

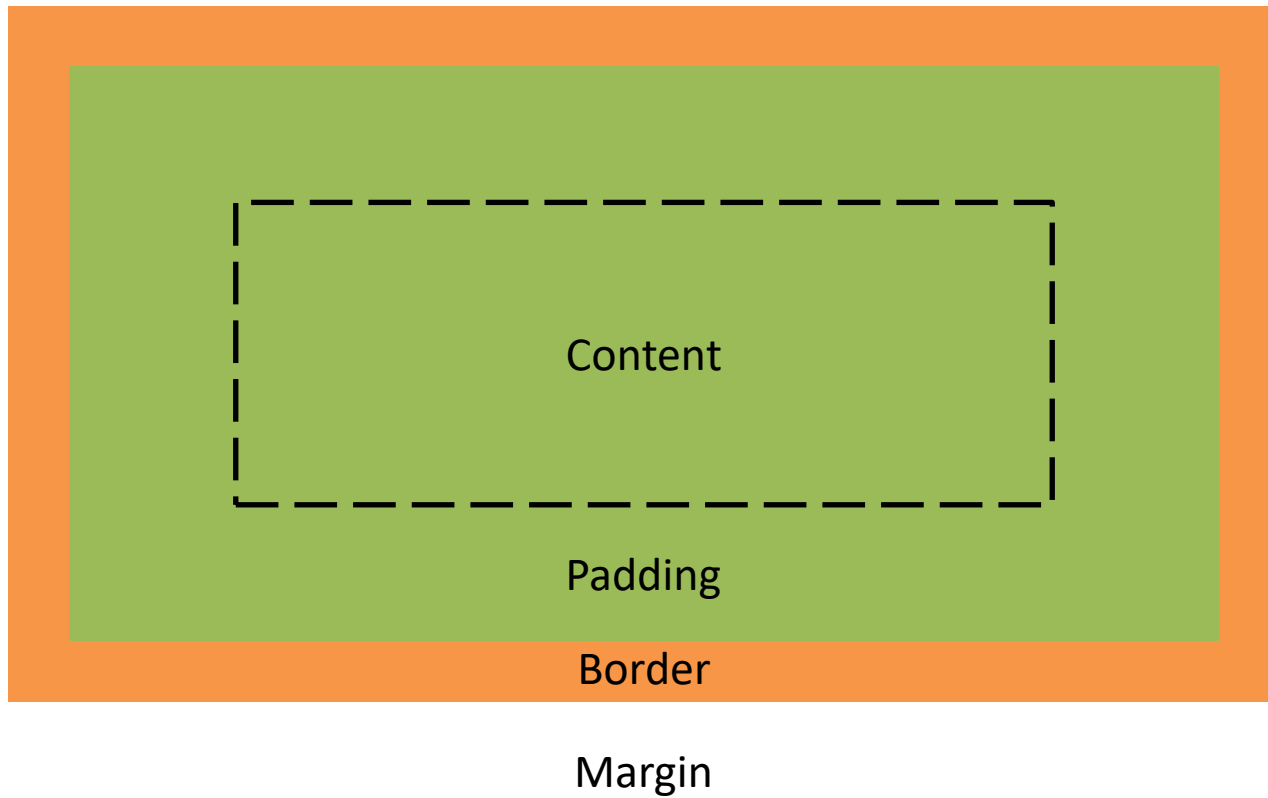
Responsive design

Laboratory

Outline

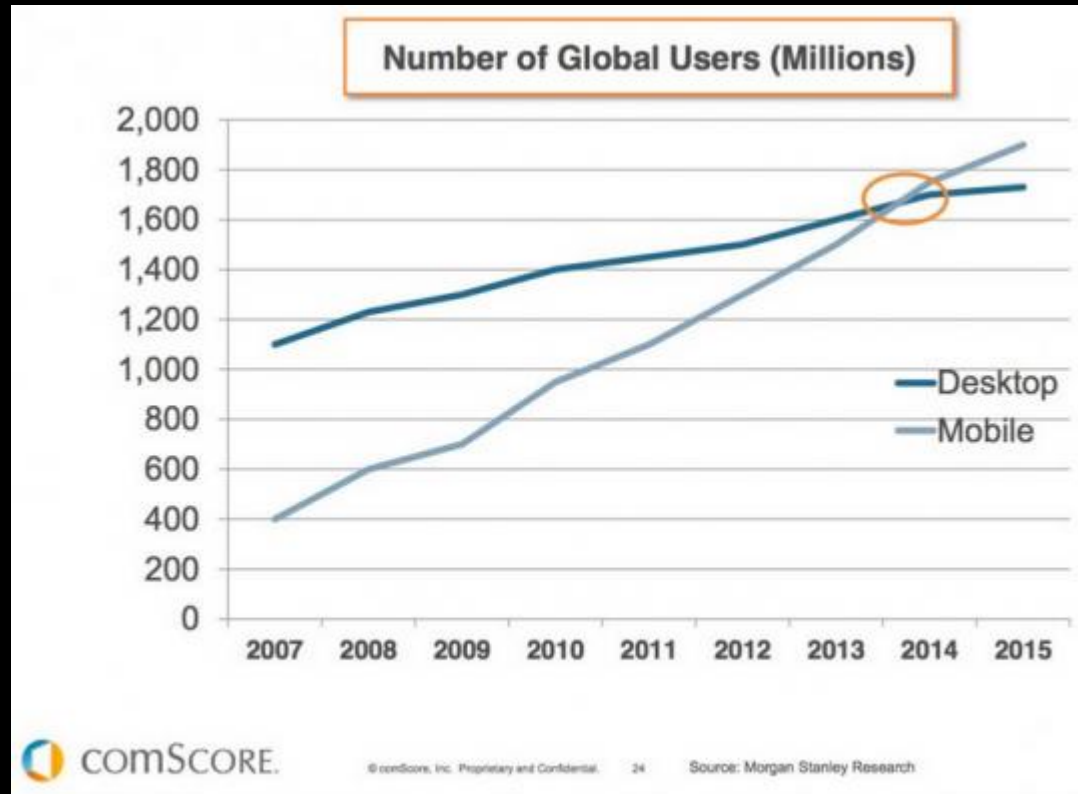
- Quick CSS recap
- Responsive design
- CSS frameworks
- Scss
- Additional issues

Box model



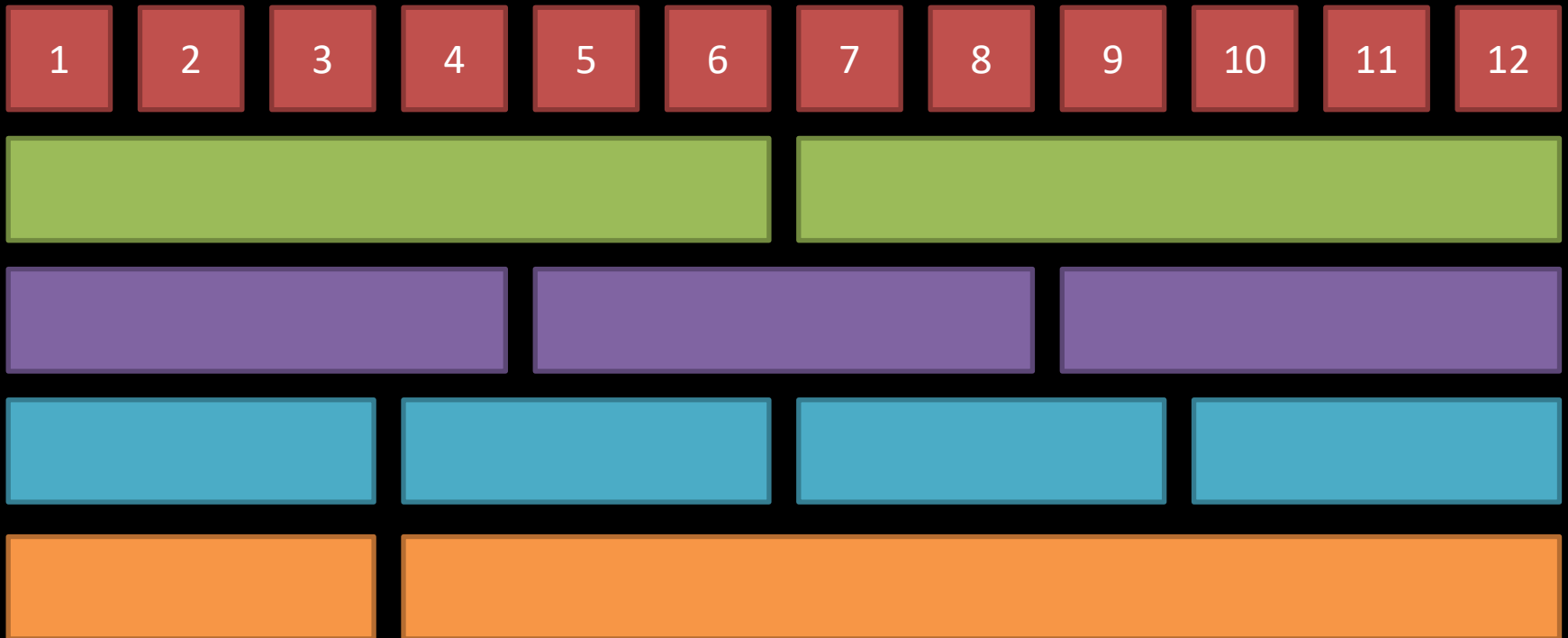
Demo

Web browsing paradigm shift





Responsive grid



@media

```
/* Mobile */
@media only screen and (max-width: 767px) {
    main { width: 100%; }
}

/* Tablet */
@media only screen and (min-width: 768px) and (max-width: 1023px) {
    main { width: 91.6%; }
}

/* Desktop */
@media only screen and (min-width: 1024px) {
    main { width: 66.6%; }
}
```


Screen width reset

```
<head>  
  <meta charset="utf-8">  
  <meta name="viewport" content="width=device-width, initial-scale=1.0">  
  ...  
</head>
```

CSS frameworks

- Bootstrap
- Foundation
- Material Framework
- Materialize
- <https://colorlib.com/wp/free-css3-frameworks/>

Bootstrap – example

	Extra small devices Phones (<768px)	Small devices Tablets (≥768px)	Medium devices Desktops (≥992px)	Large devices Desktops (≥1200px)
Grid behavior	Horizontal at all times	Collapsed to start, horizontal above breakpoints		
Container width	None (auto)	750px	970px	1170px
Class prefix	.col-xs-	.col-sm-	.col-md-	.col-lg-
# of columns	12			
Column width	Auto	~62px	~81px	~97px

Sass

Installation

<https://sass-lang.com/install>

Compilation

```
sass style.scss style.css
```

Automatic compilation

```
sass --watch style.scss:style.css
```

Automatic compilation and compression

```
sass --watch style.scss:style.css --style compressed
```

Sass

Variables

```
$tablet-width: 100%;  
$desktop-width: 91.6%;  
  
/* Mobile */  
@media only screen and (max-width: 767px) {  
    main { width: $tablet-width; }  
}  
  
/* Tablet */  
@media only screen and (min-width: 768px) and (max-width: 1023px) {  
    main { width: $desktop-width; }  
}
```

Sass

Nesting

```
table.subjects {
  width: 100%;
  border-top: 1px solid $main-color;
  border-bottom: 1px solid $main-color;

  a {
    color: black;
  }

  tr:nth-child(even) {
    background-color: $background-color;
  }

  &:hover {
    cursor: crosshair;
  }
}
```

Sass

Stylesheet import

```
/* _reset.scss */

html, body {
  margin: 0;
  padding: 0;
}

/* style.scss */

@import 'reset';

* {
  box-sizing: border-box;
  font-family: "Lucida Sans", Verdana, sans-serif;
}
```

Sass

Inheritance

```
.error {  
  border: 1px solid #f00;  
  background-color: #fdd;  
}  
  
.seriousError {  
  @extend .error;  
  border-width: 3px;  
}
```


Sass

Operators

```
$no-menu-items: 5;

/* Mobile */
@media only screen and (max-width: 767px) {
  .menu-item { width: 100%; }
}

/* Tablet */
@media only screen and (min-width: 768px) and (max-width: 1023px) {
  .menu-item { width: 100% / $no-menu-items; }
}
```

Browser-sync

Installation

```
npm install -g browser-sync
```

Listener

```
browser-sync start --server --directory --files "**/*"
```

To read

- <https://css-tricks.com/> (flexbox, grid)
- Google Material Design
- Content Delivery Network
- WCAG 2.0
- Technology radar
<https://www.thoughtworks.com/radar>
- <https://flexboxfroggy.com/>
- <https://cssgridgarden.com/>