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**Lab 4**

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**Executive Summary**

This lab will discuss the internet, the World Wide Web, other Networks; how to navigate and name all of the above; and how to make one's web browser more secure. The lab also discusses a newer part of the internet: The "internet of things" and how it might serve humans, and how some business models are best able to break into the market with new products. In the most fun part of this lab, I show off my first foray into html coding.

**IP Addresses, the Internet, the Web and other Networks**

With help from Howtogeek.com, I found my computer's IP address by first typing "cmd" in the Windows search box (ie, the little box that pops up when you hit the start button in Windows 7). Then when the next screen opened, I types "ipconfig" at the prompt. My IPv4 address: 10.104.89.234. I know it is an IPv4 address because it is 4 numbers between 0 and 255, and because it says "IPv4." Google.com's IP is more complicated. According to Lifewire.com, Google has several thousand IP addresses because it needs multiple servers to handle traffic on its search engine. Google separately maintains the IP addresses 8.8.8.8 and 8.8.4.4 for itsGoogle Public DNS (domain name server), which is one of the systems that converts domain names into IP addresses.

Internet means "an interconnected network of networks" and refers to all computers or networks that use a standard protocol that allows them to communicate with each other. Early navigation of the Internet required specialized knowledge of commands to type that would take a user to the information she wanted. The World Wide Web, first developed in 1990, is sort of a subset of the Internet, and is a tool people can use to move around the Internet. The WWW allows people to move from one place to another through the use of "hyperlinks" – text that is coded to take a user to another place. While people who create hyperlinks need some technical know-how, people who use them do not. There is still information on the Internet that is not part of the WWW (such as email, video, file transfers), and therefore the WWW is only a subset of all of the information out there. An Intranet allows people within a closed network to access information or view websites, but excludes users outside of the network. An example of this might be an employee timesheet system – office workers can log in to a web-based timesheet at their desks, but cannot access it from their homes or their phones. Unless there's an element to this I don't yet know… there can be many intranets, but there is only THE internet.

In the earlier days of the World Wide Web, people who created content had to have some specialized knowledge of HTML defineor web server technology. In the early 2000s, the "Web 2.0" started allowing people to create web content without being familiar with those, by integrating tools into websites that allow people to post content without needing to know the technical aspects. Sites like blogs (WordPress, Blogspot), photo-sharing sites (Photobucket), social media (Facebook, Twitter, MySpace) are all examples of Web 2.0. Even the ability to post a comment at the bottom of an article is an example.

A local area network (LAN) allows computers to connect to each other and to peripherals (for example, several computers in office are connected to one printer). It is, by definition, local, and is usually limited to one small geographic area, like an office building or college campus or private home. Computers on a LAN might be connected to resources outside of the LAN (like the WWW) but people outside the LAN cannot connect to resources within it. A wide area network is also an enclosed system but covers a wider geographical scope, like locations in multiple cities.

## URLs

This is the website of the New York Times search page: https://query.nytimes.com/search/sitesearch/

"https://" is the scheme, which tells the browser what type of page it is. (https stands for "Hyper Text Transfer Protocol" with Secure Sockets Layer (SSL), which is secure technology used to communicate between web servers and web users.)

"Query.nytimes.com" is the domain name. .com is the top-level domain name, which identifies generally what kind of site this is. nytimes is the second-level domain, which usually identifies the organization or topic. And "query" is a sub-domain that further refines what the page is about – in this case, it's a search page.

"search/sitesearch/" is the file path, which tells the browser to load a specific page.

## Creating a Web Page with HTML

Below is my first attempt at creating a web page using HTML. I replied on the exercises provided in our lesson, and on a video provided in the instructions to this lab. My experience was... it was so easy, I assumed I was doing it wrong! Every time, I just typed exactly what the exercise or video showed, and my webpage updated just like I wanted it to! I imagine that as a person becomes more skilled, remembering all of the tags will get more complicated. And of course, spotting "typos," such as missing close-tags, will be required. But I am much less intimidated by this now that I've successfully completed a (small and simple) web page of my own. A copy of my code is included below the screenshot.
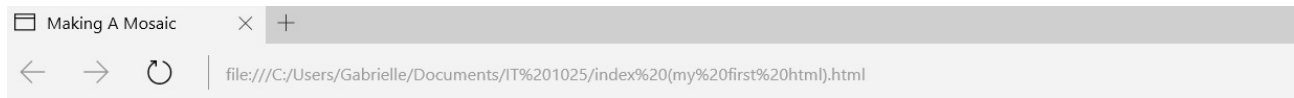
# So You Want To Make a Mosaic

## Selecting the Base

The first step in creating your mosaic is deciding what object the mosaic will decorate. Do you want your piece to be flat or curved? Decorative or practical?

You can find many examples here.

And here is an example of a mosiac during the planning stages:



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And here is the same photo, but stored in a different folder on my computer, and made smaller:



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```
<!DOCTYPE html>
<html lang="en-US">
<head>
<title>Making A Mosaic</title>
<meta charset="UTF-8">
</head>
<body>
<h1>So You Want To Make a Mosaic</h1>
<h2>Selecting the Base</h2>
<p title="Selecting the Base">The first step in creating your mosaic is deciding what object the mosaic will decorate. Do you want your piece to be flat or curved? Decorative or practical?</p>
<a href="http://www.mosaicartnow.com">You can find many examples here.</a>
<p>And here is an example of a mosiac during the planning stages:</p>
<img src="mosaicpixlr1.jpg" width="400px" />
<hr />
```

<p>And here is the same photo, but stored in a different folder on my computer, and made smaller:</p>
<img src="C:\Users\Gabrielle\Pictures\ART ideas and my stuff\mosaic first try text and more red.jpg" width="300px" />
</body>
</html>

I included the same photo twice. Once so I could practice including it from the same folder as the code document. And a second time so I could practice including it from a different folder. The first photo file path is merely " mosaicpixlr1.jpg" and is considered a relative file path. The second photo file is "C:\Users\Gabrielle\Pictures\ART ideas and my stuff\mosaic first try text and more red.jpg" and is the absolute file path. (Note that I renamed the photo when I copied it from an art folder to my IT1025 folder, hence the two different names.) The relative file path needs only the final part of the file name because it is in the same location as the code file. Images that are found elsewhere need the full path, so the program can find them.

**The Internet of Things and the Intelligence Age**

The "Intelligence Age," described by the Internet of Things Consortium, is a world where objects are able to communicate with one another (without being instructed by a human) and where they anticipate humans' needs and do things in order to make humans more comfortable. [Just typing that reminds me of the Ray Bradbury short story "The Veldt," in which a family's home that is designed to anticipate their every need turns out to be a horror story instead of science fiction.]

The internet of things, and its ability to "enhance" humans' lives is still in its early stages, but technological advances and humans' acceptance of such devices will quickly lead to more and more inventions and interconnection. These developments can make lives more comfortable (like by automatically adjusting the thermostat), more economical (ditto), and more enriching (for example, houses that select proper lighting for their owners, or phones that recommend nearby restaurants to try). Costs of the technology are dropping quickly, and many humans are naturally drawn to such advances. Both of these factors will result in an increase the type and number of internet-connected things.

The article by the ITC downplays (or rather, does not even mention) that other human factors will work against a very quick adoption of an internet of things. Many people do not like or feel the need to be monitored every moment of their lives. Many even fear that. Some people like the actual actions of work, such as hand-washing dishes instead of letting a machine do it. Others will be "left behind" by the new technology because they cannot afford it. New home appliances are expensive, and many people will question whether buying new items for minor upgrades like "your refrigerator will tell you when you need milk" is worth it. Finally, as the new-ish crime of hijacking home and business

electronics becomes more well-known, many people will decline to participate in the internet of things just because they fear hackers shutting down their whole house.

Amazon's Echo/Alexa is an always-listening device that will respond to voice commands and questions, and provide data, or answers to questions, or media such as music and news reports. It is successful in large measure because it is very easy to use (you just talk to it), is fairly affordable, and by most accounts is quite responsive to requests. What will make it difficult for competitors to compete with the Echo is that Amazon is such a large presence in the e-commerce world. So many people shop there, that it is easy for Amazon to market the Echo to a very large audience. Amazon also has a very fast and efficient delivery system – especially for people who use its Prime delivery services – that delivery will be quick. The ICT does identify areas where competitors might have some advantages over Echo. For example, Google may produce a similar device, one that can tap the enormous info-seeking resources of the Google search engine. In addition, Amazon does not have any particular expertise when it comes to knowing how computers can best understand human commands. A company that has decades of human-computer communication background may be able to produce a "smarter" listening device, one that more readily understands what is being requested.

**The World Wide Web Consortium**

The purpose of the World Wide Web Consortium (W3C) is to lead the WWW to its full potential by developing protocols and guidelines that ensure the long-term growth of the web, and to make the web's benefits available to everyone regardless of their hardware, software, network, language, culture, geographical location, or abilities.

One of the web aspects that the W3C is involved in is graphics. Their current page reads as if it is still in a draft version, because it invites "the community" to develop the page for its beta release of W3.org. But in its current form, the page discusses the various types of graphical formats that are used on web pages, explaining which kind of formats are best for which functions (ie, Portable Network Graphics are best for photos, while Scalable Vector Graphics are best for interactive elements, etc.)

**Securing the Web Browser**

At home I mostly use the Chrome browser. There are six primary security measures in Chrome users can take to make their web surfing more secure: Privacy settings, warnings about unsafe sites, reporting errors and crashes, saving passwords, managing website content, and sharing your location. I was unfamiliar with how to manage two of these – saving passwords and the sharing of my location. So I read up on them. Here's what I learned:

While I know Chrome will often ask me if I wish to save a password on a website, I just learned I could this feature off completely. I'm glad I learned that. I don't like saving my passwords, in part because it makes me nervous to have them saved (ie, it seems less

secure than having to type them each time) and because having to type them each time forces me to remember them. I also learned that if I ever *do* have Chrome remember some passwords, I will know how to delete individual or all passwords at any time.

I also often get requests from websites asking if I will share my location. Like the password save feature, I almost always say no. Through the tutorial in this lesson, I learned I can make Chrome automatically block all location requests. Or I could manage which sites can see my location, and revoke any one or all sites whenever I choose.

## Conclusion

In this lab, I discussed several different networks, including the internet and the World Wide Web; I explored how these are named and how they are accessed; and learned how to make web browsers more secure. I thought about whether the internet of things will in fact increase human productivity and pleasure, and what some companies' advantages were if they introduced new products for the internet of things. I also included both the results of my first html code, and the code itself.