Vietnam and Japan Joint ICT HRD Program

ICT 5 Web Development

Chapter 1-1.

Introduction to Web Programming

Content

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

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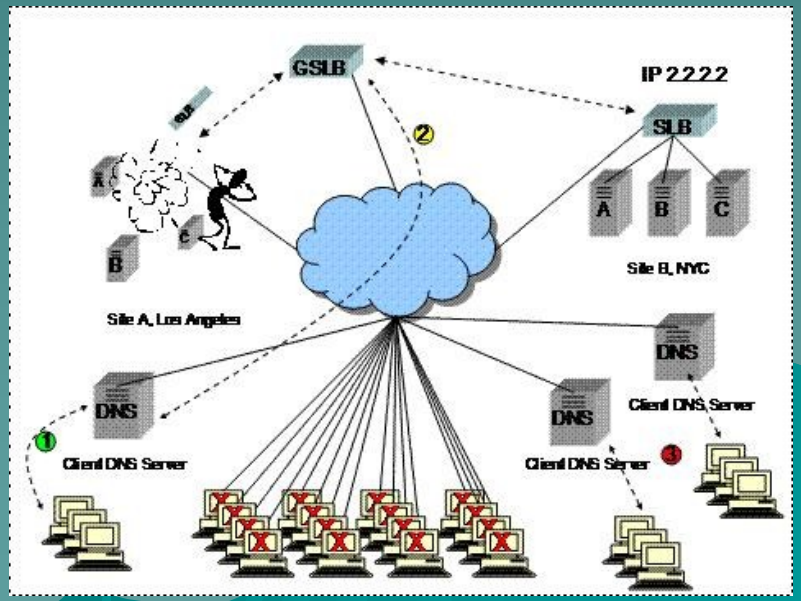
3. Web Application model

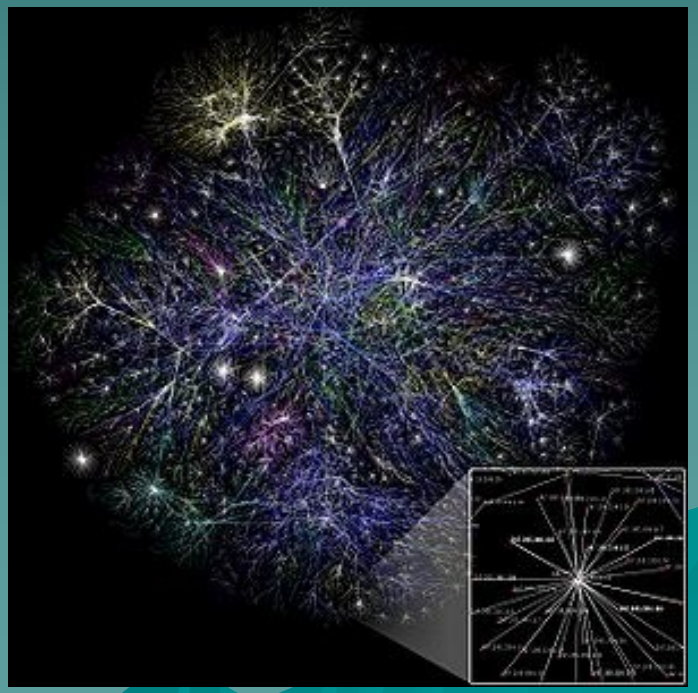
1.1. The Internet

- 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



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.

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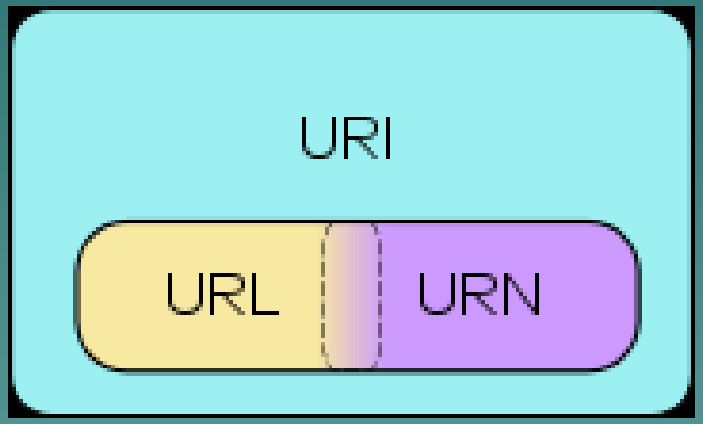
2.1. URI (Uniform Resource Identifier)

- 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#prs

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

2.2. Uniform Resource Locator (2)

- Syntax

resource_type://domain:port/filepathname?query_string#anchor

- Example

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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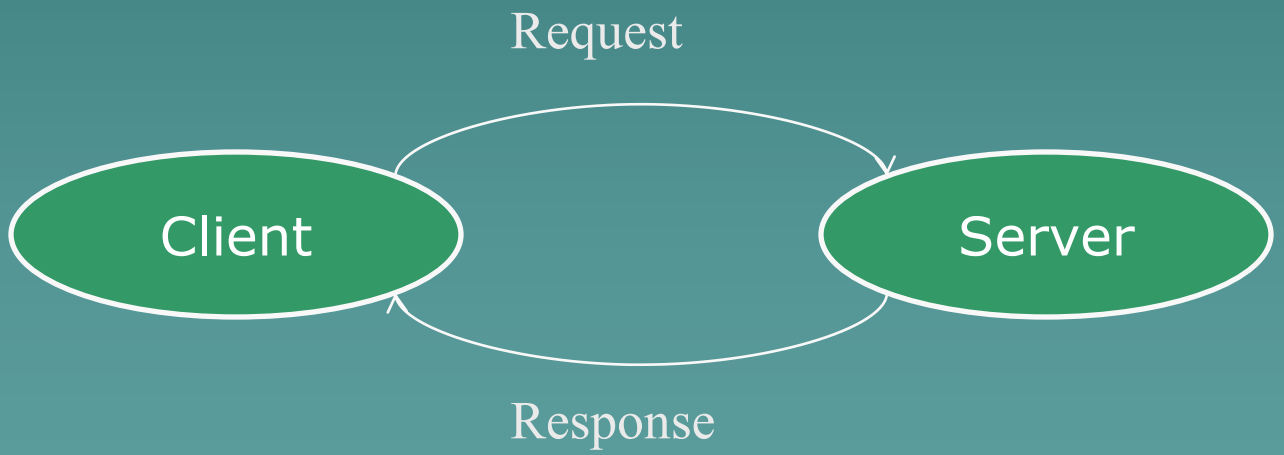
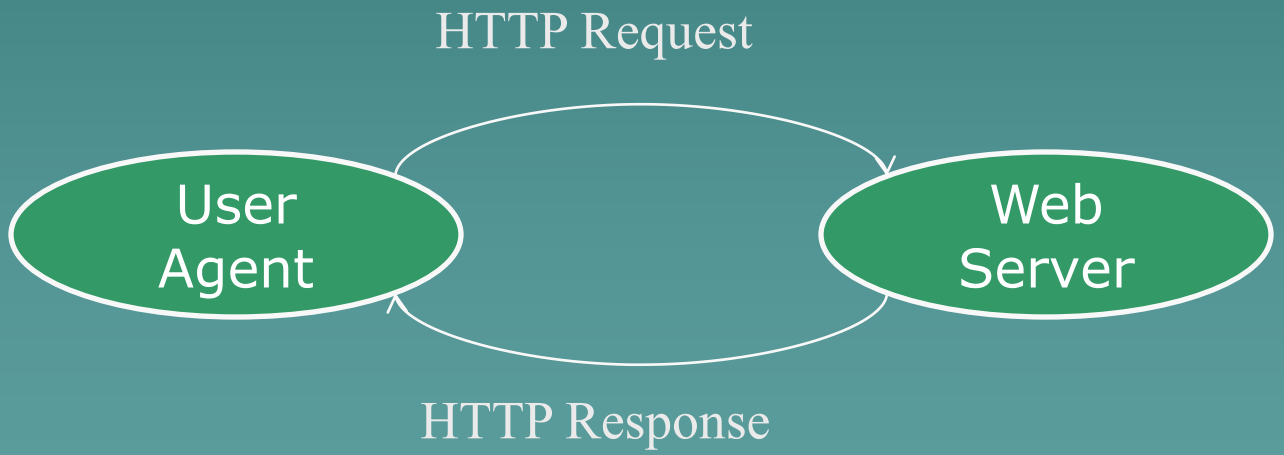
Client Server Model

- A simple network model
- Used by various network applications

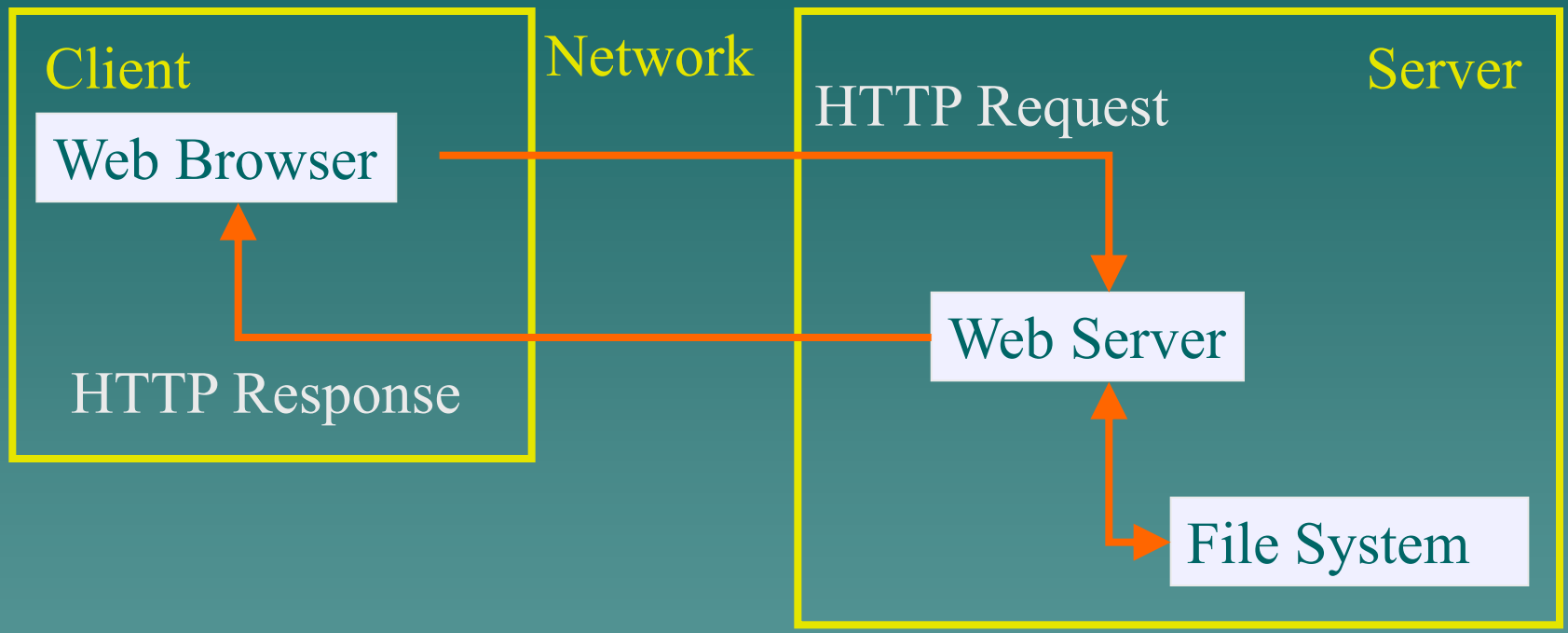


Client Server Model (Web)

- Client: User Agent
- Server: Web server

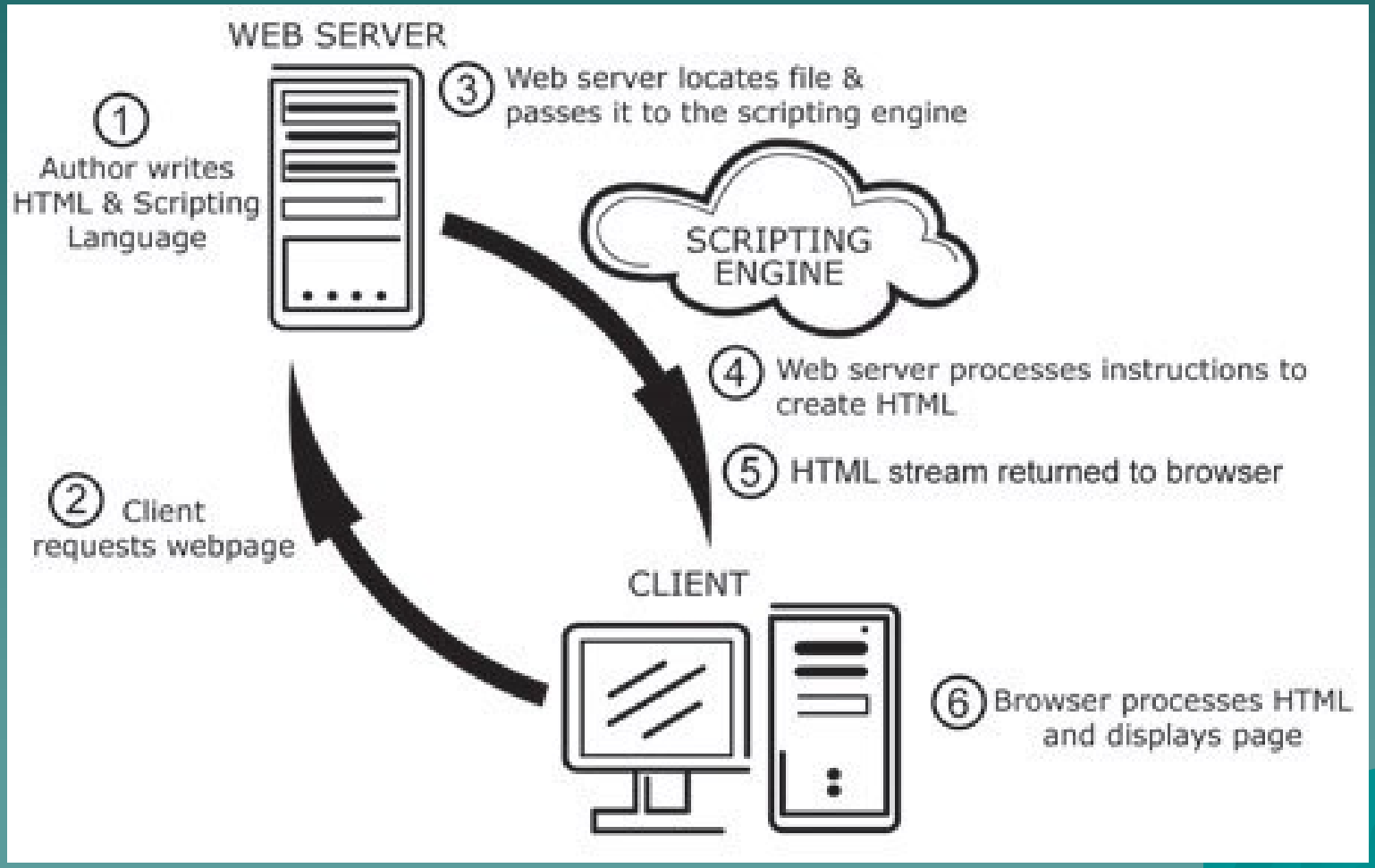


Web Application Evolution – Static

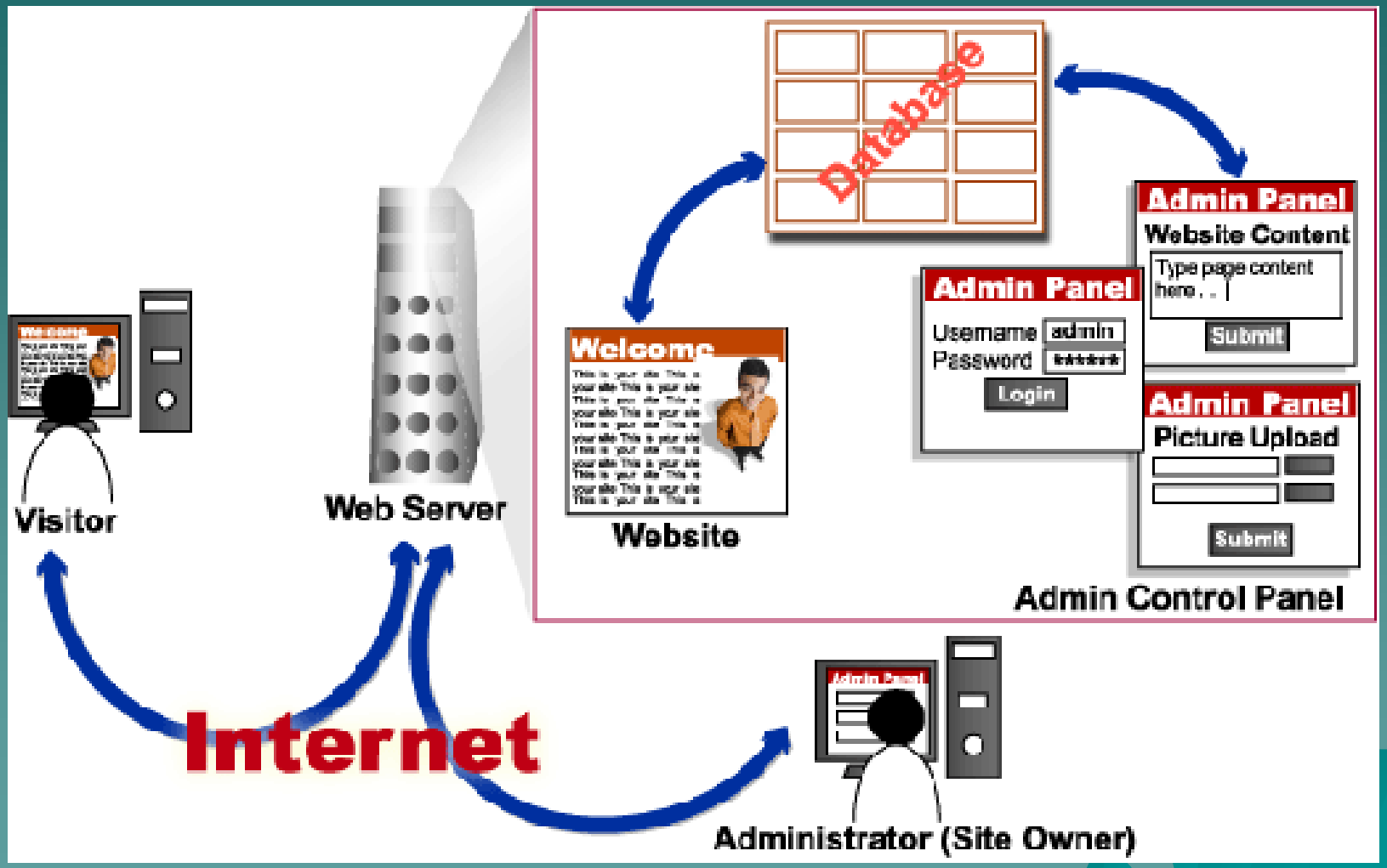


- Organizations want to make their information available to as many people in the world as possible
- This can be achieved by using the Web, delivering the information as static HTML pages

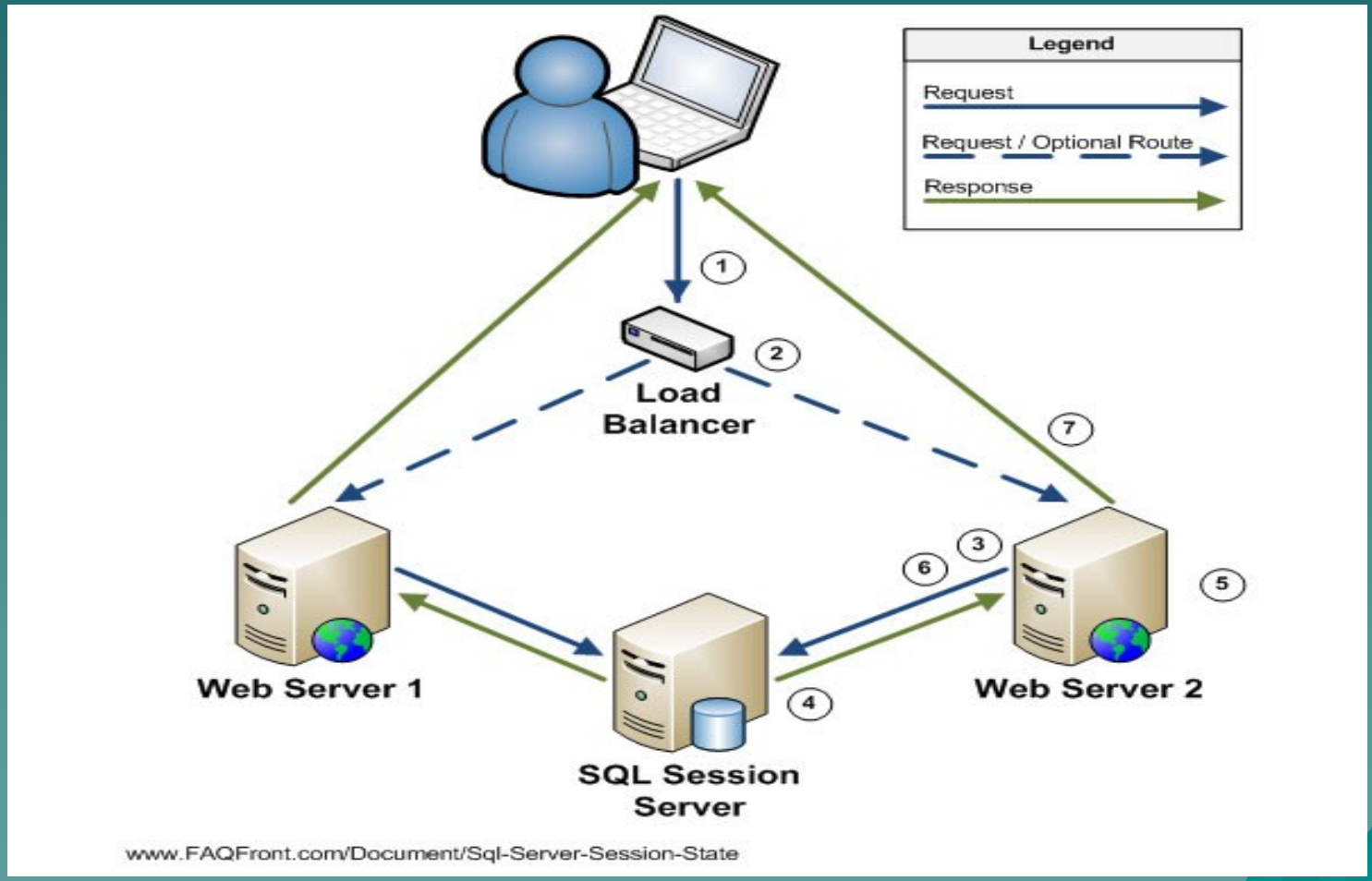
Web Application Evolution – Dynamic



Web Application – Dynamic



More than one Web server?



Question?