

Contemporary Web Development

Lesson 1



<http://bit.ly/cannotfeelmybones>

Hey mlab, Avner here.

- <https://avner.js.org>
- <https://github.com/Avnerus>
- avner.peled@aalto.fi

Notable web projects:

- <https://github.com/Avnerus/tzina> : WebVR Documetary (IDFA Doclab 2016).
- <https://github.com/Avnerus/STIR> : Mobile Web App (IDFA Doclab 2017) .
- <https://github.com/Avnerus/silencecaptive> : Wi-Fi Portal (CCA Gallery).
- <https://github.com/Raycasters/Marrow> : AI Installation (IDFA Doclab 2018).
- <https://github.com/Avnerus/softbot> : Soft Robotic Avatar Platform (MA Thesis).
- <https://github.com/Avnerus/riot-isomorphic> : RiotJS Framework powering [Feature.fm](#)

Disclaimer

Evolution of web technology

<http://www.evolutionoftheweb.com/>

- Static HTML/CSS
 - # telnet www.oocities.org 80
 - GET /hollywood/1525/ HTTP/1.1
 - Host: www.oocities.org
- Javascript
- Weird Hybrids (Java, Flash, ActiveX, Silverlight 🙄)
- AJAX
- HTML5 (Canvas, SVG)
- **Node JS**
- **Front-end frameworks**
- **Web Extensions**

The web browser is *slowly* replacing the operating system, becoming a standard for content.

PWA

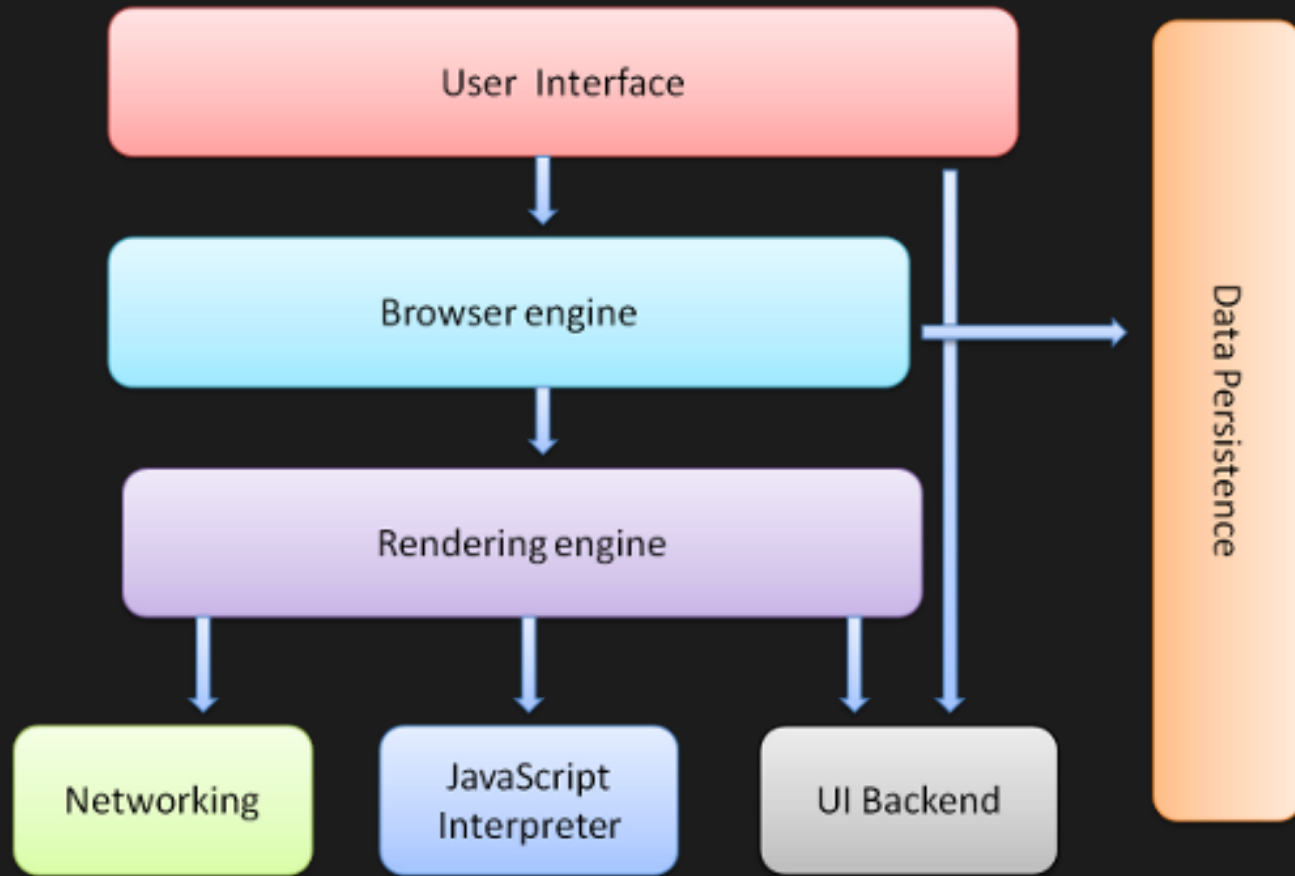


Chrome OS *



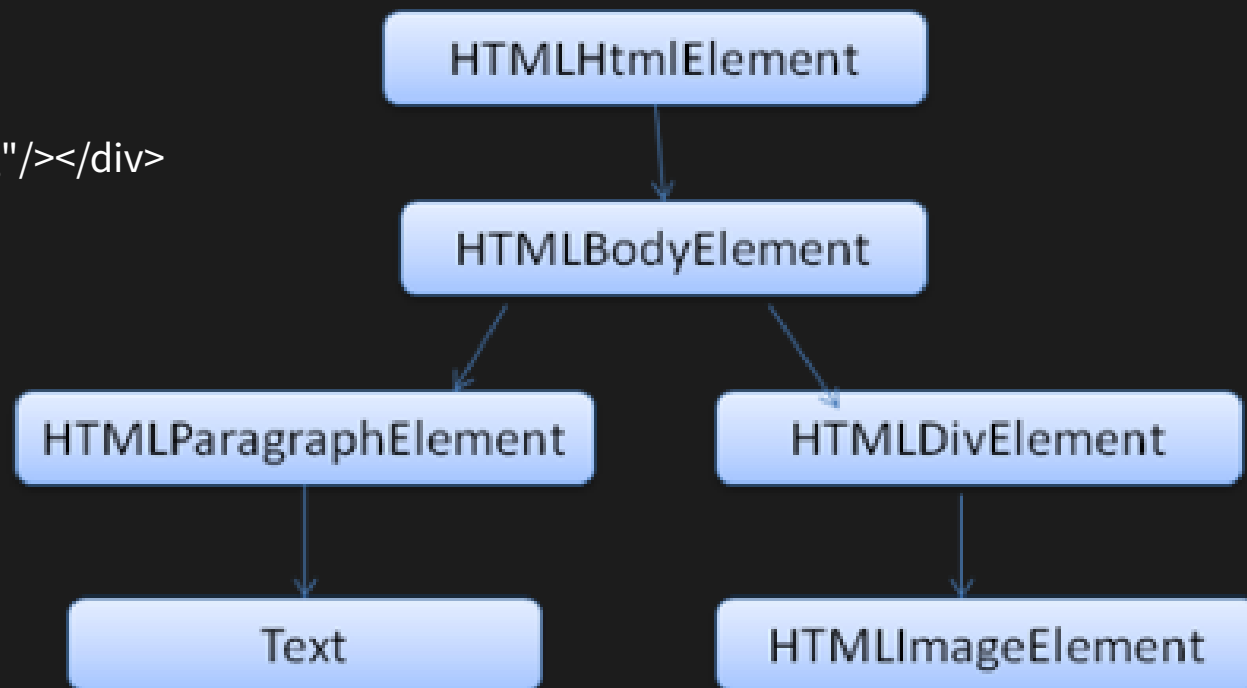
Firefox OS **

But let's focus on one tab.

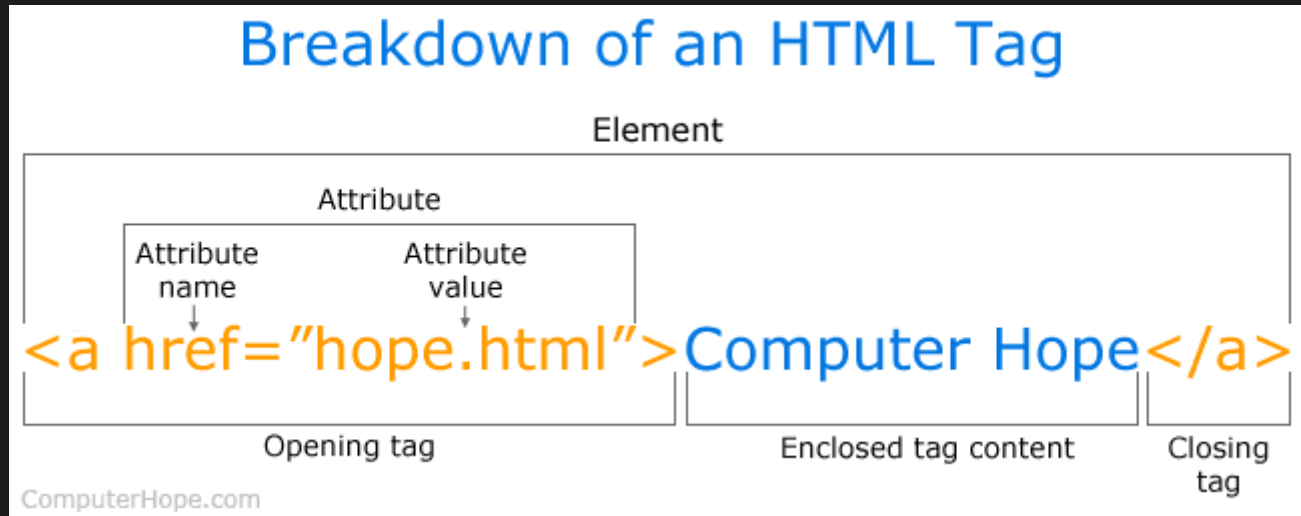


<https://www.html5rocks.com/en/tutorials/internals/howbrowserswork/>

```
<html>
<body>
  <p>
    Hello World
  </p>
  <div> </div>
</body>
</html>
```



HTML is almost XML



```
<father name="Papa" age=50>
  <refrigerator>
    ice cream
  </refrigerator>
</father>
<mother name="Mama" age=45>
  <son name="Johnny" age=8>
    sugar
  </son>
  <daughter
    name="Neene"
    age=7
    oneatsugar="changeMood('happy')
  />
</mother>
```

A happy family

```
<father name="Papa" age=50>
  <refrigerator>
    ice cream
  </refrigerator>
</father>
<mother name="Mama" age=45>
  <son name="Johnny" age=8>
    sugar
  </son>
  <daughter
    name="Neene"
    age=7
    oneatsugar="changeMood('happy')
  />
</mother>
```

A happy family

Don't actually do this in web development. Structure and behavior should be separated.
"Unobtrusive Javascript"

Code style guide

```
<johnny  
  age=8  
  shirt-color="pink"  
  pants-color="pink"  
  favorite-food="sugar"  
>
```

Let's think about [Reddit](#).

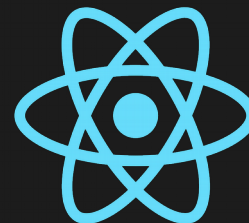
All about `<components>`



Web components



Polymer

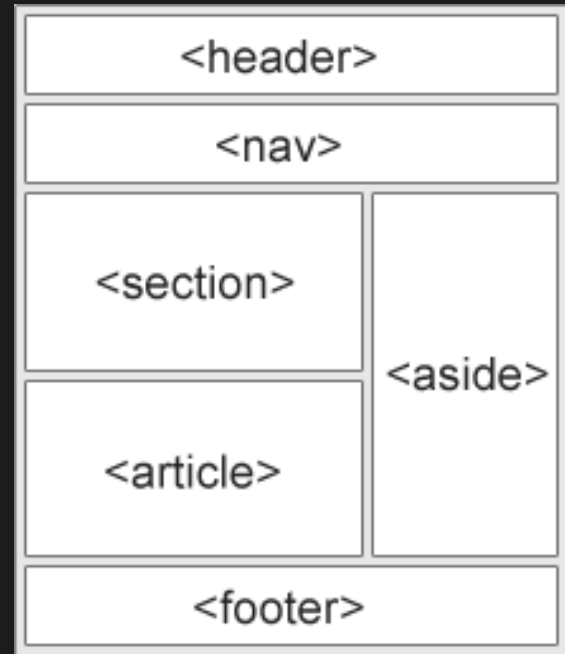


React



Riot JS

HTML5 Semantic Elements





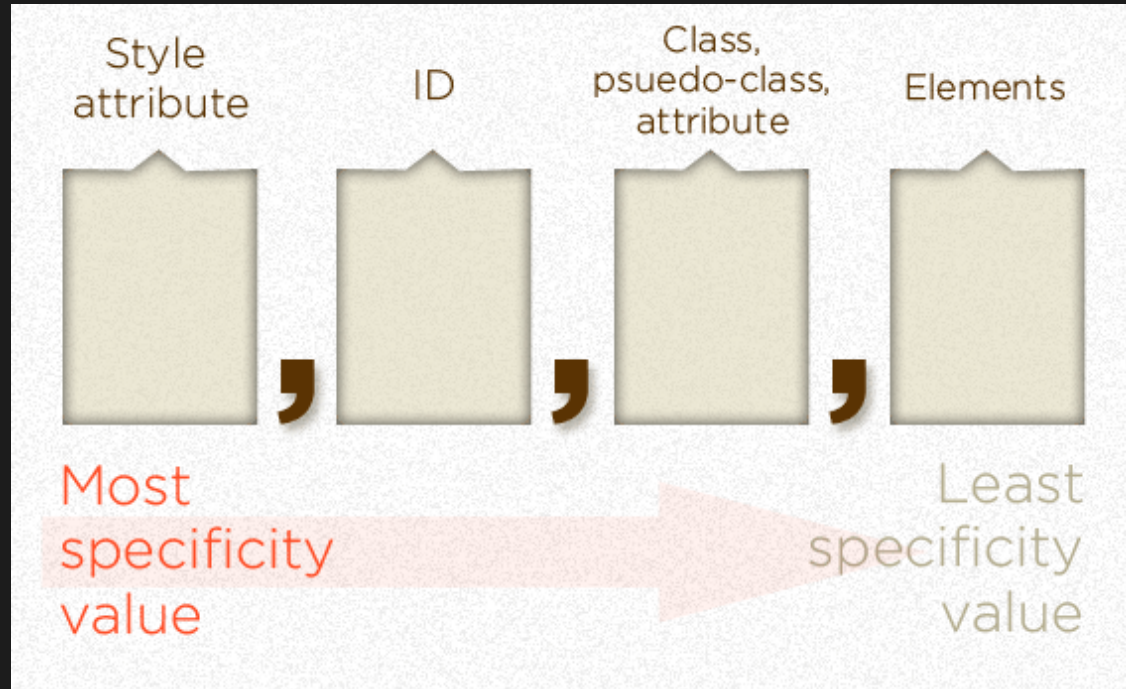
Styling

```
.human {
  empty-cells: show;
}
father {
  overflow: visible;
}
#child1 {
  border: none;
}

.human refrigerator {
  box-shadow: 6px 6px #666
}
```

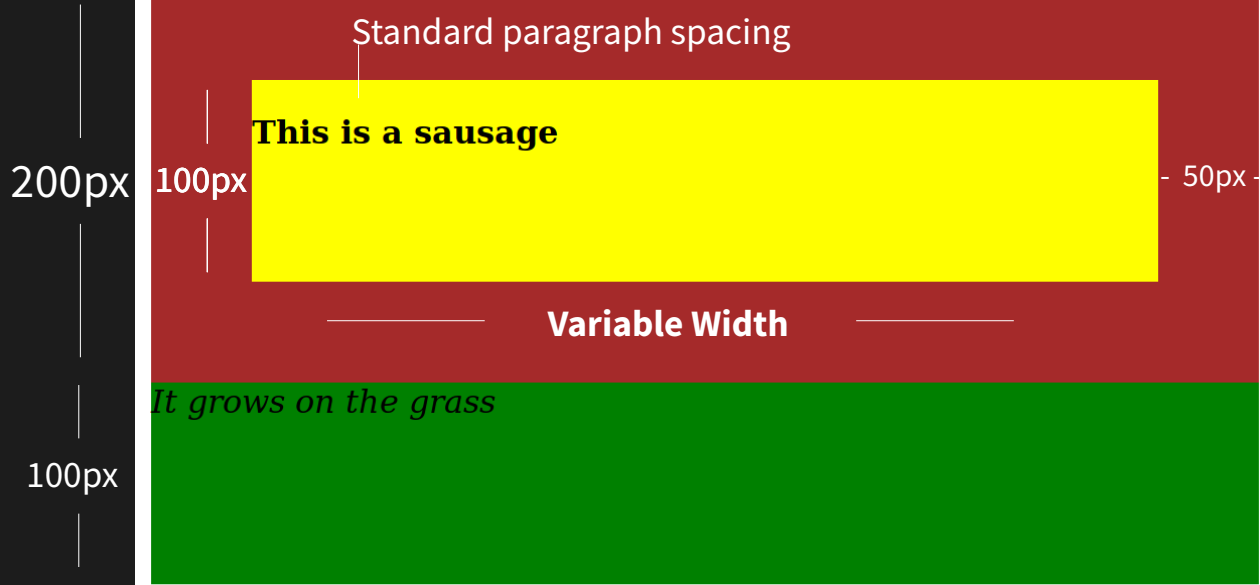
```
<father name="Papa" age=50 class="human">
  <refrigerator>
    ice cream
  </refrigerator>
</father>
<mother name="Mama" age=45
class="human">
  <son id="child1" name="Johnny" age=8>
    sugar
  </son>
  <daughter
    name="Neene"
    age=7
    oneatsugar="changeMood('happy')
  />
</mother>
```

CSS Specificity - Example



Contemporary Style: SASS - Example

A stylized, cursive logo for the word "SASS" in a vibrant pink color. The letter 'S' is large and features a prominent, elegant loop at the top. The 'A' is smaller and more compact, followed by two 'S's that continue the fluid, flowing cursive style. The final 'S' ends with a long, sweeping tail that curves to the right. The entire logo is set against a solid black background.



Three methods for centering elements.

Even more here <http://thenewcode.com/723/Seven-Ways-of-Centering-With-CSS>

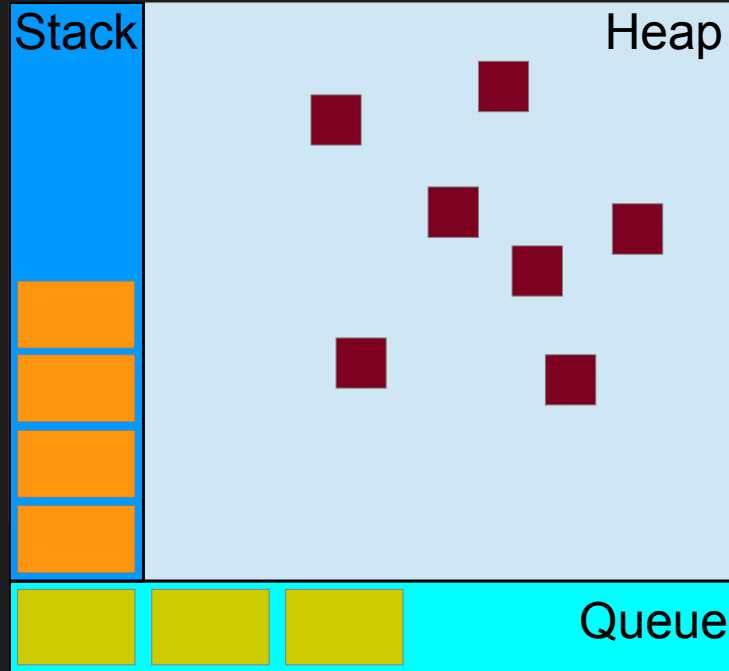
Responsive Design with Media Queries - Example

```
1  /* Large desktop */
2  @media (min-width: 1200px) { /* CSS Classes */ }
3
4  /* Portrait tablet to landscape and desktop */
5  @media (min-width: 768px) and (max-width: 979px) { /* CSS Classes */ }
6
7  /* Landscape phone to portrait tablet */
8  @media (max-width: 767px) { /* CSS Classes */ }
9
10 /* Landscape phones and down */
11 @media (max-width: 480px) { /* CSS Classes */ }
```



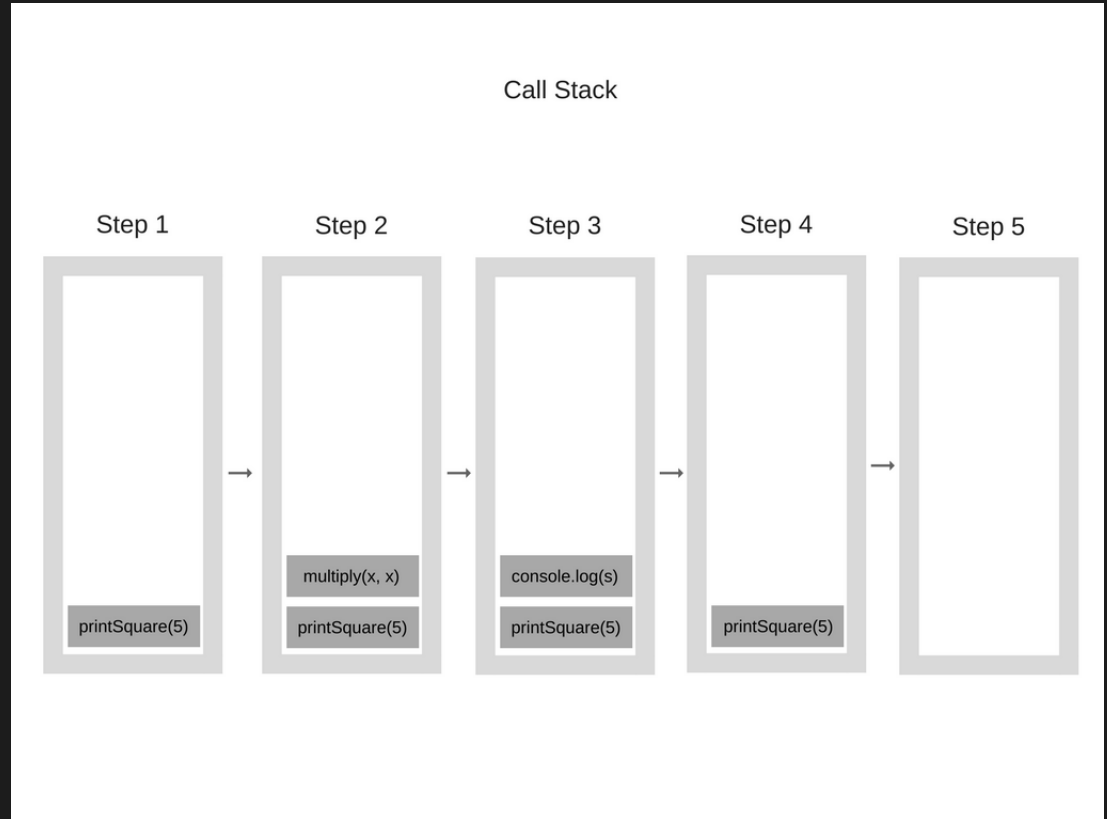
Javascript

The runtime model

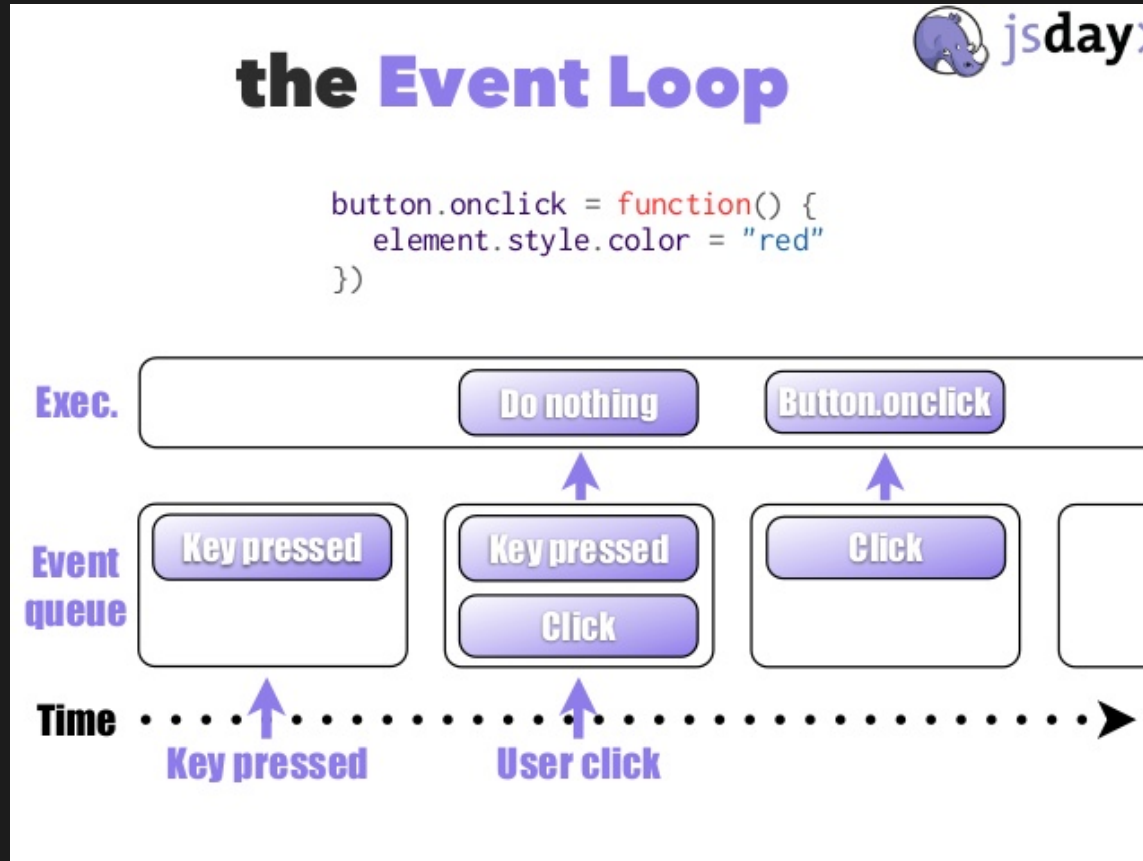


Call Stack LIFO

```
function multiply(x, y) {  
  return x * y;  
}  
function printSquare(x) {  
  var s = multiply(x, x);  
  console.log(s);  
}  
printSquare(5)
```



Event Queue FIFO



Blocking / Non-blocking

Example

Listening to Events and Event Bubbling Example

Warm up exercise – your dream website OR a sample website.

Home exercise – Stack/Queue tracing

```
window.onload = function run() {
  let cracker = document.querySelector("#cracker");
  cracker.addEventListener("click", dipCracker);
}
function dipCracker(event) {
  let cracker = event.target;
  if (cracker.style.backgroundColor != "green") {
    cracker.style.backgroundColor = "green";
    dipCracker(event);
  } else {
    setTimeout(function eat() {
      console.log("Yummy!")
      cracker.style.display = "none";
    },2000);
    console.log("Nom Nom...");
  }
}
```

Pen

```
<html>
  <body>
    <div id="cracker">
    </div>
  </body>
</html>

#cracker {
  background-color: brown;
  width: 100px;
  height: 200px;
}
```

Also practice:

- CSS Selectors: <https://flukeout.github.io/>