Web Technology

Semester 2019

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ผศ.ดร.มานพ พันธ์โคกกรวด

ห้องพัก 510-3

วัตถุประสงค์

- มีความรู้ ความเข้าใจเกี่ยวกับเทคโนโลยีต่างๆที่เกี่ยวกับเว็บ
- เข้าใจองค์ประกอบ หน้าที่ และแนวคิดพื้นฐาน และหลักการทำงานของระบบเว็บ
- มีความรู้ทั้งด้านเทคนิควิธีและสามารถใช้งานเทคโนโลยีต่างๆที่เกี่ยวกับเว็บได้
- สามารถเลือกเทคโนโลยีประเภทต่างๆ ได้อย่างเหมาะสม
- สามารถใช้เครื่องมือต่างๆได้

รูปแบบของการเรียนรู้

- บรรยาย 2 ชั่วโมง
- ปฏิบัติการ 2 ชั่วโมง
- ศึกษาด้วยตนเอง
- โครงงาน
- สอบย่อย
- สอบกลางภาค
- สอบปลายภาค

แผนการสอนและเนื้อหาวิชา

- องค์ประกอบและแนวคิดพื้นฐานของระบบเว็บ
- เบื้องต้นเกี่ยวกับ Internet Protocols
- เครื่องมือสำหรับการออกแบบและพัฒนาเว็บ
- เทคโนโลยีเว็บฝั่งไคลแอนท์ (Client-side technology)
- Browsers and Document Object Model (DOM)

แผนการสอนและเนื้อหาวิชา (ต่อ)

- เทคโนโลยีเว็บฝั่งเซิร์ฟเวอร์ (Server-side technology)
- Responsive Web Design
- Representing Web Data
- Web Services
- Search Engine and Streaming
- Location-based services and Geolocation

เอกสารอ้างอิง

- Jeffrey C. Jackson, **WEB TECHNOLOGIES: A Computer Science Perspective**, Pearson Prentice Hall, Inc.
- Paul Deitel, Harvey Deitel, and Abbey Deitel, **Internet & World Wide Web: How to Program**, Fifth Edition, Pearson.
- **W3Schools** Online Web Tutorials

อัตราส่วนคะแนน

รายการ	คะแนน
สอบกลางภาค	30
สอบปลายภาค	30
โครงงาน	20
ทดสอบย่อย	15
การมีส่วนร่วมกับการเรียน	5

ตัดเกรดโดยใช้เกณฑ์มาตรฐาน ผ่าน 50 คะแนนขึ้นไป

Web Technology

Introduction to Internet & World Wide Web

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Outline

1. Introduction to Web Technology
2. History of Internet
3. The World Wide Web
4. Technologies Overview

Introduction to Web Technology

- **Web technology** is the methods by which computers communicate with each other through the use of *markup languages* and *multimedia packages*.
- Web Technologies are playing the leading role in the World Wide Web includes many latest evolutions in it like Web Services, HTML, XHTML, XML, CSS, XML, JSON, etc.
- Web technology aims to enhance creativity, secure information sharing, collaboration and functionality of the web.

Introduction to Web Technology

Web Technology application include:

- ❑ Ecommerce
- ❑ Content management
- ❑ Customer relationship management systems
- ❑ Mobile web technologies
- ❑ Web-enabled applications
- ❑ Social media and Computing
- ❑ Web Analytics and Search Engine
- ❑ etc.

History of Internet

2

What is the Internet ?

- **The Internet** is a worldwide system of interconnected networks and computers.
- **The Internet** is a worldwide collection of computer networks.
- **The Internet** is a network of networks that connects users in every country in the world. There are currently over one billion Internet users worldwide.

History of the Internet (cont.)

Use of internet

- Email
- Social Networking, Chat
- Information sharing
- Getting updates – News around the world
- Entertainment – Games, Videos and Music
- Virtual classrooms
- Remote Access
- Online Jobs

History of the Internet (cont.)

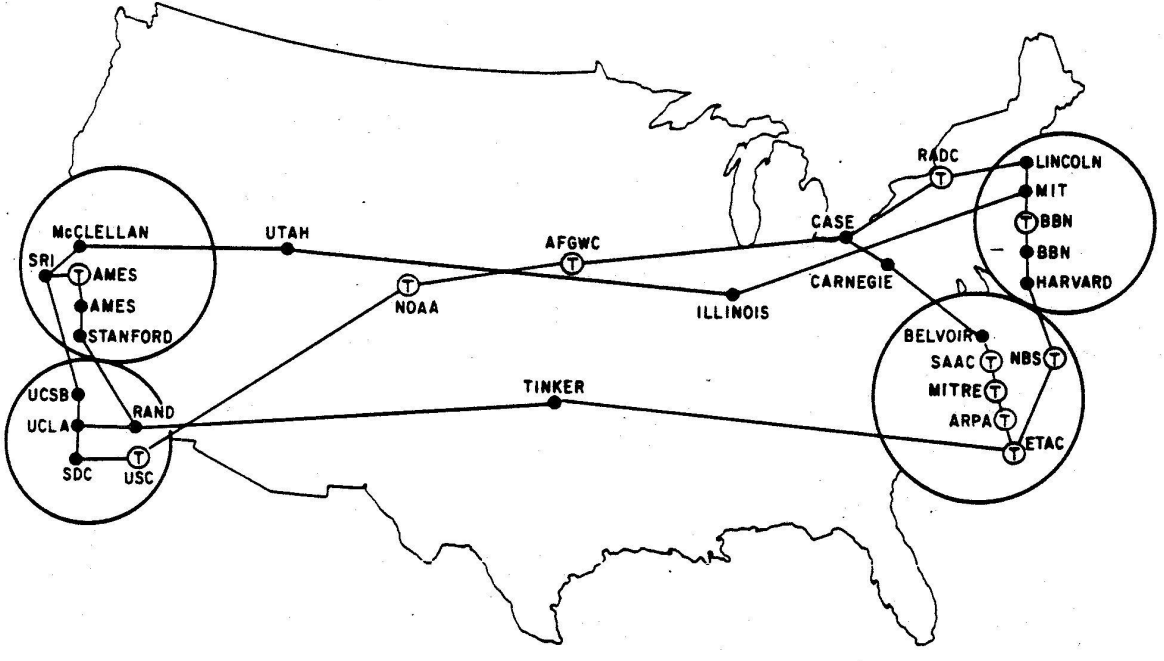
How big is the Internet ?

WORLD INTERNET USAGE AND POPULATION STATISTICS JUNE, 2019 - Updated						
World Regions	Population (2019 Est.)	Population % of World	Internet Users 30 June 2019	Penetration Rate (% Pop.)	Growth 2000-2019	Internet World %
Africa	1,320,038,716	17.1 %	525,148,631	39.8 %	11,533 %	11.9 %
Asia	4,241,972,790	55.0 %	2,200,658,148	51.9 %	1,825 %	49.8 %
Europe	829,173,007	10.7 %	719,413,014	86.8 %	585 %	16.3 %
Latin America / Caribbean	658,345,826	8.5 %	447,495,130	68.0 %	2,377 %	10.1 %
Middle East	258,356,867	3.3 %	173,576,793	67.2 %	5,184 %	3.9 %
North America	366,496,802	4.7 %	327,568,628	89.4 %	203 %	7.4 %
Oceania / Australia	41,839,201	0.5 %	28,634,278	68.4 %	276 %	0.6 %
WORLD TOTAL	7,716,223,209	100.0 %	4,422,494,622	57.3 %	1,125 %	100.0 %

source : https://www.internetworldstats.com/stats.htm

History of the Internet (cont.)

ARPANET was the world's first operational network, and the predecessor of the global Internet



History of the Internet (cont.)

1973 Transmission Control Protocol/Internet Protocol (**TCP/IP**) is designed and in 1983 it becomes the standard for communicating between computers over the Internet.

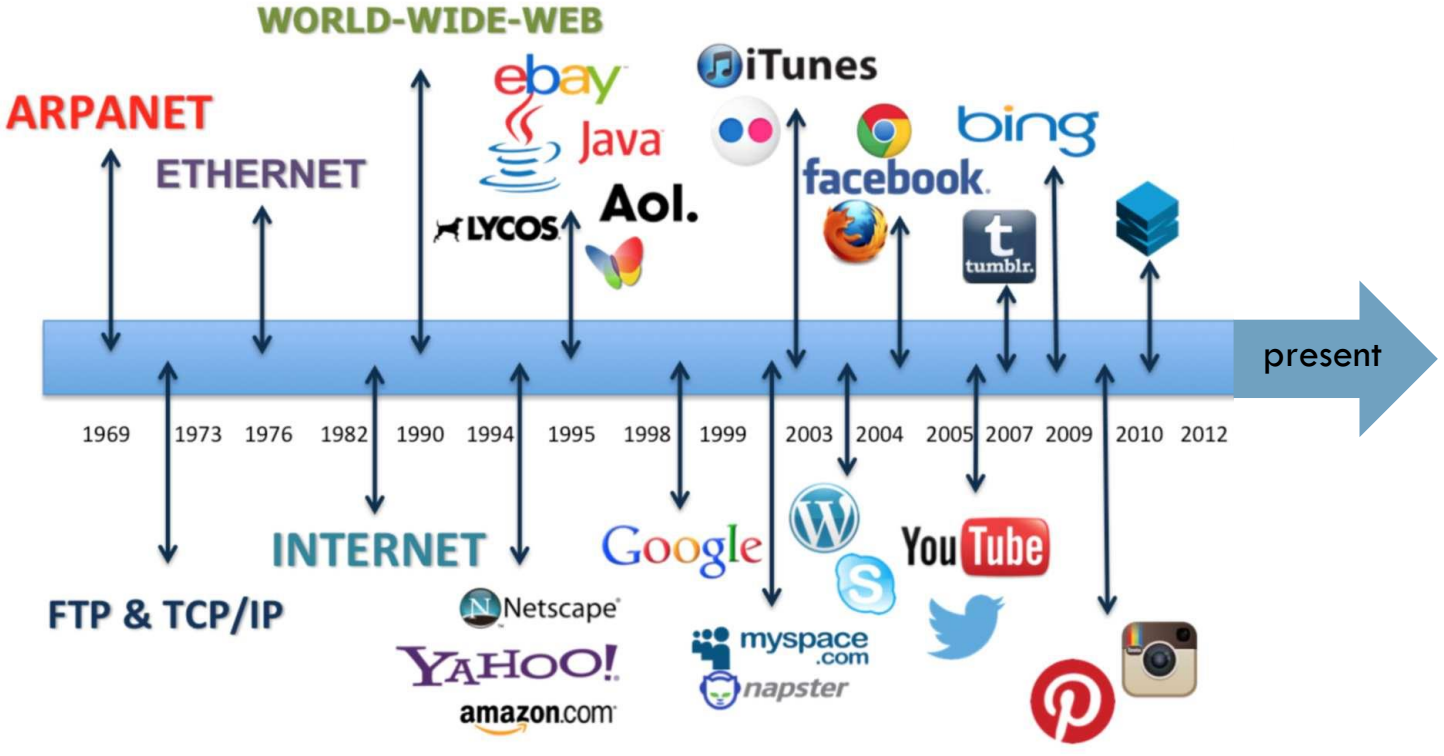
TCP/IP, or the Transmission Control Protocol/Internet Protocol, is a suite of communication protocols used to interconnect network devices on the internet. TCP/IP can also be used as a communications protocol in a private network (an intranet or an extranet).

History of the Internet (cont.)

1974 The first appearance of the term **'Internet'** as an abbreviation for '***Internetworking***' , and things developed from there, with electronic mail soon becoming an important form of communication within the research community that used this technology.

History of the Internet (cont.)

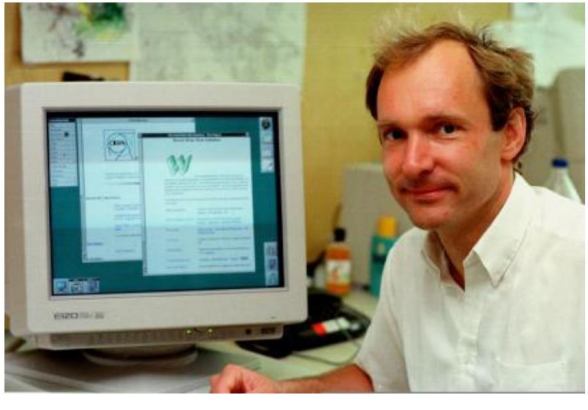
Evolution of Internet



The World Wide Web

3

1990 Tim Berners Lee brought all of this together to form the **World Wide Web**. HTML documents transmitted over the Internet by a web server to web browsers using URIs and HTTP. The first web page online on Aug 6, 1991.



World Wide Web

The WorldWideWeb (W3) is a wide-area hypermedia information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an executive summary of the project, Mailing lists , Policy , November's W3 news , Frequently Asked Questions .

What's out there?
Pointers to the world's online information, subjects , W3 servers, etc.
Help
on the browser you are using
Software Products
A list of W3 project components and their current state. (e.g. Line Mode ,X11 Viola , NeXTStep , Servers , Tools , Mail robot , Library)

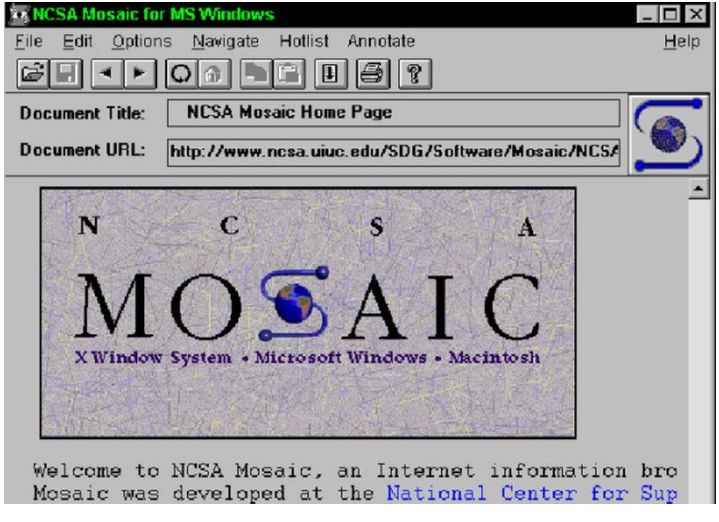
The World Wide Web (cont.)

- The World Wide Web (**WWW**, or simply **Web**) is an information space in which the items of interest, referred to as resources, are identified by global identifiers called Uniform Resource Identifiers (URI).
- The Web presents information through multimedia formats: graphics, sound, animation, and video.

The World Wide Web (cont.)

Mosaic is the first Web Browser.

- Very slow
- Did not handle loading pictures very well
- Modems were very slow



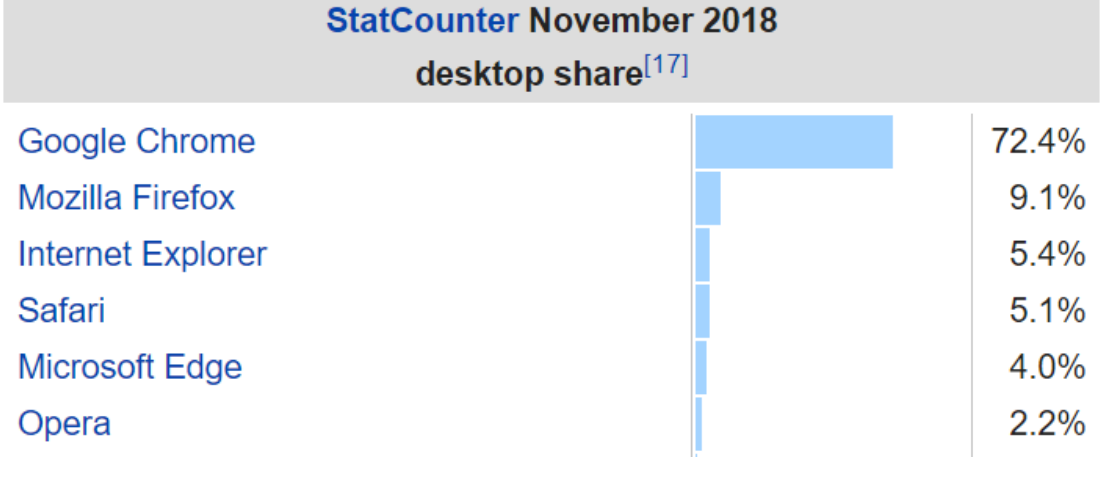
The World Wide Web (cont.)

- The Web uses several tools to provide a visual layout:
  - Hypertext links
  - Browser software
  - Code structure
- The Web resembles an electronic library – each location or site is like a book. These books are created using Hypertext Markup Language (HTML).
- These materials, along with interactive objects such as JavaScript, and VBScript adds functionality to web pages.

The World Wide Web (cont.)

Web Browsers

- An application that provides a way to look at and interact with the information on the WWW.
- It retrieves, presents, and traverses information resources.
- These include web pages, images, video, and other multimedia content



Internet and WWW

Who owns the Internet?

- No person or organization owns the entire Internet
- As the Internet is a network of networks, each network is owned by a company
- This is similar to the motor-way and road system. Each town or state owns and maintains roads in its jurisdiction

Internet and WWW(cont.)

Online Application

- No need to install
- Just login and use
- Available from anywhere where Internet connection is available
- Operating system independent
- No piracy issues

Technologies Overview

Client-Side Technologies

- HTML
- CSS
- JavaScript, AJAX, VBScript
- XHTML, DHTML, WML
- DOM
- etc…

Technologies Overview (cont.)

Server-Side Technologies

- ASP, ASP.NET
- PHP
- Perl
- JSP, Java
- MySQL, SQL Server
- Node.JS
- etc...

Technologies Overview (cont.)

Some More Advanced Technologies

- ❑ XML, XSLT, RSS
- ❑ XQuery, WSDL
- ❑ XML-DOM, RDF
- ❑ Ruby on Rails
- ❑ REST, SOAP
- ❑ JSON
- ❑ etc...

How to choose a Technology?

Depends on:

- ❑ What is the type of content?
- ❑ Who is your audience?
- ❑ Who will modify your content?
- ❑ What are your Future Plans?
- ❑ Availability of technology?
- ❑ Your previous experience?
- ❑ Portability and Data sharing

More Information

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