Lesson Proper for Week 1

The World Wide Web (WWW or simply the Web) is certainly what most people think of when they see the word “Internet.”

Short History of the Internet

The Internet is not alone in providing instantaneous digital communication. Earlier technologies like radio, telegra

Telephone networks in particular provide a good starting place to learn about modern digital communications. In t to a switchboard to complete a circuit. These operators were around in some areas for almost a century before being repl

One of the weaknesses of having a physical connection is that you must establish a link and maintain a dedica

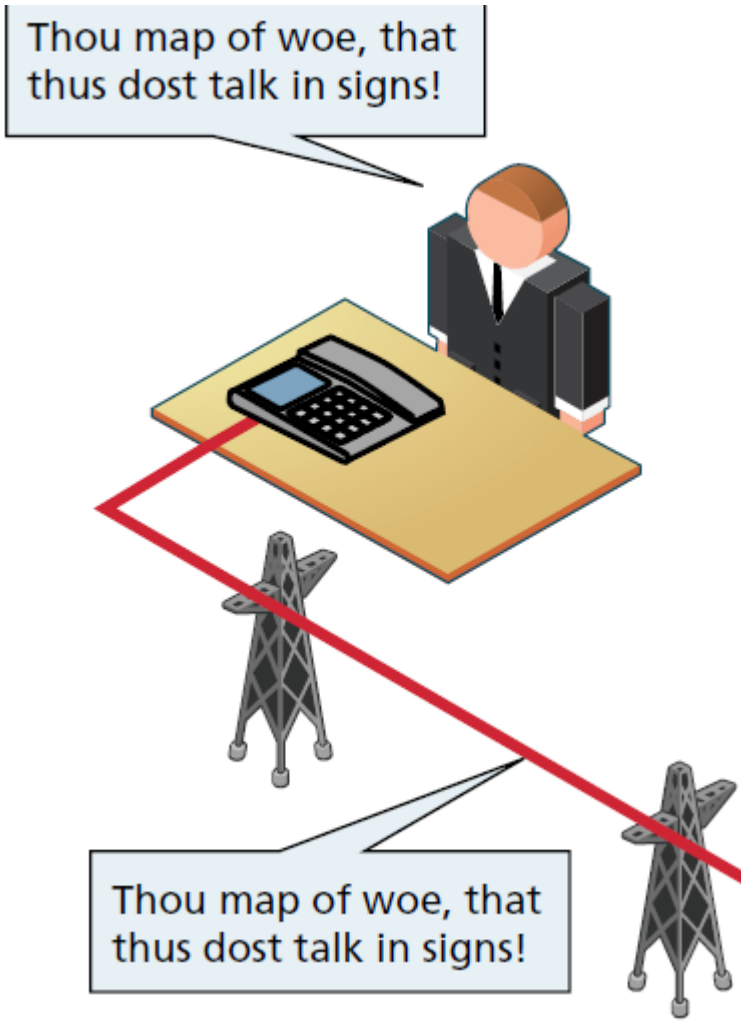

Figure 2 Telephone ne

In the 1960s, as researchers explored digital communications and began to construct the first networks, the res instead used an alternative communications method called packet switching. A packet-switched network does not require based on the destination address. The packets can take different routes to the destination, as shown in Figure 3.

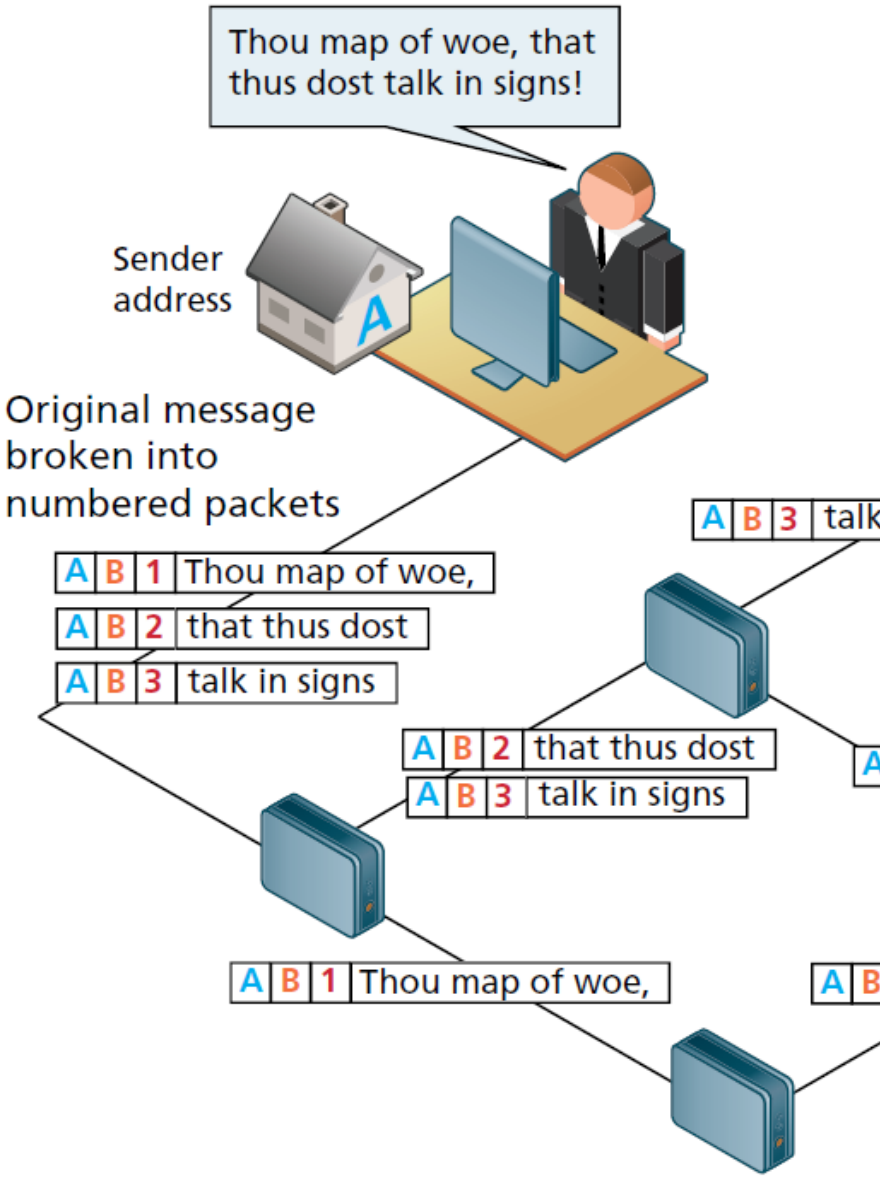

Figure 3 Internet networ

This early ARPANET network was funded and controlled by the United States government and was used exclusi research institutions and companies in 1969 and grew to a few hundred by the early 1980s.

To promote the growth and unification of the disparate networks, a suite of **protocols** was invented to unify th Communications protocols allow any two computers to talk to one another, so long as they implement the protocol. By 1 **(Transmission Control Protocol/Internet Protocol)** communication model while older networks were transitioned over On January 1, 1983, TCP/IP was adopted across all of ARPANET, marking the end of the research network that spawned

- ✦ **Transmission Control Protocol (TCP):** a connection-oriented communications protocol that facilitates th
- ✦ **Internet Protocol (IP):** is the method or protocol by which data is sent from one computer to another on th

The Birth of the Web

The next decade saw an explosion in the numbers of users, but the Internet of the late 1980s and the very early Internet experience.

This transition from the old terminal and text-only Internet of the 1980s to the Internet of today is of course d Tim Berners-Lee), who, along with the Belgian Robert
Cailliau, published a proposal in 1990 for a hypertext system while both were working at CERN in Switzerland. Sho

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- A Uniform Resource Locator (URL) a unique identifier used to locate a resource on the internet.
- The Hypertext Transfer Protocol (HTTP) a protocol used to transfer data over the web.
- A software program (later called web server software) that can respond to HTTP requests.
- Hypertext Markup Language (HTML) a language used to create webpages.
- A program (later called a browser) that can make HTTP requests from URLs and that can display the HTML it receives.

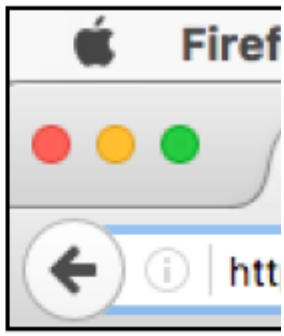
How the web works

Before you can understand web coding and development, you need to take a step back and understand a bit al page address into your browser.

Here's a high-level blow-by-blow of what happens:

1. You tell the web browser the web page you want to visit.
   You do that either by clicking a link to the page or by typing the location known as the ***uniform resource locator*** o

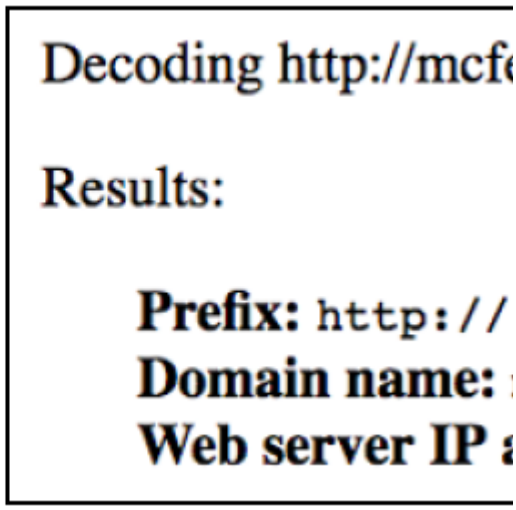
FIGURE 1-1: One way to get to a web page is to type the URL in the browser's address bar.



The browser decodes the URL.

Decoding the URL means two things: First, it checks the prefix of the URL to see what type of resource you're requestin the something.com or whatever.org part — and asks the *domain name system* (DNS) to translate this into a unique locati

FIGURE 1-2: The browser extracts the prefix, domain, and the server address from the URL.



The browser contacts the web server and requests the web page.

With the web server's unique IP address in hand, the web browser sets up a communications channel with the server and

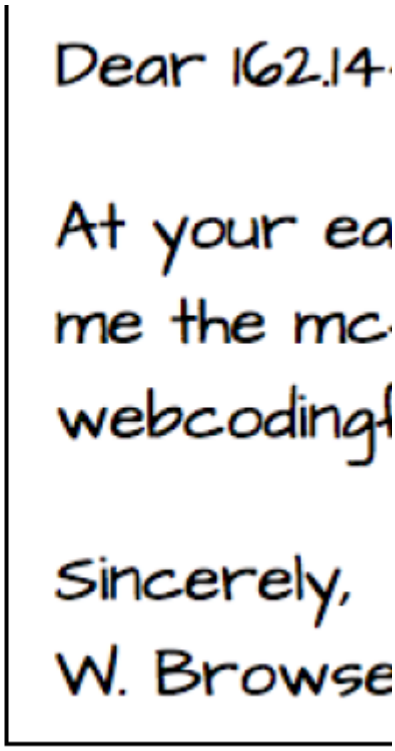


FIGURE 1-3: The browser asks the web server for the web page.

The web server decodes the page request.

Decoding the page request involves a number of steps. First, if the web server is shared between multiple user account directory that holds the page and the file in which the page code is stored (see Figure 1-4).

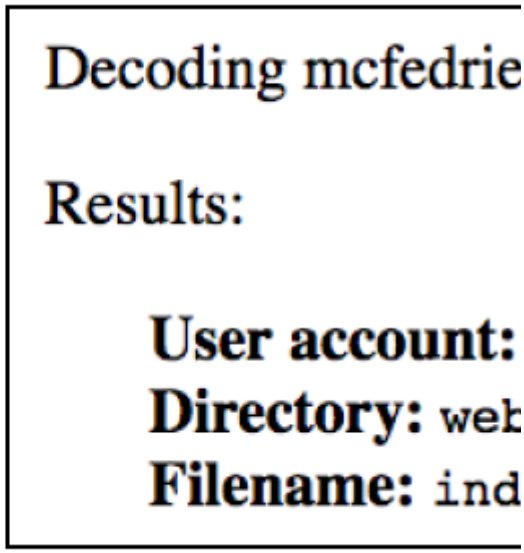


FIGURE 1-4: The server uses the page request to get the account, directory, and filename.

The web server sends the web page file to the web browser (see Figure 1-5).

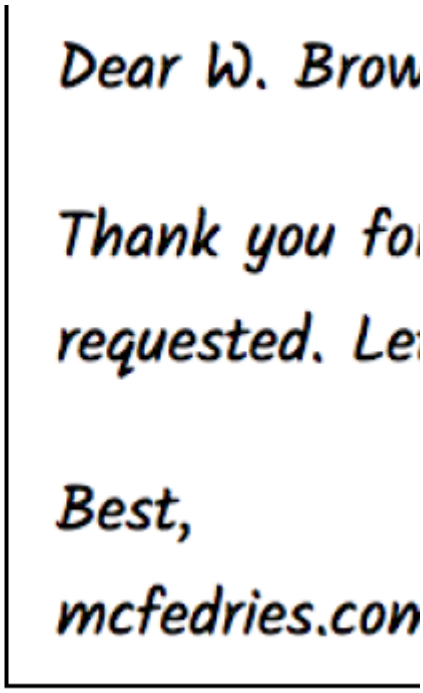


FIGURE 1-5: The web server sends the requested web page file to the browser.

The web browser decodes the web page file.

Decoding the page file means looking for text to display, instructions on how to display that text, and other resources requ

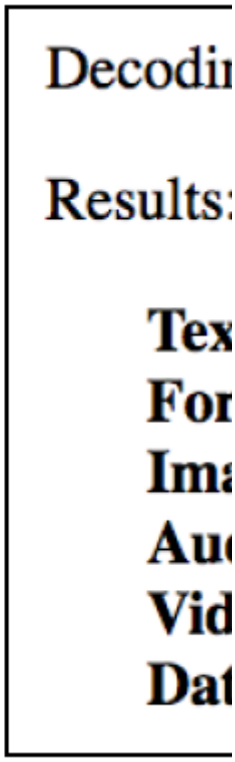


FIGURE 1-6: The web browser scours the page file to see if it needs anything else from the server.

If the web page requires more resources, the web browser asks the server to pass along those resources (see Figure 1-7

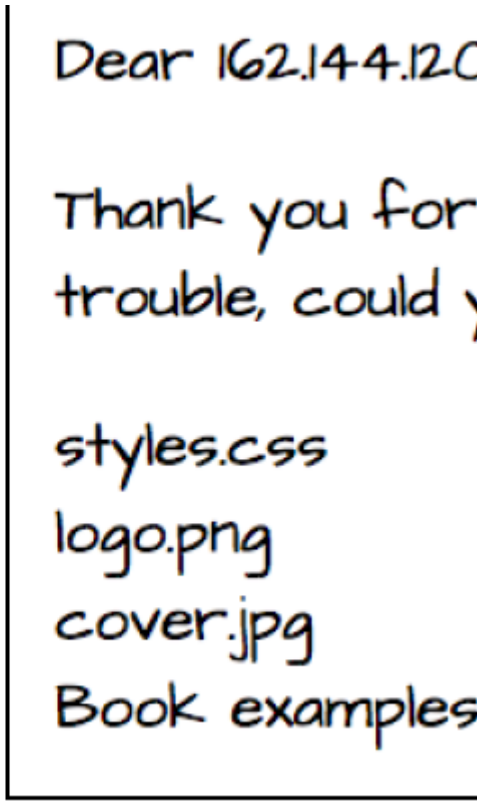


FIGURE 1-7: The web browser goes back to the server to ask for the other data needed to display the web page.

For each of the requested resources, the webserver locates the associated file and sends it to the browser (see Figure 1-

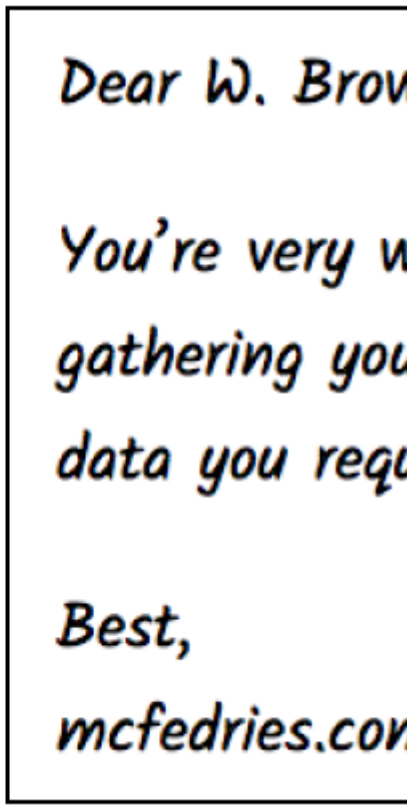


FIGURE 1-8: The web server sends the browser the rest of the requested files.

The web browser gathers up all the text, images, and other resources and displays the page in its entire digital splendor i

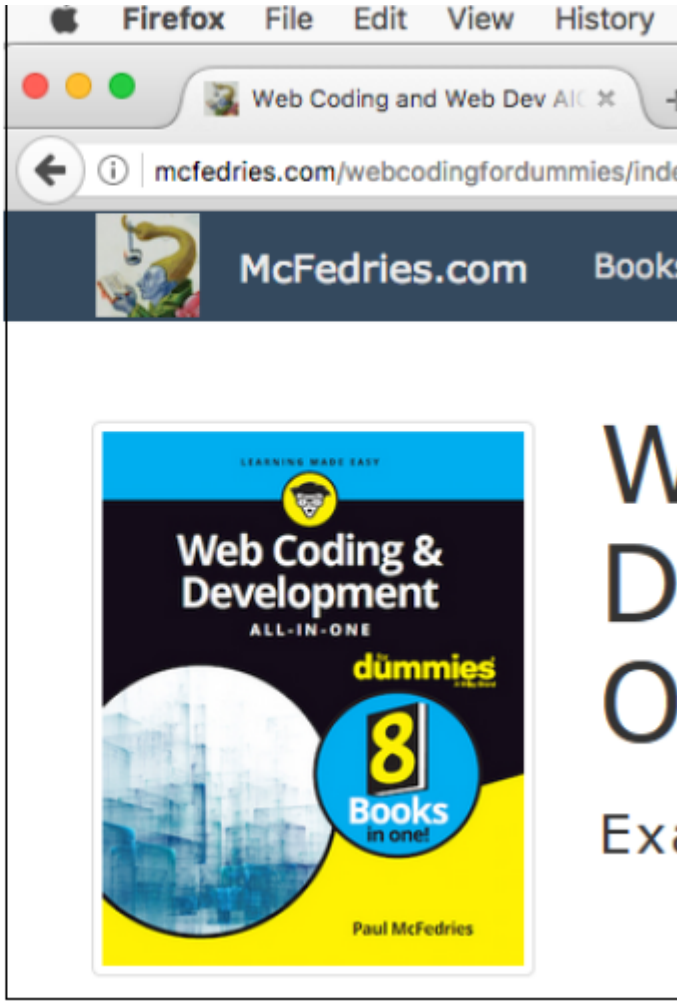


FIGURE 1-9: At long last, the web browser displays the web page.

Another way to look at this process is to think of the web as a giant mall or shopping center, where each website the clerk for the web page. The clerk goes into the back of the store, locates the page, and hands it to the browser. The the browser has everything it needs, and it then puts all the page pieces together for you, right there in the front of the important concepts in web development.

In the same way that our website store has a front and a back, so, too, is web development separated into a front

ront end: That part of the web page that the web browser displays in the browser window. That is, it's the page stuff you

ack end: That part of the web page that resides on the webserver. That is, it's the page stuff that the server gathers base

As a consumer of web pages, you only ever deal with the front end, and even then you only passively engage wit

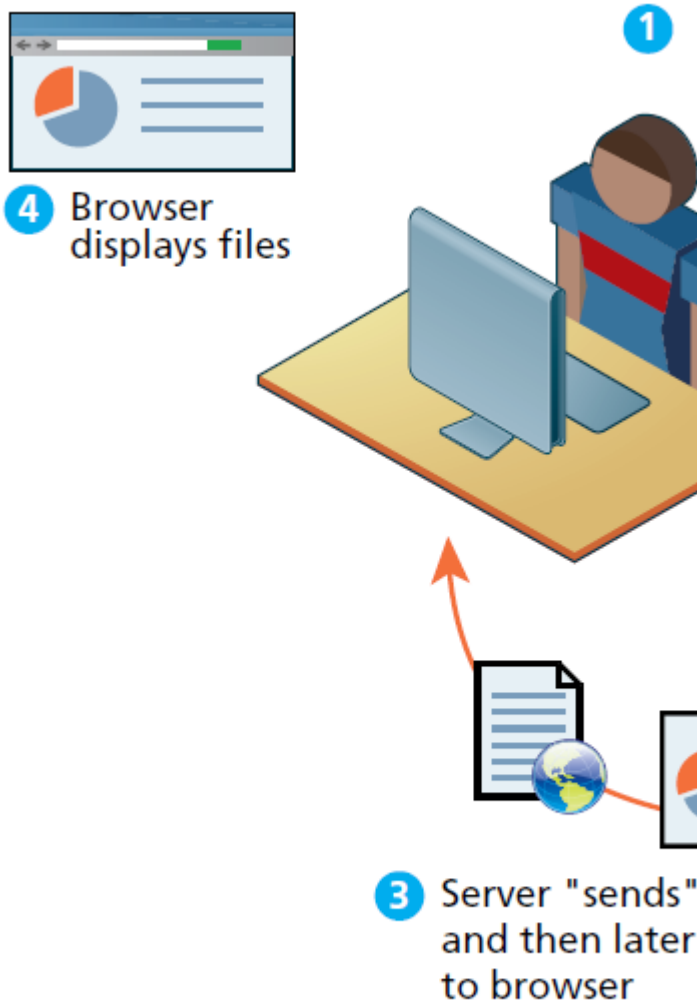
However, as a maker of web pages — that is, as a web developer — your job entails dealing with both the front e the back end and coding the intermediate tasks that tie the two together.

Static Websites versus Dynamic Websites

In the earliest days of the web, a ***webmaster*** (the term popular in the 1990s for the person who was responsible not provide feedback. The early days of the web included many encyclopedic, collection style sites with lots of content to

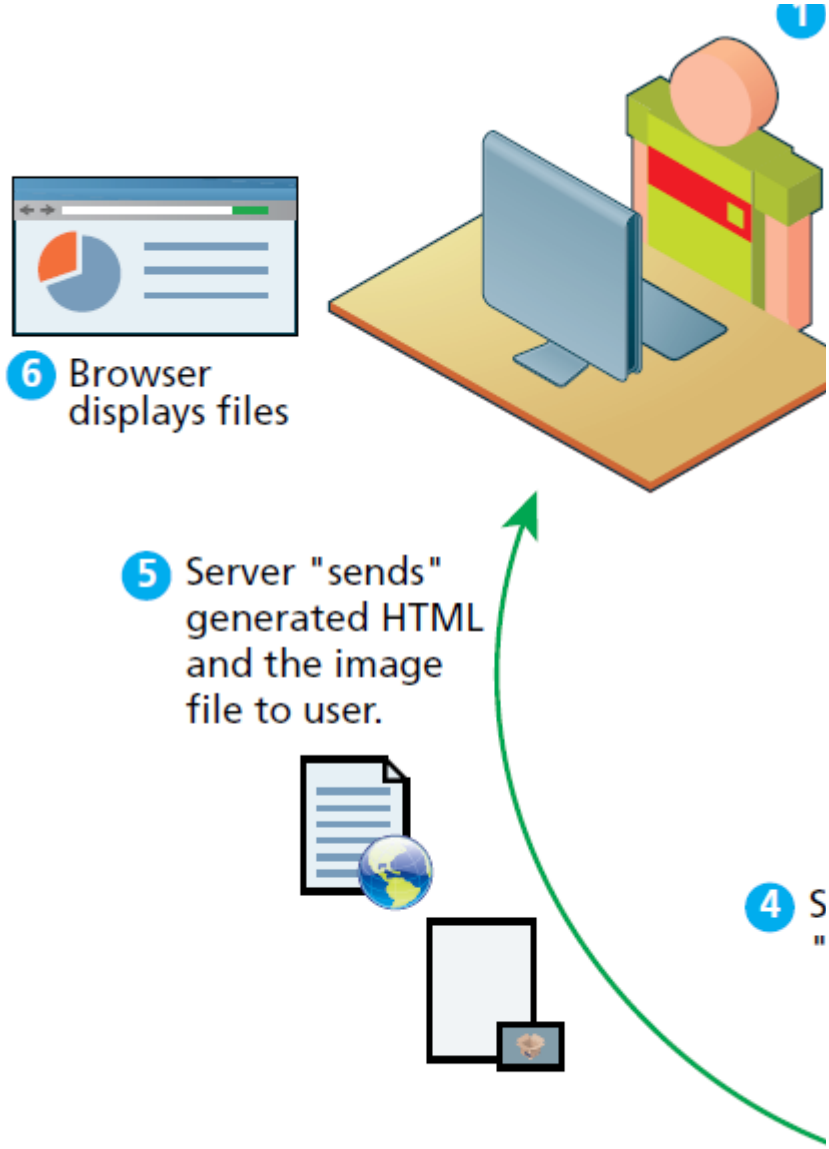
In those early days, the skills needed to create a website were pretty basic: one needed knowledge of the HTML consists only of HTML pages that look identical for all users at all times.

The image below illustrates a simplified representation of the interaction between a user and a static website.



Within a few years of the invention of the web, sites began to get more complicated as more and more sites beg databases, interface with existing enterprise computer systems, communicate with financial institutions, and then output I page content is being created at run time by a program created by a programmer; this page content can vary from user tc

The image below illustrates a very simplified representation of the interaction between a user and a dynamic website.


6 Browser displays files
5 Server "sends" generated HTML and the image file to user.
4 S

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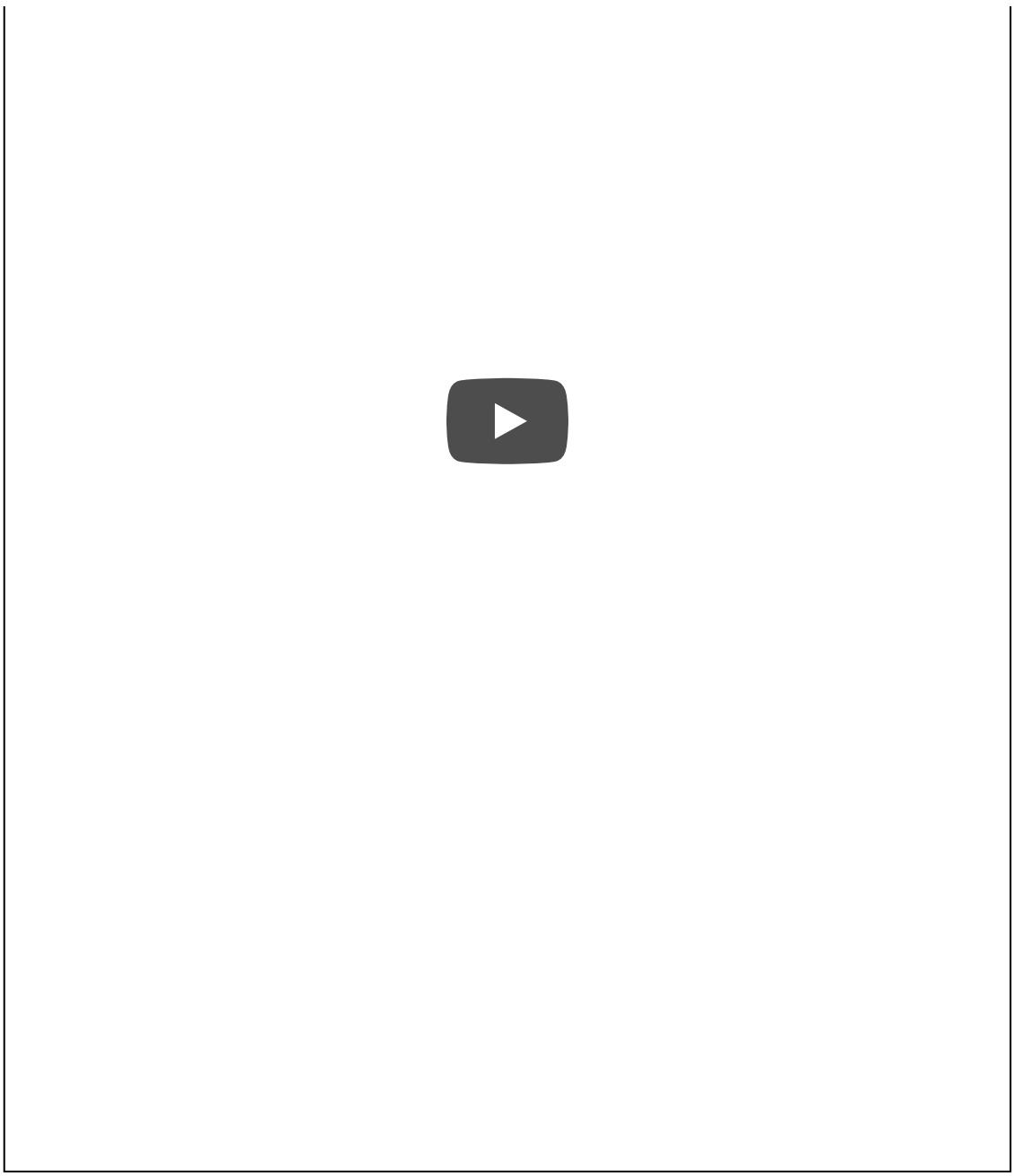

◀ Preliminary Activity for Week 1

Jump to...

Analysis, Application, and Exploration For Week 1 ▶

Navigation

Home

Dashboard

Site pages

My courses

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PROSECUTION: Under Philippine law (Republic Act No. 8293), copyright infringement is punishable by the following: Imprisonment of between 1 to 3 years and a fine of between 50,000 to 150,000 pesos for the first offense. Imprisonment of 3 years and 1 day to six years plus a fine of between 150,000 to 500,000 pesos for the second offense.

COURSE OF ACTION: Whoever has maliciously uploaded these concerned materials are hereby given an ultimatum to take it down within 24-hours. Beyond the 24-hour grace period, our Legal Department shall initiate the proceedings in coordination with the National Bureau of Investigation for IP Address tracking, account owner identification, and filing of cases for prosecution.

2nd Semester Enrollment

Activities

- Assignments
- Forums
- Quizzes
- Resources