

Enhancing the User Interface

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CSS Standards

- Sass
- Flexbox / CSS Grid

UI Frameworks

- Bootstrap
- Office UI Fabric

Modern UI

- Customization Options
- Site Theming
- View / Column Formatting

CSS Standards

What is Responsive Web Design

- Responsive Websites respond to their environment.
- RWD is a process of designing a single website to be used and compatible on
 - different portable or handy electronic devices
 - with different Screen size , platform and orientation
- Uses fluid grids and layout technology
 - Flexbox
 - CSS Grid

Common Devices

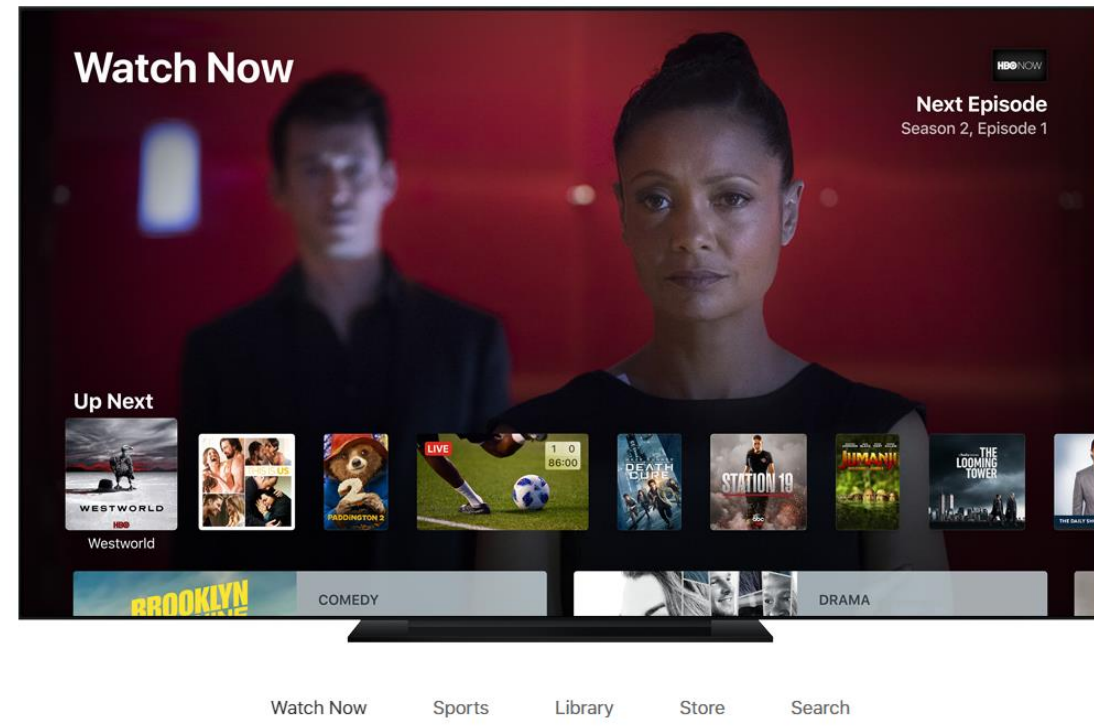
TV & Widescreens -> Apple TV, Firestick

Laptops, Mini Laptops

iPad / Tablets

Mini Tablets

Smartphones



Elements of RWD

- Fluid & Flexible Layouts

Use percentages instead of fixed widths

- Flexible Images

Size Images with dynamic resizing

- Media Queries

Assign certain styles for certain sizes

CSS Units

Absolute and Relative Lengths available

For Responsive Design use Relative Units as much as possible

Unit	Description		
em	Relative to the font-size of the element (2em means 2 times the size of the current font)		
ex	Relative to the x-height of the current font (rarely used)		
ch	Relative to width of the "0" (zero)		
rem	Relative to font-size of the root element		
vw	Relative to 1% of the width of the viewport*	Unit	Description
vh	Relative to 1% of the height of the viewport*	cm	centimeters
vmin	Relative to 1% of viewport's* smaller dimension	mm	millimeters
vmax	Relative to 1% of viewport's* larger dimension	in	inches (1in = 96px = 2.54cm)
%	Relative to the parent element	px *	pixels (1px = 1/96th of 1in)
		pt	points (1pt = 1/72 of 1in)
		pc	picas (1pc = 12 pt)

Using Sass

Syntactically Awesome Style Sheets

Sass is a CSS Preprocessor

Two Syntax versions

- Sass
- Scss – Sassy CSS -> most modern projects use this syntax



Features:

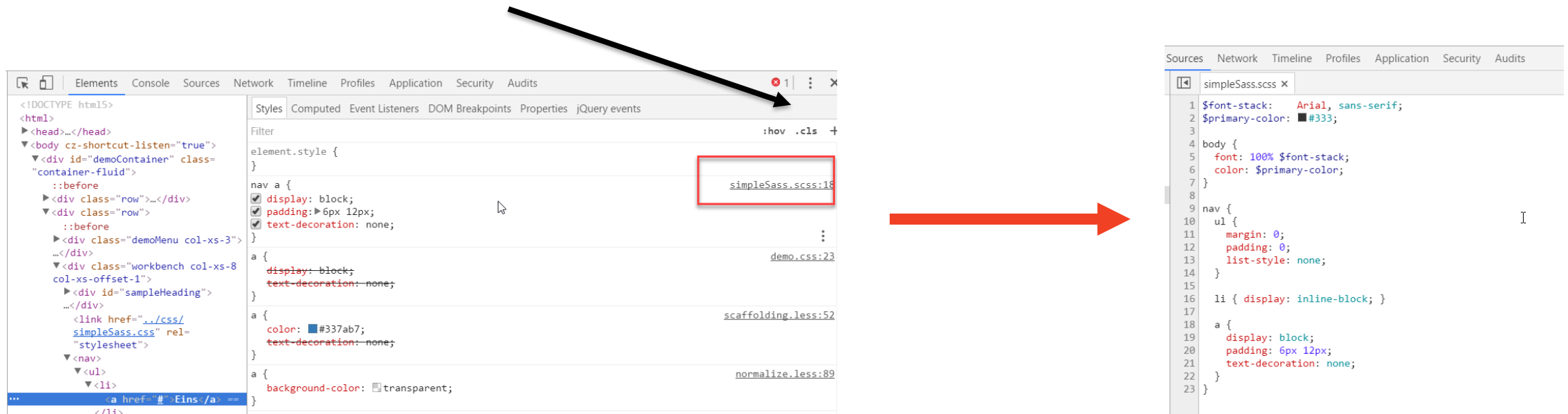
- CSS compatible
- Support Variables & Nesting
- Partials / Import
- Mixins

Source Maps

Sources maps allow debugging *.sass Files instead of *.css

Enable CSS Source Maps in Chrome

- Developer Tools – Open Menu – Settings - Sources – Enable & Auto Reload



Variables & Nesting

Allows definition of Variables using \$

Support Nesting of Classes



```
$primary-color: #32333;  
$margin: 0;  
$padding: 8px;  
  
body {  
  color: $primary-color;  
}
```

```
nav {  
  ul {  
    margin: $margin;  
    padding: $margin;  
    list-style: none;  
  }  
  
  a {  
    display: block;  
    padding: $padding;  
    text-decoration: none;  
  }  
}
```

Partials / Import

Partials allow split of large CSS into smaller chunks

Import allows consumption of Partials

```
// _reset.scss
```

```
html,  
body,  
ul,  
ol {  
  margin: 0;  
  padding: 0;  
}
```



```
// base.scss
```

```
@import 'reset';  
  
body {  
  font: 100% Helvetica, sans-serif;  
  background-color: #efefef;  
}
```

Mixin's

A mixin lets you make groups of CSS declarations that you want to reuse

Mixins can accept Parameters

```
@mixin big-font{
  font-size: 18px
}

@mixin box{
  padding: 10px;
  margin: 10px;
}

.sectionPanelBlue{
  @include big-font();
  @include box();
  background-color: lightblue;
}
```

```
@mixin grid($flex) {
  @if $flex {
    @include flex;
  } @else {
    display: block;
  }
}
```

Flexbox

What is Flexbox

Flexbox is a layout mode used responsive websites, that provides for a better arrangement of all of the page elements that behave in a predictable mode.

„Replacement“ for Bootstrap Grid System

- Why replace Bootstrap? Maybe you want to get rid of jQuery!

Googles implementation Angular Flex Layout

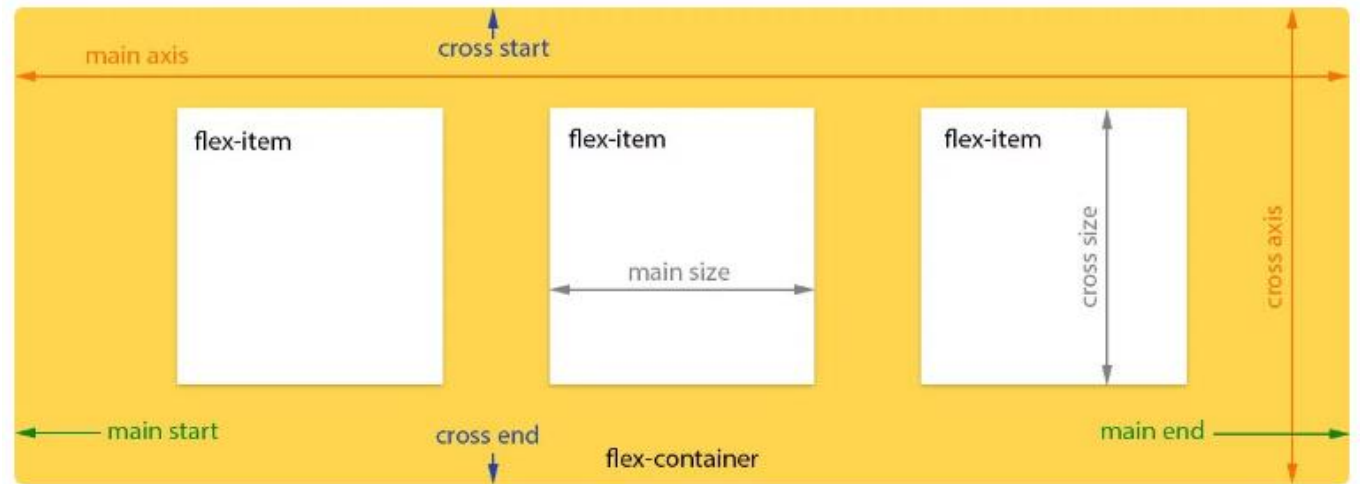
@ https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Flexible_Box_Layout/Basic_Concepts_of_Flexbox

Flexbox Basic Terms

The flex layout is constituted of parent container referred as *flex container*

Its immediate children which are called *flex items*

Visual Guide @ <https://css-tricks.com/snippets/css/a-guide-to-flexbox/>



Properties for Container

Use following Styles to Format the Container

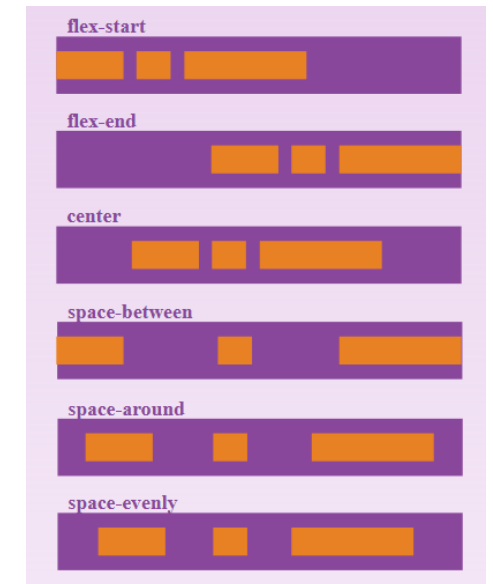
`display: flex | inline-flex`

`justify-content: flex-start | flex-end | center | space-between | space-around | space-evenly;`

`flex-direction: row | row-reverse | column | column-reverse;`

`flex-wrap: nowrap | wrap | wrap-reverse;`

`flex-flow: shorthand flex-direction and flex-wrap`



Properties for Item

Use following Styles to Format the Item

order: <integer>; /* default is 0 */

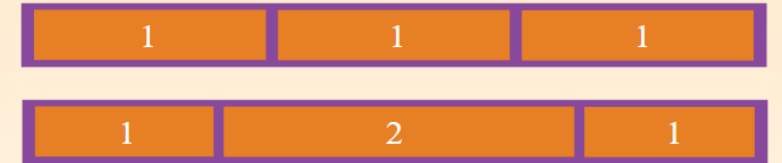
flex-grow: <number>; /* default 0 */

flex-shrink: <number>; /* default 1 */

flex-basis: <length> | auto; /* default auto */

flex: shorthand for flex-grow, flex-shrink and flex-basis

#flex-grow



flex none | [<'flex-grow'> <'flex-shrink'>? | <'flex-basis'>]

Browser Compatibility

Supported by all newer Browsers

Source: <https://caniuse.com/#feat=flexbox>

Vendor prefixing to support the most browsers possible

IE	Edge *	Firefox	Chrome	Safari	iOS Safari *	Opera Mini *	Chrome for Android
			49				
			61		9.3		
			62		10.2		
	15	57	63	10.1	10.3		
11	16	58	64	11	11.2	all	64

```
SCSS

@mixin flexbox() {
  display: -webkit-box;
  display: -moz-box;
  display: -ms-flexbox;
  display: -webkit-flex;
  display: flex;
}

@mixin flex($values) {
  -webkit-box-flex: $values;
  -moz-box-flex: $values;
  -webkit-flex: $values;
  -ms-flex: $values;
  flex: $values;
}

@mixin order($val) {
  -webkit-box-ordinal-group: $val;
  -moz-box-ordinal-group: $val;
  -ms-flex-order: $val;
  -webkit-order: $val;
  order: $val;
}
```

Responsive Flexbox

Responsive Flexbox is achieved using Media Queries

Used to change:

- flow-direction, visibility, scaling, ...

```
<article>  
  <div>Main Content in center in  
  wide screen, first in narrow  
  screen  
</div>  
  <aside>Left side in wide screen,  
  after content in narrow screen  
</aside>  
  <footer>Right side in wide screen,  
  button in narrow screen  
</footer>  
</article>
```

Demo: Flexbox Media Query - Component:

Left side in wide screen, after content in narrow screen	Main Content in center in wide screen, first in narrow screen	Right side in wide screen, button in narrow screen
--	---	--

```
@media screen and (min-width: 600px){  
  article {  
    flex-direction: row;  
  }  
  
  article > * {  
    flex: 1;  
  }  
  
  aside {  
    order: -1;  
  }  
  
  article > div {  
    flex: 3;  
  }  
  
  footer {  
    background-color: #ccc;  
  }  
}  
  
@media screen and (max-width: 600px){  
  article {  
    flex-direction: column;  
  }  
}
```

CSS Grid

What is CSS Grid

CSS Grid Layout is the most powerful layout system available in CSS

It is a 2-dimensional system, meaning it can handle both columns and rows

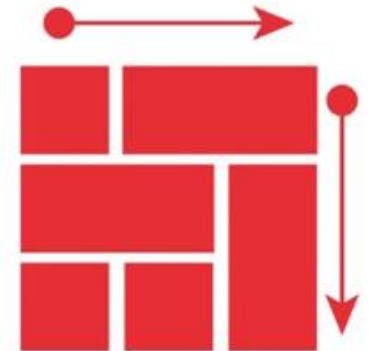
- Allows Cell- / Row-Span

Works well together with Flexbox

- CSS Grid: Base Layout
- Flexbox: Row or Column



Flexbox
ONE DIMENSION



CSS Grids
TWO DIMENSIONS

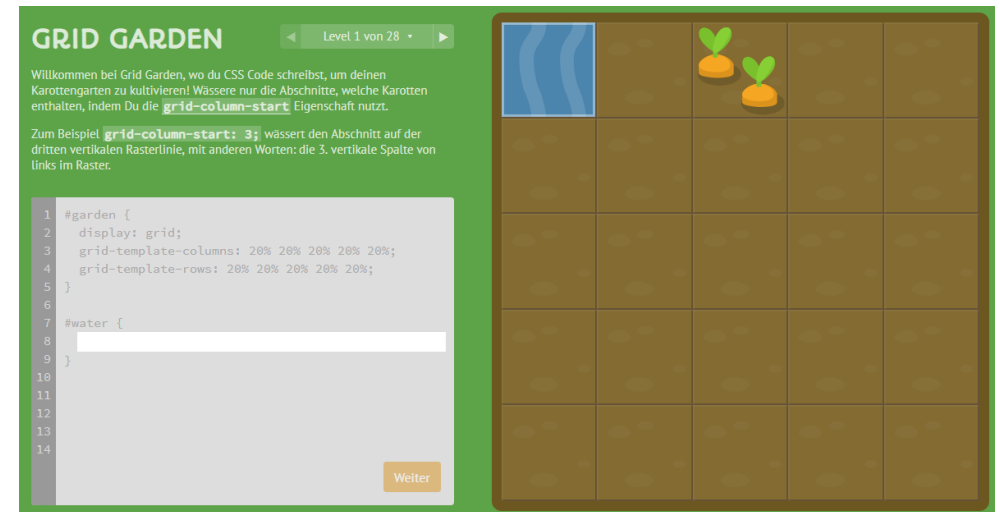
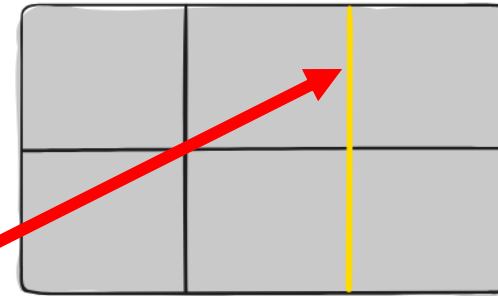
Gettings Started

Similar to Flexbox: Use „display:grid“

Important Terms:

- Grid Container
- Grid Item, Row Column
- Grid Line – use for Col & Row Span
- Grid Cell, Grid Gutter

Supports Sub-Grids



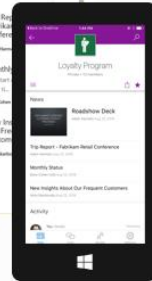
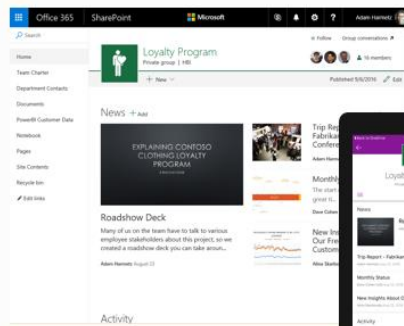
Modern UI

SharePoint: Mobile and Intelligent Intranet



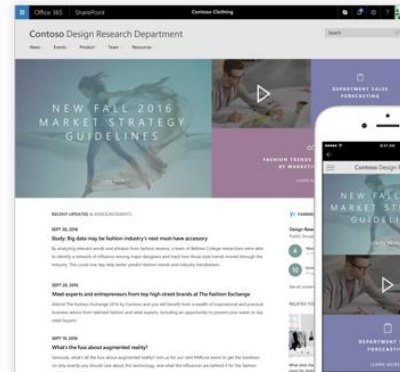
Native mobile experiences

Team Sites



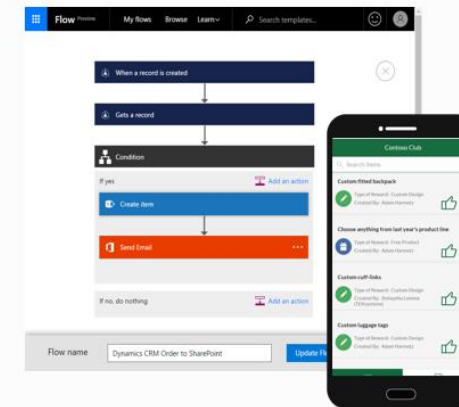
+

Portals & Publishing



+

Business Apps



Office 365 Groups



Microsoft Graph



SharePoint Framework



Security & Compliance

Hybrid



Modern sites – Site Contents page

The screenshot shows the SharePoint Modern Site Contents page for a site named "Development". The top navigation bar includes "Office 365", "SharePoint", and the "contentandcode" logo. The left sidebar contains a search bar and a list of site sections: Home, Shared Documents, Notebook, Code repository, Starter template, Development Standards, Site Pages, Calendar, Site Contents (selected), and Recycle bin. The main content area features a header with a site icon (a black square with white text: ".ninja { color: black; visibility: hidden; }"), the site name "Development", and a "+ New" button. Below the header, there are three main sections: "Site visits" showing 6 views in the last 7 days with a "View report" link; "Trending content" listing four items with their view counts and "View report" links; and "Tips" with an illustration and the text "Make it your own" and "Go to homepage". At the bottom, there are tabs for "Contents" (selected) and "Subsites", and a "Feedback" button.

Office 365 | SharePoint | contentandcode

Search

Home

Shared Documents

Notebook

Code repository

Starter template

Development Standards

Site Pages

Calendar

Site Contents

Recycle bin

Return to classic SharePoint

Development

+ New

Site workflows | Site settings | Recycle bin (0)

Site visits View report

6 views in the last 7 days

Trending content View report

	Provision taxonomy terms with Pow.. Chris OBrien modified 6/13/2013	2 views
	Home.aspx Chris OBrien modified 10/3/2014	1 view
	Content and Code - Product specifi.. Chris OBrien modified 4/2/2013	1 view
	Logging and Error Handling Best Pr.. Chris OBrien modified 5/31/2013	1 view

Tips Show next

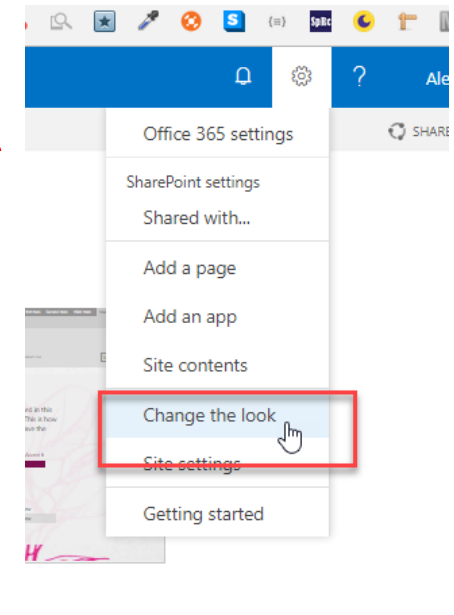
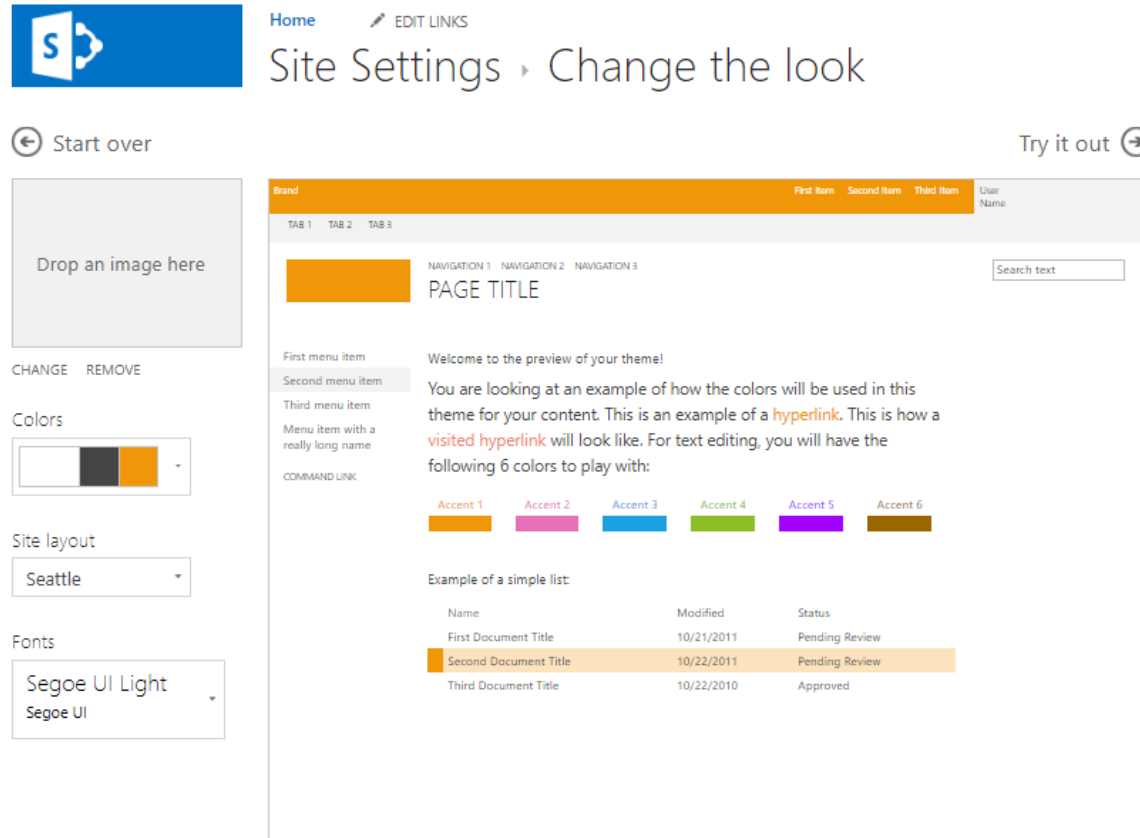
Make it your own
Customize your homepage and highlight content and data using web parts.
[Go to homepage](#)

Contents Subsites

Name	Type	Items	Modified
------	------	-------	----------

Feedback

Modern UI Themes



What is a modern Theme

Consists of

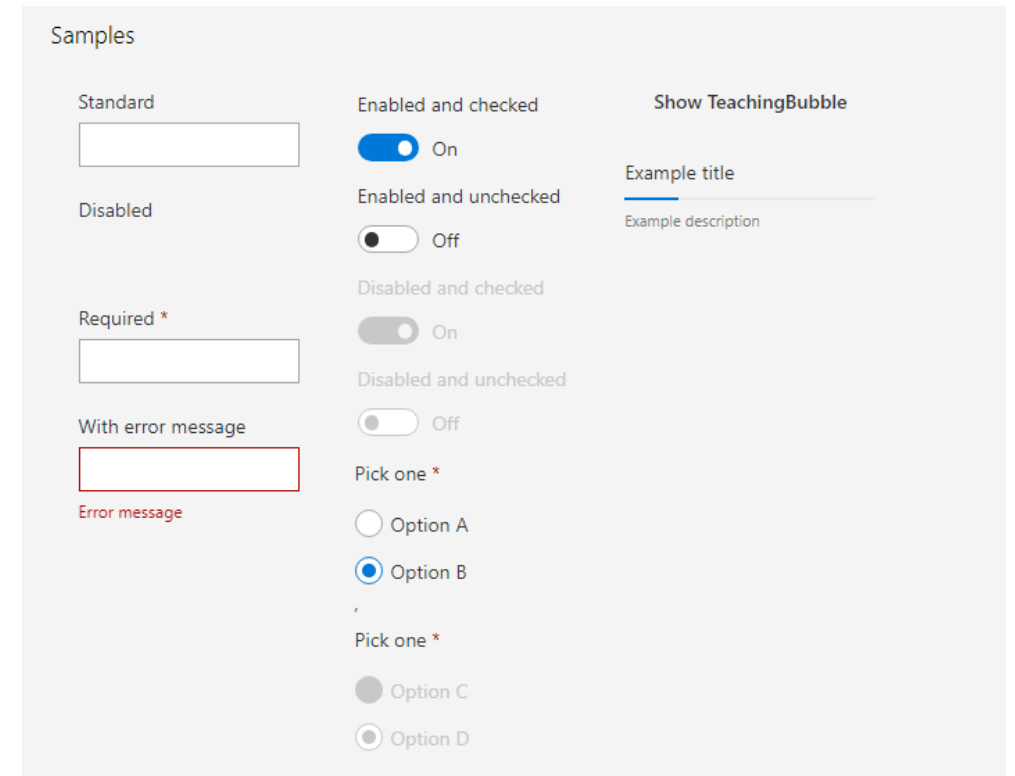
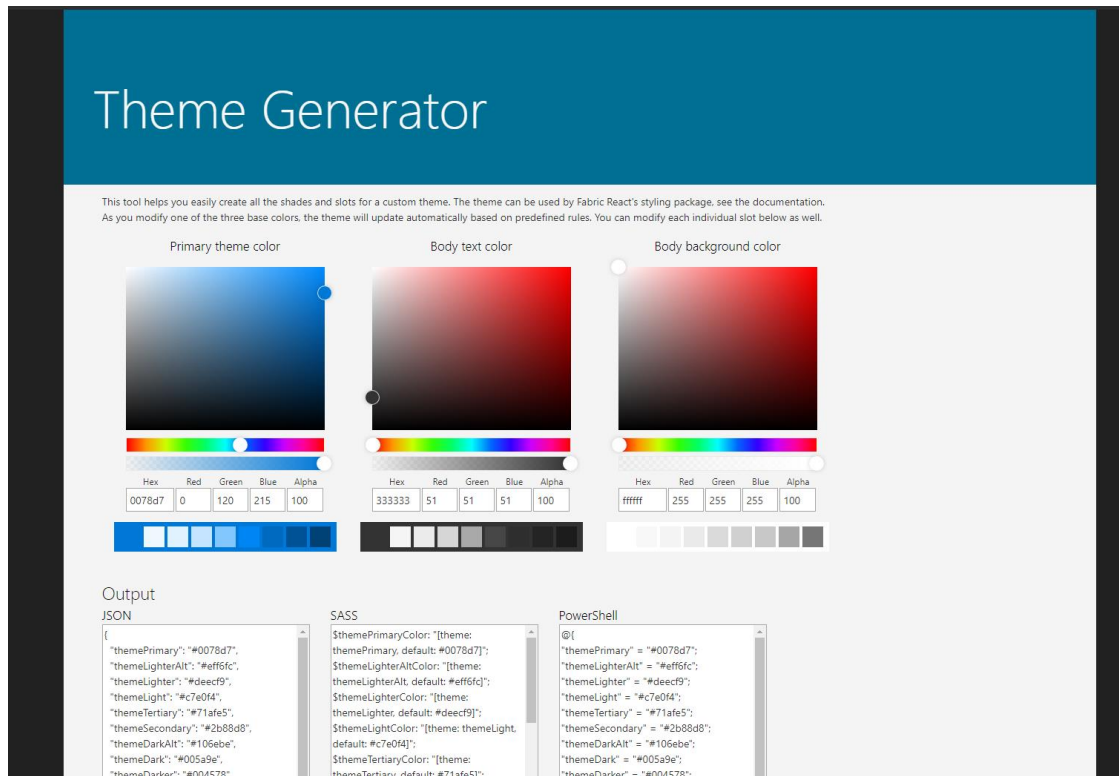
- name
- isInverted
- backgroundImageUri
- theme

Schema persisted as JSON

```
{
  name: 'Blue',
  isInverted: true,
  backgroundImageUri: '',
  theme: {
    themePrimary: "#00bcf2",
    themeLighterAlt: "#00090c",
    themeLighter: "#001318",
    themeLight: "#002630",
    themeTertiary: "#005066",
    themeSecondary: "#00abda",
    themeDarkAlt: "#0ecbff",
    themeDark: "#44d6ff",
    themeDarker: "#6cdfff",
    neutralLighterAlt: "#2e3340",
    neutralLighter: "#353a49",
    neutralLight: "#404759",
    neutralQuaternaryAlt: "#474e62",
    neutralQuaternary: "#4c546a",
    neutralTertiaryAlt: "#646e8a",
    neutralTertiary: "#686e8a"
  }
}
```

Theme Generator

Allows easy generation of SharePoint Themes



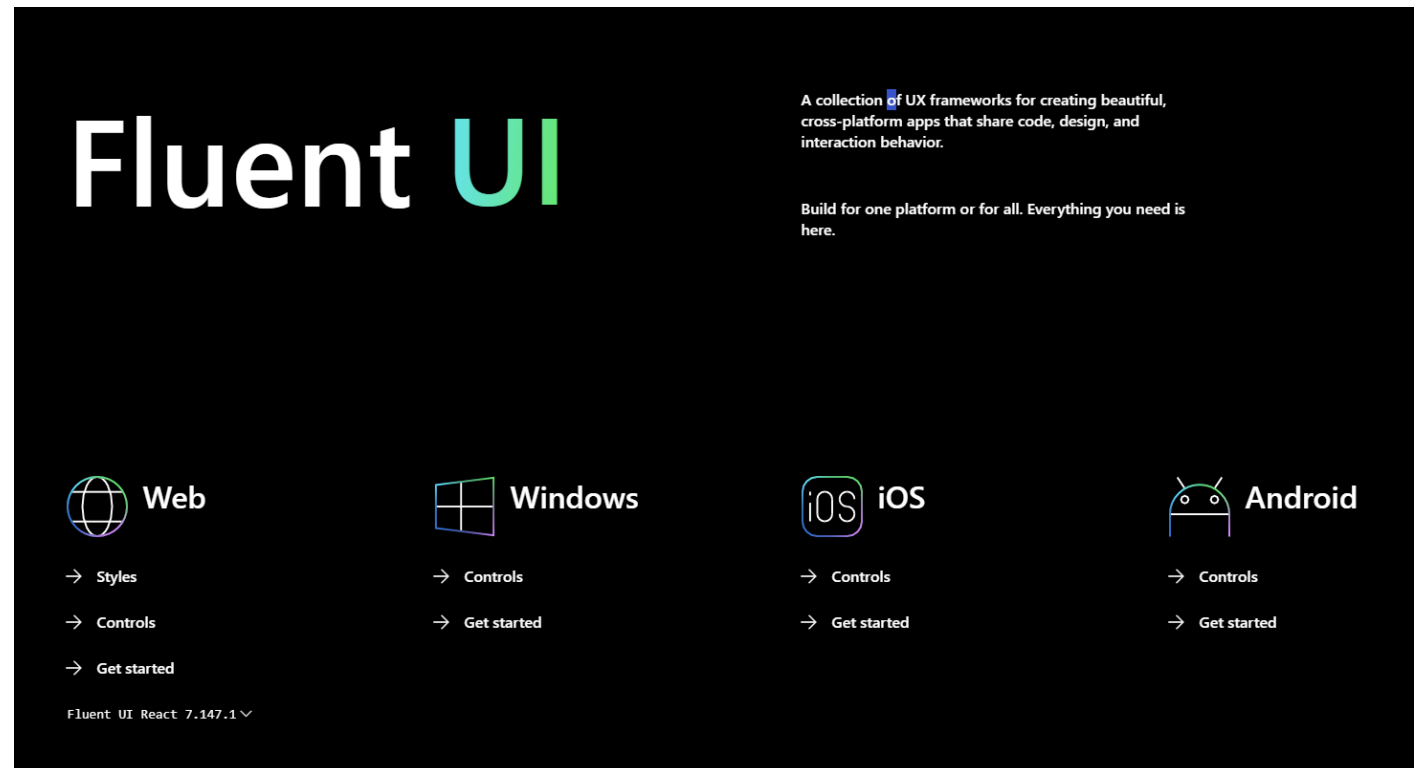
Fluent UI a.k.a Office UI Fabric

Available on any Device

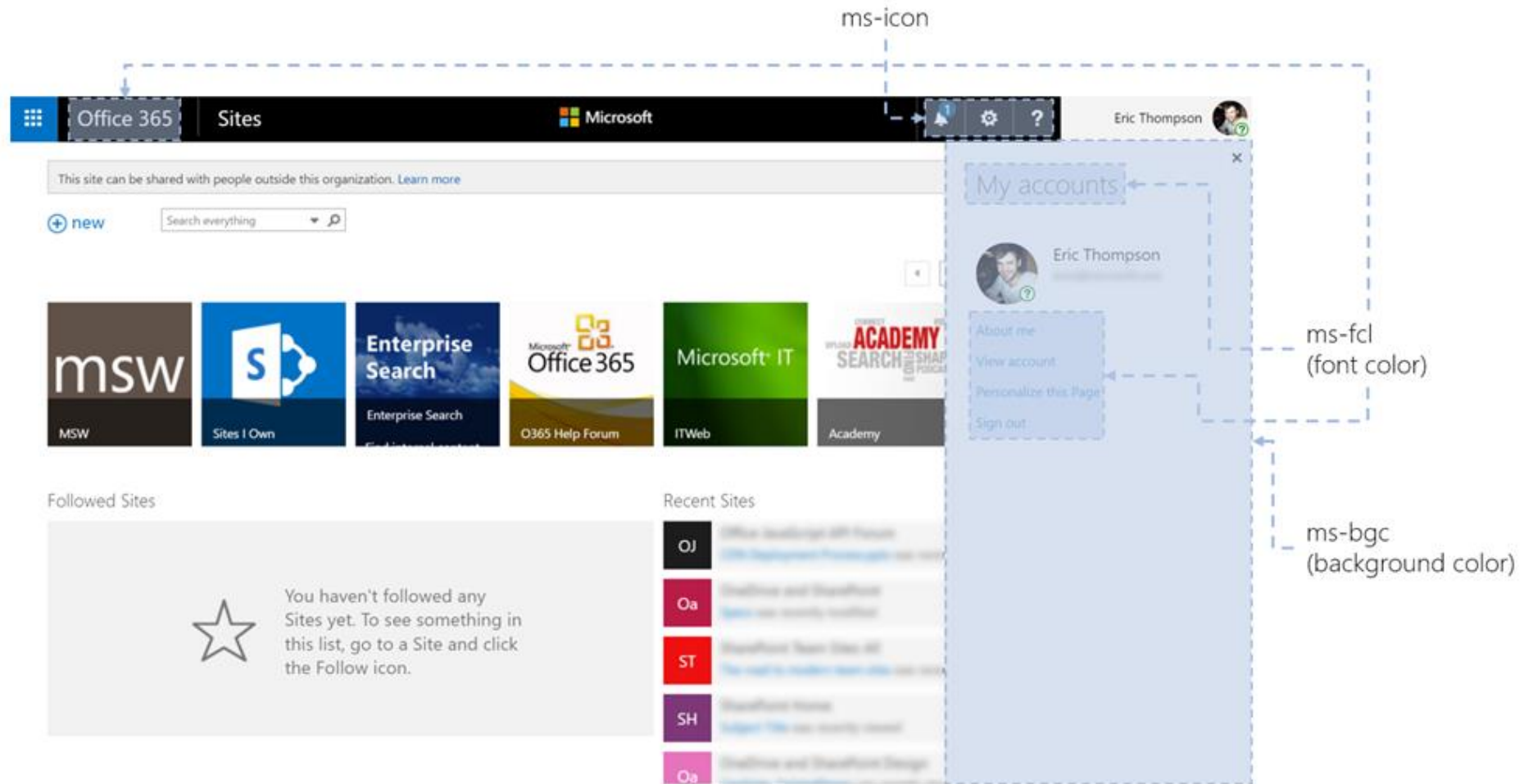
Documentation @ <https://developer.microsoft.com/en-us/fluentui#/>

Consists of:

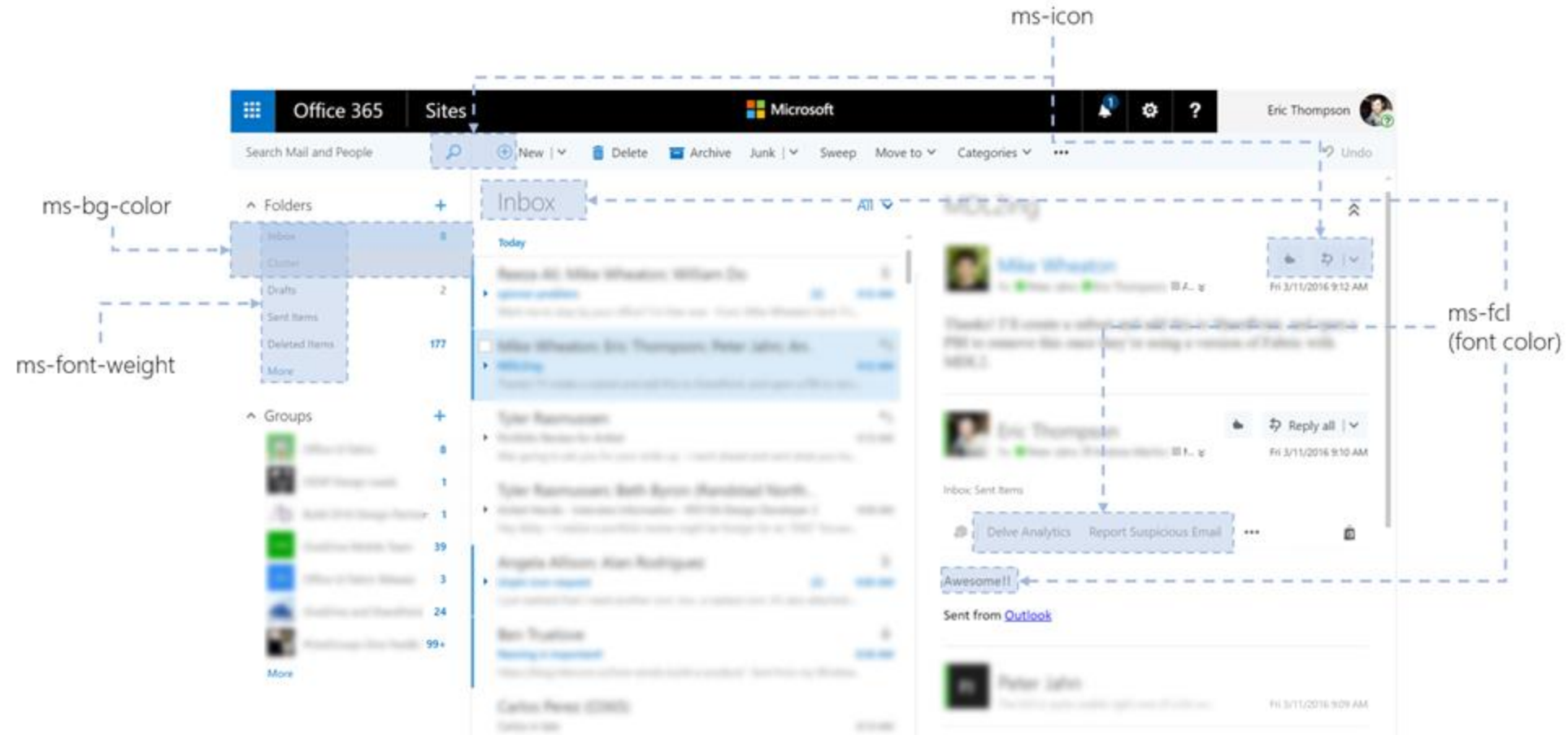
- Styles
- Typography
- Iconography
- Controls



Microsoft 365 Chrome



Outlook Web App



OneDrive

The screenshot shows the OneDrive web interface. Annotations include:

- ms-bg-color**: Points to the left sidebar.
- ms-ContextualMenu**: Points to the 'New' dropdown menu.
- ms-font (size)**: Points to the 'Size' column header in the file list.

The file list is as follows:

Name	Date modified	Sharing	Size
Design Development	7/15/2015	Can edit	2.29 MB
Notes	7/17/2015	Can edit	2.23 GB
Learning Checkpoints	7/15/2015	Can edit	404.99 MB
Research	7/15/2015	Can edit	2.2 GB
Teamwork	7/15/2015	Can edit	214.14 MB
Tools	7/15/2015	Can edit	971.03 MB
Health and Innovation Design	7/15/2015	Can edit	530.53 MB
WFLS Learning Engineering	8/18/2015	Can edit	24.54 MB
Online Design	7/17/2015	Can edit	35.79 GB
Online Marketing Design	10/15/2015	Can edit	4.66 GB
Brand Experience Design	7/15/2015	Can edit	12.04 GB
DesignFront Design	7/15/2015	Can edit	26.44 GB

Responsive Layout

Fabric Core comes with a mobile-first, 12-column, responsive grid that you can use to create flexible layouts for a variety of screen sizes and device types.

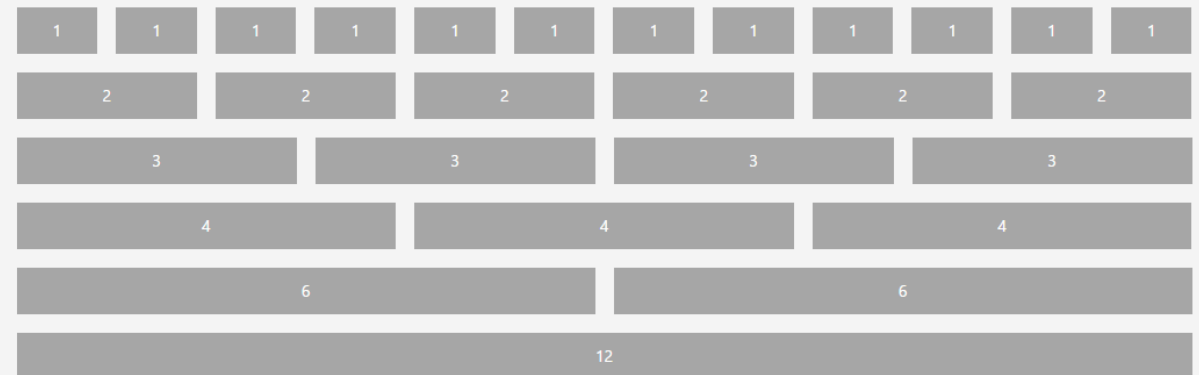
Breakpoints

The grid and utilities use this common set of six breakpoints.

Breakpoint	Range
small	320px - 479px
medium	480px - 639px
large	640px - 1023px
extra large	1024px - 1365px
extra extra large	1366px - 1919px
extra extra extra large	1920px and up

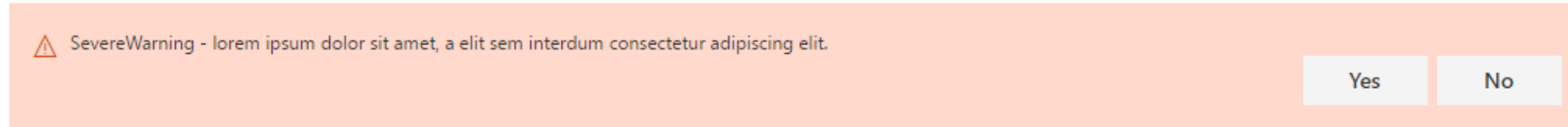
Grid

Fabric comes with a mobile-first, 12-column, responsive grid that you can use to create flexible layouts for a variety of screen sizes and device types.



All the „Controls“ you need

SevereWarning MessageBar - multiline (default)



ContextMenu beak/direction test

[Show code](#)

☒ Show beak

Gap Space
 13

Beak Width
 10

Directional hint

- Bottom Left Edge
- Top Left Edge
- Top Center
- Top Right Edge
- Top Auto Edge
- Bottom Left Edge

Hide context menu

- + New
- ↑ Upload
- Rename
- Share
- Print

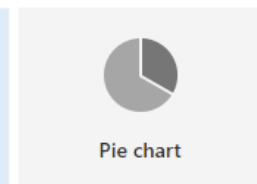
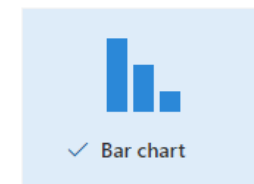
[Show code](#)

ChoiceGroups

Pick one *

- ☐ Option A
- ☒ Option B
- ☐ Option C
- ☐ Option D

Pick one image



Office UI Fabric JS

Used for Angular Styling

- Published @ <https://dev.office.com/fabric-js/>

Documentation @ <https://github.com/OfficeDev/office-ui-fabric-js>

Lots of codepens @ <https://codepen.io/andrewconnell/pens/public/>

Add References to your project

```
<!--Office UI Fabric-->  
<link rel="stylesheet" href="https://.../css/fabric.min.css">  
<link rel="stylesheet" href="https://.../css/fabric.components.min.css">  
<script src="https://.../js/fabric.min.js"></script>
```