* [BIT 175 - 1580](https://cascadia.instructure.com/courses/1582972)
* [Pages](https://cascadia.instructure.com/courses/1582972/pages)

Spring 2018

* [Home](https://cascadia.instructure.com/courses/1582972)
* [Assignments](https://cascadia.instructure.com/courses/1582972/assignments)
* [Pages](https://cascadia.instructure.com/courses/1582972/wiki)
* [Grades](https://cascadia.instructure.com/courses/1582972/grades)
* [Outcomes](https://cascadia.instructure.com/courses/1582972/outcomes)
* [People](https://cascadia.instructure.com/courses/1582972/users)
* [Discussions](https://cascadia.instructure.com/courses/1582972/discussion_topics)

Front Page

**Resource WIKI**

Use this page to list links to valuable resources related to developing interactive, web-based, multimedia applications. Anyone registered in the course can edit it, so PLEASE BE CAREFUL to not erase content from others. Please categorize items using headings and make each resource its own paragraph.

**Responsive Web Design**

[Responsive Design Overview (Links to an external site.)Links to an external site.](https://developers.google.com/web/fundamentals/design-and-ux/responsive/) - A general introduction by Google

[Responsive Images Overview (Links to an external site.)Links to an external site.](https://alistapart.com/article/responsive-images-in-practice) - careful review of srcset, sizes and picture

**Developer Tools & Examples:**

[http://help.github.com/ (Links to an external site.)Links to an external site.](http://help.github.com/) Get answers to all your Github questions

[https://guides.github.com/introduction/flow/ (Links to an external site.)Links to an external site.](https://guides.github.com/introduction/flow/) - Branching and merging explained

[http://html5test.com (Links to an external site.)Links to an external site.](http://html5test.com/) Find out how well a browser supports HTML5

[http://caniuse.com (Links to an external site.)Links to an external site.](http://caniuse.com) Check for CSS support across different browsers

[https://pages.github.com/ (Links to an external site.)Links to an external site.](https://pages.github.com/) Host your website using Github - FREE

[http://html5boilerplate.com/ (Links to an external site.)Links to an external site.](http://html5boilerplate.com/) & [Initializr: Get a custom HTML5 template for your new website (Links to an external site.)Links to an external site.](http://www.initializr.com/)

[http://search.creativecommons.org (Links to an external site.)Links to an external site.](http://search.creativecommons.org/) Find media with proper licensing for use on the web

[What's the iPhone Screen Resolution? (Links to an external site.)Links to an external site.](http://www.iphoneresolution.com/) This site is all you need

[setmy.browsersize.com (Links to an external site.)Links to an external site.](http://setmy.browsersize.com/320%C3%97480!) A nifty online tool for setting your browser size while doing Web design.

[HTML5 Web Storage - CodeProject (Links to an external site.)Links to an external site.](http://www.codeproject.com/Articles/361428/HTML5-Web-Storage) How to use Web Storage; Author: SamarRizvi;

[The W3C Markup Validation Service (Links to an external site.)Links to an external site.](http://validator.w3.org/#validate_by_uri+with_options)W3C's easy-to-use markup validation service, based on SGML and XML parsers.

[Open Clipart - dont panic (Links to an external site.)Links to an external site.](http://openclipart.org/detail/118849/don-t-panic--dan-gerhard-01-by-anonymous) originally uploaded by Dan Gerhards for OCAL 0.18

**Cascading Style Sheets**

**CSS Backgrounds/Borders and Filters:**

[Cross-Browser CSS3 Shadow example-  (Links to an external site.)Links to an external site.](http://jsfiddle.net/ttCSQ/1/)

You can get a complete list of filters and other information from the W3C Editor Draft (which is a work-in-progress): [http://dev.w3.org/fxtf/filters/ (Links to an external site.)Links to an external site.](http://dev.w3.org/fxtf/filters/)

**CSS Grid:**

[CSS Grid introduction (Links to an external site.)Links to an external site.](https://css-tricks.com/getting-started-css-grid/)

[Grids by Example (Links to an external site.)Links to an external site.](https://gridbyexample.com/examples/)

[Grids in Detail (Links to an external site.)Links to an external site.](https://cssgrid.io/) -  video series

**CSS Flexbox:**

[FlexBox All The Things (Links to an external site.)Links to an external site.](http://ie.microsoft.com/testdrive/Graphics/hands-on-css3/hands-on_flex.htm)

[http://ie.microsoft.com/testdrive/Graphics/hands-on-css3/hands-on\_flex.htm (Links to an external site.)Links to an external site.](http://ie.microsoft.com/testdrive/Graphics/hands-on-css3/hands-on_flex.htm)

CSS Flexbox specification: [*http://www.w3.org/TR/css3-flexbox/ (Links to an external site.)Links to an external site.*](http://www.w3.org/TR/css3-flexbox/)

So far IE only: [http://css-tricks.com/almanac/properties/g/grid/ (Links to an external site.)Links to an external site.](http://css-tricks.com/almanac/properties/g/grid/)

CSS Grid specification: [*http://www.w3.org/TR/css3-grid/ (Links to an external site.)Links to an external site.*](http://www.w3.org/TR/css3-grid/)

CSS Regions Module specification: [*http://dev.w3.org/csswg/css3-regions/ (Links to an external site.)Links to an external site.*](http://dev.w3.org/csswg/css3-regions/)

**CSS Color:**

[micmro/Cross-Browser-Linear-Gradient-jQuery-CSS-Hook · GitHub (Links to an external site.)Links to an external site.](https://github.com/micmro/Cross-Browser-Linear-Gradient-jQuery-CSS-Hook)

[jQuery.cssHooks | jQuery API Documentation  (Links to an external site.)Links to an external site.](http://api.jquery.com/jQuery.cssHooks/)jQuery: The Write Less, Do More, JavaScript Library

[Ultimate CSS Gradient Generator - ColorZilla.com (Links to an external site.)Links to an external site.](http://www.colorzilla.com/gradient-editor/#whats-new)

[CSS3 Please! The Cross-Browser CSS3 Rule Generator (Links to an external site.)Links to an external site.](http://css3please.com/)

[Linear Gradients (Links to an external site.)Links to an external site.](http://www.westciv.com/tools/gradients/)

[CSS Gradient Generator | CSS3 Factory (Links to an external site.)Links to an external site.](http://www.css3factory.com/linear-gradients/)

**CSS Selectors:**

[http://code.tutsplus.com/tutorials/the-30-css-selectors-you-must-memorize--net-16048 (Links to an external site.)Links to an external site.](http://code.tutsplus.com/tutorials/the-30-css-selectors-you-must-memorize--net-16048)

[http://lea.verou.me/demos/nth.html (Links to an external site.)Links to an external site.](http://lea.verou.me/demos/nth.html)

**CSS Fonts:**

[Font Pairings Overview (Links to an external site.)Links to an external site.](https://webdesign.tutsplus.com/articles/a-beginners-guide-to-pairing-fonts--webdesign-5706)

[Font Joy (Links to an external site.)Links to an external site.](http://fontjoy.com/) - tool for generating font pairs

[CSS3 Resource: Preview Custom Web Fonts with Font Dragr - CSS3 . Info (Links to an external site.)Links to an external site.](http://www.css3.info/css3-resource-preview-custom-web-fonts-with-font-dragr/)

[font dragr | Drag and drop font testing (Links to an external site.)Links to an external site.](http://fontdragr.com/)

[Handpicked free fonts for graphic designers with commercial-use licenses. | Font Squirrel (Links to an external site.)Links to an external site.](http://www.fontsquirrel.com/)

**Animation**

**CSS Animation:**

[CSS animation performance with Translate (Links to an external site.)Links to an external site.](http://www.paulirish.com/2012/why-moving-elements-with-translate-is-better-than-posabs-topleft/)

"Ceaser" - CSS Easing Animation Tool: [http://matthewlein.com/ceaser/ (Links to an external site.)Links to an external site.](http://matthewlein.com/ceaser/)

Understanding CSS cubic-bezier (with link to the [cubic-bezier builder (Links to an external site.)Links to an external site.](http://www.roblaplaca.com/examples/bezierBuilder)): [http://roblaplaca.com/blog/2011/03/11/understanding-css-cubic-bezier/ (Links to an external site.)Links to an external site.](http://roblaplaca.com/blog/2011/03/11/understanding-css-cubic-bezier/)

Using CSS transitions: [https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Using\_CSS\_transitions (Links to an external site.)Links to an external site.](https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Using_CSS_transitions)

[https://greensock.com/ (Links to an external site.)Links to an external site.](https://greensock.com/) - a JavaScript animation library

**CSS 2D & 3D:**

[jquery.transform.js: add cross-browser 2d transform capabilities to jQuery css() and animate() (Links to an external site.)Links to an external site.](http://louisremi.github.io/jquery.transform.js/)

[https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Using\_CSS\_transitions (Links to an external site.)Links to an external site.](https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Using_CSS_transitions)

[http://www.pageresource.com/css3/3d-transforms-tutorial/ (Links to an external site.)Links to an external site.](http://www.pageresource.com/css3/3d-transforms-tutorial/)

[http://css-tricks.com/almanac/properties/t/transform/ (Links to an external site.)Links to an external site.](http://css-tricks.com/almanac/properties/t/transform/)

[http://css-tricks.com/almanac/properties/p/perspective/ (Links to an external site.)Links to an external site.](http://css-tricks.com/almanac/properties/p/perspective/)

Understanding matrix transforms: [http://www.eleqtriq.com/2010/05/css-3d-matrix-transformations/ (Links to an external site.)Links to an external site.](http://www.eleqtriq.com/2010/05/css-3d-matrix-transformations/)

Computes matrix transforms for you: [http://meyerweb.com/eric/tools/matrix/ (Links to an external site.)Links to an external site.](http://meyerweb.com/eric/tools/matrix/)

Introduction to CSS 3D transforms (especially review Carousel and Carousel 2 examples): [http://desandro.github.com/3dtransforms (Links to an external site.)Links to an external site.](http://desandro.github.com/3dtransforms)

[http://www.paulirish.com/2012/why-moving-elements-with-translate-is-better-than-posabs-topleft/ (Links to an external site.)Links to an external site.](http://www.paulirish.com/2012/why-moving-elements-with-translate-is-better-than-posabs-topleft/)

Optional: More very detailed references:[http://www.html5rocks.com/en/features/performance (Links to an external site.)Links to an external site.](http://www.html5rocks.com/en/features/performance)

**CSS Sprites**

How to make and use CSS sprites: [http://css-tricks.com/video-screencasts/43-how-to-use-css-sprites/ (Links to an external site.)Links to an external site.](http://css-tricks.com/video-screencasts/43-how-to-use-css-sprites/)

Make the images on your site into CSS sprites to save http calls: [http://simpreal.org.ua/csssprites (Links to an external site.)Links to an external site.](http://simpreal.org.ua/csssprites) or try [http://spriteme.org/ (Links to an external site.)Links to an external site.](http://spriteme.org/)

Building Faster Websites with CSS Sprites: [Top 10 Tutorials of Sprites (Links to an external site.)Links to an external site.](http://namburivk.blogspot.in/2012/05/building-faster-websites-with-css.html?goback=.gde_2071438_member_120537762)

**CSS Grab Bag**

[Impress - Presentation Framework with CSS animation (Links to an external site.)Links to an external site.](https://github.com/bartaz/impress.js)

An article that provides information for writing more efficient CSS selectors is here:

[http://www.pubnub.com/blog/css3-performance-optimizations (Links to an external site.)Links to an external site.](http://www.pubnub.com/blog/css3-performance-optimizations)

Information regarding “best practices” for writing CSS3 selectors is provided here:

[http://webdesignerwall.com/trends/css3-examples-and-best-practices (Links to an external site.)Links to an external site.](http://webdesignerwall.com/trends/css3-examples-and-best-practices)

http://www.impressivewebs.com/css3-best-practices/

[http://andrew-hoyer.com/index.html (Links to an external site.)Links to an external site.](http://andrew-hoyer.com/index.html) A nice set of “sketch-like” visual effects that use CSS3

[http://caniuse.com (Links to an external site.)Links to an external site.](http://caniuse.com) Compatibility tables for support of HTML5, CSS3, SVG, and more in desktop and mobile browsers is here

[http://CSS3generator.com (Links to an external site.)Links to an external site.](http://CSS3generator.com) A Web site for generating CSS3 code using various CSS3 features

A Web site that enables you to perform live editing of the contents of various CSS3 selectors and then see the results is here:

[*http://CSS3please.com (Links to an external site.)Links to an external site.*](http://CSS3please.com)

A toolkit that handles the details of browser-specific extensions for CSS3 properties so that you can write prefix-less CSS3 selectors is here:

[*http://ecsstender.org (Links to an external site.)Links to an external site.*](http://ecsstender.org)

A Web site that enables you to create gradients online and view the associated CSS3 code is here:

[*http://gradients.glrzad.com (Links to an external site.)Links to an external site.*](http://gradients.glrzad.com)

Another Web site with information regarding browser support for HTML5 and CSS3 features is here:

[*http://html5readiness.com (Links to an external site.)Links to an external site.*](http://html5readiness.com)

An extensive collection of articles regarding HTML5 is available here:

[*http://www.html5rocks.com/en/ (Links to an external site.)Links to an external site.*](http://www.html5rocks.com/en/)

A JavaScript utility that emulates CSS3 pseudo-classes and attribute selectors in IE6-8:

[*http://selectivizr. com (Links to an external site.)Links to an external site.*](http://selectivizr.com)

An excellent source for browser compatibility information on the Internet (maintained by Peter-Paul Koc):

[*http://www.quirksmode.org (Links to an external site.)Links to an external site.*](http://www.quirksmode.org)

A **very good** online tool that allows you to experiment with many CSS3 features and also display the associated CSS3 code:

[http://www.westciv.com/tools/3Dtransforms/index.html (Links to an external site.)Links to an external site.](http://www.westciv.com/tools/3Dtransforms/index.html)

These links provide a wealth of information and useful techniques, so there’s a very good chance that you can find the information that you need to create the visual effects that you want for your Web site.

A comparison of 15 cross-browser testing tools (most are free, and some are commercial) with a tabular comparison of features is here:

[*http://www.smashingmagazine.com/2011/08/07/a-dozen-cross-browser-testing-tools/ (Links to an external site.)Links to an external site.*](http://www.smashingmagazine.com/2011/08/07/a-dozen-cross-browser-testing-tools/)

CSS TextWrapper is an online tool that generates CSS code that “wraps” text inside. Its homepage is here:

[*http://www.csstextwrap.com/ (Links to an external site.)Links to an external site.*](http://www.csstextwrap.com/)

**Scalable Vector Graphics**

SVG Stacks: [http://simurai.com/blog/2012/04/02/svg-stacks/ (Links to an external site.)Links to an external site.](http://simurai.com/blog/2012/04/02/svg-stacks/)

SVG Stacking: [http://hofmannsven.com/2013/laboratory/svg-stacking/ (Links to an external site.)Links to an external site.](http://hofmannsven.com/2013/laboratory/svg-stacking/)

Zoom and pan code samples: [http://msdn.microsoft.com/en-us/library/gg589508(v=vs.85).aspx (Links to an external site.)Links to an external site.](http://msdn.microsoft.com/en-us/library/gg589508(v=vs.85).aspx)

How to Add Scalable Vector Graphics to Your Web Page:[http://www.sitepoint.com/add-svg-to-web-page/ (Links to an external site.)Links to an external site.](http://www.sitepoint.com/add-svg-to-web-page/)

Create SVG from Illustrator and optimize it

Responsive SVG in Illustrator CC

Adobe Illustrator CC CSS and SVG Graphic Export Tutorial CSS FOR BEGINNERS!

Introduction to SVG and RaphaelJS

**JavaScript / jQuery**

jQuery Syntax Basics - Smashing  
[https://www.smashingmagazine.com/2014/05/mystery-jquery-object-syntax-basic-introduction/ (Links to an external site.)Links to an external site.](https://www.smashingmagazine.com/2014/05/mystery-jquery-object-syntax-basic-introduction/)

[jQuery Essentials Slides (Links to an external site.)Links to an external site.](https://www.slideshare.net/1Marc/jquery-essentials/) - Mark Grabanski

[JSFiddle (Links to an external site.)Links to an external site.](http://jsfiddle.net/ttCSQ/1/) Test your JavaScript, CSS, HTML or CoffeeScript online with JSFiddle code editor.

**D3.js** is a JavaScript library for manipulating documents based on data. **D3** helps you bring data to life using HTML, SVG and CSS: [http://d3js.org/ (Links to an external site.)Links to an external site.](http://d3js.org/)

[Design with PC  (Links to an external site.)Links to an external site.](http://designwithpc.com/post/7392045476/setting-cross-browser-border-radius-with-jquery)Setting cross browser border-radius with jQuery

[http://blackberry.github.com/Alice/ (Links to an external site.)Links to an external site.](http://blackberry.github.com/Alice/) : AliceJS is an acronym for A Lightweight Independent CSS Engine, and its supports CSS3-based graphics and animation effects

Shadow example on JSFiddle: [http://jsfiddle.net/ttCSQ/1/ (Links to an external site.)Links to an external site.](http://jsfiddle.net/ttCSQ/1/)

[deck.js » Modern HTML Presentations (Links to an external site.)Links to an external site.](http://louisremi.github.io/jquery.transform.js/)

[bartaz/impress.js Presentation Web Software· GitHub (Links to an external site.)Links to an external site.](https://github.com/bartaz/impress.js)

[http://learn.jquery.com/about-jquery/how-jquery-works/ (Links to an external site.)Links to an external site.](http://learn.jquery.com/about-jquery/how-jquery-works/)

[http://www.malsup.com/jquery/corner/ (Links to an external site.)Links to an external site.](http://www.malsup.com/jquery/corner/) JQuery Corner Demo

**The Compass/Sass Framework**

[Sass in the Real World Part 1](https://cascadia.instructure.com/courses/1582972/files/94101255/download?wrap=1)

 Github Book

[Online Sass Language Guide (Links to an external site.)Links to an external site.](http://sass-lang.com/guide)

Scout is a cross-platform (MacOSX & Windows) app that delivers the power of [Sass (Links to an external site.)Links to an external site.](http://sass-lang.com) & [Compass (Links to an external site.)Links to an external site.](http://compass-style.org) into the hands of web designers: [http://mhs.github.io/scout-app/ (Links to an external site.)Links to an external site.](http://mhs.github.io/scout-app/)

Compass is a framework that enables you to create CSS stylesheets using Sass instead of pure CSS: [http://compass-style.org/ (Links to an external site.)Links to an external site.](http://compass-style.org/)

Neat/Bourbon Library: [SASS Mixins because Semantics Matter (Links to an external site.)Links to an external site.](http://neat.bourbon.io/).

**Mobile Device Orientation and Acceleration**

This End Up: Using Device Orientation [http://www.html5rocks.com/en/tutorials/device/orientation/ (Links to an external site.)Links to an external site.](http://www.html5rocks.com/en/tutorials/device/orientation/)

[http://caniuse.com/#feat=deviceorientation (Links to an external site.)Links to an external site.](http://caniuse.com/#feat=deviceorientation)

JavaScript "devicemotion" Demo / Jack-in-the-Box

https://developer.mozilla.org/en-US/docs/Web/Reference/Events/devicemotion

[https://developer.mozilla.org/en-US/docs/Web/API/DeviceMotionEvent.acceleration (Links to an external site.)Links to an external site.](https://developer.mozilla.org/en-US/docs/Web/API/DeviceMotionEvent.acceleration)

HTML5 for the Mobile Web: Device Orientation Events: [http://mobiforge.com/design-development/html5-mobile-web-device-orientation-events (Links to an external site.)Links to an external site.](http://mobiforge.com/design-development/html5-mobile-web-device-orientation-events)

[http://mobilehtml5.org/ (Links to an external site.)Links to an external site.](http://mobilehtml5.org/)

[Playing with javascript, iPhone and devicemotion event listener(uses jQuery Mobile) (Links to an external site.)Links to an external site.](http://www.emanueleferonato.com/2011/09/05/playing-with-javascript-iphone-and-devicemotion-event-listener/)

[Playing with deviceOrientation events and orientationchange (Links to an external site.)Links to an external site.](http://mathieujouhet.tumblr.com/post/16635188738/playing-with-deviceorientation-events-and)

**Web Frameworks**

**Backbone:**

[http://backbonejs.org/ (Links to an external site.)Links to an external site.](http://backbonejs.org/)

On Lynda.com: [http://www.lynda.com.ezproxy.kcls.org/Backbonejs-tutorials/Up-Running-Backbonejs/163089-2.html (Links to an external site.)Links to an external site.](http://www.lynda.com.ezproxy.kcls.org/Backbonejs-tutorials/Up-Running-Backbonejs/163089-2.html)

[http://bocoup.com/weblog/organizing-your-backbone-js-application-with-modules (Links to an external site.)Links to an external site.](http://bocoup.com/weblog/organizing-your-backbone-js-application-with-modules/)

[http://coenraets.org/blog/2013/04/sample-application-with-backbone-js-and-twitter-bootstrap-updated-and-improved (Links to an external site.)Links to an external site.](http://coenraets.org/blog/2013/04/sample-application-with-backbone-js-and-twitter-bootstrap-updated-and-improved/)

Backbone Tutorial [Organizing your application using Modules (require.js)  (Links to an external site.)Links to an external site.](http://backbonetutorials.com/organizing-backbone-using-modules/)

**Bootstrap:**

Current Bootstrap 3: [http://getbootstrap.com (Links to an external site.)Links to an external site.](http://getbootstrap.com/)

There are many courses on Bootstrap 3 on Lynda.com, start with [http://www.lynda.com.ezproxy.kcls.org/Bootstrap-tutorials/Up-Running-Bootstrap-3/133339-2.html (Links to an external site.)Links to an external site.](http://www.lynda.com.ezproxy.kcls.org/Bootstrap-tutorials/Up-Running-Bootstrap-3/133339-2.html)

[http://webdesign.tutsplus.com/articles/twitter-bootstrap-101-tabs-and-pills--webdesign-6592 (Links to an external site.)Links to an external site.](http://webdesign.tutsplus.com/articles/twitter-bootstrap-101-tabs-and-pills--webdesign-6592)

[http://coenraets.org/blog/2013/04/sample-application-with-backbone-js-and-twitter-bootstrap-updated-and-improved (Links to an external site.)Links to an external site.](http://coenraets.org/blog/2013/04/sample-application-with-backbone-js-and-twitter-bootstrap-updated-and-improved/)

**Three.js:**

[http://threejs.org/ (Links to an external site.)Links to an external site.](http://threejs.org/)

Getting started with three.js:  
[http://www.lynda.com.ezproxy.kcls.org/Flash-Professional-tutorials/Getting-started-threejs/97148/107052-4.html (Links to an external site.)Links to an external site.](http://www.lynda.com.ezproxy.kcls.org/Flash-Professional-tutorials/Getting-started-threejs/97148/107052-4.html)

BoilerPlate Builder for three.js  
[https://jeromeetienne.github.io/threejsboilerplatebuilder/ (Links to an external site.)Links to an external site.](https://jeromeetienne.github.io/threejsboilerplatebuilder/)

**Free Web Portfolio Hosting**

Github Pages - your HTML/CSS/Javascript integrated with your repos  
[https://pages.github.com/ (Links to an external site.)Links to an external site.](https://pages.github.com/)

CodePen - highlight your code as you demo your front-end development portfolio  
[https://codepen.io/hello/ (Links to an external site.)Links to an external site.](https://codepen.io/hello/)

Behance - pre-built portfolios and connected community for creatives (non-programmers)  
[https://www.behance.net/ (Links to an external site.)Links to an external site.](https://www.behance.net/)

Portfoliobox - another option for pre-built portfolios for creatives  
[https://www.portfoliobox.net/pricing (Links to an external site.)Links to an external site.](https://www.portfoliobox.net/pricing)

Deviant Art - your artwork, searchable and linkable  
[http://www.deviantart.com/ (Links to an external site.)Links to an external site.](http://www.deviantart.com/)

Heroku - Hosting your applications (free with usage limits) and ready to grow  
[https://www.heroku.com/ (Links to an external site.)Links to an external site.](https://www.heroku.com/)

Firebase - Another free application hosting (for low usage) with a google-integrated backend  
[https://firebase.google.com/ (Links to an external site.)Links to an external site.](https://firebase.google.com/)

Jobrary - Resumes and Portfolio template - add your own content  
[http://www.jobrary.com/ (Links to an external site.)Links to an external site.](http://www.jobrary.com/)

Let's Encrypt - Free SSL certificates for your portfolio  
[https://letsencrypt.org/ (Links to an external site.)Links to an external site.](https://letsencrypt.org/)