Introduction to Web Design

Dr. Sarah mohamed

Web versus internet

- The **internet** is an international network of connected computers. No company owns the internet; it is a cooperative effort governed by a system of standards and rules. The purpose of connecting computers together, of course, is to share information.
- The **web** (originally called the World Wide Web, thus the "www" in site addresses) is just one of the ways information can be shared over the internet. It is unique in that it allows documents to be linked to one another via **hypertext links**—thus forming a huge "web" of connected information. The web uses a protocol called HTTP (**Hyper Text Transfer Protocol**).

- **A Web Server** is a computer intended to house and deliver web content. The computer is secured so that only authorized people can access it to make changes to the data. If you are on the same network as the Web Server, you may be able to save the data directly onto the Web Server computer.
- **Web Page:** is a single document which can contain text, images, hypertext, or any other elements. We create web pages using a markup language such as Hyper Text Markup Language HTML
- **Website:** These interconnected web pages forms an organised network of web pages
- **Hyper Text: a**ny web document which contains hyperlinks. A hyperlink is any element in the web page which, when you click on it, links to another web page.

What is a Website?

Website is the collection of web pages, different multimedia content such as text, images, and videos which can be accessed by the URL which you can see in the address bar of the browser. For example: https://www.geeksforgeeks.org

How to access Websites?

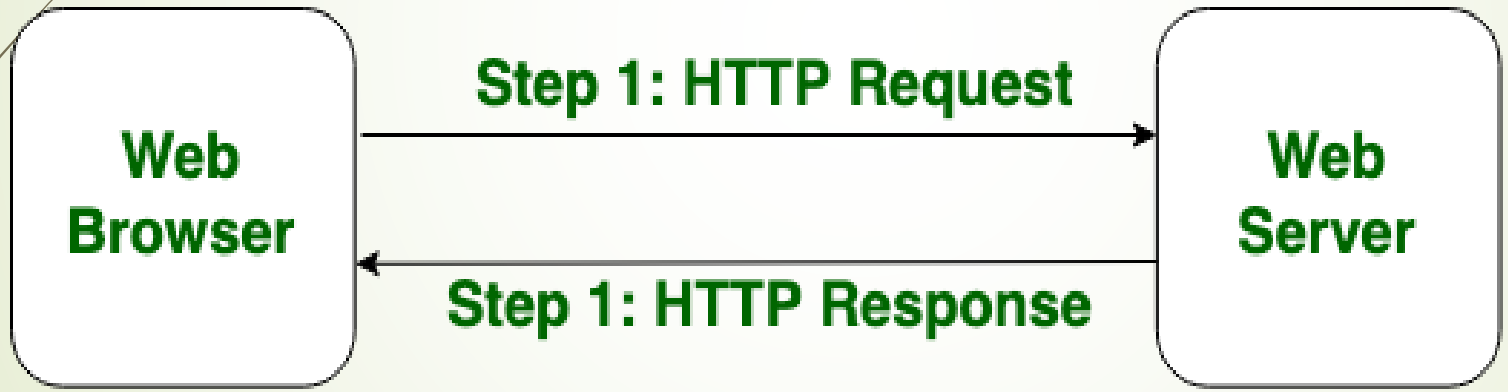
When we type a certain URL(**Uniform Resource Locator**.) In a browser search bar, the browser requests the page from the web server, and the Web server returns the required web page and its content to the browser. Now, it differs how the server returns the information required in the case of static and dynamic websites.

Types of Website:

- Static Website
- Dynamic Website

Static Web pages:

- Static Web pages are very simple. It is written in languages such as HTML, JavaScript, CSS, etc. For static web pages when a server receives a request for a web page, then the server sends the response to the client without doing any additional process. And these web pages are seen through a web browser. In static web pages, Pages will remain the same until someone changes it manually.



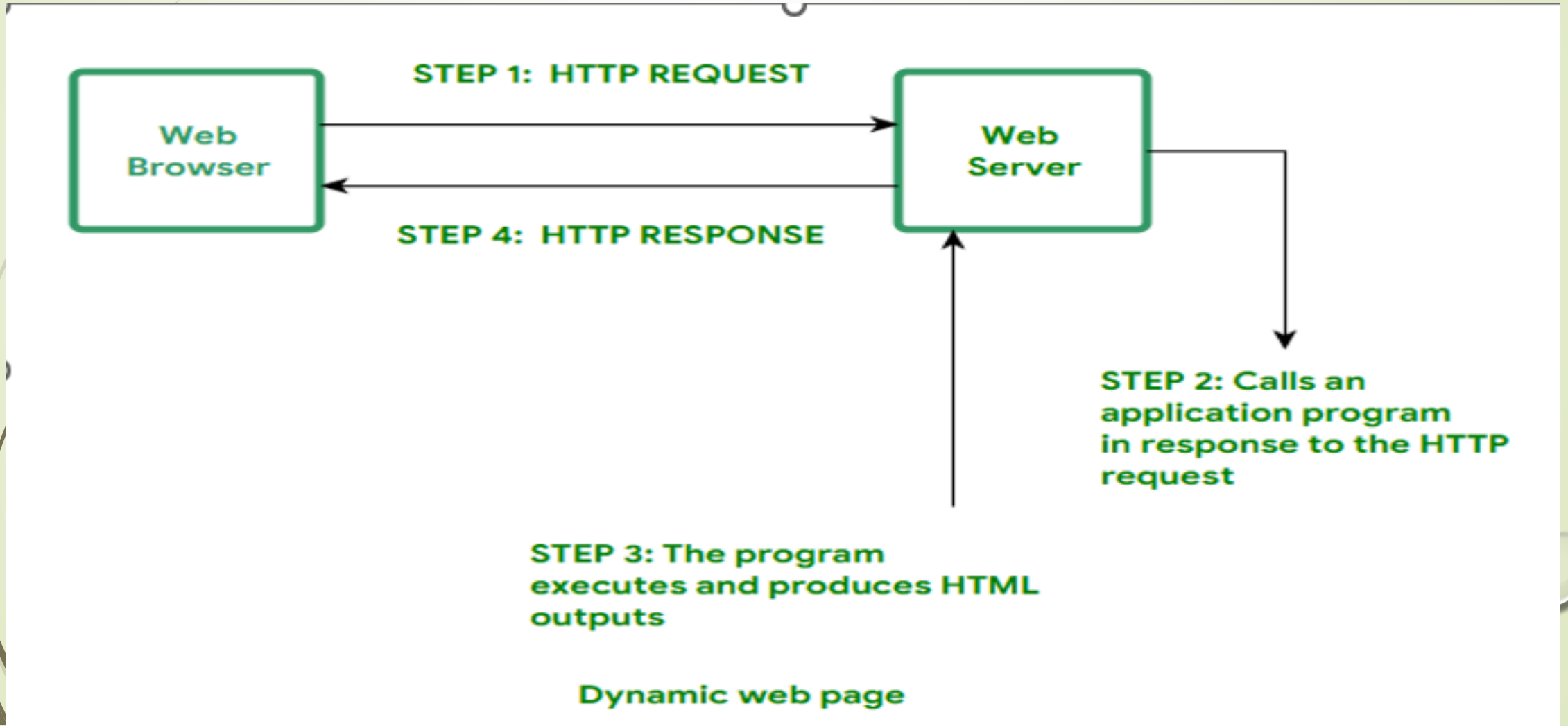
Static Web Page

What is a Static Page?

- The page is already present even before a user requests it. A static page must be already physically present and hydrated.
- The page generally maintains the same content every time the user requests it. If hitting the same URL returns different content, then that page is not static at all. This is not to say static pages cannot be modified. But the only way to change a static page for the creator to manually edit the content (like an HTML document)

Dynamic Web Pages:

Dynamic Web Pages are written in languages such as php, AJAX, ASP, ASP.NET, etc. In dynamic web pages, the Content of pages is different for different visitors. It takes more time to load than the static web page. Dynamic web pages are used where the information is changed frequently, for example, **stock prices, weather information**, etc.



What is a Dynamic Page?

- A dynamic page has the following characteristics:
  - ✓ The page is not physically present on the server when the user makes a request for it
  - ✓ Instead, when a user makes a request a script or program runs and ultimately cooks up a web page. It does this by interacting with a database to retrieve data which it packages and sends over as a page.
  - ✓ On every request, every new page created may be different from the last.

Server

What is a server and what does a server do? A server is a computer that serves information to other computers. These computers, called clients, can connect to a server through either a local area network or a wide area network, such as the internet. A server is a vital piece of your IT infrastructure.

➨ How servers work

The term server can refer to a **physical machine, a virtual machine** or to software that is performing server services. The way that a server works varies considerably depending on how the word server is being used.

Physical and virtual servers

A physical server is simply a computer that is used to run server software.

Servers are large data storage and processing devices that exist either as hardware or as virtual storehouses located on the internet. Computers or software systems act as servers that connect to a network.

A server can be any type of device that shares and saves information. Servers can both store and process information within their own system or request it from another.

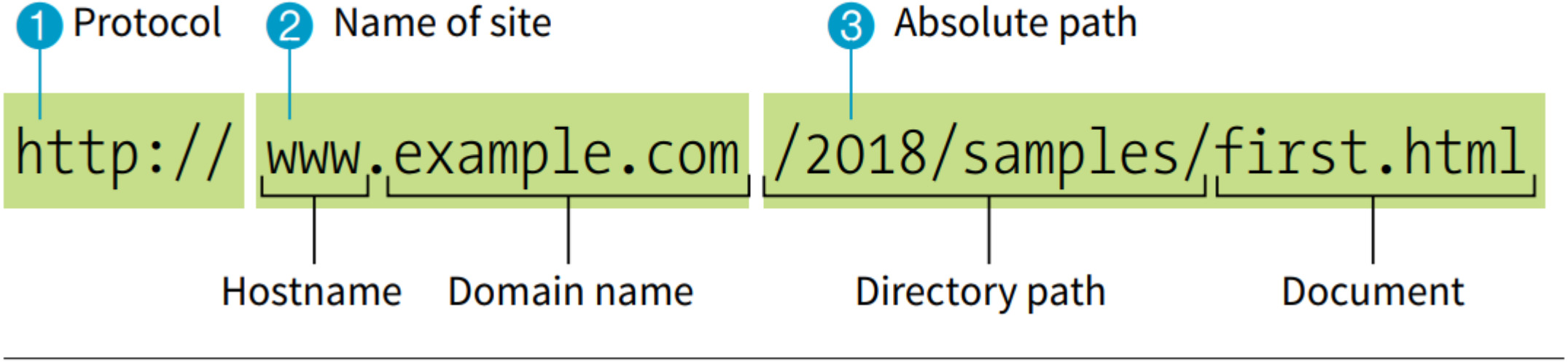
A WORD ABOUT BROWSERS

- People use desktop browsers, mobile browsers, and other assistive technologies (such as screen readers) as clients to access documents on the web. The server returns the documents for the browser.
- The requests and responses are handled via the HTTP protocol, mentioned earlier. Although we've been talking about "documents," HTTP can be used to transfer images, movies, audio files, data, scripts, and all the other web resources that commonly make up websites and applications.

Browser
Chrome 28+
Firefox (all)
Safari and Safari iOS (all)
Internet Explorer 4–11
MS Edge (all)
Opera 15+

WEB PAGE ADDRESSES (URLS)

- **Every page and resource on the web has its own special address called a URL, which stands for Uniform Resource Locator**



The Parts of a URL

- **http://:** The first thing the URL does is to define the protocol that will be used for that particular transaction. The letters "HTTP" let the server know to use Hyper Text Transfer Protocol.

- **www.example.com**:The next portion of the URL identifies the website by its domain name. In this example, the domain name is "example.com." The "www." part at the beginning is the particular hostname at that domain.

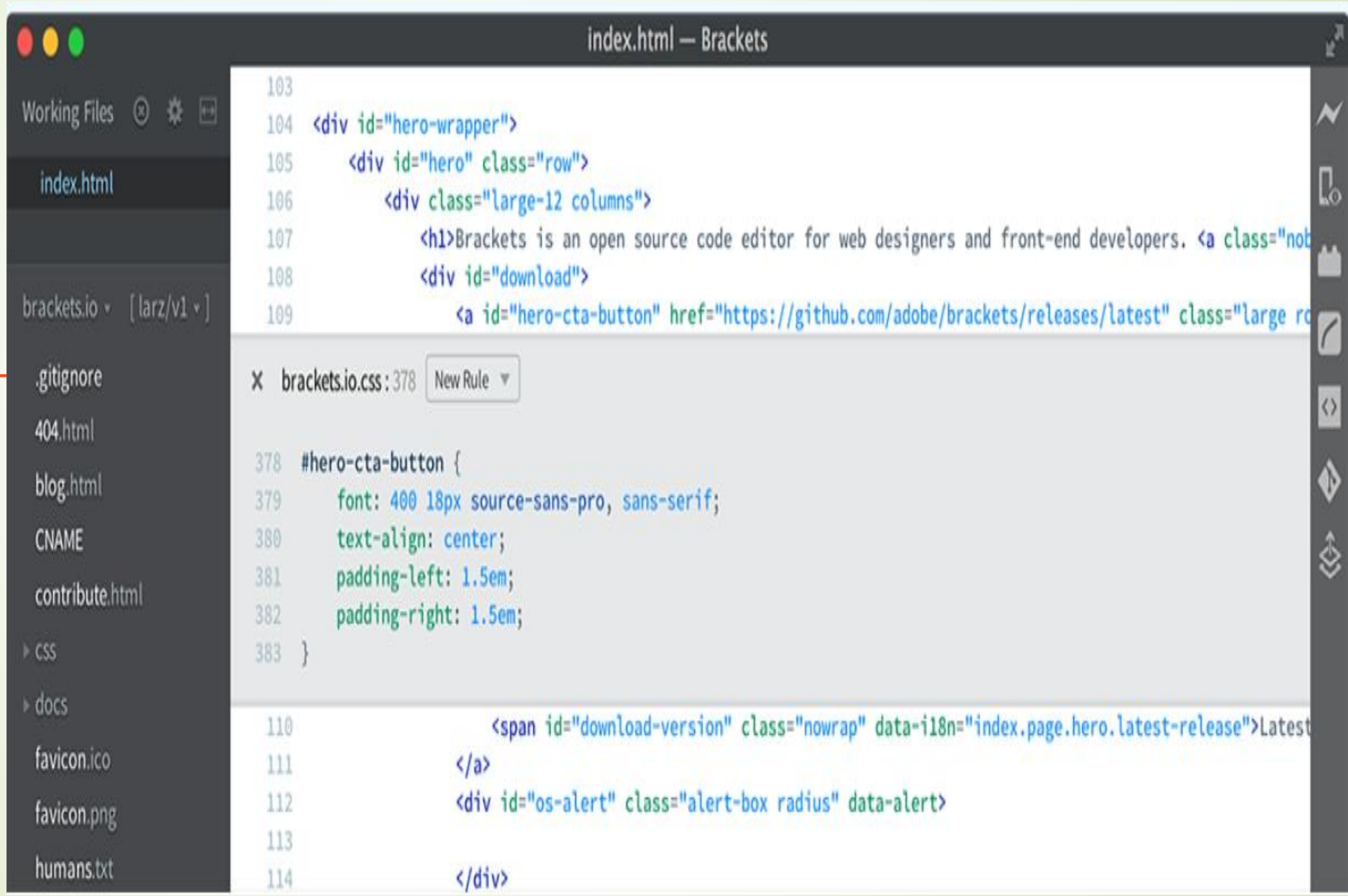
- **/2018/samples/first.html:** This is the absolute path through directories on the server to the requested HTML document, first.html. The words separated by slashes are the directory names, starting with the root directory of the host (as indicated by the initial /).

Web design languages

- HTML (Hypertext Markup Language)
- CSS (Cascading Style Sheets)
- JavaScript: an object-oriented computer programming language commonly used to create interactive effects within web browsers.

HTML editors examples

- Notepad ++
- Sublime Text
- Visual Studio Code
- Brackets



```html
<!DOCTYPE html>
<html>
<head>
<title>Web Programming I</title>
</head>
<body>

<h1>This is a Heading</h1>
<h2>This is a Heading</h2>
<h3>This is a Heading</h3>
<h4>This is a Heading</h4>
<h5>This is a Heading</h5>

</body>
</html>
```

<h1>This is a Heading</h1>

<h2>This is a Heading</h2>

<h3>This is a Heading</h3>

<h4>This is a Heading</h4>

<h5>This is a Heading</h5>

```
<!DOCTYPE html>
<html>
<head>
<title>Web Programming I</title>
</head>
<body>

<p > <font size="5" color="blue">
Web Programming</font>.</p>



</body>
</html>
```

Web Programming.

```
<!DOCTYPE html>
<html>
<body>

<h2>The target Attribute</h2>

<a href="https://www.w3schools.com/" target="_blank">Visit W3Schools!
</a>

<p>If target="_blank", the link will open in a new browser window or
tab.</p>

</body>
</html>
```

The target Attribute

Visit W3Schools!

If target="_blank", the link will open in a new browser window or tab.

```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Image</h2>
<img src="pic_trulli.jpg" alt="Trulli" width="500" height="333">

</body>
</html>
```

HTML Image

```html
<!DOCTYPE html>
<html>
<body>

<h1>All the different list types for ul with CSS</h1>

<ul style="list-style-type:circle">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>

<ul style="list-style-type:disc">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>

<ul style="list-style-type:square">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>

</body>
</html>
```

All the different list types for ul with CSS

- Coffee
- Tea
- Milk

- Coffee
- Tea
- Milk

- Coffee
- Tea
- Milk

```html
<!DOCTYPE html>
<html>
<body>

<h1>Specify list type with CSS</h1>

<ol type="A">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>

<ol type="a">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>

<ol type="I">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>
<ol type="i">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>
```

Specify list type with CSS

A. Coffee
B. Tea
C. Milk

a. Coffee
b. Tea
c. Milk

I. Coffee
II. Tea
III. Milk

i. Coffee
ii. Tea
iii. Milk

```
<!DOCTYPE html>
<html>
<body>

<h1>The ol element</h1>

<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>

<ol start="50">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>

</body>
</html>
```

The ol element

1. Coffee
2. Tea
3. Milk

50. Coffee
51. Tea
52. Milk

References

- Jennifer Niederst Robbins, LEARNING WEB DESIGN A BEGINNER'S GUIDE TO HTML, CSS, JAVASCRIPT, AND WEB GRAPHICS, O'Reilly Media, Inc., 1005 Gravenstein Highway North, Sebastopol 2018.
- Lance Douglas Jackson, INTRODUCTION TO THE INTERNET AND WEB PAGE DESIGN, Master of Arts in Professional Communication 2009.
- https://www.freecodecamp.org/news/static-vs-dynamic-web-pages/