Chapter 1-1.
Introduction to Web Programming

Content

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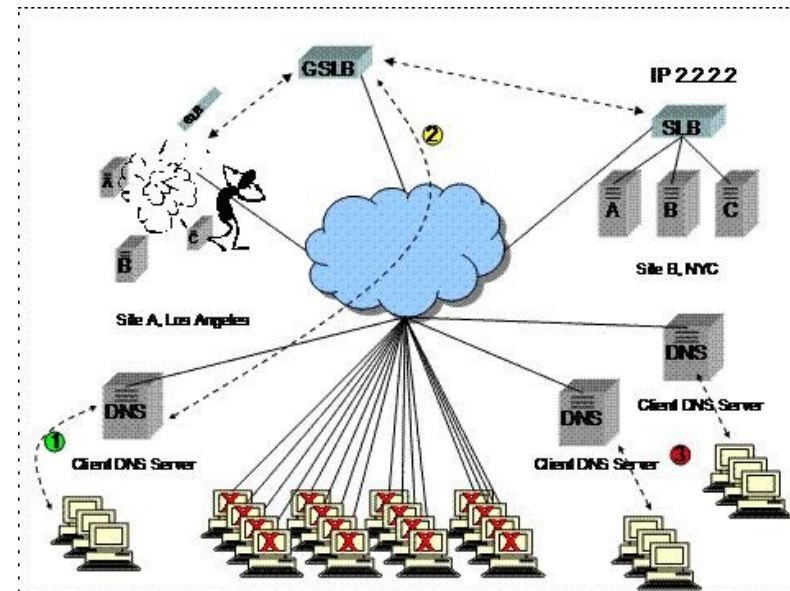3. Web Application model

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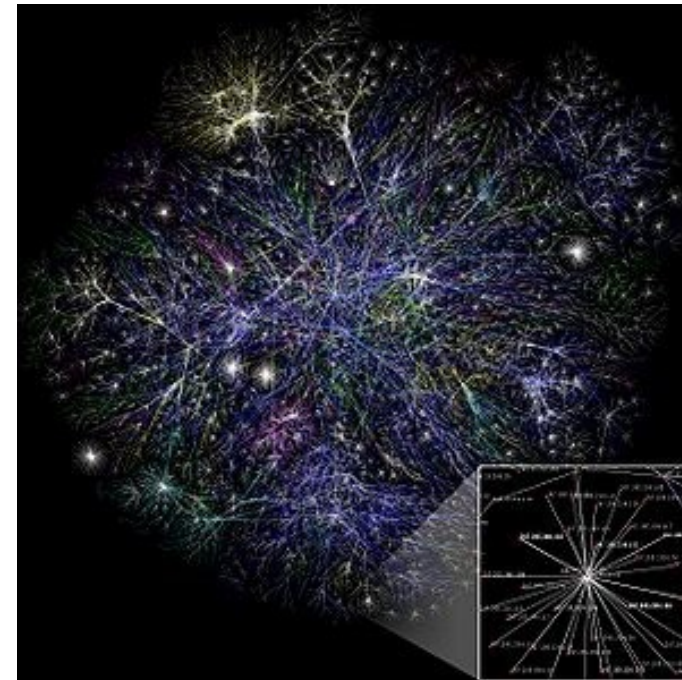3. Web Application model

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. 8.8.8.8

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.
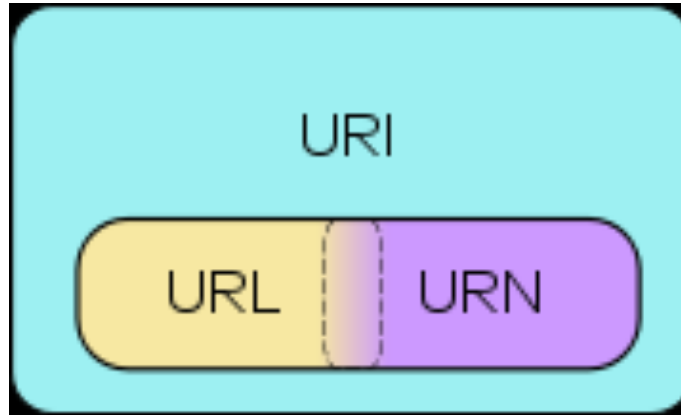
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2.1. URI (Uniform Resource Identifier)

- A string of characters used to identify or name a resource on the Internet

- Classification

  - URN (Uniform Resource Name): e.g., a person's name
  - URL (Uniform Resource Locator): e.g., a 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

mailto:John.Doe@example.com

scheme   **path**

tel:+1-816-555-1212

scheme **path**

urn:oasis:names:specification:docbook:dtd:xml:4.1.2

scheme   **path**

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

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

2.2. Uniform Resource Locator (2)

http://www.annex.com/southwest/museum.htm

Document

Path (Directory or Folder)

Internet Address (Web site)

Means of access,
HyperText Transfer Protocol

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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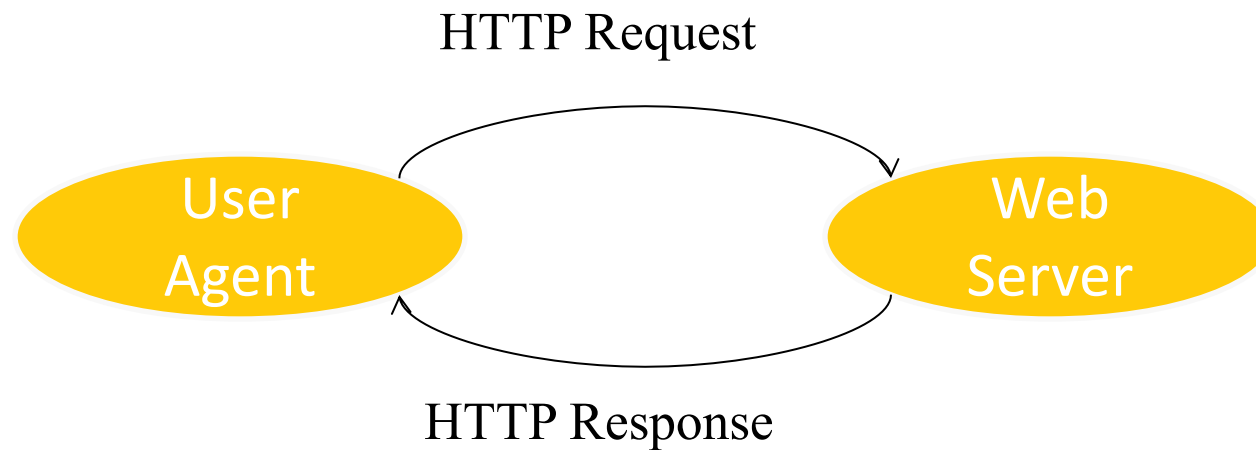2. Uniform Resource Identifier (URI)
3. Web Application model

Client Server Model

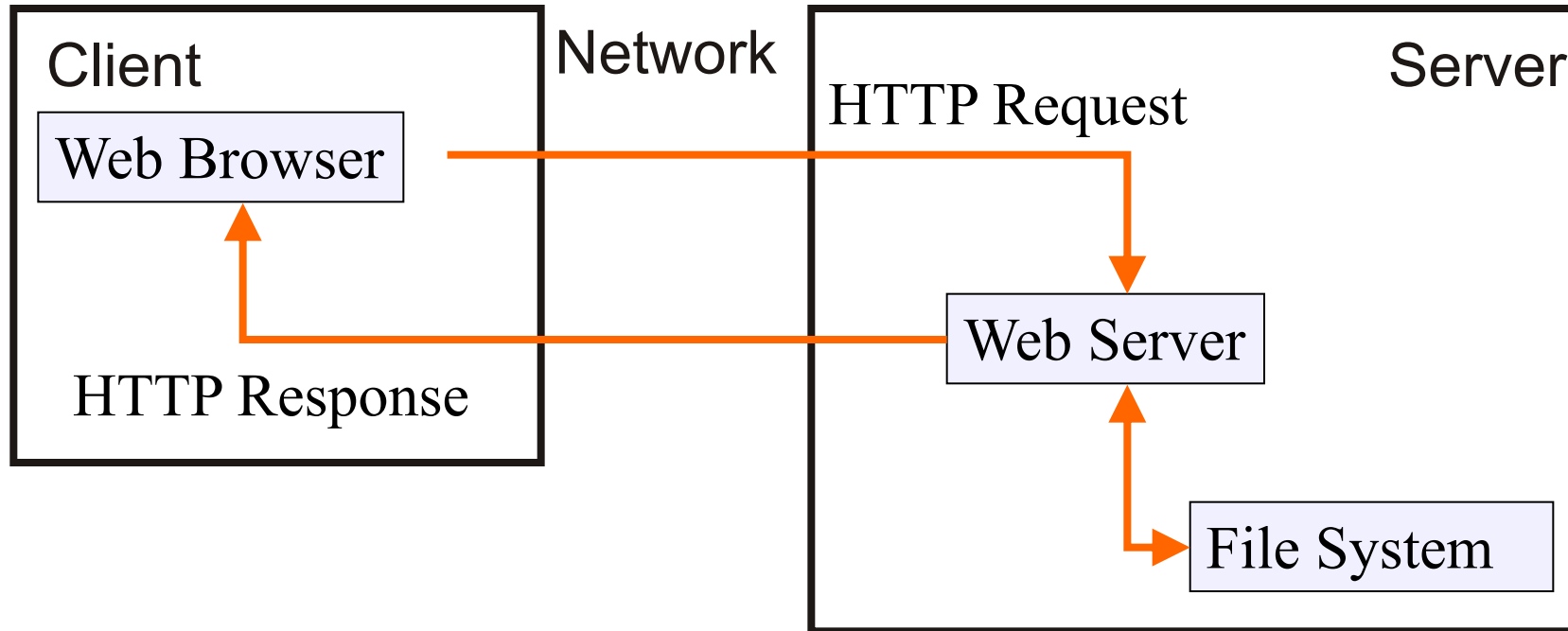- A simple network model
- Used by various network applications

Request

Client   Server

Response
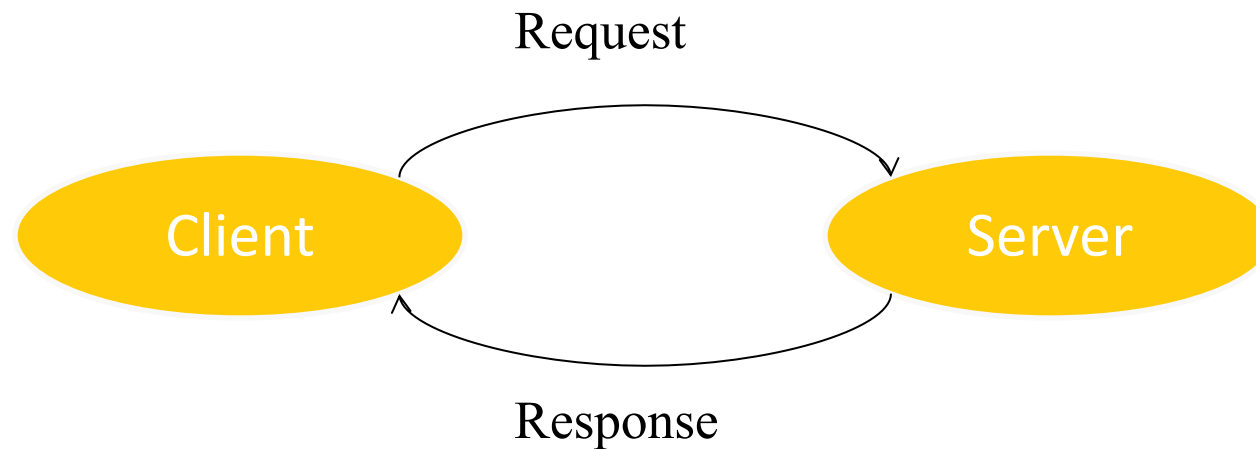
Client Server Model (Web)

- Client: User Agent
- Server: Web server

HTTP Request

User Agent

Web Server

HTTP Response

Web Application Evolution – Static

Client

Network

Server

Web Browser

HTTP Request

Web Server

HTTP Response
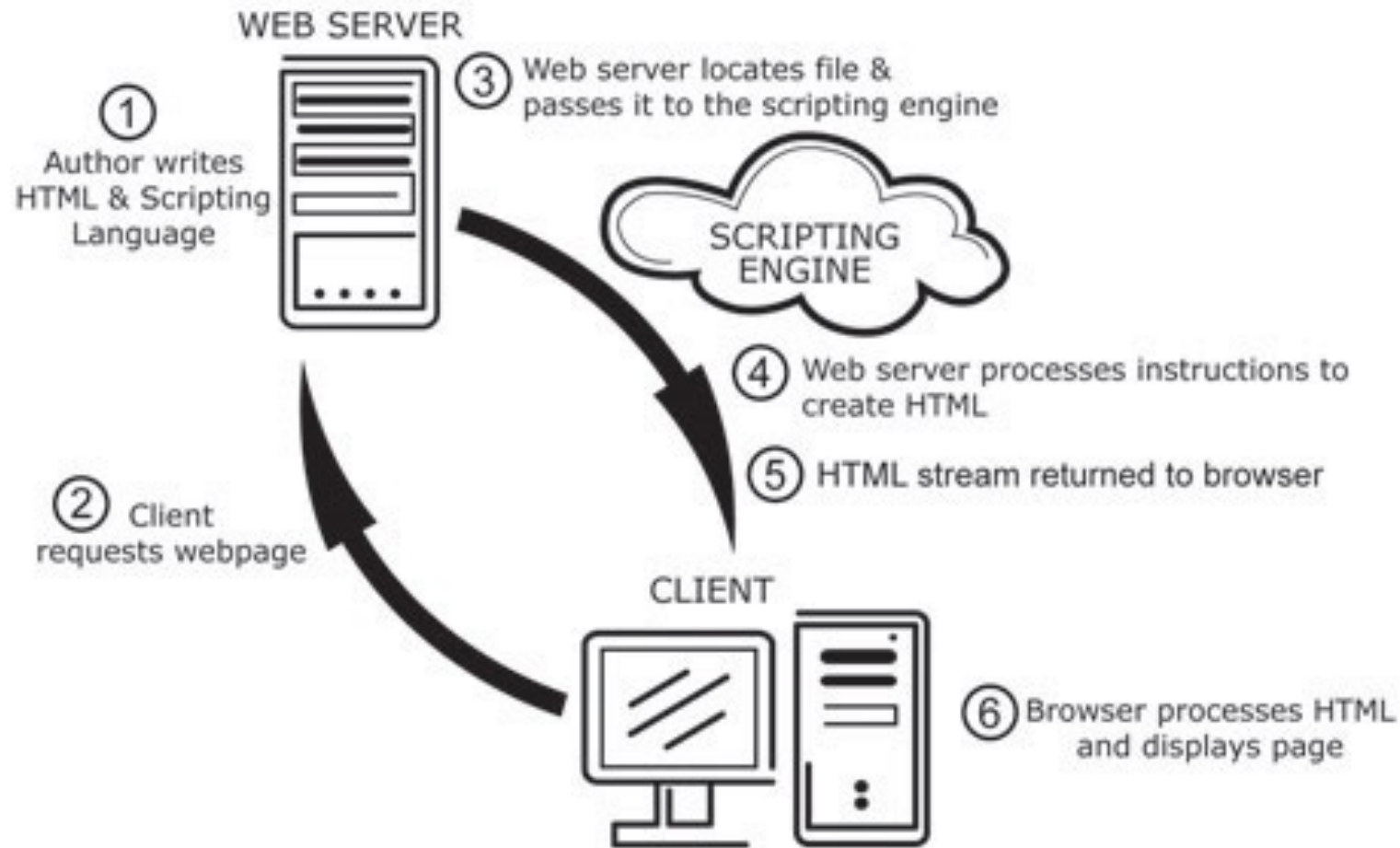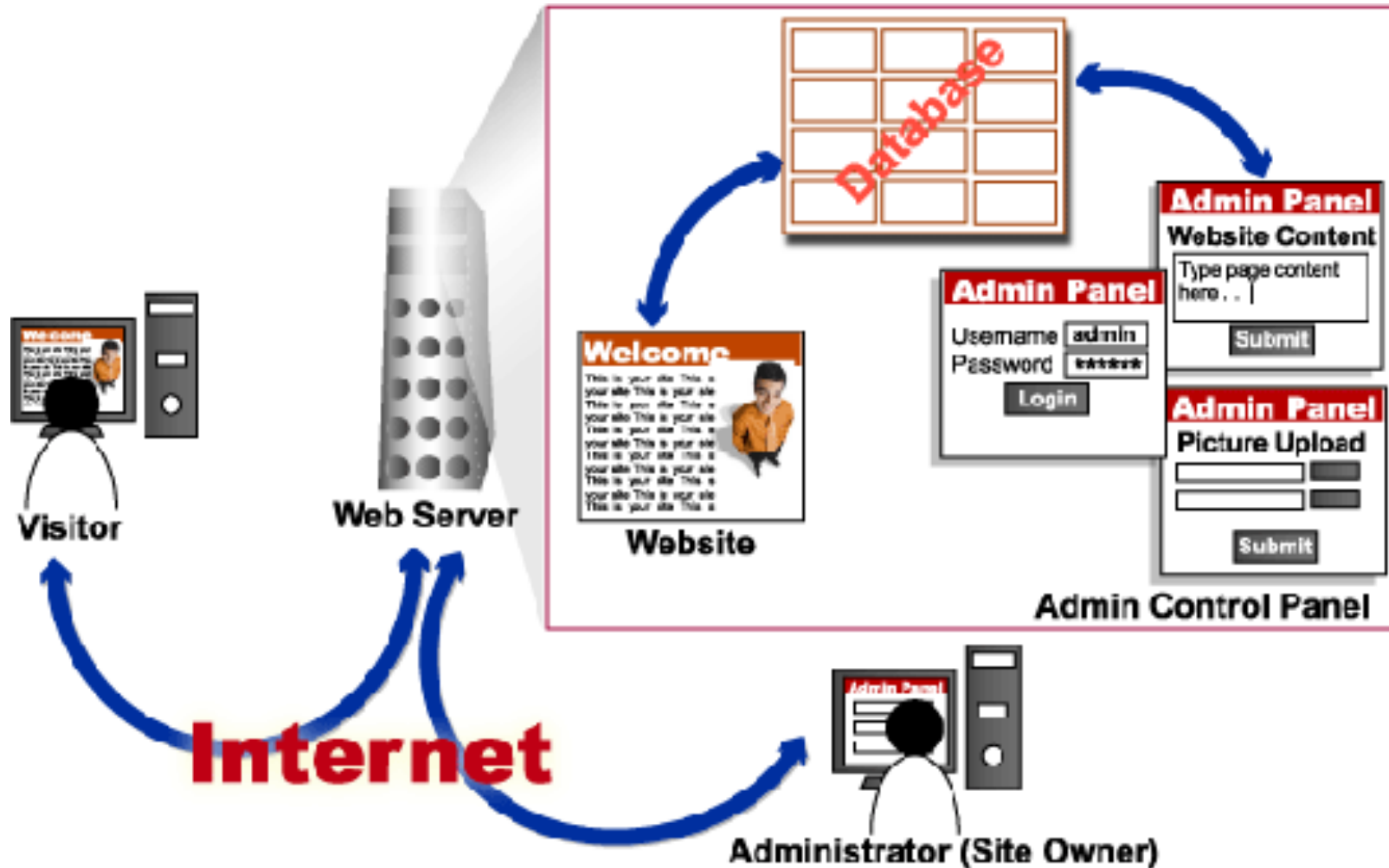
File System

- 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
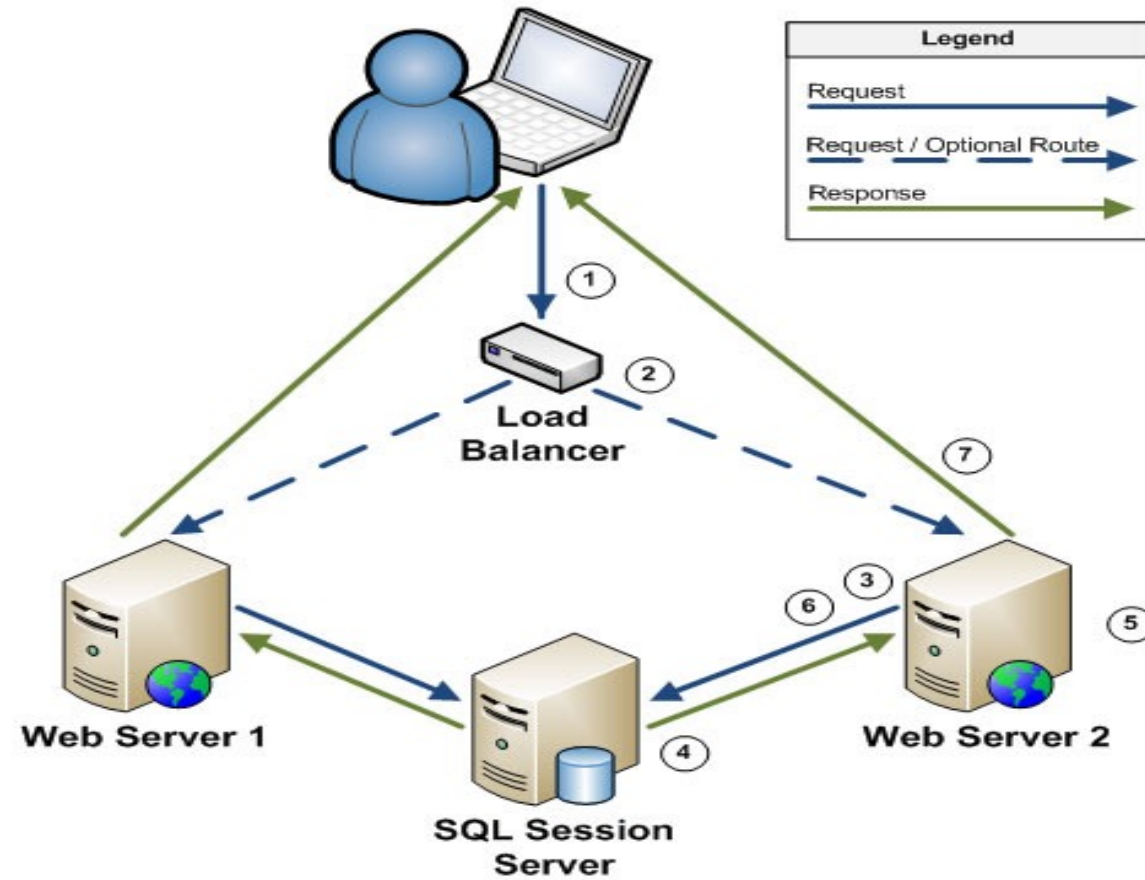
Web Application Evolution – Dynamic

WEB SERVER

① Author writes HTML & Scripting Language

③ Web server locates file & passes it to the scripting engine

SCRIPTING ENGINE

④ Web server processes instructions to create HTML

⑤ HTML stream returned to browser

② Client requests webpage

CLIENT

⑥ Browser processes HTML and displays page

Web Application – Dynamic

More than one Web server?

www.FAQFront.com/Document/Sql-Server-Session-State

Question?