

More CSS

Styling the Web

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Photo by [Marcus Ganahl](#) on [Unsplash](#)

Goal

- Advanced layout in web pages
- Responsive layouts
- Libraries

Outline

- Page layout with
 - Grid
 - Flex
- Other flow layouts
- Responsive layout
- CSS Framework: Bootstrap



Page Layout

GRIDS

Advanced Layout: Grid

Maki-zushi



The rice and seaweed rolls with fish and/or vegetables. There are also more specific terms for the rolls depending on the style.

Nigiri-zushi



The little fingers of rice topped with wasabi and a filet of raw or cooked fish or shellfish. Generally the most common form of sushi you will see.

Temaki-zushi



Also called a hand-roll. Cones of sushi rice, fish and vegetables wrapped in seaweed. It is very similar to maki.

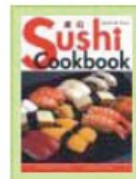
WHAT IS SUSHI?

Beginning as a method of preserving fish centuries ago, sushi has evolved into an artful, unique dining experience. In its earliest form, dried fish was placed between two pieces of vinegared rice as a way of making it last. The nori (seaweed) was added later as a way to keep one's fingers from getting sticky.

Sashimi

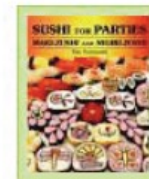


Sashimi is raw fish served sliced, but as-is. That means no rice bed or roll, but it is often served alongside daikon and/or shiso. This is my favorite style as you really get the flavor of the fish..



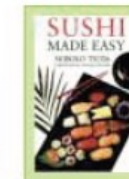
QUICK & EASY SUSHI COOKBOOK

This book has great pictures, however it is not as complete as Sushi Made Easy.



SUSHI FOR PARTIES: MAKI-ZUSHI AND NIGIRI-ZUSHI

This book also has great pictures, with advanced maki (cut roll) making techniques.



SUSHI MADE EASY

A very decent all-around book for the money.

Advanced Layout: Grid

<p>Maki-zushi</p>  <p>The rice and seaweed rolls with fish and/or vegetables. There are also more specific terms for the rolls depending on the style.</p>		<p>Nigiri-zushi</p>  <p>The little fingers of rice topped with wasabi and a filet of raw or cooked fish or shellfish. Generally the most common form of sushi you will see.</p>	<p>Temaki-zushi</p>  <p>Also called a hand-roll. Cones of sushi rice, fish and vegetables wrapped in seaweed. It is very similar to maki.</p>
<p>WHAT IS SUSHI?</p>  <p>Beginning as a method of preserving fish centuries ago, sushi has evolved into an artful, unique dining experience. In its earliest form, dried fish was placed between two pieces of vinegared rice as a way of making it last. The nori (seaweed) was added later as a way to keep one's fingers from getting sticky.</p>		<p>Technically, the word "sushi" refers to the rice, but colloquially, the term is used to describe a finger-sized piece of raw fish or shellfish on a bed of vinegared rice or simply the consumption of raw fish in the Japanese style (while sushi is solely a Japanese invention, these days, the Japanese style is considered the de facto serving standard).</p>	
<p>Sashimi</p>  <p>Sashimi is raw fish served sliced, but as-is. That means no rice bed or roll, but it is often served alongside daikon and/or shiso. This is my favorite style as you really get the flavor of the fish..</p>	 <p>QUICK & EASY SUSHI COOKBOOK</p> <p>This book has great pictures, however it is not as complete as Sushi Made Easy.</p>	 <p>SUSHI FOR PARTIES AND NIGIRI-ZUSHI</p> <p>This book also has great pictures, with advanced maki (cut roll) making techniques.</p>	 <p>SUSHI MADE EASY</p> <p>A very decent all-around book for the money.</p>

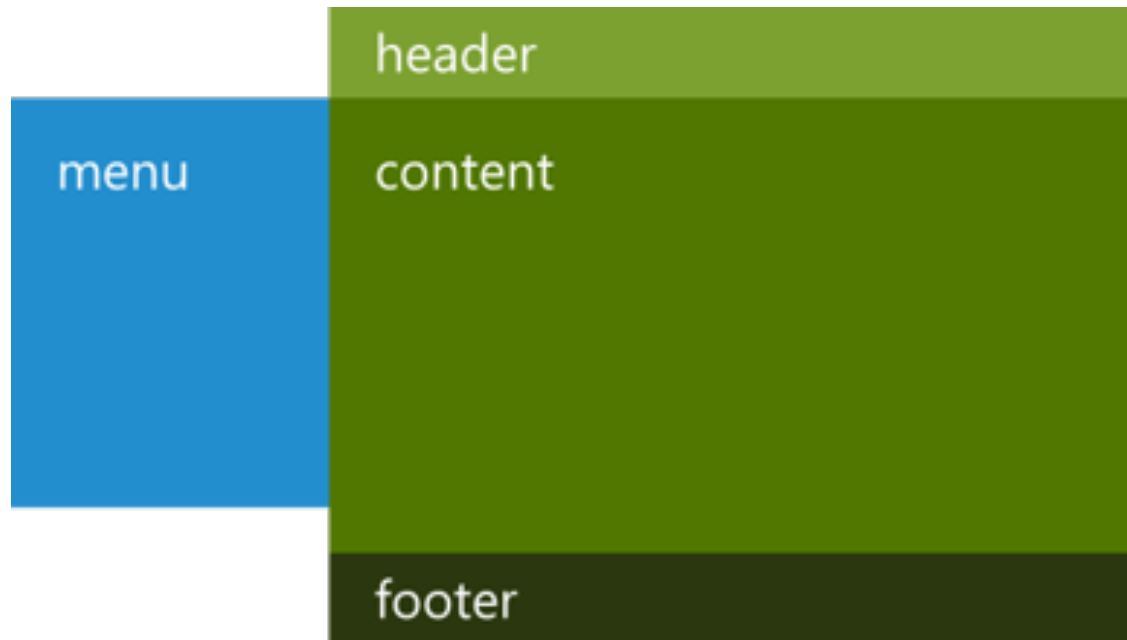
Advanced Layout: Grid

- It is possible to define a grid in which content can flow or be placed, or that remain empty
- There are 3 ways to define a grid
 - Explicit grid: defined with `'grid-columns'` and `'grid-rows'` properties
 - Natural grid: automatically created by elements with a natural grid structure (multi-column elements and tables)
 - Default grid: all other block elements define a single-cell grid

Example

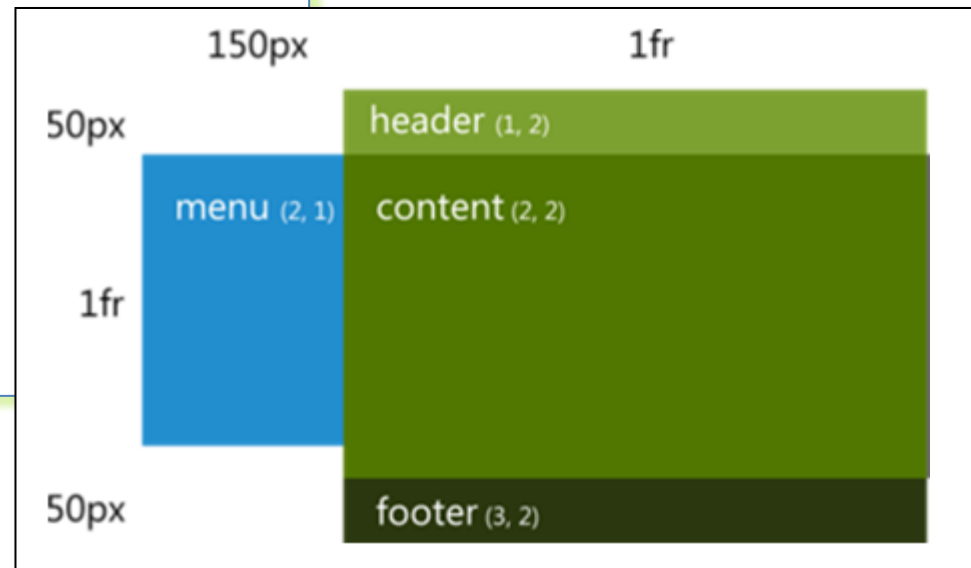
- Classic two-column layout

```
<section>  
  <header>Title</header>  
  <aside>Menu</aside>  
  <article>Content</article>  
  <footer>Footer</footer>  
</section>
```



Example

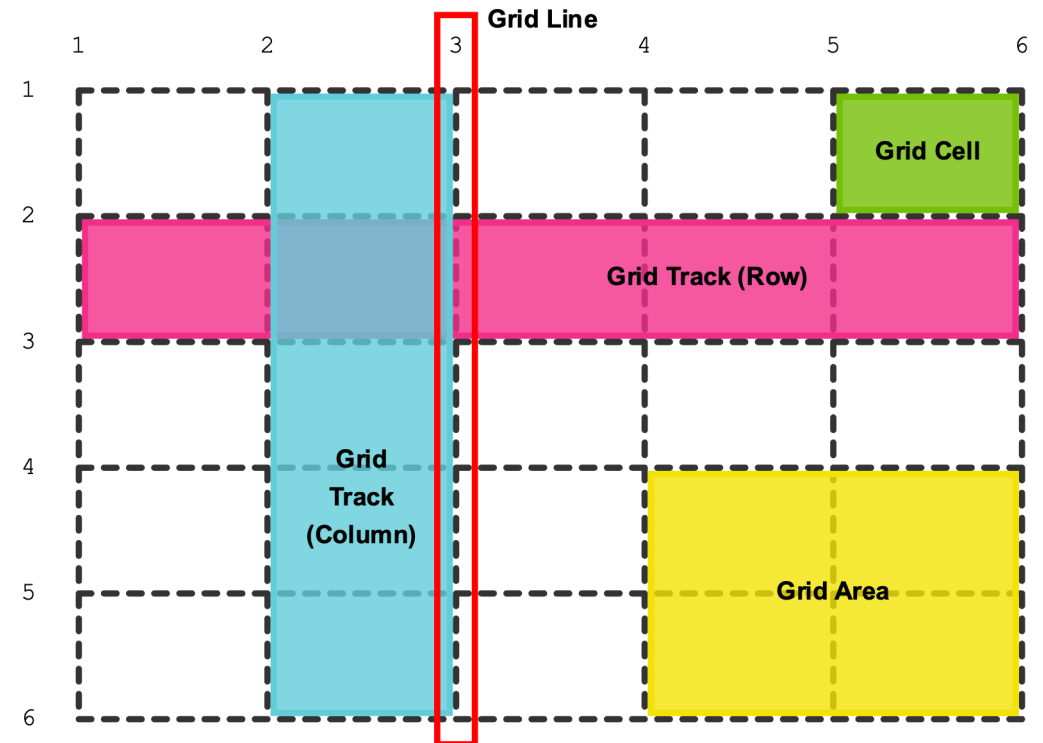
```
section {  
  display: grid;  
  grid-columns: 150px 1fr;  
  grid-rows: 50px 1fr 50px; }  
section header {  
  grid-column: 2;  
  grid-row: 1; }  
section aside {  
  grid-column: 1;  
  grid-row: 2; }  
section article {  
  grid-column: 2;  
  grid-row: 2; }  
section footer {  
  grid-column: 2;  
  grid-row: 3; }
```



- fr = fraction values
 - new unit applicable to grid-rows and grid-columns properties

Suggested Reference for Grid Layout

- <https://webkit.org/blog/7434/css-grid-layout-a-new-layout-module-for-the-web/>



Page Layout

FLEX

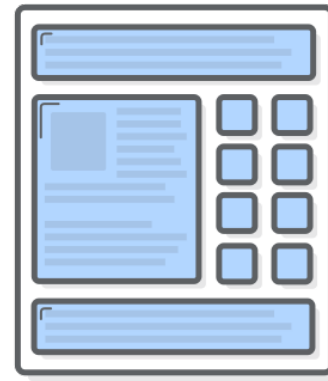
Flexbox

- Alternative to floats/grids for defining the overall appearance of a web page
- Flexbox gives complete control over the alignment, direction, order, and size of boxes



FLOATS

(MAGAZINE-STYLE LAYOUTS)



FLEXBOX

(OVERALL PAGE STRUCTURE)

Flexbox



ALIGNMENT



DIRECTION



ORDER



SIZE

<https://internetingishard.com/html-and-css/flexbox/>

https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Flexible_Box_Layout/Basic_Concepts_of_Flexbox

Flexbox

- Flexbox uses two types of boxes
 - **Flex containers**: group a set of flex items and define how they're positioned
 - **Flex items**
- Every HTML element that's a direct child of a flex container is an item



“FLEX CONTAINER”



“FLEX ITEMS”

Horizontal Alignment

```
.menu-container {  
  /* ... */  
  display: flex;  
  justify-content: center;  
}
```

- To turn one HTML elements into a flex container:
`{ display:flex ; }`
- “justify-content” property defines the horizontal alignment of its items
 - center, flex-start, flex-end
 - space-around, space-between



FLEX-START



CENTER



FLEX-END



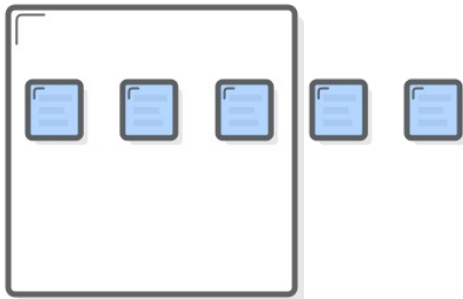
SPACE-AROUND



SPACE-BETWEEN

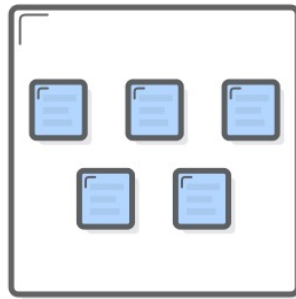
Wrapping

- The **flex-wrap** property creates a grid
 - Then, you can change alignment, direction, order, and size of items



NO WRAPPING

FLEX-WRAP: NOWRAP;



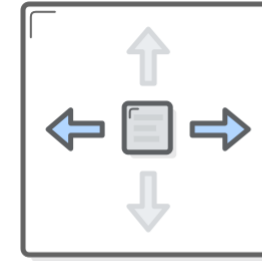
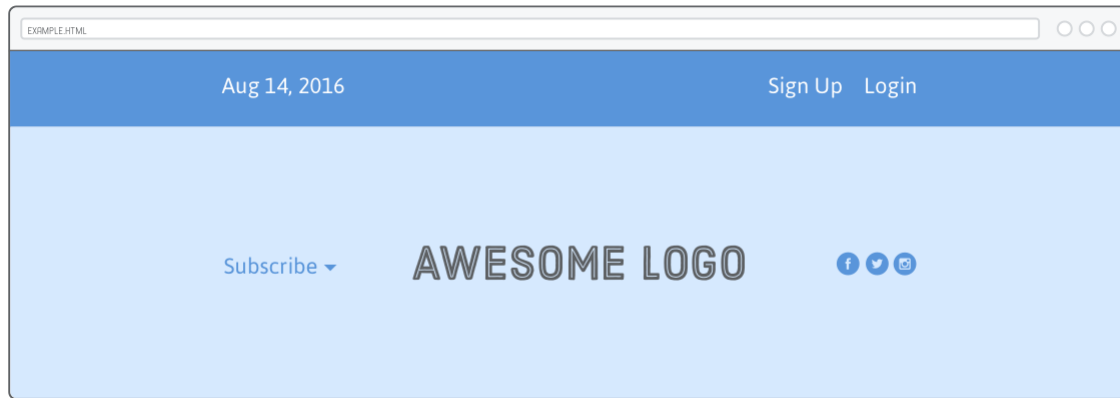
WITH WRAPPING

FLEX-WRAP: WRAP;

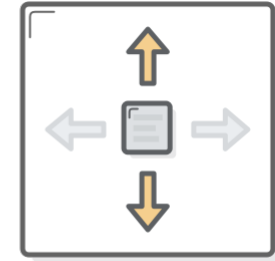
```
.photo-grid {  
  width: 900px;  
  display: flex;  
  justify-content: center;  
  flex-wrap: wrap;  
}
```

Vertical Alignment

- Flex containers can also define the vertical alignment of their items



JUSTIFY-CONTENT

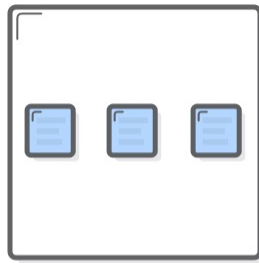


ALIGN-ITEMS

```
.header {  
  width: 900px;  
  height: 300px;  
  display: flex;  
  justify-content: space-between;  
  align-items: center;  
}
```

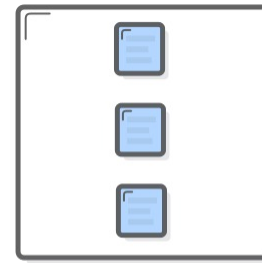
Direction

Refers to whether a container renders its items horizontally or vertically



ROW

FLEX-DIRECTION: ROW;

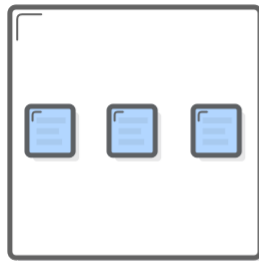


COLUMN

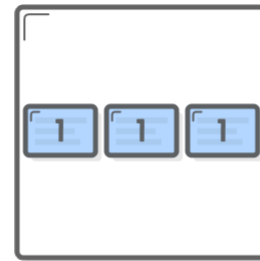
FLEX-DIRECTION: COLUMN;

Flexible Items

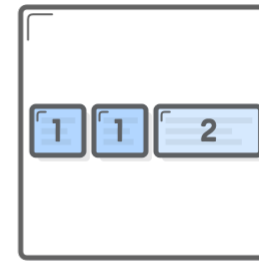
- Flex items are flexible: they can shrink and stretch to match the width of their containers
- The **flex** property defines the width of individual items in a flex container
 - a *weight* that tells the flex container how to distribute extra space to each item
 - E.g., an item with a flex value of 2 will grow twice as fast as items with the default value of 1



NO FLEX

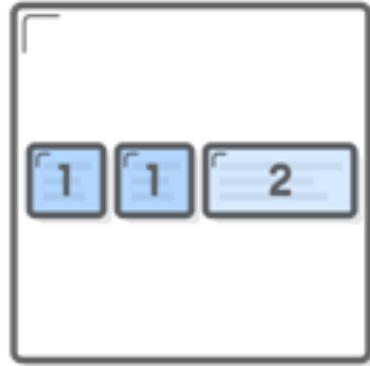


EQUAL FLEX



UNEQUAL FLEX

Flexible Items: Example



```
.footer {  
  display: flex;  
  justify-content: space-between;  
}
```

```
.footer-item {  
  border: 1px solid #fff;  
  background-color: #D6E9FE;  
  height: 200px;  
  flex: 1; }
```

```
.footer-three { flex: 2; }
```

```
<div class='footer'>  
  <div class='footer-item footer-one'></div>  
  <div class='footer-item footer-two'></div>  
  <div class='footer-item footer-three'></div>  
</div>
```


Grouping

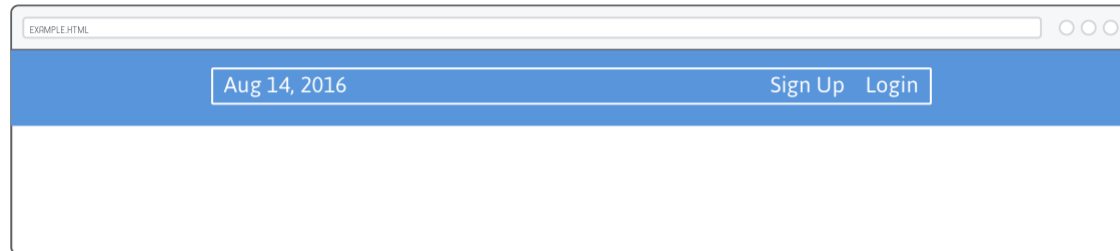
- Flex containers only know how to position elements that are one level deep (i.e., their child elements)
 - You can group flex items using `<div>`



NO GROUPING
(3 FLEX ITEMS)



GROUPED ITEMS
(2 FLEX ITEMS)

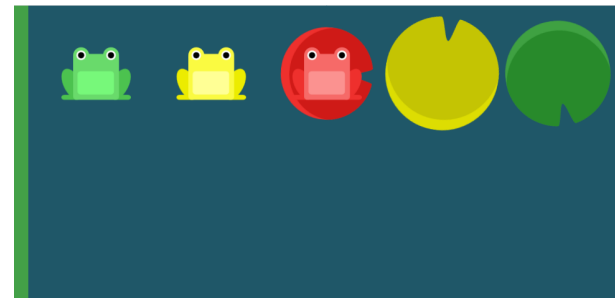


Summary of Flexbox

- `display: flex` to create a flex container
- `justify-content` to define the horizontal alignment of items
- `align-items` to define the vertical alignment of items
- `flex-direction` if you need columns instead of rows
- `row-reverse` or `column-reverse` values to flip item order
- `order` to customize the order of individual elements
- `align-self` to vertically align individual items
- `flex` to create flexible boxes that can stretch and shrink

References for Flexbox

- Interneting is hard flexbox tutorial
 - <https://internetingishard.com/html-and-css/flexbox/>
- A complete guide to flexbox
 - <https://css-tricks.com/snippets/css/a-guide-to-flexbox/>
- W3schools
 - https://www.w3schools.com/css/css3_flexbox.asp
- Flexbox, guida pratica
 - <http://www.html.it/guide/flexbox-guida-pratica/>
- Flexbox Froggy (a game-like tutorial)
 - <http://flexboxfroggy.com/>



Advanced “display”

OTHER LAYOUTS

Property Keywords

- flex, grid, and table are **inside keywords** of the display property
- They specify the element's inner display type
 - The type of formatting context that its contents are laid out in
- The **default** inside keyword is instead flow
 - display: block == display: block flow
 - display: flex == display: block flex
- block and inline are, indeed, **outside keywords**
 - The element role in the flow layout

Two-value syntax

Property Keywords

- Browsers that support the two-value syntax, on finding the inner value only, will set their outer value to **block**
- Browsers that support the two-value syntax, on finding the outer value only, will set the inner value to **flow**

flow-root

- Another inside keyword for the display property
 - not experimental
- The element with this property generates a block element box that establishes a new **block formatting context** (BFC)
- BFC defines *where* the formatting root lies (typically: <html> and floats)
 - The region in which the layout of block boxes occurs and in which floats interact with other elements

flow-root

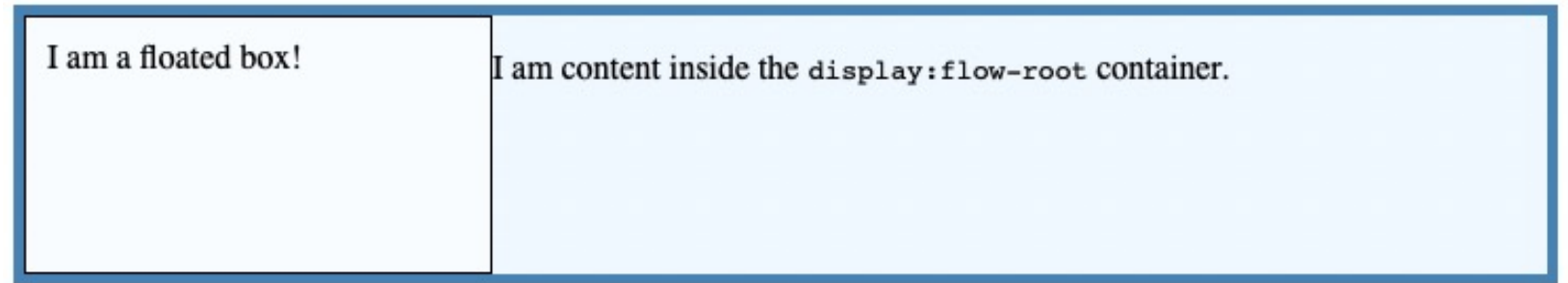
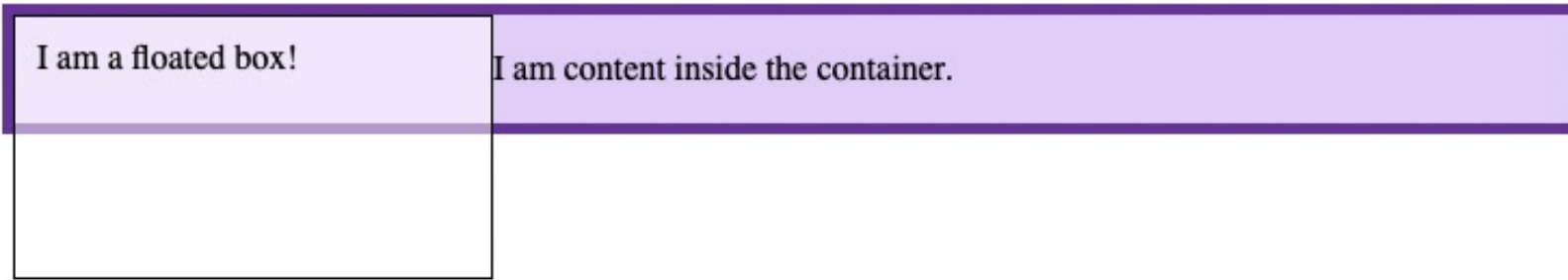
- Two-value syntax
 - `display: block flow-root`
 - `display: inline flow-root`
- Single-value syntax
 - `display: flow-root`
 - `display: inline-block`

Example

```
<section>
  <div class="box">
    <div class="float">I am a floated box!</div>
    <p>I am content inside the container.</p>
  </div>
</section>
<section>
  <div class="box" id="flow-root">
    <div class="float">I am a floated box!</div>
    <p>I am content inside the <code>display:flow-root</code>
container.</p>
  </div>
</section>
```

```
section {
  height: 150px;
}
.box {
  background-color: rgb(224, 206, 247);
  border: 5px solid rebeccapurple;
}
#flow-root {
  display: flow-root;
  background-color: aliceblue;
  border: 5px solid steelblue;
}
.float {
  float: left;
  width: 200px;
  height: 100px;
  background-color: rgba(255, 255, 255, 0.5);
  border: 1px solid black;
  padding: 10px;
}
```

Example



Remember This?

IAW Blog

Tutto su Introduzione alle Applicazioni Web [Login](#)

- [Home](#)
- [Presentazione](#)
- [Contatti](#)

With inline-block

```
<header>
  <div>
    <h1>IAW Blog</h1>
    <h2>Tutto su Introduzione alle Applicazioni Web</h2>
  </div>
  <nav>
    <ul>
      <li><a href="home.html" title="Homepage">Home</a></li>
      <li><a href="presentazione.html" title="Di cosa si
parla">Presentazione</a></li>
      <li><a href="contatti.html" title="Chi sono">Contatti</a></li>
    </ul>
    <a href="login.html" title="Entra nel sito">Login</a>
  </nav>
</header>
```

```
header > div {
  display: inline-block;
}
```

```
header > nav {
  display: inline-block;
}
```

IAW Blog

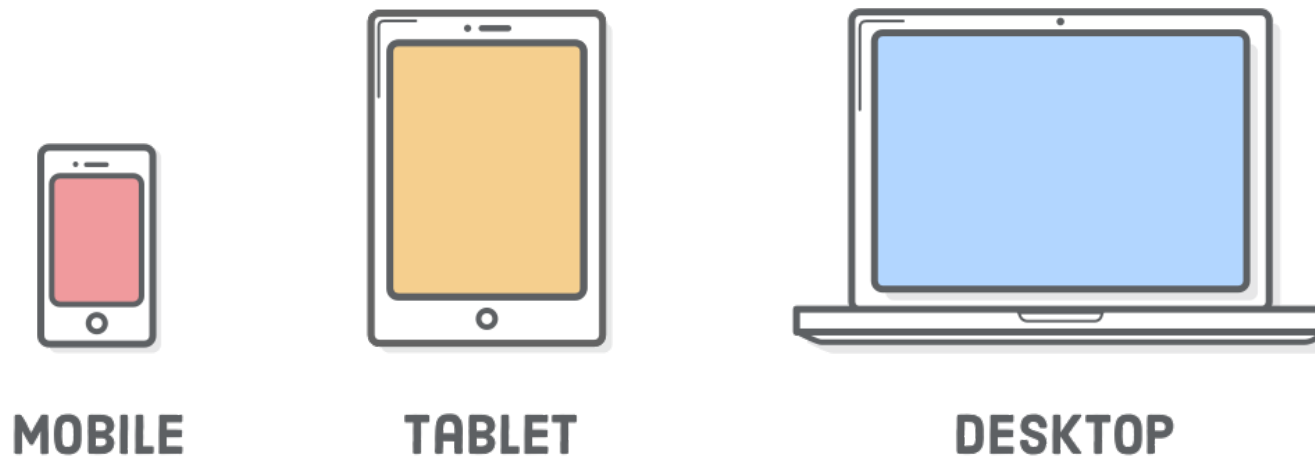
Tutto su Introduzione alle Applicazioni Web [Login](#)

- [Home](#)
- [Presentazione](#)
- [Contatti](#)

RESPONSIVE LAYOUT

Responsive Design

- Display well in everything from widescreen monitors to mobile phones
- Approach to web design to eliminate the distinction between the mobile-friendly version of your website and its desktop counterpart



<https://internetingishard.com/html-and-css/responsive-design/>

Responsive Design

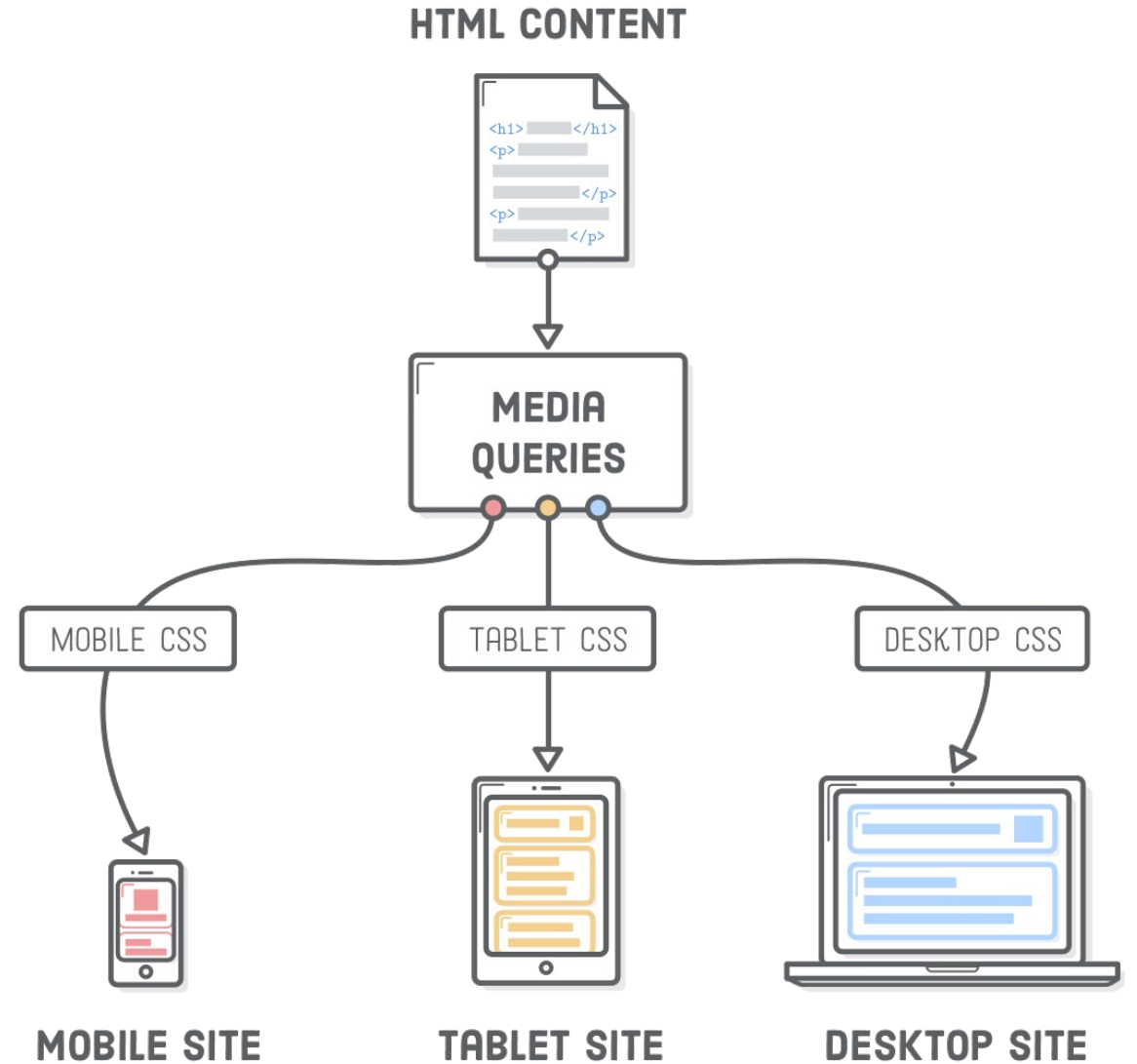
- Responsive design is accomplished through CSS “media queries”
- A way to *conditionally* apply CSS rules

```
@media(min-width:900px){p{color:red;}}
```

Media query announcement

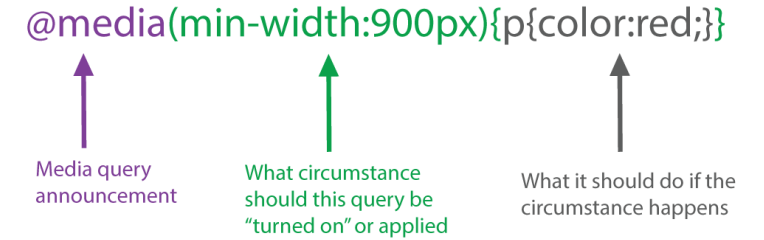
What circumstance should this query be “turned on” or applied

What it should do if the circumstance happens



Media Queries

`@media(min-width:900px){p{color:red;}}`



The diagram illustrates the components of the CSS media query `@media(min-width:900px){p{color:red;}}`. Three arrows point from descriptive text below to specific parts of the code above:

- A purple arrow points from "Media query announcement" to the `@media` prefix.
- A green arrow points from "What circumstance should this query be 'turned on' or applied" to the `(min-width:900px)` condition.
- A black arrow points from "What it should do if the circumstance happens" to the `{p{color:red;}}` block.

- Composed of an (optional) **media type** and any number of **media feature expressions**
- Media type
 - category of device for which the query applies
 - `all` (default), `print`, `screen`
- Media feature
 - specific characteristic of the user agent or output device
 - height, width, orientation, aspect ratio, ...

Combining Media Queries

Mostly use Boolean operators

```
@media (min-width: 30em) and (orientation: landscape) {  
  /* Restrict styles to landscape-oriented devices with  
  a width of at least 30 ems */  
}
```

```
@media (min-height: 680px), screen and (orientation: portrait) {  
  /* Apply the style if the user's device has either a minimum  
  height of 680px or is a screen device in portrait mode */  
}
```

```
@media not screen and (color), print and (color) {  
  /* Apply the style if it's not a colored screen nor a colored printer */  
}
```

Range Syntax for Media Queries (NEW)

You can **now** use `<`, `<=`, `>`, and `>=` to specify width and height

```
@media (min-width: 30em) and (max-width: 50em) {  
  /* ... */  
}
```



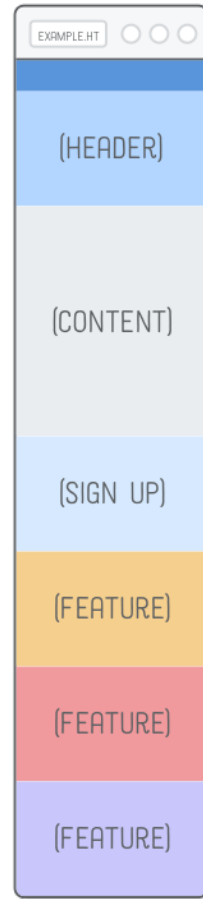
```
@media (30em <= width <= 50em) {  
  /* ... */  
}
```

Beware: compatibility! <https://caniuse.com/>

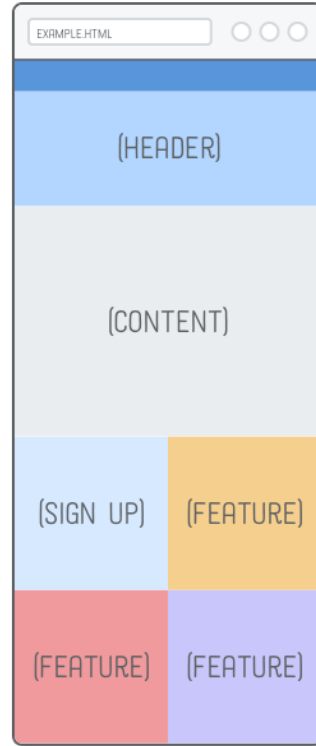
Chrome	Edge [*]	Safari	Firefox	Opera	IE
4-103	12-103		2-62		
104-105	104-105	3.1-15.6	63-104	10-90	6-10
106	106	16.0	105	91	11
107-109		16.1-TP	106-107		

Layout for Responsive Design

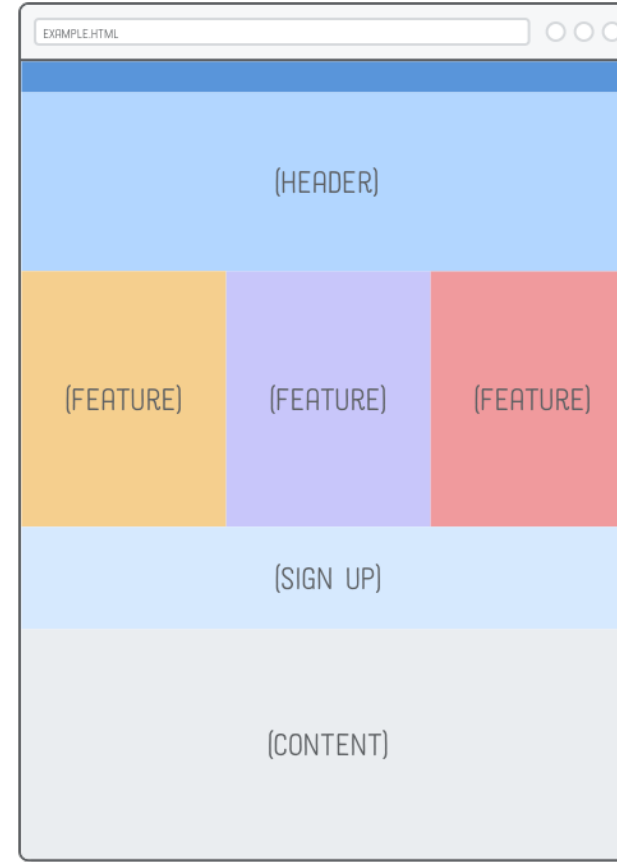
MOBILE



TABLET

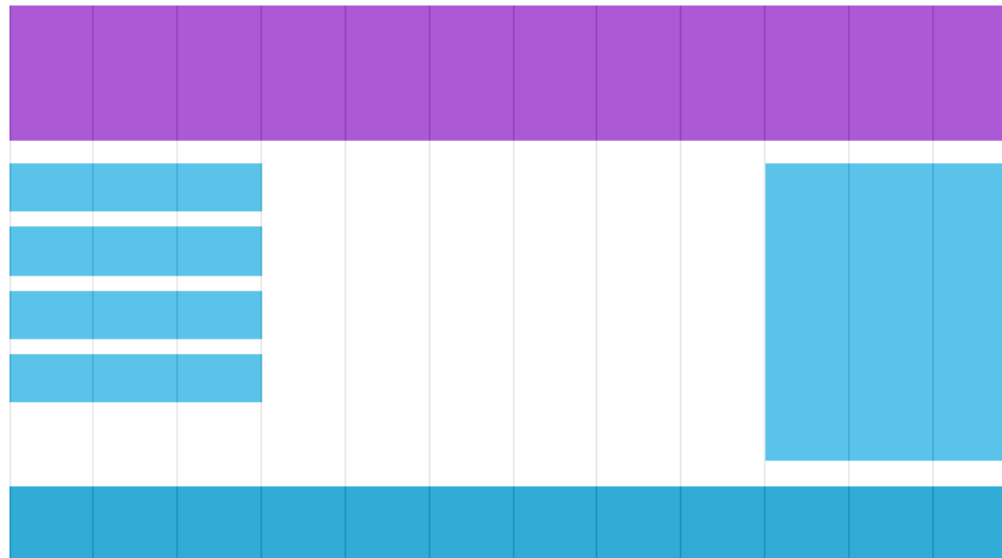


DESKTOP



Grid-view

- Many web pages are based on a [grid-view](#), i.e., the page is divided into columns
- A responsive grid-view often has 12 columns, a total width of 100%, and will shrink and expand as you resize the browser window



CSS Frameworks

- Set of templates to simplify web development
- Example: Bootstrap
 - Open-Source CSS (and JavaScript) framework
 - Allows applying “modern” styles with sensible and nice-looking defaults
 - Many ready-to-use UI elements (e.g., buttons, menus, tabs, collapsible items, etc.)
 - Takes care of cross-browser issues
 - Simplified layout model
 - Developed by Twitter
 - <https://getbootstrap.com>

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