CSC101
Introduction to ICT

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Lecture - 4

Internet and World Wide Web

Internet

- Internet is _Interconnected Networks_

- It is a global system of interconnected networks
- Large network connecting millions of computers

- It is a network of networks that consists of millions of private, public, academic, business, and government networks, of local to global scope

Internet

- Who controls the Internet?
    - No one, it is a public, cooperative, and independent network
- Several organizations set standards
    - World Wide Web Consortium (W3C)
    - Internet2 (I2)
- How can you connect to the Internet?
    - Slow speed technology (dial-up access)
    - High speed technology (Digital Subscriber Line (DSL))

- DSL is a broadband technology used to access the internet
- Two variants; with <u>Asymmetric DSL</u> you can send and receive data at different speeds while with <u>Symmetric DSL</u> you can send and receive data using one speed only

Internet

- ISP or Internet Service Provider
- A company that provides services for accessing the Internet
- ISPs may be commercial, community-owned, non-profit, or otherwise privately owned

- Following are some of the services found on the Internet
    - Email
    - Web browsing
    - File sharing
    - Chatting
    - Voice/video calling
    - Information sharing

Internet History

- 1969 – ARPANET
  - Developed by the Department of Defense
  - Connected universities and defense bases
- 1973 – ARPANET connects to Europe
- Mid-1980s – NSFNet
  - Network between supercomputers
  - Internet was the link to ARPANET
  - No commercial traffic allowed
- 1990s
  - ARPANET shut down
  - NSFNet abandoned
  - Commercial networks take over

The Invention of the Internet: https://www.history.com/topics/inventions/invention-of-the-internet

History of the Internet: http://www.youtube.com/watch?v=9hIQjrMHTv4

Netiquette: http://www.albion.com/netiquette/

World Wide Web

- World Wide Web also known as WWW or W3

- Also called the Web, is a distributed application that runs over the Internet

- Developed in 1993 by Tim-Berners Lee, it's a worldwide collection of electronic documents

- Internet is like a net of roads in a city, whereas WWW is a service like the "Bus Service" that run on those roads, just like any other service

- Each document, in the Web, is called a webpage

- Web page can contain text, graphics, sound or video

- Website is a collection of related webpages

- Web browser is a program that allows you to view web pages

- It reads and translates the HTML and display other web content

WWW Jargons

HTML or HyperText Markup Language

- ⚽ Used to create web pages (websites)
- ⚽ Use tags to describes how pages should look
- ⚽ Content enclosed in those tags

FTP or File Transfer Protocol

- ⚽ A standard network protocol used for the transfer of files between a client and server on a computer network

WWW Jargons

- Domain name is the text version of Internet Protocol (IP) address

- IP is the number that uniquely identifies each computer or device connected to the Internet

- DNS or Domain Name Service

- An Internet service that translates domain names into IP addresses

- For example, the domain name ''www.example.com'' translates to the address ''93.184.216.119''

- DHCP or Dynamic Host Configuration Protocol

- A protocol that enables a computer server to automatically assign an IP address to a computer from a defined range of numbers

- It enables easier management of IP addresses

- Without DHCP;

  - You must manually assign IP addresses

  - You must be careful to assign unique IP addresses

WWW Jargons

- URL or Uniform Resource Locator is a complete web address that reference to a resource
- It specifies where a known resource is available on the internet and the mechanism for retrieving it

protocol

file or page to get

http://www.facebook.com/profile/index.html

domain name

- Hyperlink is an element in an electronic document (webpage) that links to another place in the same document or to an entirely different document
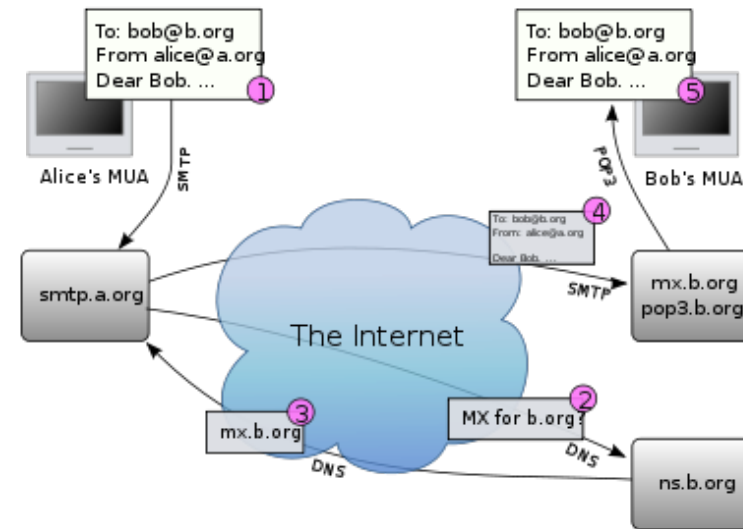
🔗 Click Here

Electronic Mail

⚽ <u>Email</u> or Electronic mail

⚽ The transmission of messages and files via a computer network

⚽ Messages can consist of simple text or can contain attachments, such as documents, graphics, or audio/video clips

⚽ Some Web sites, such as Gmail and Yahoo, provide free e-mail services

⚽ Its one of the first services on the Internet

⚽ An <u>Email address</u> is a unique name that consists of a user name and domain name that identifies the user

Electronic Mail

- How Email system works?

- Step 1: Using e-mail software, you create and send message

- Step 2: Your software contacts software on the outgoing mail server

- Step 3: Software on outgoing mail server determines best route for data and sends message, which travels along internet routers to recipient's incoming mail server (inbox)

- Step 4: When recipient uses e-mail software to check for e-mail messages, the message transfers from incoming mail server to recipient's computer

To: bob@b.org
From alice@a.org
Dear Bob. ... ①

Alice's MUA SMTP

To: bob@b.org
From alice@a.org
Dear Bob. ... ⑤

Bob's MUA POP3

smtp.a.org

The Internet

To: bob@b.org
From: alice@a.org
Dear Bob. ... ④

SMTP mx.b.org
pop3.b.org

mx.b.org ③

MX for b.org? ②

DNS

DNS

ns.b.org

https://www.howitworksdaily.com/how-does-email-work/

12

Other Types of Online Communication

- Blogging
- Skype (VoIP)
- Web conference (Webinar – Webcasts)
- Social networking
  - Facebook
  - Twitter
  - YouTube
  - Flickr
  - WhatsApp
  - Snapchat
  - Instagram
  - LinkedIn
  - Pinterest

Other Types of Online Communication

- A search website helps find webpages containing the information you are seeking, e.g. google.com

- It is always better to search using keywords

- Efficient search techniques
    - quote the exact phrase
    - use the keywords AND, OR, NEAR
    - use the asterisk wildcard
    - avoid common words
    - use the site's (Google) advanced tools

Read more here: https://www.google.com/educators/downloads/Tips_Tricks_17x22.pdf

THANK YOU