

Creating a website with HTML and CSS

MMP 100

Creating a folder for the project

A website is usually comprised of multiple files. We'll create a folder to keep them grouped together and organized.

In the Finder, go to *File > New Folder*.
Rename the folder *firstWebsite*



firstWebsite

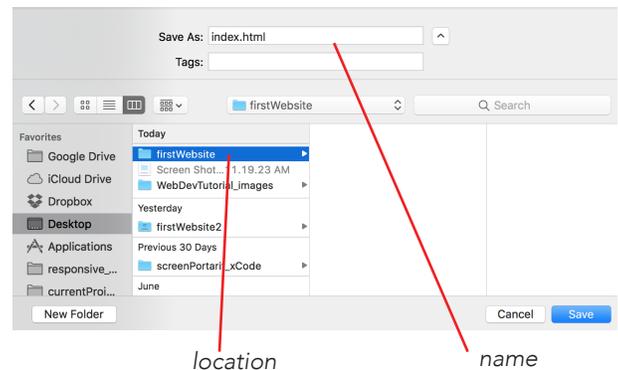
empty project folder

Creating and Saving an HTML file

The structure and content of a webpage is defined in HTML documents (one for each page). We'll create our first page and write HTML code in a simple and free code editor called Brackets (you can download it for free at <http://brackets.io>).

Once you've launched Brackets, go to *File > New*
Go to *File > Save As...*

The homepage for most websites is usually called *index.html*. Use that as the name for your file and save it in your *firstWebsite* folder.



Required tags

Every HTML document has to include `<html>`, `<head>`, `<title>` and `<body>` (sometimes referred to as "required tags.")

- `<html>` states that everything between its opening and closing tag is HTML code. It is the parent element of everything that follows.
- `<head>` is the first element inside the `<html>` element. It contains information about the page which, although useful, should not be displayed in the browser window.
- `<title>` is part of `<head>` and will appear in the window's tab.
- `<body>` comes after `<head>` (but is still part of `<html>`) and is where we'll add the content we want users to see on our web page.

Type these tags in *index.html*. All of them need an opening and closing tag (the closing tag contains an extra forward slash). Indent your code to reflect the elements' hierarchy.

```
1 <html>
2 <head>
3 <title>my first website</title>
4 </head>
5 <body>
6 </body>
7 </html>
8 |
```

required tags

Saving

Get in the habit of frequently saving your changes as you progress by hitting `Cmd + S` on your keyboard to avoid losing your work if the program crashes and to make sure you are previewing your latest version (see *live preview* below)

Content

If we were to open our file in a browser at this point it would be empty (except for the title displayed in the tab). We'll add a main header and a paragraph inside our `<body>` element.

```
3     <title>my first website</title>
4   </head>
5   <body>
6     <h1>Welcome to my website</h1>
7     <p>It features my favorite cat images from the web</p>
8   </body>
9 </html>
```

main header and paragraph.

Live preview

At this point, we should pause and check how our page looks in the browser. You can easily preview a page in Brackets by clicking on the Live Preview icon on the right.

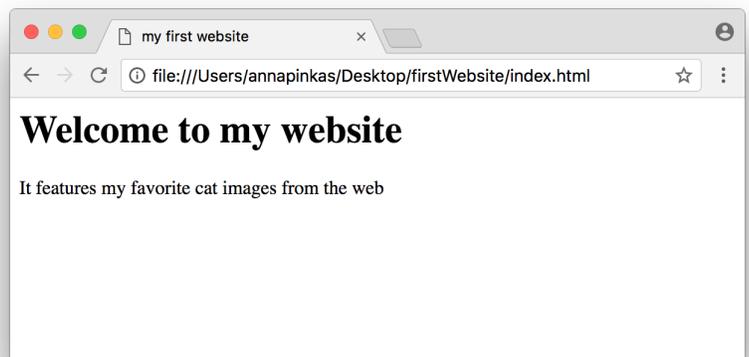
The preview will only display the latest saved changes. If you are not seeing some of your content, save your page in its current state (`Cmd + S`). If your file contains unsaved changes, a little dot will appear to the left of it.

When open, the live preview window will automatically update as you change and save your code.



dot indicating unsaved changes

live preview icon



live preview window

Finding and storing images

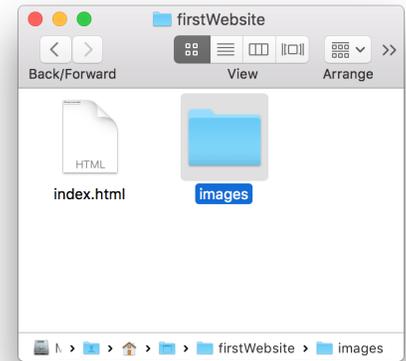
Most websites have dozens if not hundreds of images. In order to keep your project folder organized, it is best to create an *images* subfolder.

Find your *firstWebsite* folder. Double-click on it to open it.
Go to *File > New Folder*.
Name the folder *images*.

This is where you'll save all your images for the site.

Adding an image

Find an image you'd like to use (it could be one you've created or one you find on search.creativecommons.org) and save it in your images subfolder,



main folder with images subfolder

We'll use the `` tag to display it on our site. This element is a bit different from those we've used up to this point:

- It does not have a separate closing tag. (just a forward slash before the closing bracket).
- It has 3 attributes (additional information needed for it to work properly).
 - `src`: where the image is located. Include the name of the subfolder followed by a slash and the name of the image.
 - `alt`: a short description in case the image can't be displayed and for visually impaired users.
 - `width` (or `height`): determines the size of the image (only use `width` or `height` or you risk distorting your image).

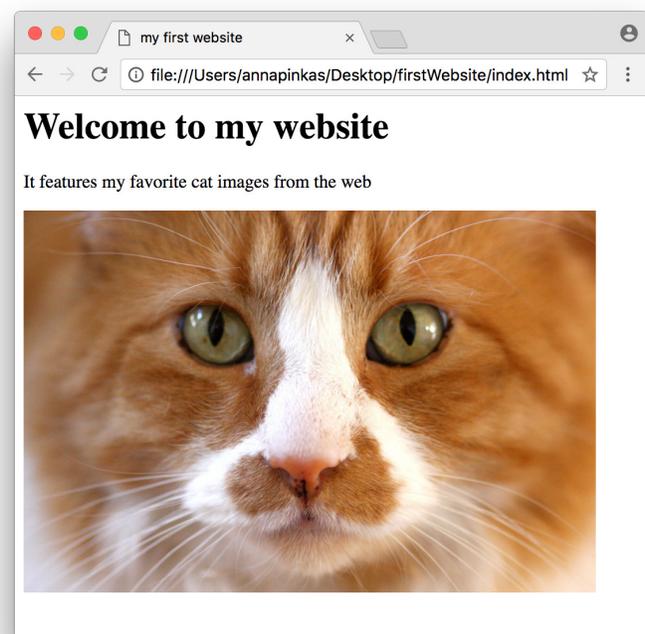
Attributes are always followed by an equal sign and their value is placed inside quotes.

Add the `` tag after the paragraph.

```
6 </h1>welcome to my website</h1>
7 <p>It features my favorite cat images from the web</p>
8 
9 </body>
10 </html>
```

image element

Save your file (Cmd + S). You should now see the image in the live preview window.



live preview with image

Attribution

If the image is licensed under a creative commons license, you must credit its author. Although there is no single “correct” way to do this, you should try to include as much information as possible.

With Flickr you can easily find the title, author name and license number for the image. If none of this information is available include at least the original URL. Add that information in a paragraph under the image.

```
7     <p>It features my favorite cat images from the web</p>
8     
10    <p>"MacDuff the cat" by Kevin Dooley. Licensed under CC
11    by 2.0</p>
12
13 </body>
14 </html>
```

paragraph for attribution

Adding another page

Most websites are comprised of multiple pages that are interconnected. Let's add a gallery page to our project.

Go to *File > New*

Go to *File > Save As...*

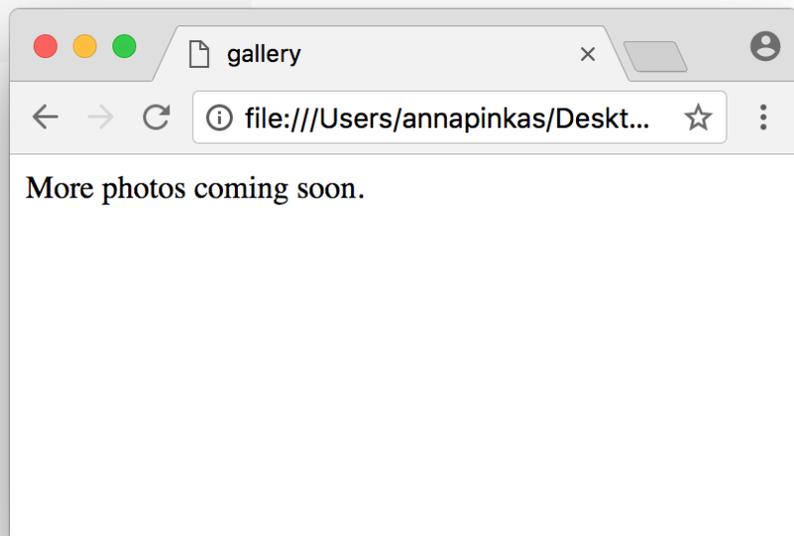
Name your file *gallery.html* and save it in your *firstWebsite folder* (at the same level as your *index.html* file).

We'll just add the required tags and a paragraph for now.

Save your file (Cmd + S) and click on the Live Preview icon.

```
1 <html>
2   <head>
3     <title>gallery</title>
4   </head>
5   <body>
6     <p>More photos coming soon.</p>
7   </body>
8 </html>
```

gallery page in the editor



gallery page in the live preview window

Linking two pages

We currently have two pages, but no way of navigating from one to the other seamlessly. To do so, we'll have to add a link (<a> tag) on both pages. This element also requires an attribute:

- `href`: gives the name of the file we are trying to access. This could be a file you've created yourself (as in this example) or a completely separate website, in which case you would include the full URL (i.e. "https://www.nytimes.com")

Go to your `index.html` file, add the link below your image (or attribution), and save (Cmd + S).

```
9         haired cat" width="500px"/>
        <p>"MacDuff the cat" by Kevin Dooley. Licensed under CC
        by 2.0</p>
10         <a href="gallery.html">Go to the Gallery page</a>
11     </body>
12 </html>
```

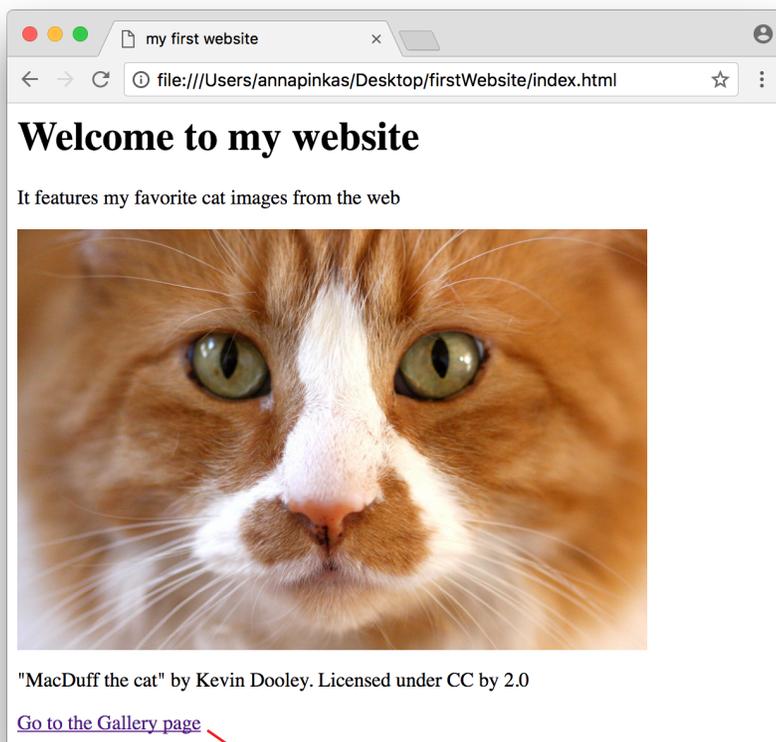
link from the home to the gallery page

Do the same on your gallery page.

```
5     </body>
6     <p>More photos coming soon.</p>
7     <a href="index.html">Go to the Home page</a>
8     </body>
9 </html>
```

link from the gallery to the home page

Once you've saved both files, you should be able to go back and forth between the two pages by clicking on the links in the live preview.



link to gallery page

Creating and saving an external CSS file

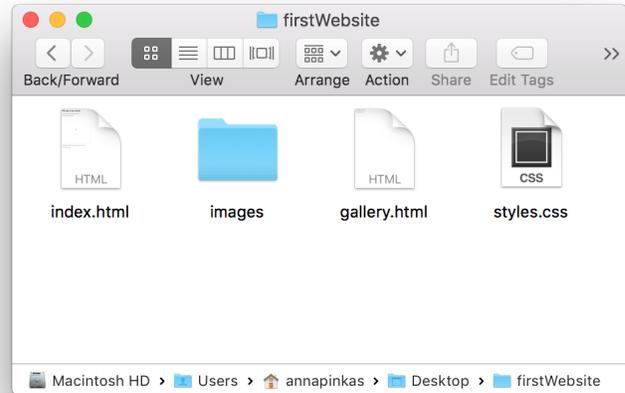
The structure and content we've created with HTML can be styled with CSS (i.e: change the color of the text or the background, the font-family, the font-size etc.).

There are several ways of adding CSS to HTML but the most efficient is adding an external CSS file to your project folder and linking it to the HTML files. This will allow you to write the rules only once and apply them to all the pages on your website.

In Brackets, go to *File > New*

Go to *File > Save As...*

Name the file *styles.css* and save it in the *firstWebsite* folder, at the same level as the HTML files.



the content of the firstWebsite folder at this point

Changing the color of the main header

Every CSS rule is made of two parts:

- selector: the HTML element the rule is being applied to
- declaration: the property and value being applied. It is surrounded by curly brackets, a colon separates the property and its value, and ends with a semi-colon.

```
1 h1{color: #ff0000;}
```

selector declaration

Notice that there are no required tags on the CSS file. Save the file (Cmd + S).

You cannot live preview a CSS file (a CSS file cannot work by itself, it should always be attached to an HTML file).

Linking the HTML and CSS files

If we were to live preview the index or gallery page at this point, we would see no difference. That's because we haven't given these files a way to access the CSS file yet. To do so, we will use the `<link>` tag inside of `<head>`. This element requires 3 attributes:

- href: location and name of the CSS file.
- rel: the relationship of the linked file to the current one (this will always be set to "stylesheet").
- type: the language in which the linked file is written (this will always be set to "text/css").

```
1 <html>
2   <head>
3     <title>my first website</title>
4     <link href="styles.css" rel="stylesheet"
5       type="text/css"/>
6   </head>
7   <body>
```

link element

Once you save the file, you should see the main header change color on the home page.

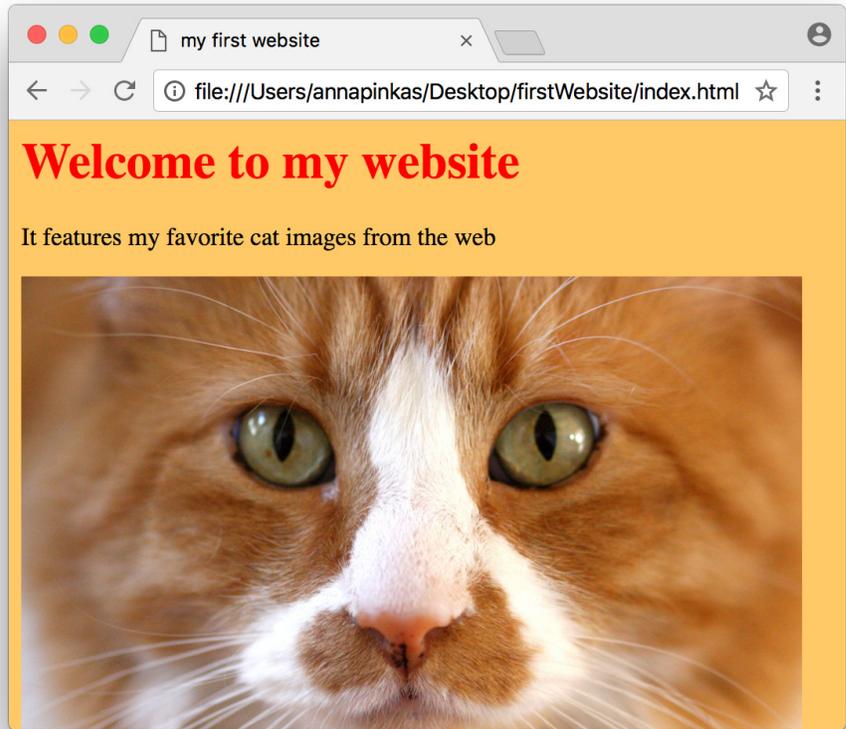
Now, you can simply copy and paste this `<link>` element in the `<head>` of the gallery page. If you don't do this, the gallery page will not know where to find the CSS rules.

Changing the background color

The css rule for the main header only applies to the *index.html* file because the gallery page doesn't have an `<h1>`. Let's create a rule that will apply to both pages: changing the background color. The selector should be the entire browser window (body). This new rule can be added right under the first one.

```
1 h1{color: #ff0000;}  
2 body{background: #FFC966;}
```

css file



home page with css

Other elements and properties

There are many other HTML elements and CSS properties you can use in your project. W3 Schools is a reliable resource.

- List of all HTML elements: https://www.w3schools.com/html/html_elements.asp
- List of all CSS properties: <https://www.w3schools.com/cssref/>