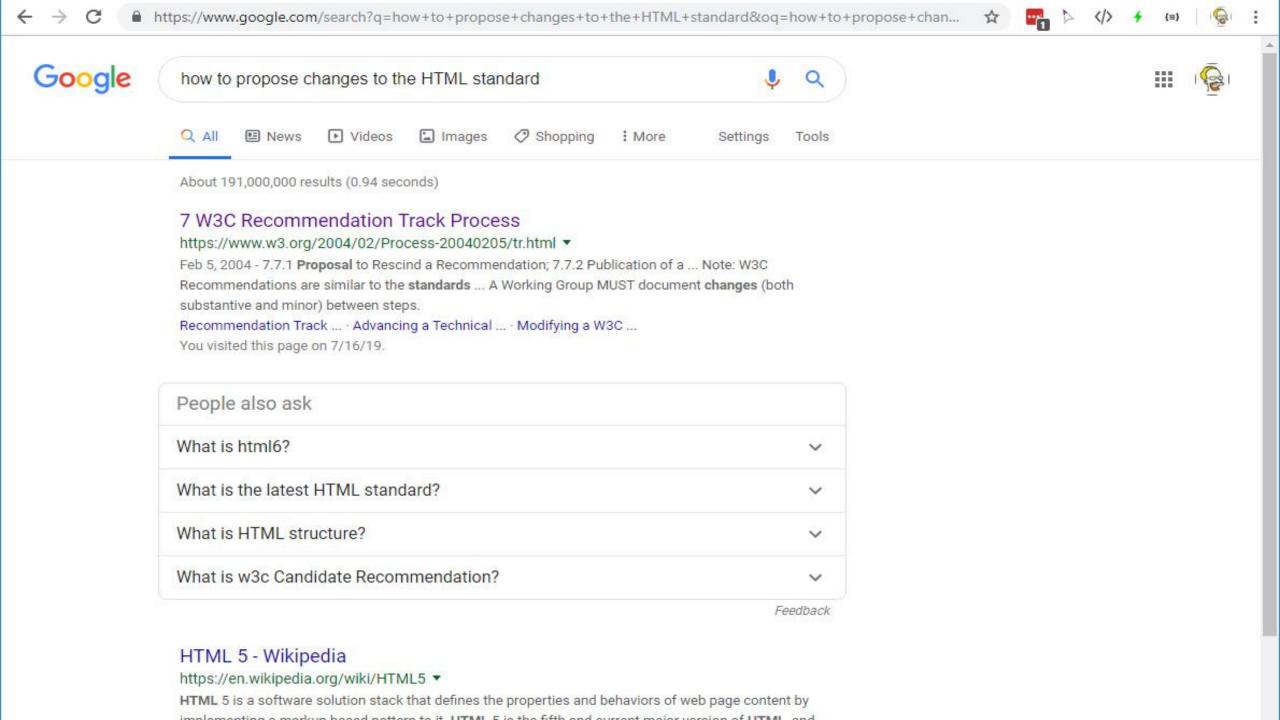






Still not Glen...

But let's pretend Glen is this cool and popular...







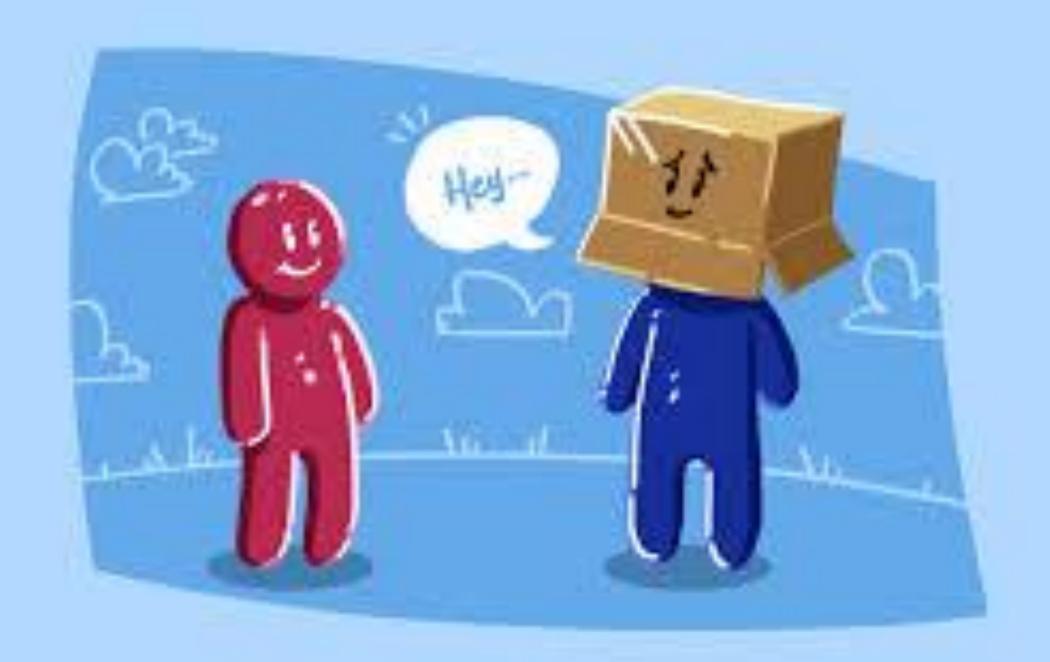
Web Platform Incubator Community Group

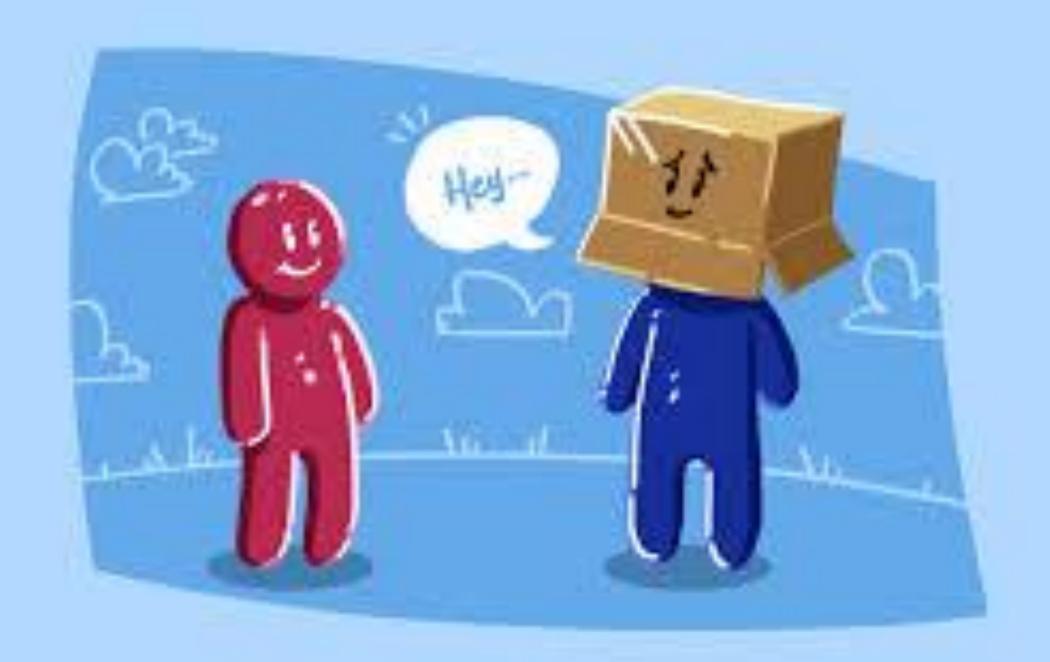


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Hacker News

scritte paralest had me to

Special County









Not really Jason...

But that's Google Image Search for you.

Focus Traversal API Proposal

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Coming Soon...

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Coming Soon...

The Focus Traversal API Proposal

github.com/awesomeeng/FocusTraversalAPI

npm install focus-traversal-api-polyfill

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Let's make Browser Focus work for us... Spread the word about the Focus Traversal API Proposal!

https://github.com/awesomeeng/FocusTraversalAPI/blob/master/EXPLAINER.md

https://github.com/awesomeeng/FocusTraversalAPI

#FocusTraversalAPI #JavaScript #Web



Let's make Browser Focus work for us... Spread the word about the Focus Traversal API Proposal!

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#FocusTraversalAPI #JavaScript #Web









Focus Traversal API Explainer

https://github.com/awesomeeng/FocusTraversalAPI/blob/master/EXPLAINER.md

Github Repo

https://github.com/awesomeeng/FocusTraversalAPI

Github Get Involved Page

https://github.com/awesomeeng/FocusTraversalAPI/blob/master/GET_INVOLVED.md

WICG W3C Discourse Discussion

https://discourse.wicg.io/t/proposal-focus-traversal-api/3427

WHATWG Github Issue

https://github.com/whatwg/html/issues/4784

ZephJS Library

https://zephjs.com