

# Web-Based Design (IT210)

## Introduction To Computers & The Internet

A large, dark blue, irregular splash-like graphic on the left side of the slide, with a lighter blue and white textured background. A semi-transparent grey rectangle is overlaid on the splash, containing the text 'Lecture Outlines'.

# Lecture Outlines

- Introduction
- The evolution of the internet
- Web basics
- Define URL and domain names
- Static and Dynamic Websites
- Client-Side Scripting versus Server-Side Scripting.
- World Wide Web Consortium (W3C)

## Lecture Objectives

- ❖ Define Internet basics
- ❖ Understand world wide web basics
- ❖ Distinguish between Static and Dynamic Web Sites
- ❖ Differentiate between client-side language and Server-Side Script language



# Introduction

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- ❖ Welcome to the exciting and rapidly evolving world of Internet and web programming!
- ❖ The Internet and web programming technologies are designed to be **portable**
- ❖ allowing you to design web pages and applications that run across an enormous range of Internet-enabled devices.

# Introduction

## Moore's Law:

***“Every year or two, the capacities of computers have approximately doubled inexpensively”.***

- ❖ This remarkable trend often is called Moore's Law, named for the person who identified it, Gordon Moore, co-founder of Intel—the leading manufacturer of the processors in today's computers and embedded systems.





# The evolution of the internet

## THE INTERNET

- ◉ The **Internet** is a worldwide collection of networks that links millions of businesses, government agencies, educational institutions, and individuals.
- ◉ In the late 1960s, **ARPA** (the Advanced Research Projects Agency) rolled out blueprints for networking. The main computer systems of about a dozen ARPA-funded universities and research institutions.
- ◉ **ARPA** proceeded to implement the **ARPANET**, which eventually evolved into today's **Internet**.

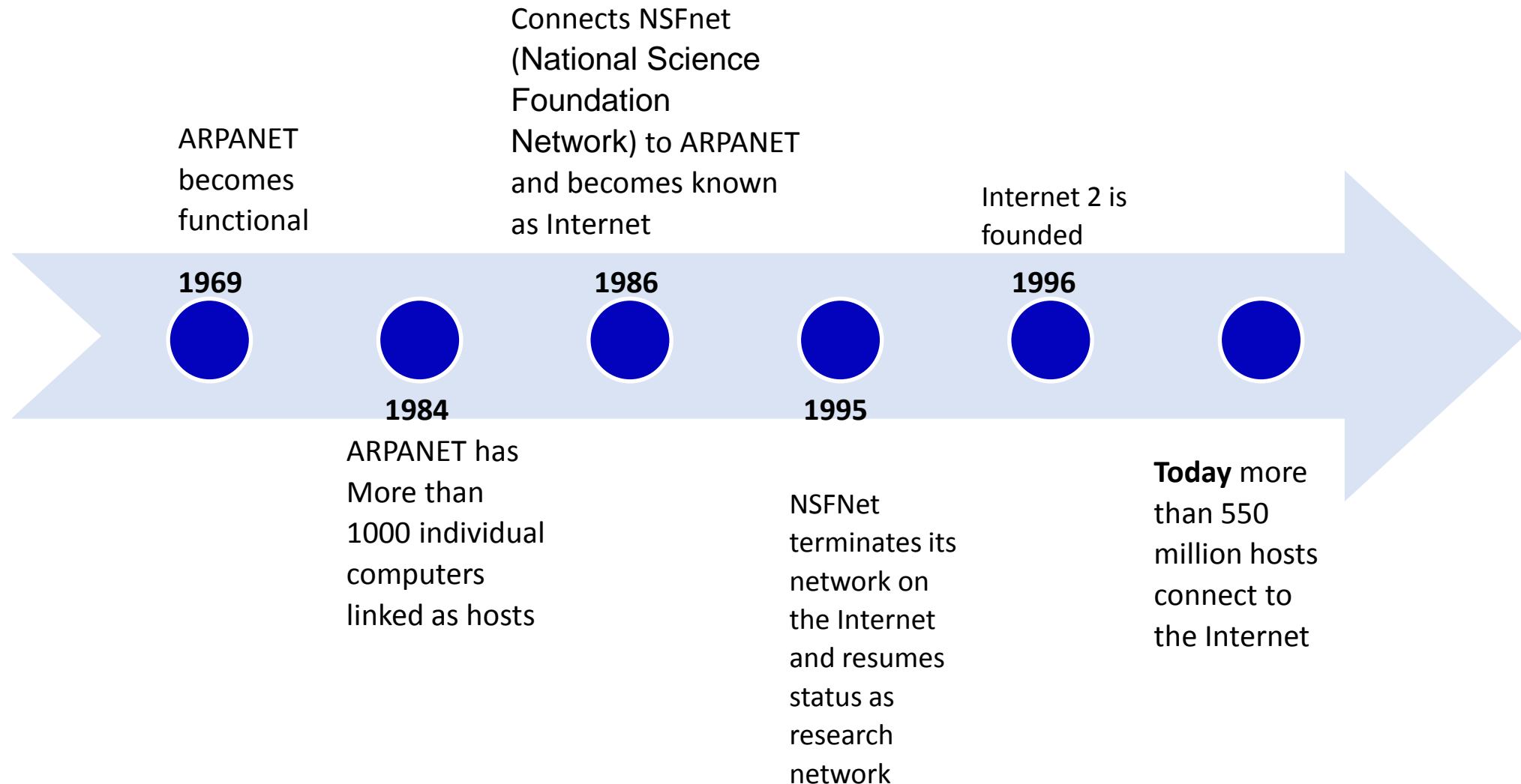
# The evolution of the internet

- ◉ Rather than enabling researchers to share each other's computers, it rapidly became clear that communicating quickly and easily via electronic mail. this was the key early benefit of the **ARPANET**.

- ◉ **ARPANET** had two main goals:

- 1 Allow scientists at different physical locations to share information and work
- 2 Function even if part of the network were disabled or destroyed

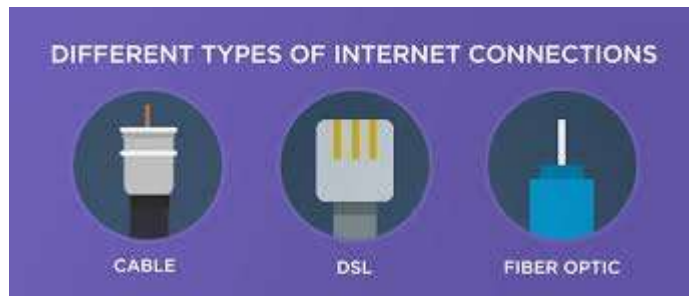
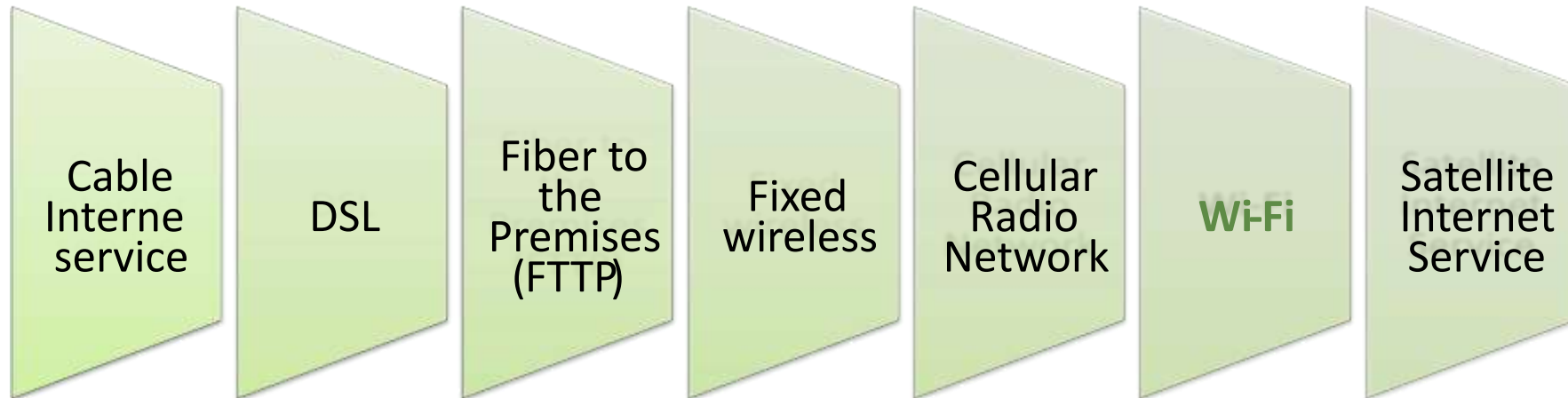
# The evolution of the internet





# The evolution of the internet

- ❖ Many home and small business users connect to the Internet via high-speed broadband Internet service



# The evolution of the internet

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## How to access the Internet?

- ❖ Many organization and businesses have direct access to the Internet using special high-speed communication lines and equipment.
- ❖ Another way to access the Internet is through **Internet Service Provider (ISP)** (A commercial organization with permanent connection to the Internet that sells temporary connections to subscribers).
- ❖ To access the Internet, an existing network need to pay a small registration fee.

# Web Basics Concepts.

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- **WWW (World Wide Web ):**

1. allows computer users to execute web-based applications
2. locate and view multimedia-based documents on almost any subject over the Internet.

- **HTML (HyperText Markup Language):**

In 1989, **Tim Berners-Lee** of CERN (the European Organization for Nuclear Research) began to develop a technology for sharing information via hyperlinked text documents.

- **HTTP (Hypertext Transfer Protocol ):**

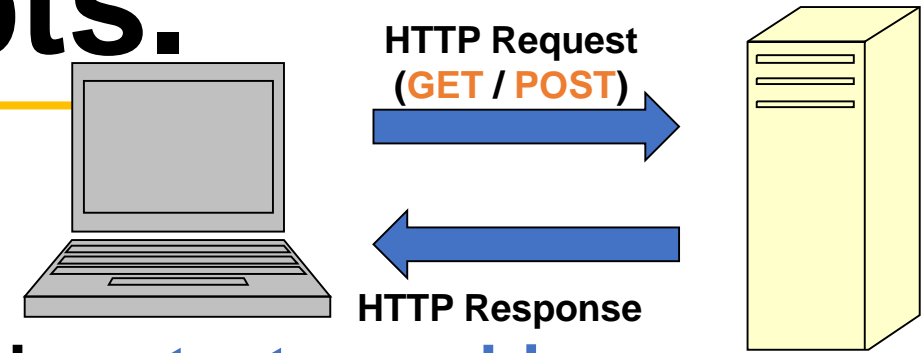
**Tim Berners-Lee** also wrote the **(HTTP)** which is a communications protocol used to send information over the web.

# Web Basics Concepts.

- **Web browser:** is a software application for accessing information on the World Wide Web.
  - E.g., Google Chrome, Apple Safari, Microsoft Internet Explorer (Edge), Mozilla Firefox, Opera.
- **Web site:** A collection of linked Web pages that has a common theme or focus.
  - E.g., IAU website
- **Home page:** The main page that all the pages on a particular Web site are organized around and link back to it
- **Web client:** is an application that communicates with a **web server**, using **HTTP**.
- **Web server** is software and hardware that uses **HTTP** and other protocols to respond to client requests made over the World Wide Web.
  - The main job of a **web server** is to display website content through storing, processing and delivering webpages to users.

# Web Basics Concepts.

## HTTP (Hypertext Transfer Protocol)



- ⦿ A set of rules for **exchanging files** such as **text, graphic images, sound, video**, and other **multimedia** files on the Web.

When the user clicks a **hyperlink in the web page**, a web server locates the requested web page and sends it to the user's **web browser**.

- ⦿ **Web browsers** send **HTTP requests** for web pages and their associated files.
  - ⦿ The two most common **HTTP request types** (HTTP request methods) are **GET** and **POST**.
- ⦿ **Web servers** send **HTTP responses** back to the web browsers.

# Web Basics Concepts.

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- ❖ **IP address (Internet Protocol):** is a unique identification for each device on the internet.
- ❖ These addresses consist of a set of four groups of numbers  
Activity: Can you provide your computer IP address ?
- ❖ **A domain name** is a unique name associated with a specific IP address.  
For example: IP: 91.227.24.32 will get you to IAU website
- ❖ **Domain Name System (DNS):** is a program, which coordinates the IP addresses and domain names for all computers attached to it.
- ❖ **Domain name server** is the host computer that runs **DNS** software.



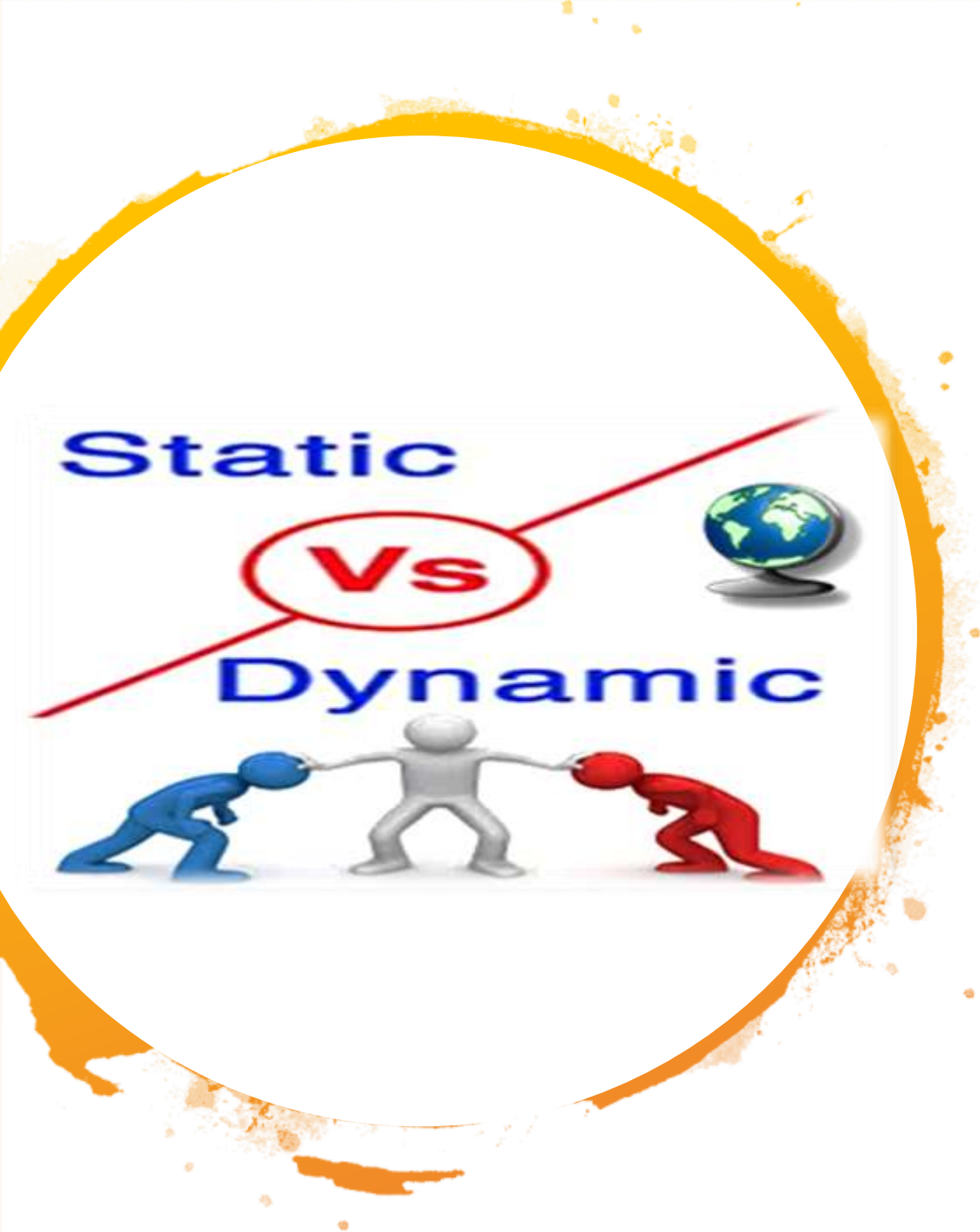
# Web Basics Concepts.

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- ❖ The IP address and the domain name each identify a particular device on the Internet.
- ❖ However, they do not indicate where a Web page's HTML document exist in on that device.
- ❖ To identify a Web pages exact location, Web browsers rely on **Uniform Resource Locator (URL)**
- ❖ **URL** : is a unique identifiers used to locate a particular resource on the network.

## Structure of a Uniform Resource Locators:

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- The diagram illustrates the components of the URL `http://www.chicagosymphony.org/civicconcerts/index.htm`. The components are labeled as follows:
- protocol**: `http`
  - Domain name**: `www.chicagosymphony.org`
  - pathname**: `/civicconcerts/`
  - filename**: `index.htm`



# Static and Dynamic Websites

# Static Web Sites

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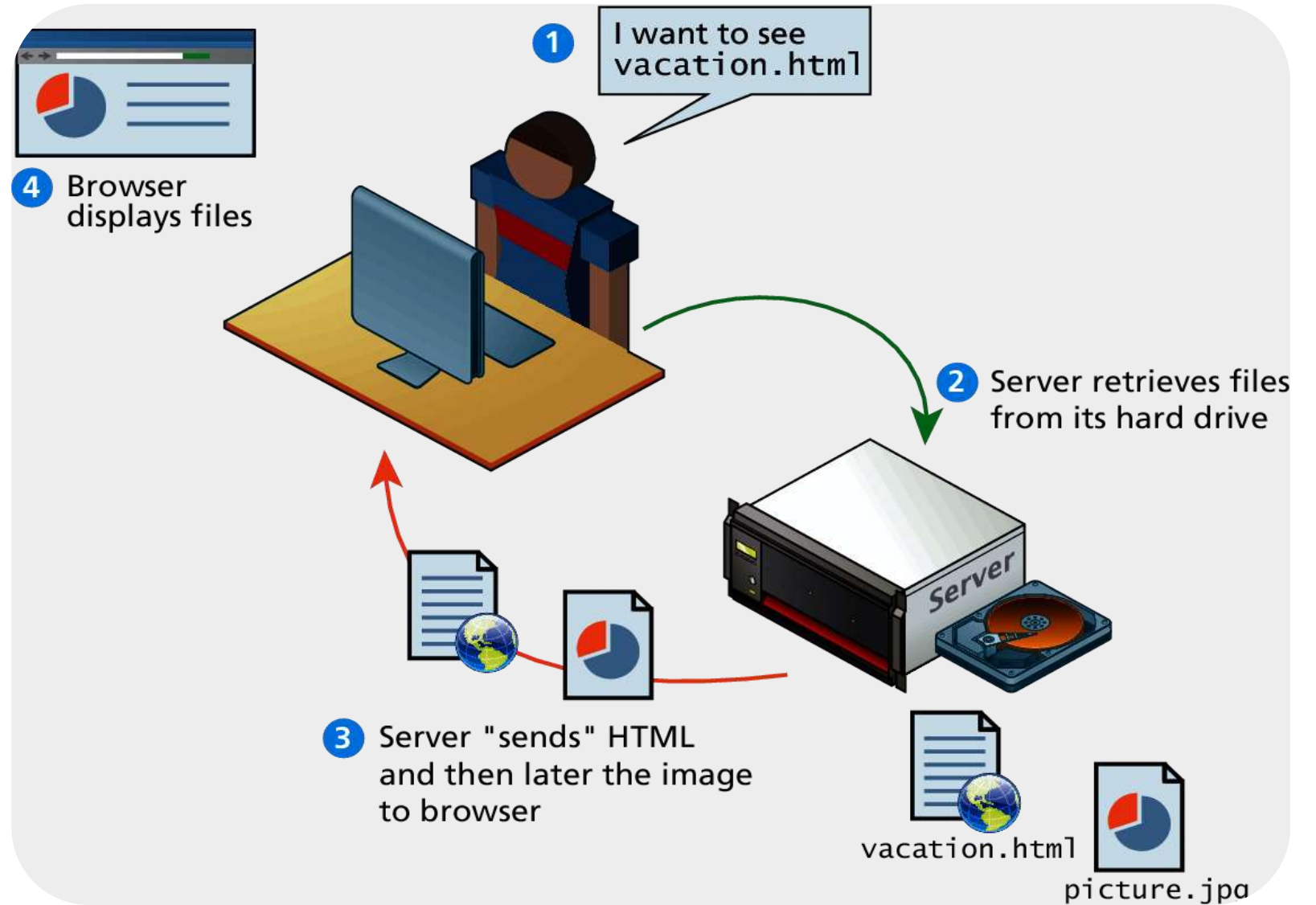
## static web site

- ⦿ consists only of **HTML pages** that look identical users at all times.

## Static Web Pages

- ⦿ exist as **individual files** has extension **.htm** or **.html**
- ⦿ typically contain **text, hyper links, photos, and graphics**
- ⦿ may also contain **animated or interactive media** such as:
  - Movie Clips (YouTube etc.)
  - Adobe Flash Presentations
  - Other media types

# STATIC WEB SITES



# Dynamic Web Sites

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## Dynamic web site

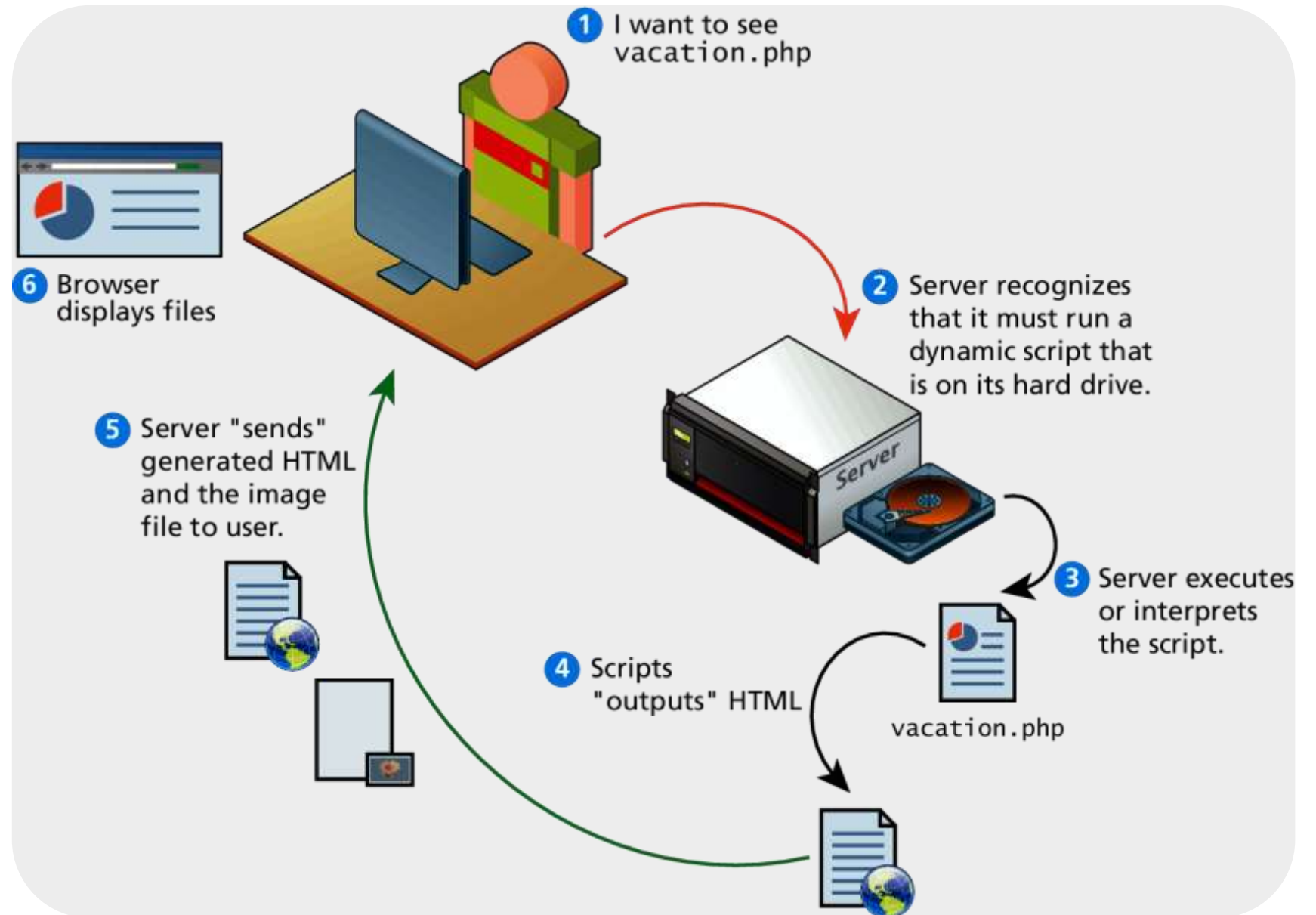
- consists of Pages that its contents continually changing from external information sources.

## Dynamic Web Pages

- can provide **Create**, **Retrieve**, **Update** , and **Delete** functions for company records
- exist as files with extensions based on the type of programming used **.jsp** ,**.php**, **.asp**, **.aspx**



# DYNAMIC WEB SITES



# client-side language

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## Client-Side Scripts

- ⦿ Scripts that **execute** locally within an **HTML** document in the **user's web browser**
- ⦿ For **client-side scripts** we will primarily utilize **Javascript & JQuery**, are placed within **HTML**
- ⦿ **For example**
  - client-side scripting could check the **user's form for errors** before submitting it
  - When click the **submit button**, an **alert box appears** telling them about the **mistake**

# Server-Side Languages

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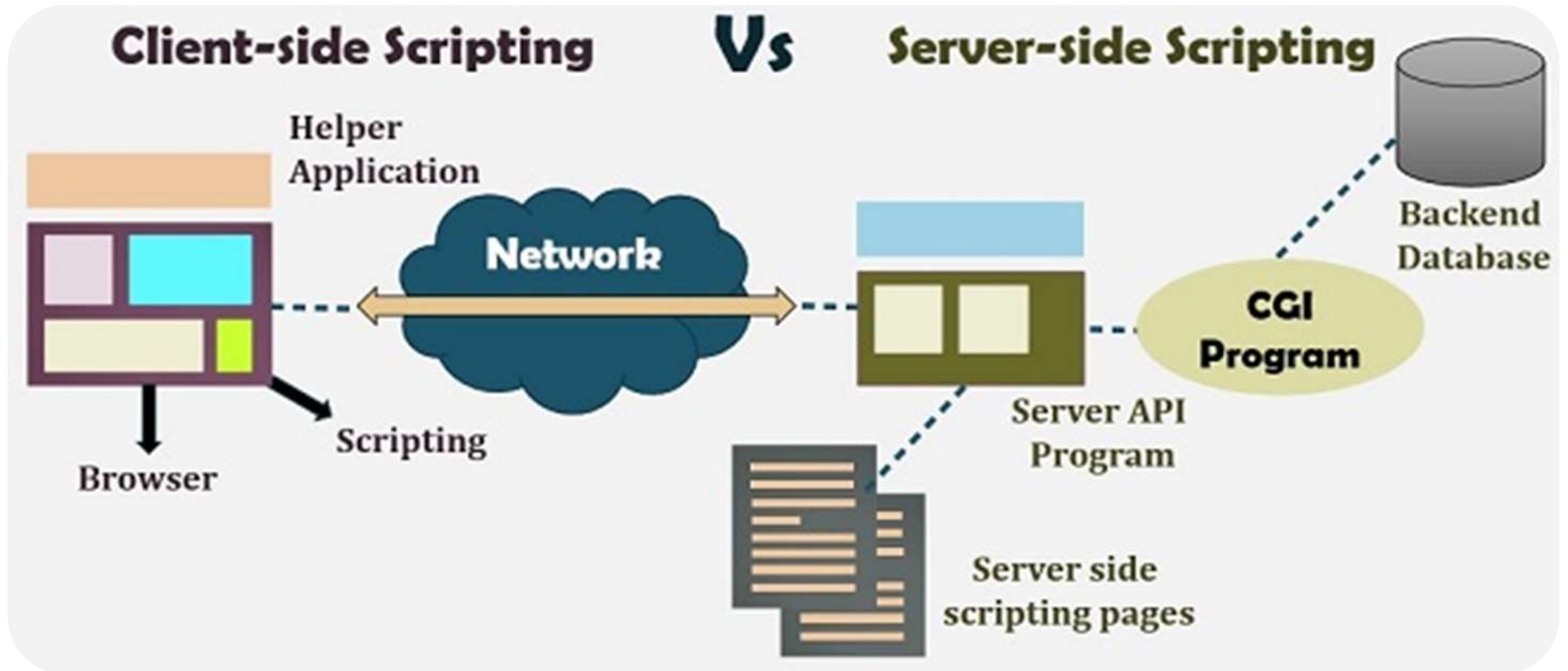
## Server-Side Script

- ❖ Scripts that **execute** on the server and return **resulting** documents to the client
- ❖ For server-side scripts we will primarily utilize the **PHP language**

## Server-side scripts are used for various purposes:

- ❖ Browser detection
- ❖ Database connectivity
- ❖ Logon scripts (**verification of username and password**)
- ❖ File uploading and downloading

# CLIENT-SIDE LANGUAGE **VS.** SERVER-SIDE LANGUAGES



# client-side language **Vs.** Server-Side Languages

BASIS FOR COMPARISON	CLIENT-SIDE SCRIPTING	SERVER-SIDE SCRIPTING
BASIC	Works at the front end and script are visible among the users.	Works in the back end which is not visible at the client end.
PROCESSING	Does not need interaction with the server.	Requires server interaction.
LANGUAGES INVOLVED	HTML, CSS, JavaScript, etc.	PHP, ASP.net, Ruby , Python, etcetera.
AFFECT	Can reduce the load to the server.	Could effectively customize the web pages and provide dynamic websites.
SECURITY	Insecure	Relatively secure.



# W3C Consortium

- ❖ Stands for "World Wide Web Consortium." The W3C is an international community that includes a full-time staff, industry experts, and several member organizations. These groups work together to develop standards for the World Wide Web.
- ❖ Their mission is to lead the World Wide Web to its full potential by developing protocols and guidelines that ensure long-term growth for the Web.
- ❖ Produces specifications, called **Recommendations**, in an effort to standardize web technologies





Any  
Questions?