

Vietnam and Japan Joint  
ICT HRD Program

ICT 5 Web Development

**Chapter 1-1.**  
**Introduction to Web Programming**

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Content

1. The Internet and WWW
2. Uniform Resource Identifier (URI)
3. Web Application model

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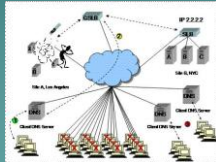
Content

- ⇒ 1. The Internet and WWW
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  3. Web Application model

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1.1. The Internet

- ◆ A network of networks
- ◆ Began in 1969 as ARPAnet (Advanced Research Projects Agency)
- ◆ No central authority and thus impossible to state the precise size



1.1. The Internet (2)

- ◆ Free access to central servers that allow machines and people to locate other machines by their **Internet address**.  
– e.g. 100.99.88.32



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1.2. The World Wide Web

- ◆ Developed by Tim Berners-Lee at CERN in 1990
- ◆ The idea of documents that contain hyperlinks to other documents on the Internet
- ◆ W3 or Web for short

NeXT Computer  
The first Web server



## 1.2. The World Wide Web (2)



- ◆ World Wide Web
  - a system of interlinked hypertext documents accessed via the Internet
- ◆ HyperText Markup Language (HTML)
  - document layout language for all Web Documents
- ◆ HyperText Transfer Protocol (HTTP)
  - allows any machine to load a document via a hyperlink from any other machine

## 1.3. Web page or Webpage

- ◆ a Web document
  - a document or resource of information that is suitable for the WWW and can be accessed through a web browser and displayed on a computer screen
- ◆ usually in HTML or XHTML format
  - XHTML (Extensible HTML): Intersection between HTML and XML
- ◆ requested and served from web servers using HTTP.



## 1.4. Web site or Website



- ◆ a collection of related web pages, images, videos or other digital assets that are addressed with a common domain name or IP address in an Internet Protocol-based network
- ◆ hosted on at least one web server, accessible via the Internet or a private local area network.

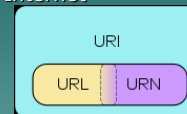


## Content

1. The Internet and WWW
- ⇒ 2. Uniform Resource Identifier (URI)
3. Web Application model

## 2.1. URI (Uniform Resource Identifier)

- ◆ A string of characters used to identify or name a resource on the Internet
- ◆ Classification
  - URN: a person's name
  - URL: that person's street-address
  - URN defines an item's identity
  - URL provides a method for finding it



## URI Generic Syntax

- ◆ RFC 3986
- ◆ Components
  - Scheme
  - Authority
  - Path
  - Query
  - Fragment

`http://www.google.com/search?q=test#hrs`

scheme authority path query fragment

## 2.2. Uniform Resource Locator (URL)

- ♦ created in 1990 by Tim Berners-Lee as part of the URI
- ♦ specifies where an identified resource is available and the mechanism for retrieving it
- ♦ separated by dots, and the file path, separated by slashes, as a coherent hierarchical path

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## 2.2. Uniform Resource Locator (2)

- ♦ Syntax  
`resource_type://domain:port/filepathname?query_string#anchor`
- ♦ Example  
`http://www.annex.com/southwest/museum.htm`
  - Means of access, HyperText Transfer Protocol
  - Internet Address (Web site)
  - Path (Directory or Folder)
  - Document

## 2.3. Uniform Resource Name (URN)

- ♦ globally unique and persistent name of a resource on the Internet
- ♦ Syntax: `<URN> ::= "urn:" <NID> ":" <NSS>`
  - ♦ <NID> is the Namespace Identifier
  - ♦ <NSS> is the Namespace Specific String
- ♦ Example
  - ♦ urn:isbn:0451450523
    - ♦ The URN for "The Last Unicorn", identified by its book number.
  - ♦ urn:isan:0000-0000-9E59-0000-O-0000-0000-2
    - ♦ The URN for "Spider-Man (film)", identified by its audiovisual number.
  - ♦ ...

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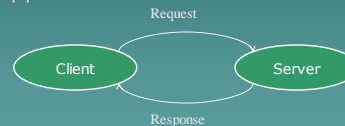
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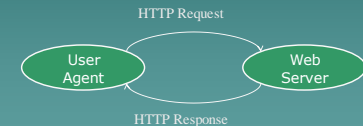
## Client Server Model

- ♦ A simple network model
- ♦ Used by various network applications

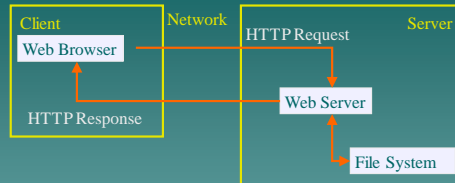


## Client Server Model (Web)

- ♦ Client: User Agent
- ♦ Server: Web server

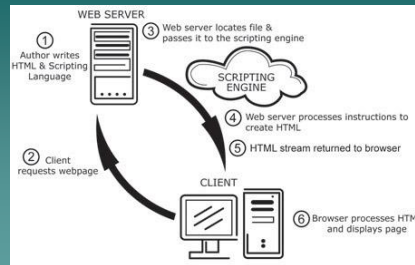


## Web Application Evolution – Static

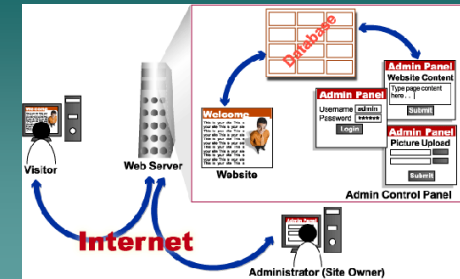


- Organizations want to make their information available to as many people in the world as possible
- This can be achieved by using the Web, delivering the information as static HTML pages

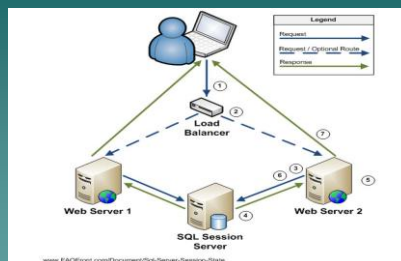
## Web Application Evolution – Dynamic



## Web Application – Dynamic



## More than one Web server?



## Question?

