Module 2

General Notes

The Internet and the Web

- The internet was launched in 1969 when the United States funded a project that developed a national computer network called **Advanced Research Project Agency Network (ARPANET)**.
- **WWW** stands for **W**orld **W**ide **W**eb
- The web was introduced in 1991. Prior, the internet was all text.
    - The web allowed graphics, animations, sound, and video.

Different Web Generations

- **Web 1.0** is defined by the use of search engines that connect everyone to web pages of interest.
    - Web pages were difficult to create and required a background in computers and programming.
- **Web 2.0** is defined by the use of social media that connect friends and family to social media posts about each others' lives.
- **Web 3.0** is defined by the innovation of the semantic web. The semantic web allows programs to identify the relationships between data.
    - Like Amazon's Alexa and Google Assistant can inform a user that a flight they are planning to take has been delayed. This is accomplished by identifying the relationship between a flight scheduled on your calendar and flight delay information available on the Internet.
        - The content creator is now a computer program, and the content audience is a single person - the user.
- **Web 4.0** called the mobile web, is defined by the use of mobile tools that provide new sources of information for programs to provide users with information. This is an extension of Web 3.0, where programs draw relationships among data to assist individuals, but now the information available to these programs includes the information gathered by mobile devices.
    - For example, your cell phone can provide your current location, or your smartwatch can report your heart rate. A program like Apple's Siri can use your current location, the location of your next calendar event, and local

traffic reports on the Internet to alert you to leave early for an appointment because of a traffic jam between your current location and your next event.

We continue to see innovations in Web 1.00 and Web 2.0 technologies even as Web 3.0 and Web 4.00 technologies are still being incorporated into our lives.

Web 5.0 is on the horizon-called the emotional web, this generation may include programs that anticipate our needs based on our moods and behaviors.

- This future is not yet realized, and the specifics of Web 5.0 are still to be determined.

Internet Vs Web

The **internet** is the physical network. It is made up of wires, cables, satellites, and rules for exchanging information between computers connected to the network.

- Being connected to this network is often described as being online.
- The internet connects millions of computers and resources throughout the world.

The **web** is a multimedia interface to the resources available on the Internet.

Internet Access

Providers

Internet Service Providers (ISP) are already connected to the internet and provide a path or connection for individuals to access the Internet.

- The mose widely used commercial Internet service providers use telephone lines, cable, and / or wireless connections.
- Some of the best known providers in the United States are:
  - AT&T
  - Comcast
  - Sprint
  - T-Mobile
  - Verizon

Users connect to ISPs using on of a variet of connection technologies including:

- **Digital Subscriber Line (DSL)**
- **Cable**
- **Wireless Modems**

Browsers

Browsers provide access to web resources. These programs connect you to remote computers; open and transfer files; display text, images, and multimedia; and provide in one tool an uncomplicated interface to the internet and web documents.

For browsers to connect to resources ,the **location** or **address** of the resource must be specified. These addresses are called **uniform resource locators (URLs)**. All URLs hav eat lesat two basic parts:

1. The first part presents the protocl used to connect to the resource.
    - The protocol *https* is used for web traffic and is one of the most widely used Internet Protocols.
2. The second part presents the **domain name**. It indicates the specific address where the resource is located.
    - The last part of the domain following the dot (.) is the **top-level domain (TLD)**, also known as the **web suffix**.
        - For example, *.com* indicates a commercial site.

Once the browser has connected to the website, a document file is sent back to your computer. This document typically contains **Hypertext Markup Language (HTML)**, a markup language for displaying web pages.

The browser interprets the HTML formatting instructions and displays the document as a **web page**.

Various technologies are used to provide highly interactive and animated websites:

- **JavaScript**
  - language often used within HTML documents to trigger interactive features, such as opening new browser windows and checking information entered in online forms.
- **PHP**
  - Like JavaScript, a language often used within HTML documents to improve a website's interactivity.
  - Unlike JavaScript, which typically executes on the user's computer, PHP executes on the website's computer.
- **Cascading Style Sheets (CSS)**
  - Separate files referenced by, or lines inserted into, an HTML document that controls the appearance of a web page.
  - CSS helps ensure that related web pages have a consistent presentation or look.

Web Utilities

Web Utilities are specialized utility programs that make the Internet and web easier and safer to use. Some of these utilities are browser-related programs that either become part of your browser or are executed from your browser, while others work as separate stand-alone applications.

- Common uses for web utilities include filtering content and transferring files.

Filters

Filters block access to selected sites.

- Filter programs allow parents as well as organizations to block out selected sites and set time limits.
- These programs can monitor use and generate reports detailing the total time spent on the Internet and the time spent at individual websites.

Some well-known filters:

- Net Nanny
- Qustodio Parental Control
- Circle with Disney
- Symantec Norton Family Premier

File Transfer Utilities

- **Downloading:** Using file transfer utility software to copy files to your computer form specially configured servers.
- **Uploading:** Using file transfer utility software to copy files from your computer to another computer on the Internet.

Three popular types of file transfer are:

- **Web-based File Transfer Services**
  - Make use of a web browser to upload and download files.
  - Microsoft's onedrive and Google's Google drive
- **BitTorrent**
  - Distributes file transfers across many different computers for more efficient downloads, unlike other transfer technologies whereby a file is copied from one computer on the Internet to another.
  - A single file might be located on dozes of individual computers.
  - When you download the file, each computer sends you a tiny piece of the larger file, making BitTorrent well suited for transferring very large files.
- **File Transfer Protocol (FTP)** and **Secure File Transfer Protocol (SFTP)**
  - Allows you to efficient copy files to and from your computer across the Internet.
  - Frequently used for uploading changes to a website hosted by an ISP.
  - FTP has been used for decased and still remains one of the most popular methods of file transfer.

Internet Security Suites

- **Internet Security Suite:** A collection of utility programs designed to maintain your security and privacy while you are on the web.
  - These programs control spam, protect against computer viruses, provide filters, and much more.
  - It's more cost-efficient to buy the suite than each tool individually.

Summary of Web Utilities

Web Utility	Description
Filter	Blocks access to selected sites and sets time limits
File Transfer	Upload and download files from servers
Internet Security Suite	Collection of utility programs for security and privacy

Communication

Communication is the most popular Internet activity. Some popular types of Internet communication are:

- Social Networking
- Blogs
- Microblogs
- Podcasts
- WIkis
- E-mail
- Messaging

On the internet, community etiquette rules are called **netiquette**, a combination of *Internet* and *etiquette*.

Social Networking

Social Networking is one of the fastest-growing and most significant Web 2.0 applications. These sites typically provide a wide array of tools that facilitate meeting, communicating, and sharing. Some common features:

- **Profiles** or **Pages**
- **Groups** and **friends**
- **News Feed**
- **Share Settings**

A social network often has an overall focus.

- LinkedIn is a popular business-oriented social networking site.
- Facebook originally had a focus on connecting friends and family, but has expanded to include news sites, entertainment sites, and a powerful way for businesses and organizations to connect with their audience.

Blogs, Microblogs, Podcasts, and Wikis

- Many individuals create personal websites, called **blogs**, to keep in touch with friends and family.
- Two of the most widely used blog tools are Blogger and WordPress
- **Microblogs** allow an individual or company to share posts with an audience, but are designed to be used with mobile devices and limit the size of posts.
    - Twitter
    - Instagram
- A **Wiki** is a website specifically designed to allow visitors to use their browser to add, edit, or delete the site's content.

Messaging

Electronic messaging is a popular way to communicate quickly and efficiently with friends, family, and co--workers.

- Common on cell phones
- Messages are short and informal
- Instantaneous responses

Thw two most widely used forms of electronic messaging are **text** and **Instant Messaging**.

E-mail

E-mail (electronic mail) is used to communicate longer and more formal text.

- E-mail exchanges tend to take longer to write and are more carefully crafted than text message exchanges, making them ideal for business communications and newsletters.
- E-mails contain the four basic elements:

    - Header
    - Message
    - Signature
    - Attachment

There are two basic types of e-mail systems:

- Client-based
    - Require a special program called an **e-mail client** to be installed on the computer.
- Web-based
    - Once your computer browser connects to an e-mail service provider, a special program called a **webmail client** is run on the e-mail provider's computer and then you can begin e-mailing.
    - Known as **webmail**.

> CAN-SPAM antispam law requires that every marketing-related e-mail provide an opt-out option. When the option is selected, the recipient's e-mail address is to be removed from future mailing lists.

Search Tools

Search Services are organizations that help you locate the information you need on the internet.

Search Engines

Search engines are specialized programs that assist you in locating information on the web and the Internet. To find information, you go to a search service's website and use its search engine.

Electronic Commerce (E-Commerce)

There's three types of e-commerce:

- **Business-to-consumer (B2C)**
- **Consumer-to-consumer (C2C)**
    - Web auctions are an example

- **Business-to-business (B2B)**

Security

- Some digital currencies like **bitcoin** has no traditional cash equivalent, and their transactions do not involve third-party banks. SUch a currency is called a **cryptocurrency**.
    - Cryptocurrencies use public ledgers, known as blockchains, to record all transactions of the cryptocurrency.

Cloud Computing

Cloud computing uses the internet and the web to shift many of application programs from the user's computer to other computers on the Internet.

The Internet of Things

The Internet of THings (IoT) is the continuing development of the Internet that allows everyday objects embedded with electronic devices to send and receive data over the Internet. These everyday objects include:

- Cell phones
- Wearable devices
- Coffee makers

Careers in IT

Web Developers develop and maintain websites and resources.

- The job may include backup of the company website, updating of resources, or development of new resources.
- Web developers are often involved in the design and development of the website.
- Some web developers monitor traffic on the site and take steps to encourage users to visit the site.
- Web developers also may work with marketing personnel to increase site traffic and may be involved in the development of web promotions.

What To Do When You Lose Something

- Article 1: https://www.vivint.com/resources/article/keyless-entry-to-avoid-the-stress-of-losing-your-keys
- Article 2: https://emeraldlocksmithllc.com/blog/what-to-do-if-you-lose-your-home-keys/
- Article 3: https://www.wisebread.com/10-things-you-should-do-immediately-after-losing-your-wallet
- Article 4: https://www.inc.com/guides/2010/12/what-to-do-when-you-lose-your-computer.html
- Article 5: https://support.apple.com/en-us/HT201472
- Article 6: https://www.hongkiat.com/blog/lost-android-phone-what-to-do/

Lost Car / Home Keys

1. Contact your insurance companyChange your locks
2. Call the police
3. Change your locks
    - *Applies only to Keyless entry locks for homes and automatic locks for cars*
4. Watch out for locksmith scams

Lost Home Keys

1. Use your spare key
2. Find another entry route
3. Try to circumvent your door
4. Hire the services of a professional technician
5. Protective measures to take if you lose your home keys
6. Change your locks
7. Rekey your locks
8. Cut new keys
9. Opt for keyless lock system
10. Get a home insurance

Lost Wallet

1. First of All, Is It Actually Lost or Stolen, or Just Misplaced?

2. Call the Issuers of Your Credit, Debit, and ATM Cards
3. Put a Fraud Alert or Credit Freeze on Your Accounts
4. Report the Loss or Theft to the Local Authorities
5. Go to Your Local DMV to Report Your Missing Driver&#65533;s License
6. If Keys Are Missing, Change the Locks
7. If Your Social Security Card Is Missing, Inform the Authorities
8. Try to List Everything Else That Was in the Wallet
9. Order Credit Reports
10. Replace the Wallet With a New One

Some steps you can take to prepare before you lose your wallet:

- Strip Your Wallet of Anything You Don&#65533;t Really Need
- Scan or Photocopy Everything That&#65533;s in Your Wallet
- Try a &#65533;Lost Wallet&#65533; App

Lost Computer

1. Change Your Passwords
2. Check the Lost-and-Found
3. Make Clients Aware
4. Utilize Computer Tracking
5. Invest in an Online Backup Service

Lost Apple Product (iPhone, iPad, iPod)

1. Look for your device on a map
2. Mark as Lost
3. Report your missing device to local law enforcement
4. File a Theft and Loss claim
5. Remotely erase your device
6. Contact your wireless carrier
7. Remove your missing device from your account

Lost Android

Four things you should immediately do:

1. Track your Android

2. Secure your Accounts
3. Block SIM Card
4. Unlink your accounts on Android

How to keep your device safe:

1. Always Enable Tracking Location
2. Always Enable Your Mobile Internet Data
3. Use A Lock Screen
4. Disable the Physical Power Button
5. Use Android Phones with Non-Removable Batteries
6. Backup your Data