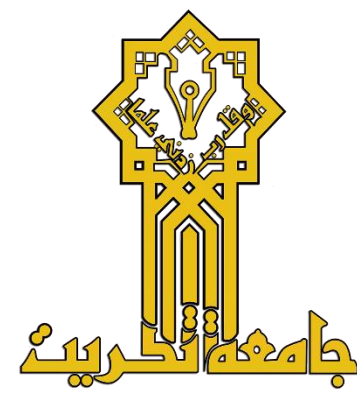# WEB PROGRAMMING

Department of Computer Sciences
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First stage
Semester: Two

Lecture - 3

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HTML Introduction

- HTML stands for HyperText Markup Language. It is used to design web pages using a markup language.

- HTML is a markup language used by the browser to manipulate text, images, and other content, in order to display it in the required format. HTML was created by Tim Berners-Lee in 1991. The first-ever version of HTML was HTML 1.0, but the first standard version was HTML 2.0, published in 1999.

HTML Released Year

HTML1	→	HTML2	→	HTML3	→	HTML4	→	HTML5
1993		1995		1997		1997		2014
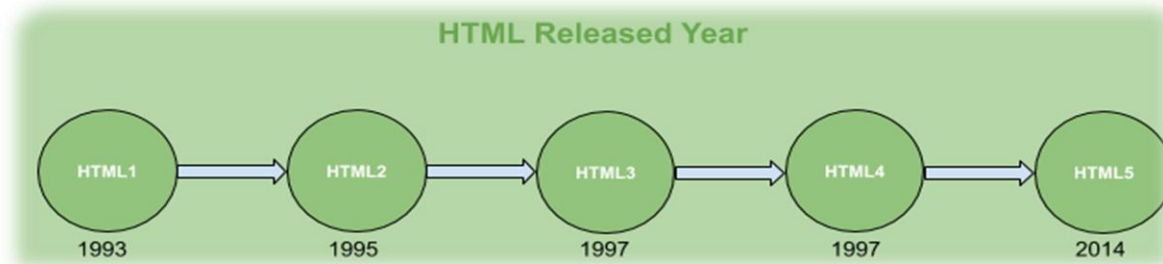
HTML Introduction

- At its most fundamental level — before extra styling and dynamic elements are applied — HTML tags tell your web browser what to display on the screen and in what order. When coding for the web, you wrap or enclose different parts of your content to ensure that it appears where, when and how you want. Basic HTML tags can determine font size as well as basic formatting choices such as bold or italics.

HTML Introduction

- While the kind of content, design and dynamism that we see on the web has changed dramatically over the past few decades, HTML has remained the fundamental framework that powers web design. Even dynamic websites generated by more advanced scripting languages such as Javascript or PHP rely at least in part on HTML. This is why learning to code in HTML continues to be essential for web developers.

Elements and Tags

Elements and Tags: Every HTML tag begins with an open angle bracket (<) and closes with a closed angle bracket (>). A forward slash before the name of the element closes a particular tag, and HTML tags can nest inside one another. It is essential to close every HTML tag you open.

Here is one of the most basic HTML tags: "p", which stands for "new paragraph".

<p> Hello </p>

Elements and Tags
Standard HTML Elements

Standard Structure of an HTML element has three parts:

1. **Opening tag.**

2. **Closing tag**.

3. **Content.**

Elements and Tags
Standard HTML Elements

Opening and closing tags:
Opening and closing tags are crucial to HTML elements. They tell a web browser when a certain piece of content begins and ends, thereby separating it from other page sections. Forgetting a closing tag can make your HTML content appear unusual or wrong. When developers troubleshoot HTML problems, searching for missing closing tags is usually one of their first steps.

HTML tags can be nested inside one another. For example, you could use the "strong" tag to nest a bolded word or phrase inside a "p" paragraph element. As with any nesting item, make sure to close the inner tags before closing the outer tags; the browser will not know how to properly process your content if you fail to distinguish your elements.

Elements and Tags
Standard HTML Elements

Content:
Content refers to any text, code, table, media or other information presented on a webpage. However, not all HTML elements need to have a closing tag or specified content.

HTML tags can be nested inside one another. For example, you could use the "strong" tag to nest a bolded word or phrase inside a "p" paragraph element. As with any nesting item, make sure to close the inner tags before closing the outer tags; the browser will not know how to properly process your content if you fail to distinguish your elements.

Elements and Tags
Standard HTML Elements

opening HTML tag

closing HTML tag

<tag>content that is affected by this tag**</tag>**

content that is being marked up

Elements and Tags
Standard HTML Elements

Notice how there is both an opening and closing part of the tag. The closing tag includes a forward slash at the beginning.
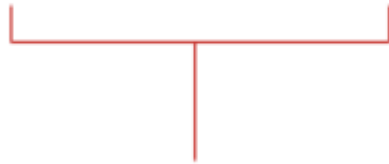
A simple example:

<p>This is a paragraph.</p>

Elements and Tags
Self Closing HTML Elements

Some HTML elements (like img and br) don't have their own content.

These are known as self closing tags or empty tags. They look like this:

This is an example of a self closing tag

Elements and Tags
Self Closing HTML Elements

A simple example:

**
**

The br tag inserts a line break (not a paragraph break). This tag has no content, so it is self closing.

HTML page structure

HTML page structure: The basic structure of an HTML page is laid in the side. It contains the essential building-block elements (i.e. doctype declaration, HTML, head, title, and body elements) upon which all web pages are created.

<!DOCTYPE html>   ← Tells version of HTML
<html>   ← HTML Root Element

<head>   ← Used to contain page HTML metadata
  <title>Page Title</title>   ← Title of HTML page
</head>

<body>   ← Hold content of HTML
  <h2>Heading Content</h2>   ← HTML headling tag
  <p>Paragraph Content</p>   ← HTML paragraph tag
</body>

</html>

HTML Page Structure

HTML page structure

- **<DOCTYPE! html>:** This is the document type declaration (not technically a tag). It declares a document as being an HTML document. The doctype declaration is not case-sensitive.

- **<html>:** This is called the HTML root element. All other elements are contained within it.

HTML page structure

- **<head>:** The head tag contains the "behind the scenes" elements for a webpage. Elements within the head aren't visible on the front-end of a webpage. HTML elements used inside the <head> element include:

<style>
<title>
<base>
<noscript>
<script>
<meta>
<link>

HTML page structure

- **<body>:** the body tag is used to enclose all the visible content of a webpage. In other words, the body content is what the browser will show on the front-end.

Note: An HTML document can be created using any text editor. Save the text file using .html or .htm. Once saved as an HTML document, the file can be opened as a webpage in the browser.

How HTML works

HTML allows the individual elements on the Web to be brought together and presented as a collection. Text, images, multimedia, and other files can all be packaged together using HTML. You can always view the HTML source code for a particular page through your browser. Once you've mastered the basics of HTML, this is a great way to learn how other authors put together their HTML documents. To view the source code of any page by choosing "View page source".

How HTML Work

There are two things should be exist to create HTML page.

1. Text editor : Basic/built-in text editors are Notepad (Windows) and TextEdit (Macs). Basic text editors are entirely sufficient for when you're just getting started.

2. Internet Browser : there are many internet browser can you used to display the HTML pages.
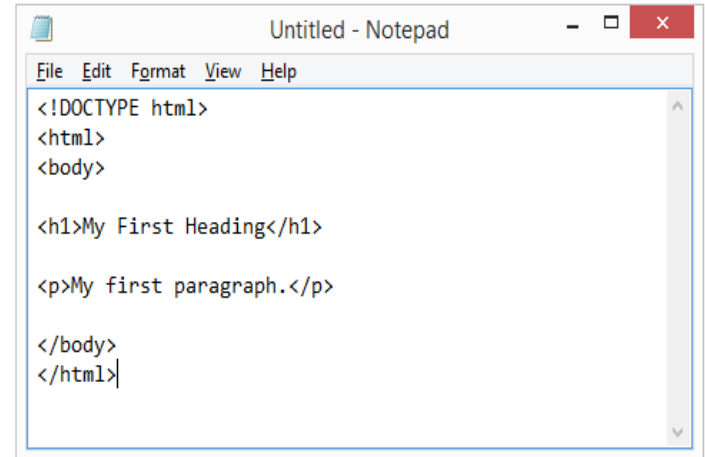
How HTML Work

Step 1: Open Notepad (PC)

- Open the Start Screen (the window symbol at the bottom left on your screen). Type Notepad. Windows 7 or other windows version :
- Open Start > Programs > Accessories > Notepad

Step 2: Write Some HTML

- Write or copy the following HTML code into Notepad:

```
Untitled - Notepad
File  Edit  Format  View  Help
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```

How HTML Work

Step 3: Save the HTML Page

- Save the file on your computer. Select File > Save as in the Notepad menu.

- Name the file "index.htm" .
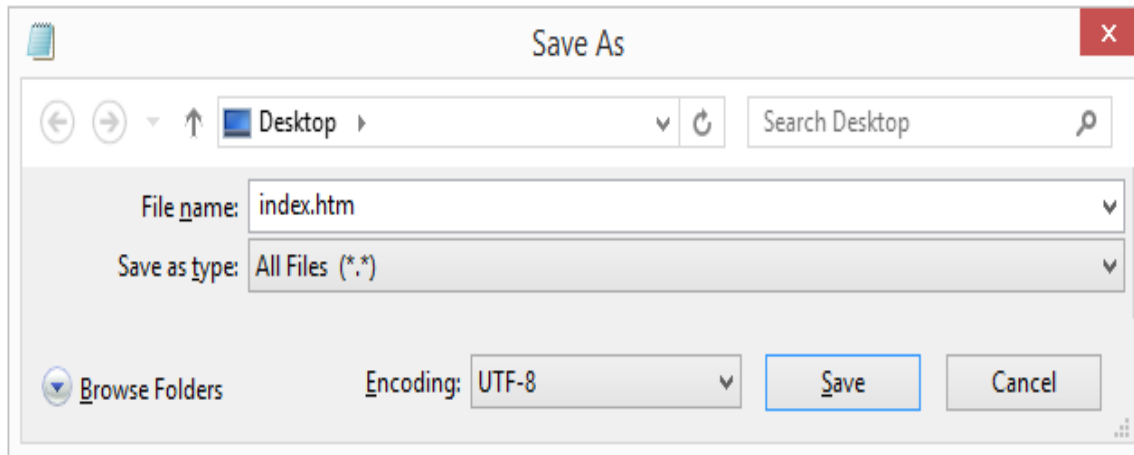
How HTML Work

- Open the saved HTML file in your favorite browser (double click on the file, or right-click - and choose "Open with").
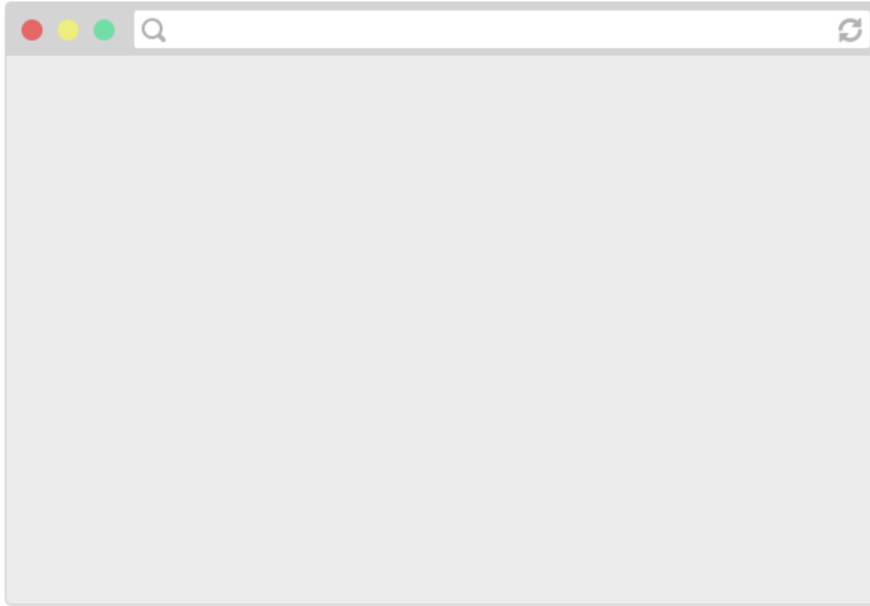- The result will look much like this:
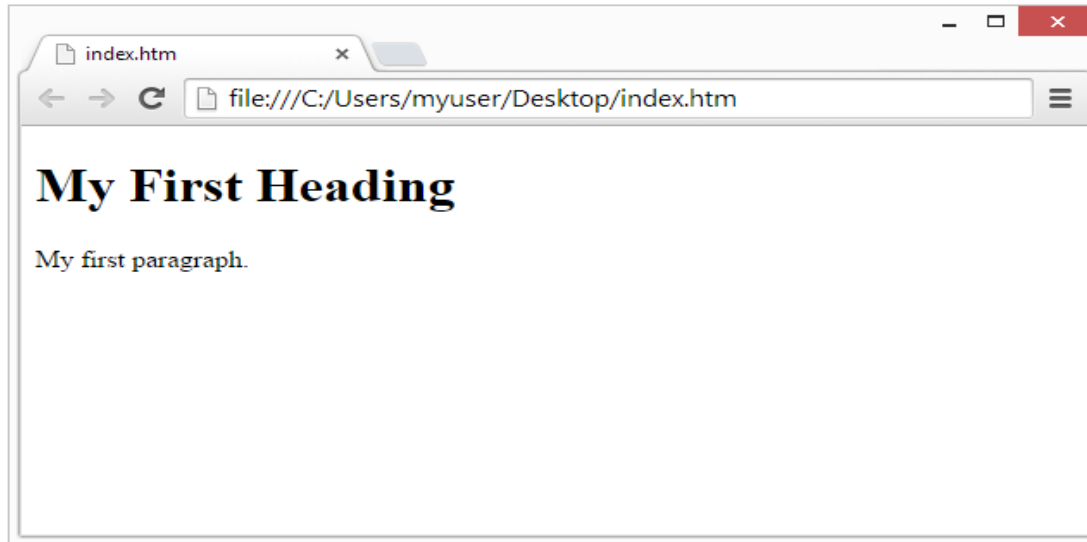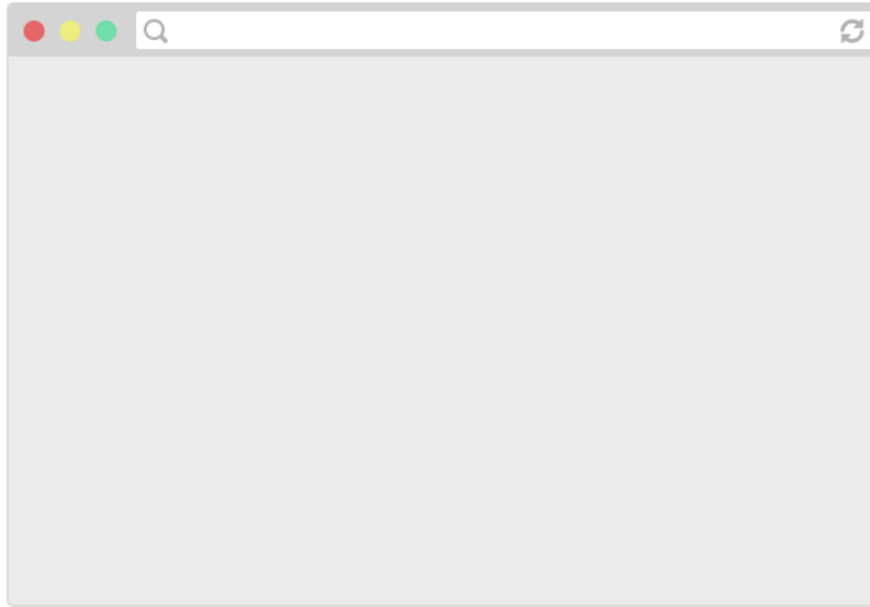
How do web pages work?
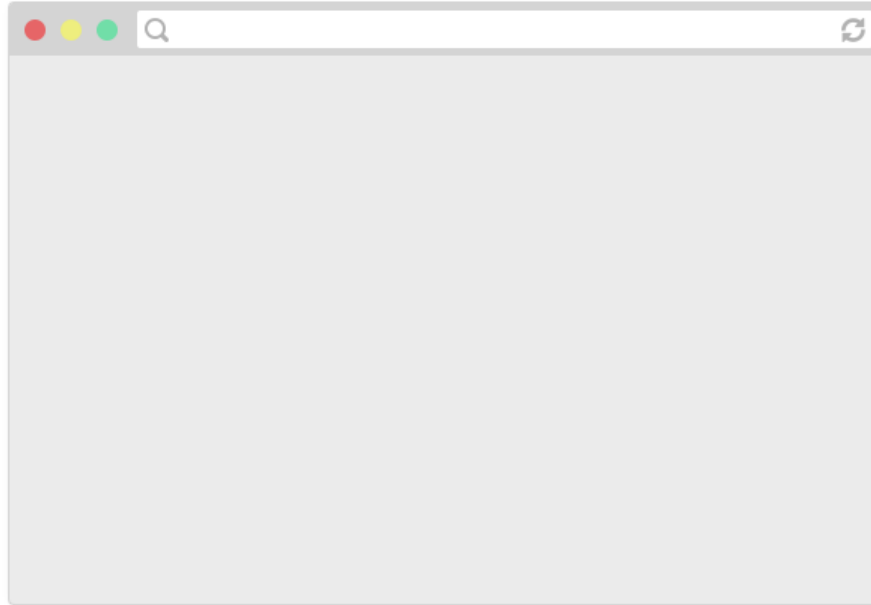
Browsers are applications that can display web pages.
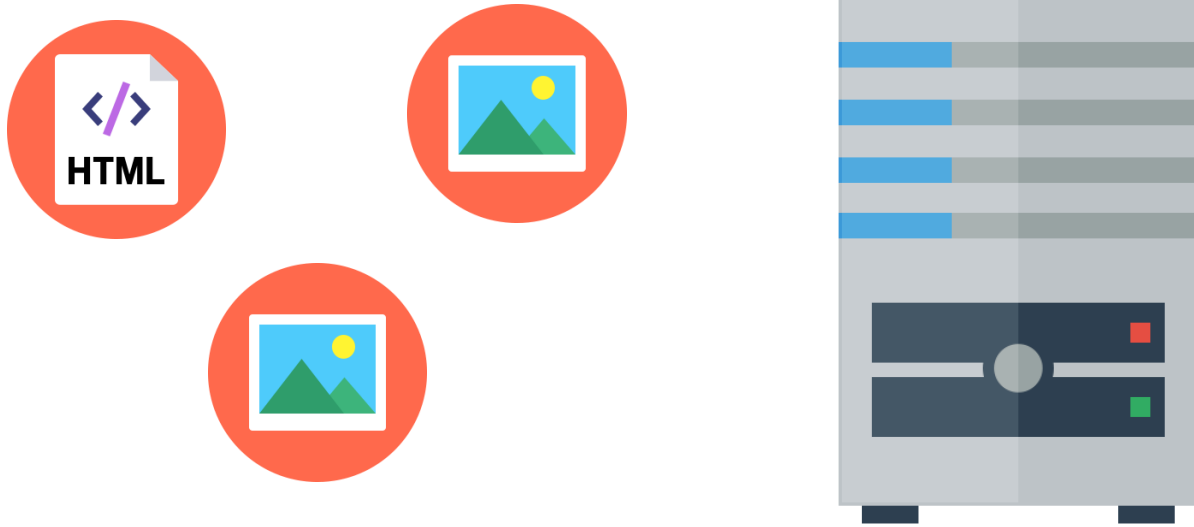E.g. Chrome, Firefox, Safari, Internet Explorer, Edge, etc.

How do web pages work?

Web pages are written in a markup language called HTML, so browsers display a web page by reading and interpreting its HTML.
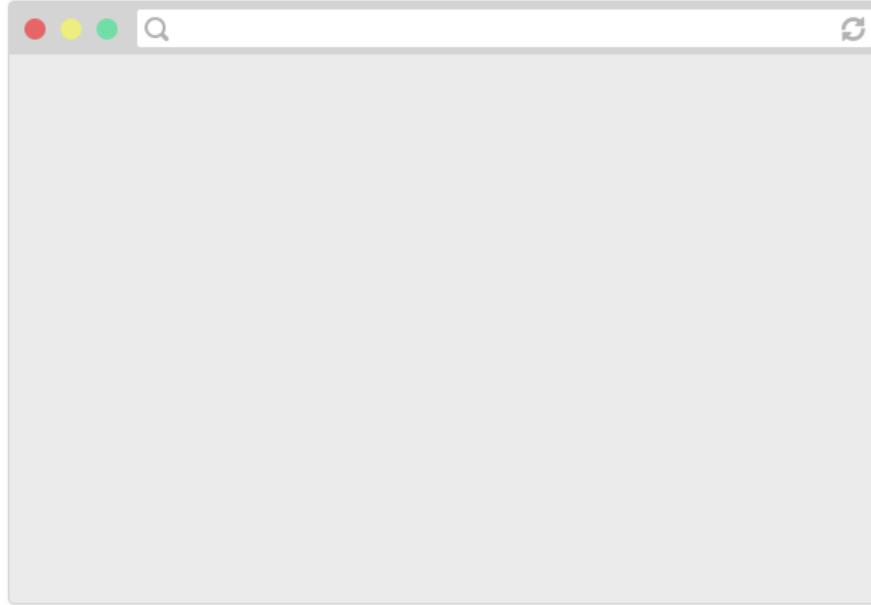
How do web pages work?

The HTML file might link to other resources, like images, videos, which the browser then also loads.
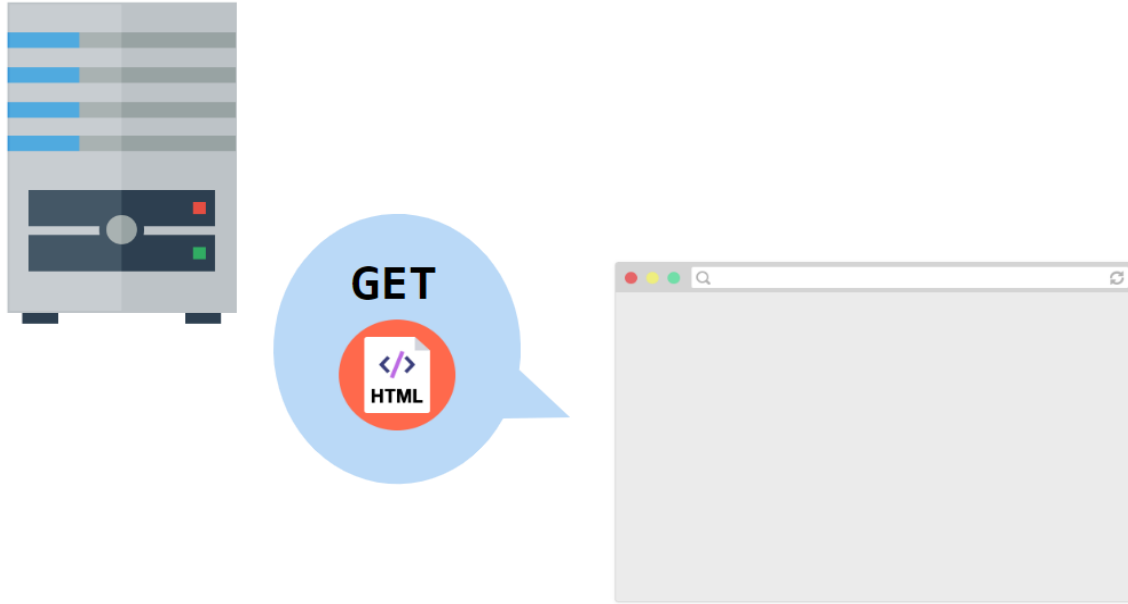
How do web pages work?

A web server is a program running on a computer that delivers web pages in response to requests.
It either stores or generates the web page returned.
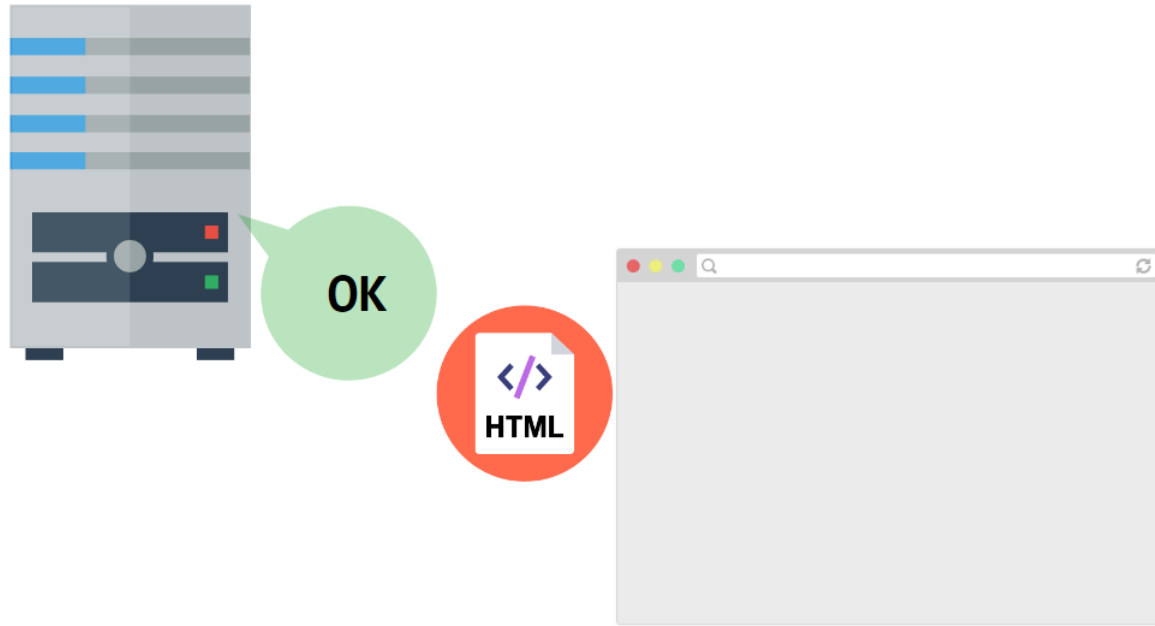
How do web pages work?

You type in a URL, which is the address of the HTML file on the internet.
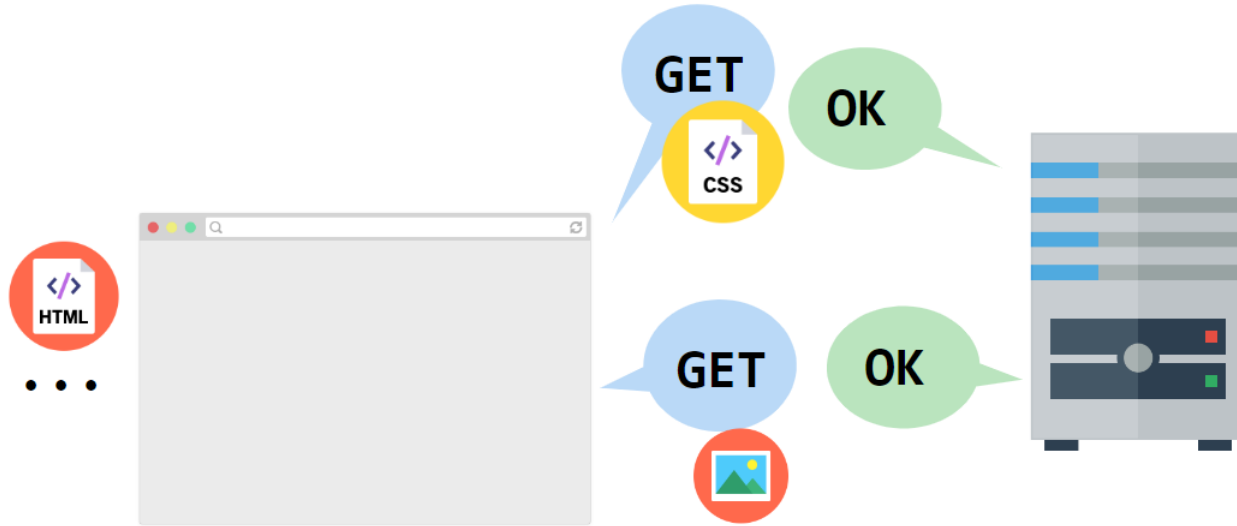
How do web pages work?

The browser asks the web server that hosts the document to send that document.
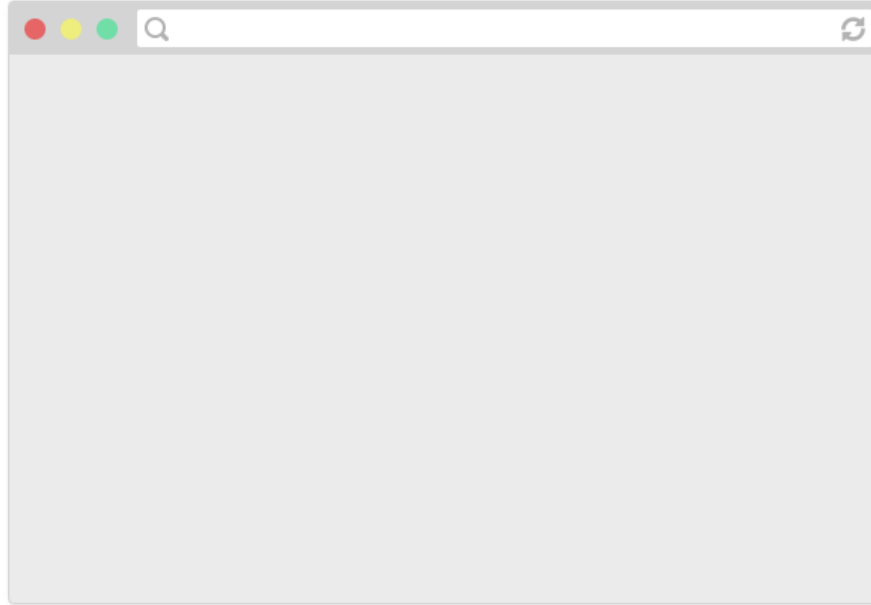
How do web pages work?

The browser reads the HTML, sees the embedded resources and asks the server for those as well.

How do web pages work?

How do web pages work?

The web page is loaded when all the resources are fetched and displayed.

More References Used

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- https://nou.edu.ng/coursewarecontent/CIT484.pdf

- https://web.stanford.edu/class/archive/cs/cs193x/cs193x.1176/lectures/

THANK YOU