

Internet and Web Principal

Week 3

How the Web Work

Content

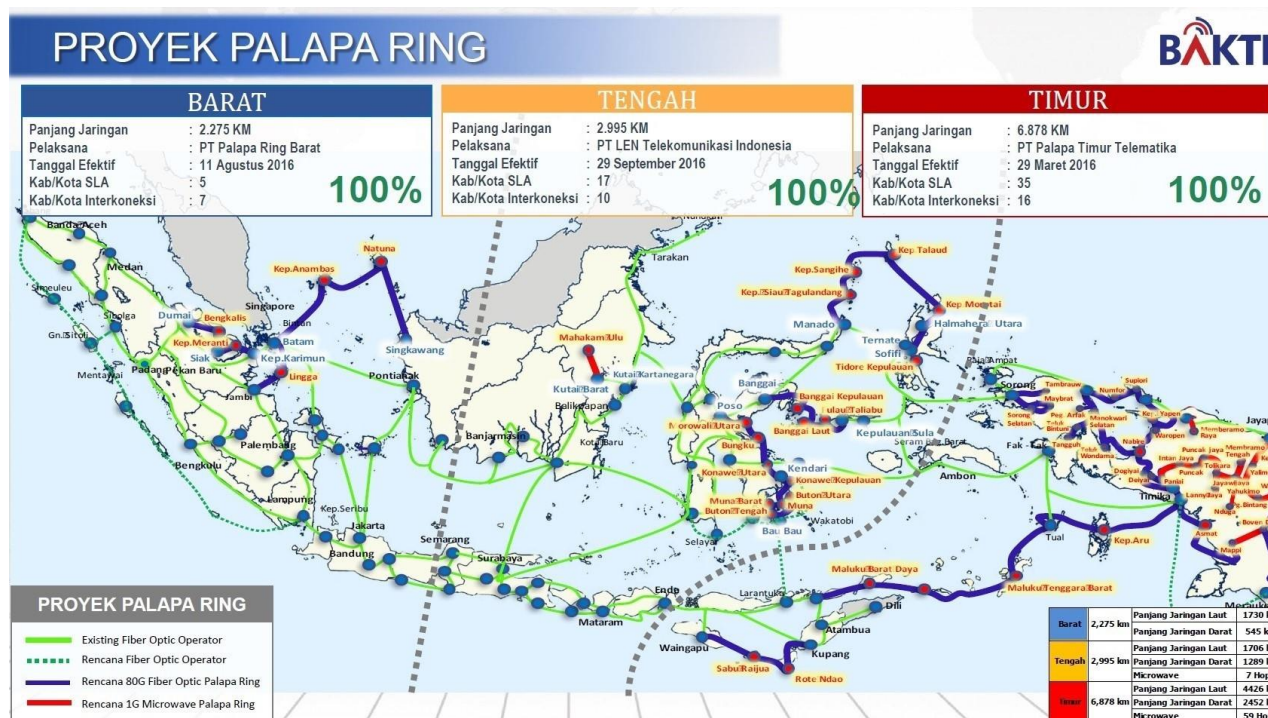
1. The Internet Versus the Web
2. Serving Up Your Information
3. A Word About Browsers
4. Web Page Addresses (URLs)
5. The Anatomy of a Web Page

The Internet Versus the Web

- The internet is a combination of network around the world that connected to each other, in purpose to exchange information.
- No one own's the internet and everyone own's the internet

The Internet Versus the Web

- Each separate network is owned by a different company, institution or organization and relies on physical servers in different countries with different laws and regulations.

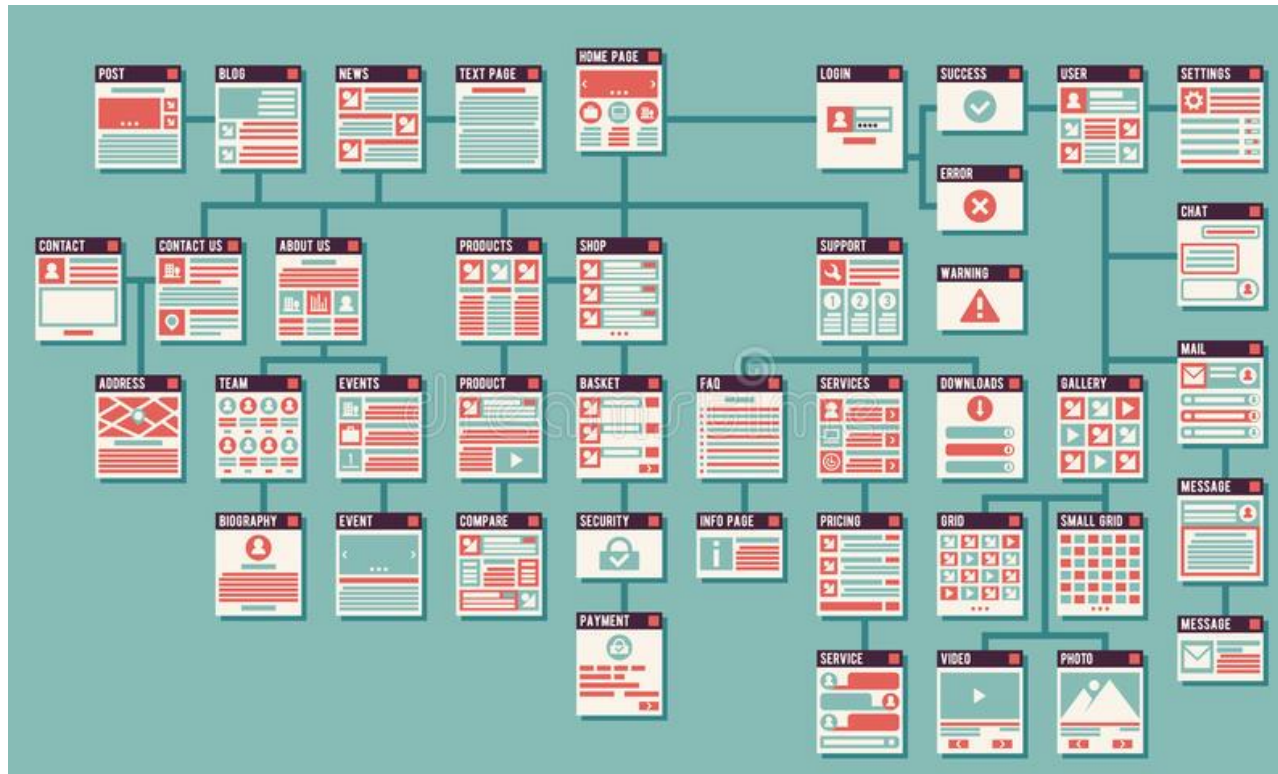


The Internet Versus the Web

- The web or we suppose to call it World Wide Web (Yes, that is the “www” in a URL) is just one way to share information over the internet
- Other ways to transfer information in internet is include email (POP3/IMAP/SMTP), File Transfer (FTP), Secure Shell (SSH), Instant messaging (IRC, XMPP, AMQP), and many other

The Internet Versus the Web

- The web using a protocol called Hyper Text Transfer Protocol (HTTP), that's allow document to be linked to one other and forming a huge “web” of connected information



<https://kiiff.com/blog/posts/what-is-a-sitemap>

Serving Up Your Information

- Did you ever heard word “server” in computer term?
- More precisely, the server is the software (not the computer itself) that allows the computer to communicate with other computers; nonetheless, the term "server" is also commonly used to refer to the computer (as a role).

Serving Up Your Information

- There is nothing difference about the computer hardware, the server it's can be a high end IBM BladeCenter or just a thinkpad personal computer, it is the software that's make a computer a server



=



Serving Up Your Information

- If a computer want to be the part of the web, it must be running a special web server software (running a web server software) that allows it to handle HTTP transactions.
- On this day we had many web server software option like: Apache, Microsoft IIS, Nginx, lighthttpd, Cherokee, Jetty, WEBrick, and many more

A Word About Browsers

- We have discuss the “Server”, what about the “Client”?
- The “client” is the software who do the requesting. The “client” software is called browser
- People use browser as a clients to access documents on the web
- The “server” return the request that has been made by the “client” by the browser software to display

A Word About Browsers

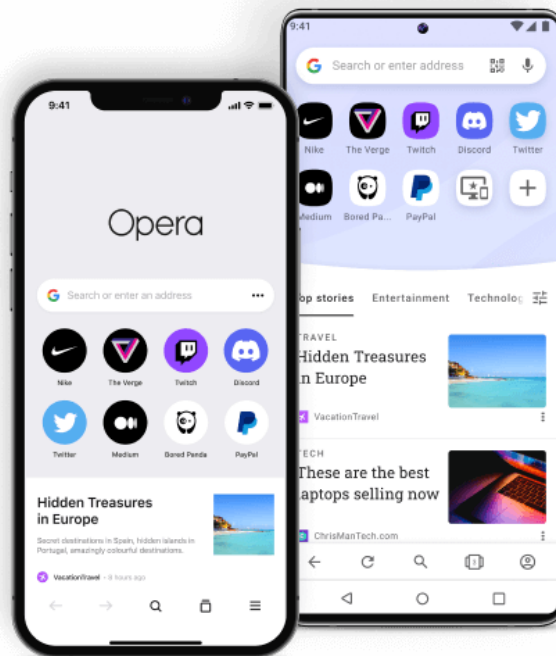
- The previously described HTTP protocol is used to manage requests and responses. Despite the fact that we've been discussing "documents," HTTP may also be used to send photos, movies, audio files, data, scripts, and all the other online resources that make up websites and apps.
- Now days we commonly know browser as a application to open a and user the web page, that known as graphical browser

A Word About Browsers

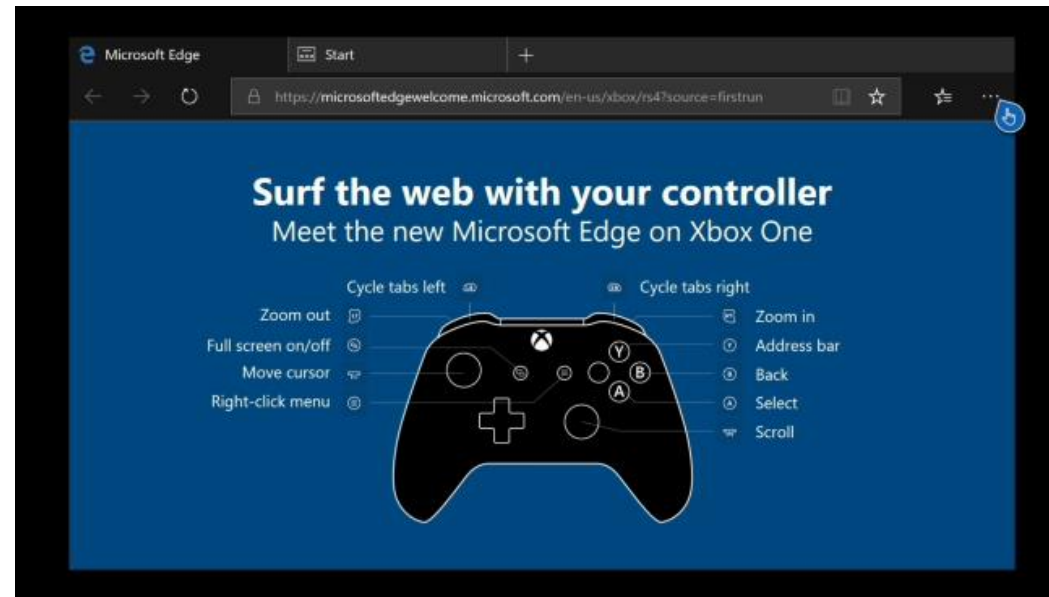
- Now days many web browser you can choose to use like: Microsoft Edge, chrome, Firefox, Safari, Opera, UC Browser, and many more
- however, more than half of web traffic comes from mobile browsers on smartphones and tablets such as Safari on iOS, Android and Chrome browsers on Android devices, Opera Mini, and a myriad of other default and installable mobile browsers

A Word About Browsers

- The web is also making its way to smart TVs and game consoles, where users can browse our pages via TV remotes or Xbox controllers.

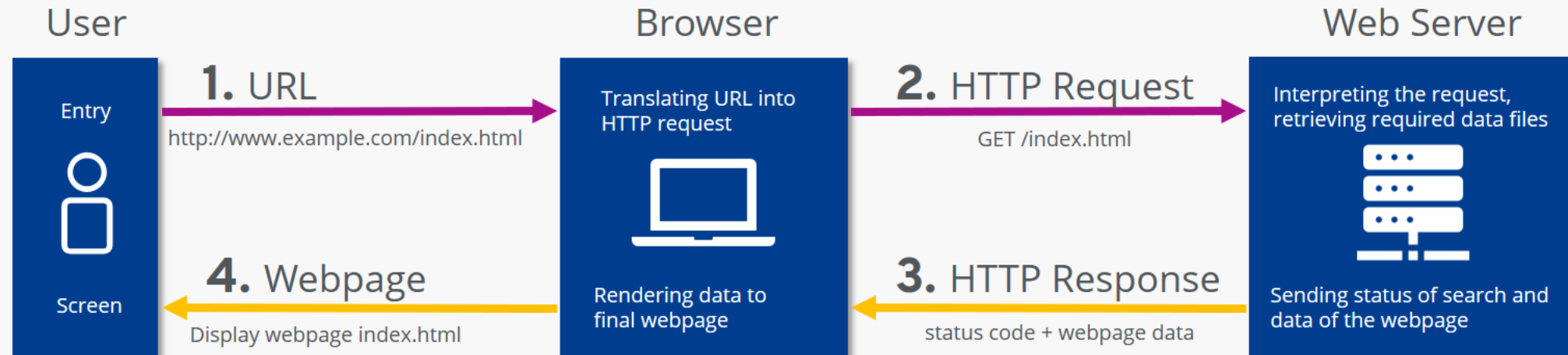


<https://www.opera.com/>

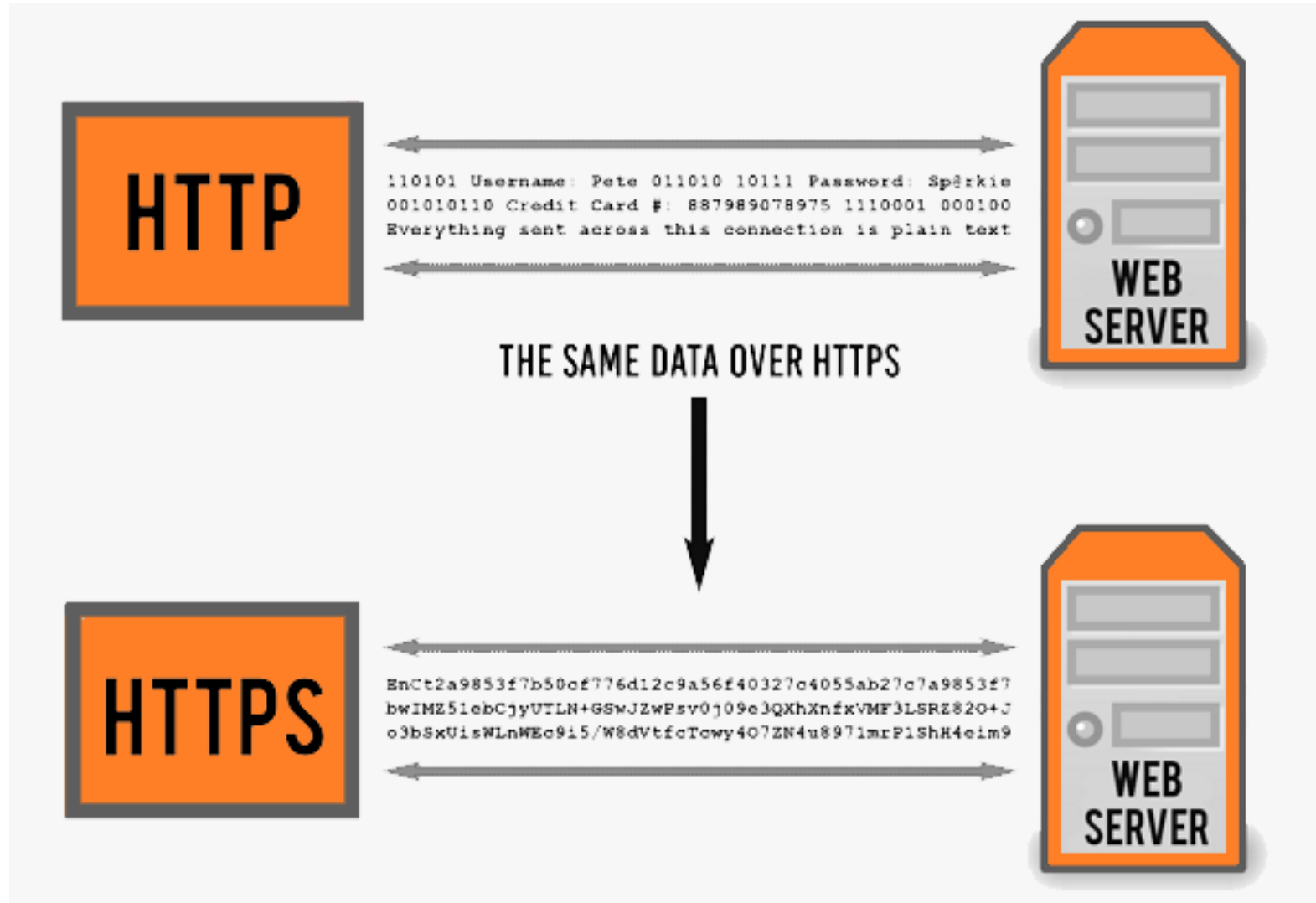


<https://www.thefastcode.com/id-idr/article/how-to-use-private-browsing-mode-on-your-xbox-one>

Communication process according to HTTP



HTTP vs HTTPS

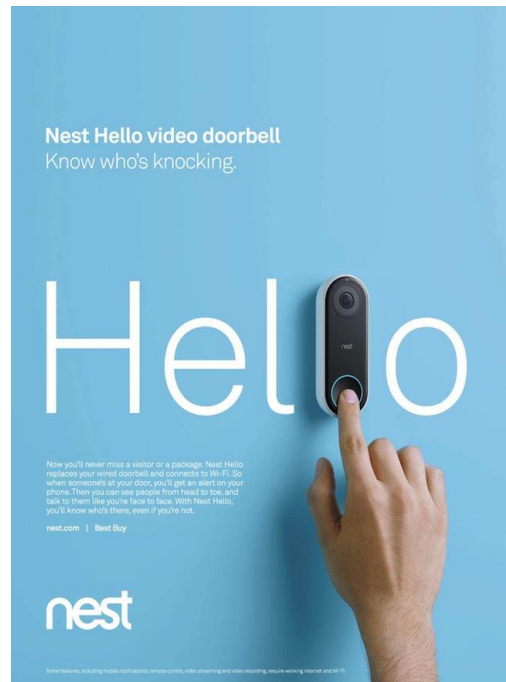


Web Page Addresses (URLs)

- As a home, office, company, and every other location who needs address web had a special address to called a URL (uniform Resource Locator)
- You can see URL almost everyday printed on a business card, TV Commercial, Banners, even on a event backdrop

Web Page Addresses (URLs)

- We usually keep URL short and sweet, easy to remember, and related to the purpose, could be a brand, event name, or some thing unique



<https://venngage.com/blog/creative-poster-ideas/>

Web Page Addresses (URLs)

- A URL is generally contain three components: Protocol, Site Name, and Absolute path to the resource

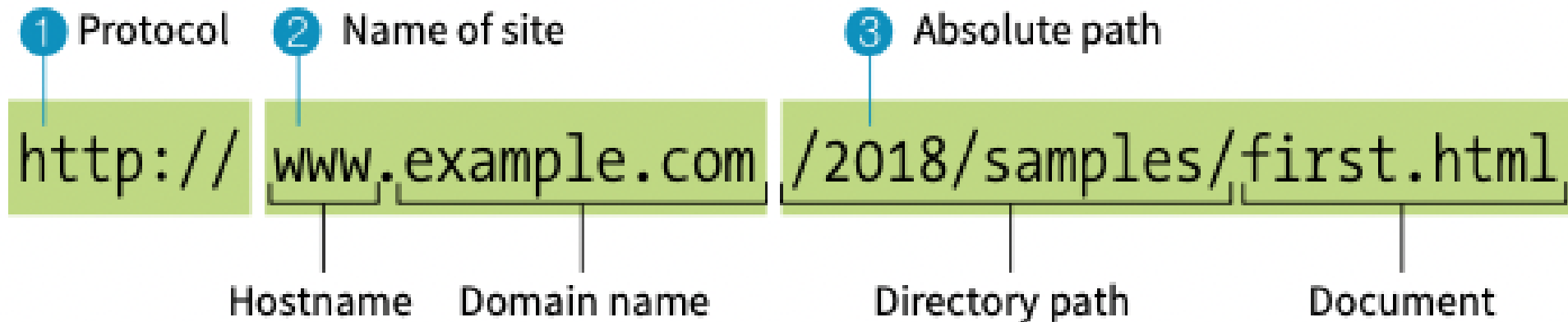



FIGURE 2-1. The parts of a URL.

Web Page Addresses (URLs)

- Protocol

The first part of the URL is protocol, protocol is used to define what protocol that will be used for the particular transaction. HTTP means that we use Hyper Text Transfer Protocol, or we are on “web mode.” or in many URLs nowadays we use HTTPS:// which is a secure version of HTTP

1 Protocol

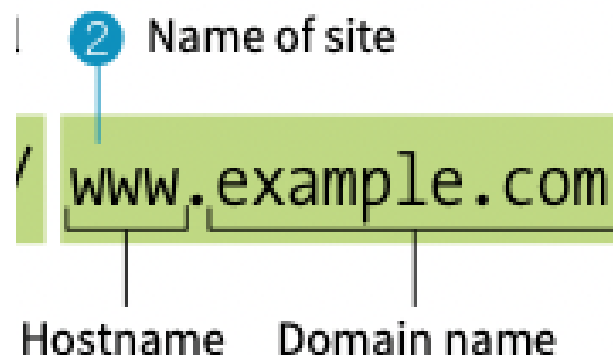


http://

Web Page Addresses (URLs)

- Name of Site

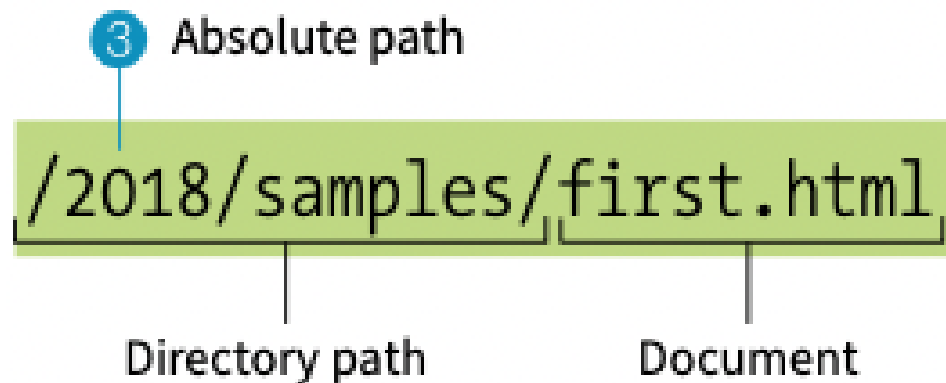
The domain name is used to identify the website in the following component of the URL. The domain name in this case is "example.com." The "www." component at the beginning represents the specific hostname at that domain. The "www" hostname has become a norm, but it is not a rule. In fact, the hostname is sometimes omitted. A domain can contain multiple websites (called subdomains). There may also be "development.example.com," "clients.example.com," and so on.



Web Page Addresses (URLs)

- Absolute Path

This is the server's absolute path via directories to the requested HTML page, first.html. The words separated by slashes are directory names, beginning with the host's root directory (as indicated by the initial /). Because the internet was built on computers that ran the Unix operating system, our present method still adheres to Unix norms and practices, hence the / separator in directory names.



Web Page Addresses (URLs)

- Skipping the protocol

The protocol part is often just implied because nearly (if not all) web page use the HTTP or HTTPS. And because URL are advertised it need to keep easy to remember. Also browsers are programmed to add `http://` or `https://` automatically to save typing.



← → ↻  google.com



← → ↻  https://www.google.com

Web Page Addresses (URLs)

- Pointing to default files

Many addresses do not include a filename, but simply point to a directory, like these:

<http://www.oreilly.com>

<http://www.jiu.ac/about/>

When a server receives a request for a directory name rather than a specific file, it looks in that directory for a default document, typically named `index.html/default.htm/index.php/default.aspx`.

The Anatomy of a Web Page

When you see a web pages, it's may look simple, just a page displaying text and picture, but what's really happening "under the hood"?



=

index.html

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <title>Jen's Kitchen</title>
  <link rel="stylesheet" href="kitchen.css" type="text/css">
</head>
<body>
<h1> Jen's Kitchen</h1>

<p>If you love to read about <strong>cooking and eating</strong>, would like to learn about some of the best
restaurants in the world, or just want a few choice recipes to add to your collection, <em>this is the site
for you!</em></p>

<p> Your pal, Jen at Jen's Kitchen</p>

<hr>
<small>Copyright 2018, Jennifer Robbins</small>
</body>
</html>
```

kitchen.css

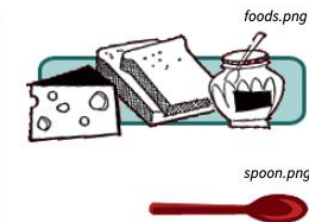
```
body { font: normal 1em Verdana; width: 80%; margin: 1em auto; }

h1 { font: italic 3em Georgia; color: rgb(23, 109, 109);
margin: 1em 0 1em; }

img { margin: 0 20px 0 0; }

h1 img { margin-bottom: -20px; }

small { color: #666666; }
```



The Anatomy of a Web Page

index.html

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <title>Jen's Kitchen</title>
  <link rel="stylesheet" href="kitchen.css" type="text/css">
</head>

<body>
<h1> Jen's Kitchen</h1>

<p>If you love to read about <strong>cooking and eating</strong>, would like to learn about some of the best
restaurants in the world, or just want a few choice recipes to add to your collection, <em>this is the site
for you!</em></p>

<p> Your pal, Jen at Jen's Kitchen</p>

<hr>
<small>Copyright 2018, Jennifer Robbins</small>
</body>
</html>
```

The Anatomy of a Web Page

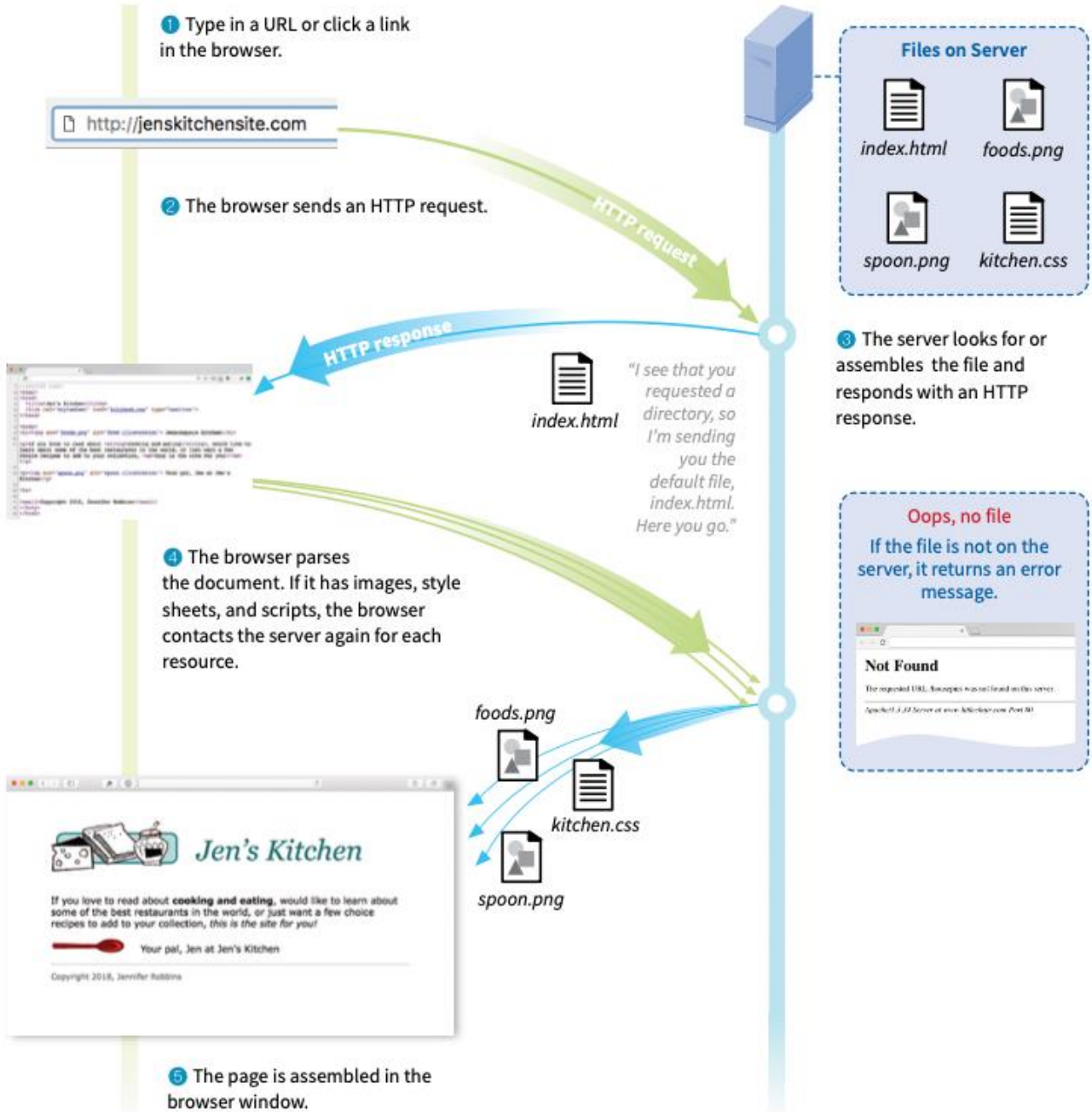
kitchen.css

```
body { font: normal 1em Verdana; width: 80%; margin: 1em auto; }  
  
h1 { font: italic 3em Georgia; color: rgb(23, 109, 109);  
      margin: 1em 0 1em; }  
  
img { margin: 0 20px 0 0; }  
  
h1 img { margin-bottom: -20px; }  
  
small { color: #666666; }
```

The Anatomy of a Web Page



Wrapping all Together



Thank You

Alfred Tenggono, S.Kom., M.Kom.

alfred.tenggono@jiu.ac

Reference

- Learning Web Design, Jennifer Niederst Robbins, O'Reilly Media, Inc., 2018, ISBN: 978-1-491-96020-2
- Computer Networking first-step, Wendell Odom, CISCO Pers, 2004, ISBN: 1-58720-101-1