

Module I: Web Essentials

Clients and Server architecture and Web Protocol

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TLO-1, TLO-2

- ✓ Identify the roles of clients, servers, and communication in web development
- ✓ Able to conceptualize internet protocols and the World Wide Web.

Session Activity

- ✓ Exploring web browsers, tools, and developer console
- ✓ Analyzing web pages and understanding the request-response cycle
- ✓ Researching on different internet protocols

Keywords

Client, Web server, Protocols, URL, DNS , Doman Name, Client Request, Server Response

Introduction to web Development

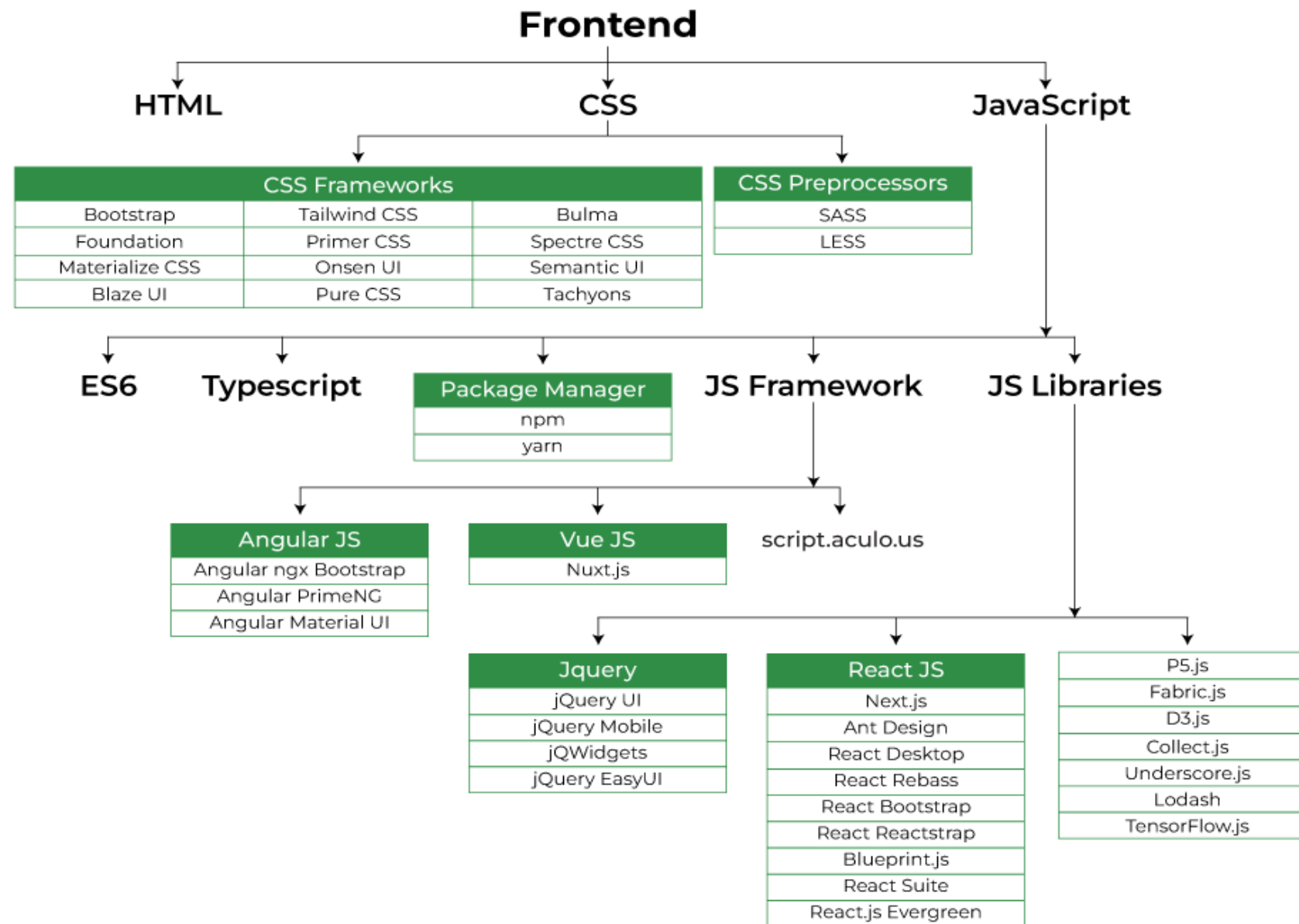
Web development refers to the creating, building, and maintaining of websites. It includes aspects such as web design, web publishing, web programming, and database management.

- ✓ Web: It refers to websites, web pages or anything that works over the internet.
- ✓ Development: It refers to building the application from scratch.

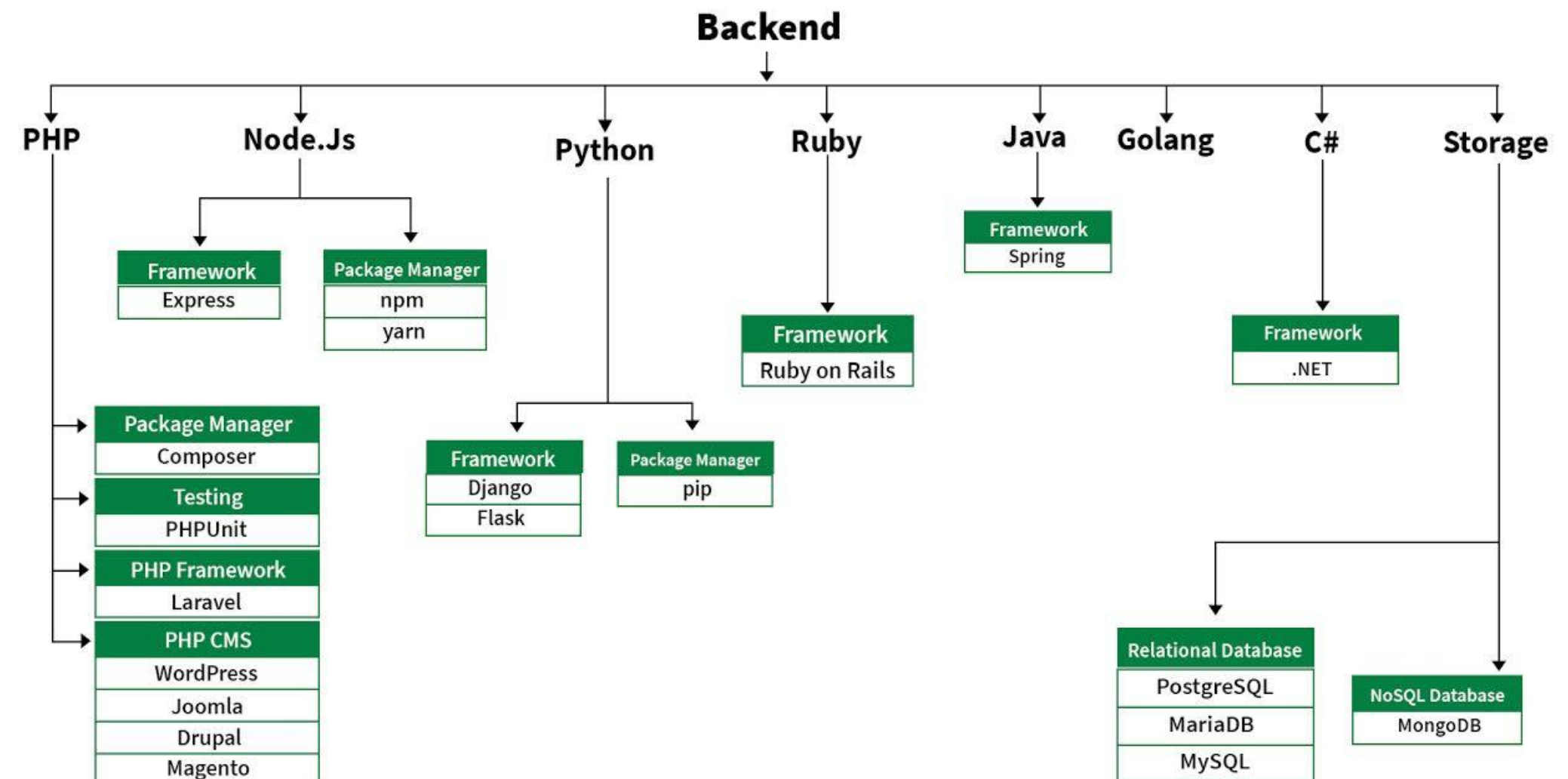


Web Development Classification

Frontend Development



Backend Development



✓ The part of a website where the user interacts directly is termed as front end. It is also referred to as the 'client side' of the application.

✓ Backend is the server side of a website. It is part of the website that users cannot see and interact with. It is the portion of software that does not come in direct contact with the users. It is used to store and arrange data.

It is the program that runs on the client machine (browser) and deals with the user interface/display and any other processing that can happen on client machine like reading/writing cookies.

- ✓ Sending request for data to server
- ✓ Make interactive web pages
- ✓ Send request to server
- ✓ work as an interface between server and user

Client side programming language:
HTML, JavaScript, CSS etc.

EXPLORE

Extra Relevant Links as per the topic

<https://www.interviewbit.com/blog/client-server-architecture//>

It is the program that runs on server dealing with the generation of content of web page.

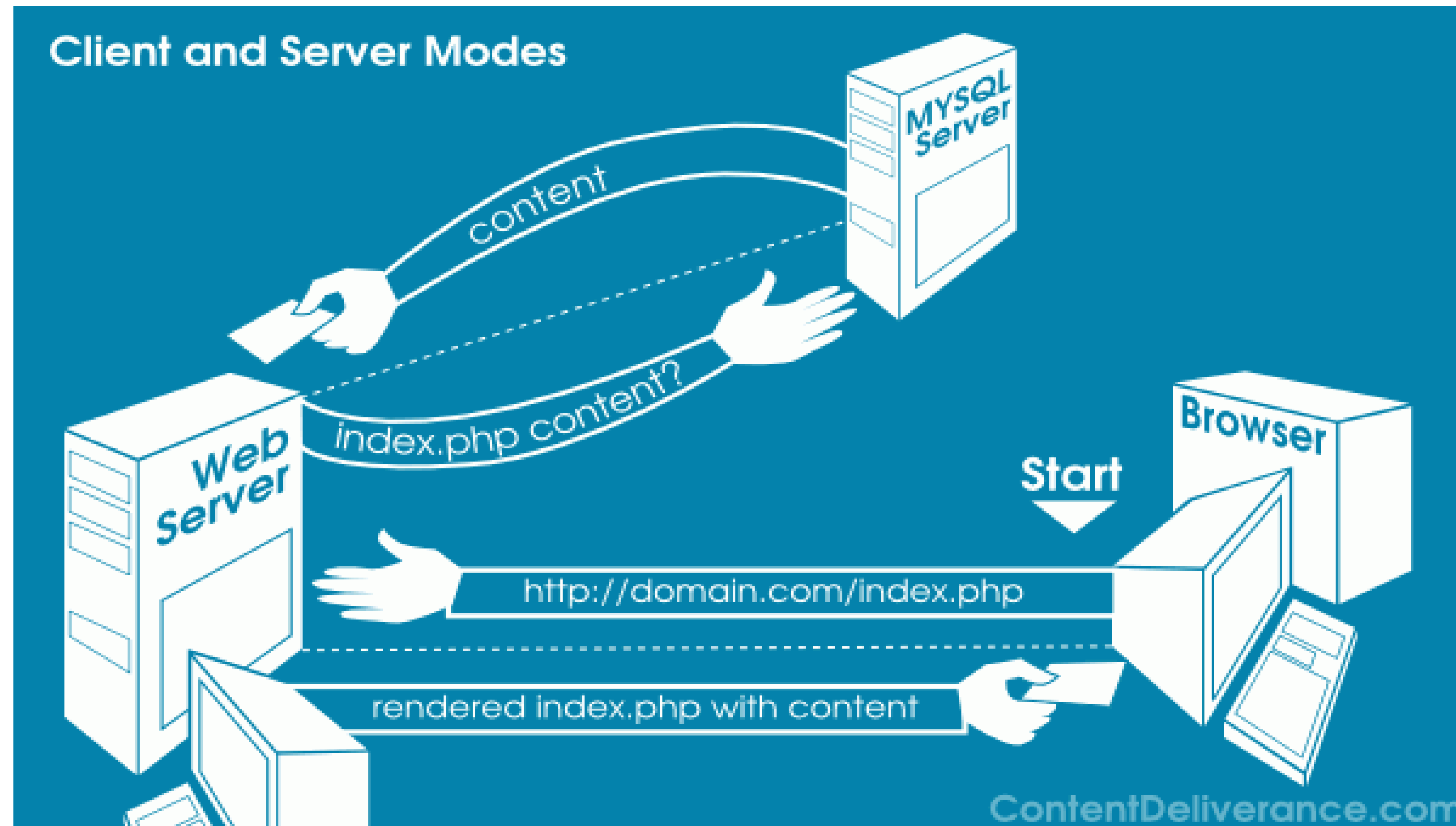
- ✓ Querying the database
- ✓ Operations over databases
- ✓ Access/Write a file on server.

Server side programming language:
PHP, C++, Java and JSP, Python.

EXPLORE

Extra Relevant Links as per the topic

<https://www.interviewbit.com/blog/client-server-architecture//>



<https://contentdeliverance.com/client-server-architecture/>

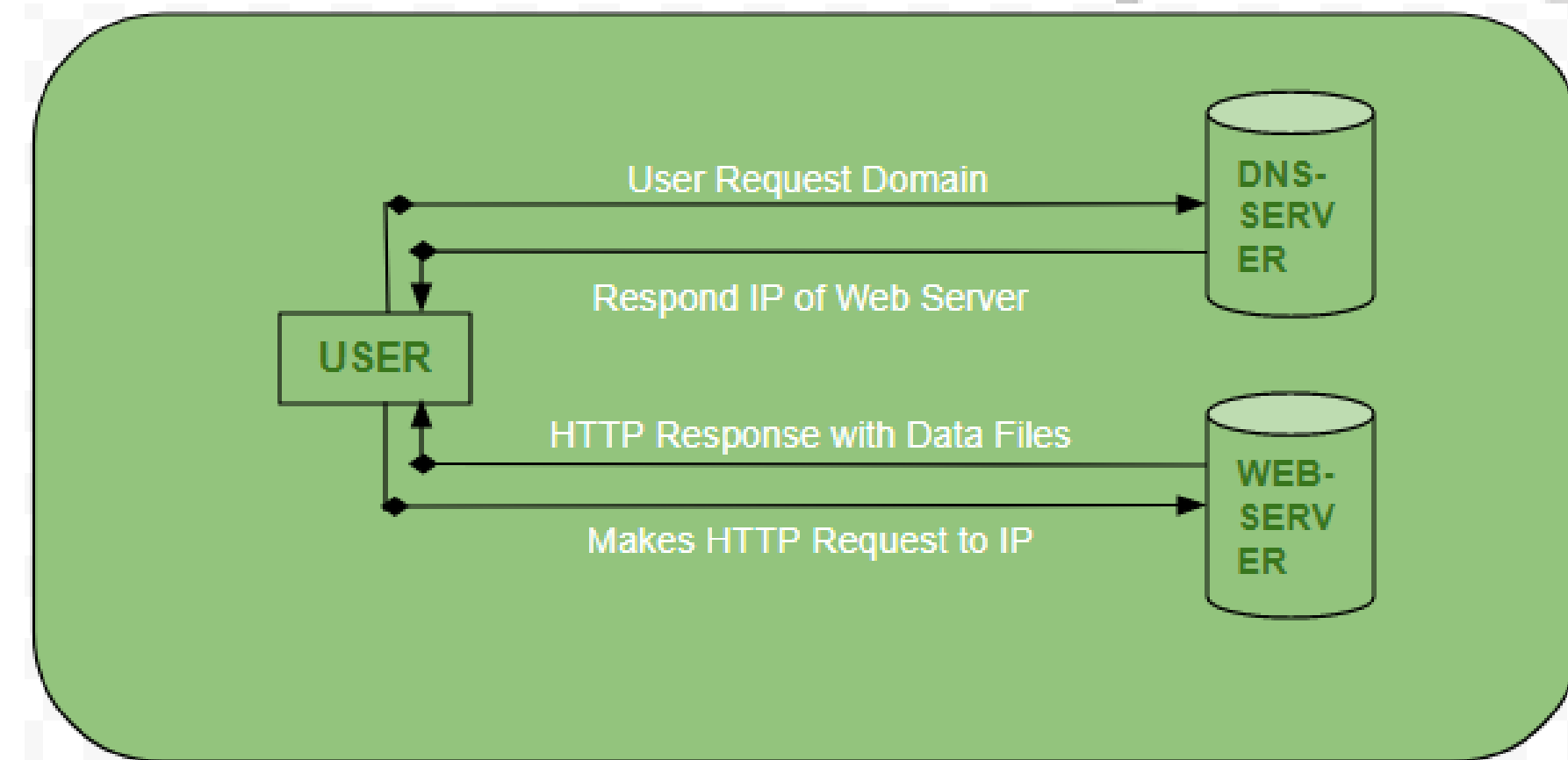
Client requesting something and the Server serving it as long as its present in the database.

- ✓ *Centralized system with all data in a single place.*
- ✓ *The capacity of the Client and Servers can be changed separately.*

Browser interacts with the servers

There are few steps to follow to interact with the servers a client.

- ✓ User enters the **URL**(Uniform Resource Locator) of the website or file. The Browser then requests the **DNS** (DOMAIN NAME SYSTEM) Server.
- ✓ **DNS Server** lookup for the address of the **WEB Server**.
- ✓ **DNS Server** responds with the **IP address** of the **WEB Server**.
- ✓ Browser sends over an **HTTP/HTTPS** request to **WEB Server's IP** (provided by **DNS server**).
- ✓ Server sends over the necessary files of the website.
- ✓ Browser then renders the files and the website is displayed. This rendering is done with the help of **DOM** (Document Object Model) interpreter, **CSS** interpreter and **JS Engine** collectively known as the **JIT** or (Just in Time) Compilers.

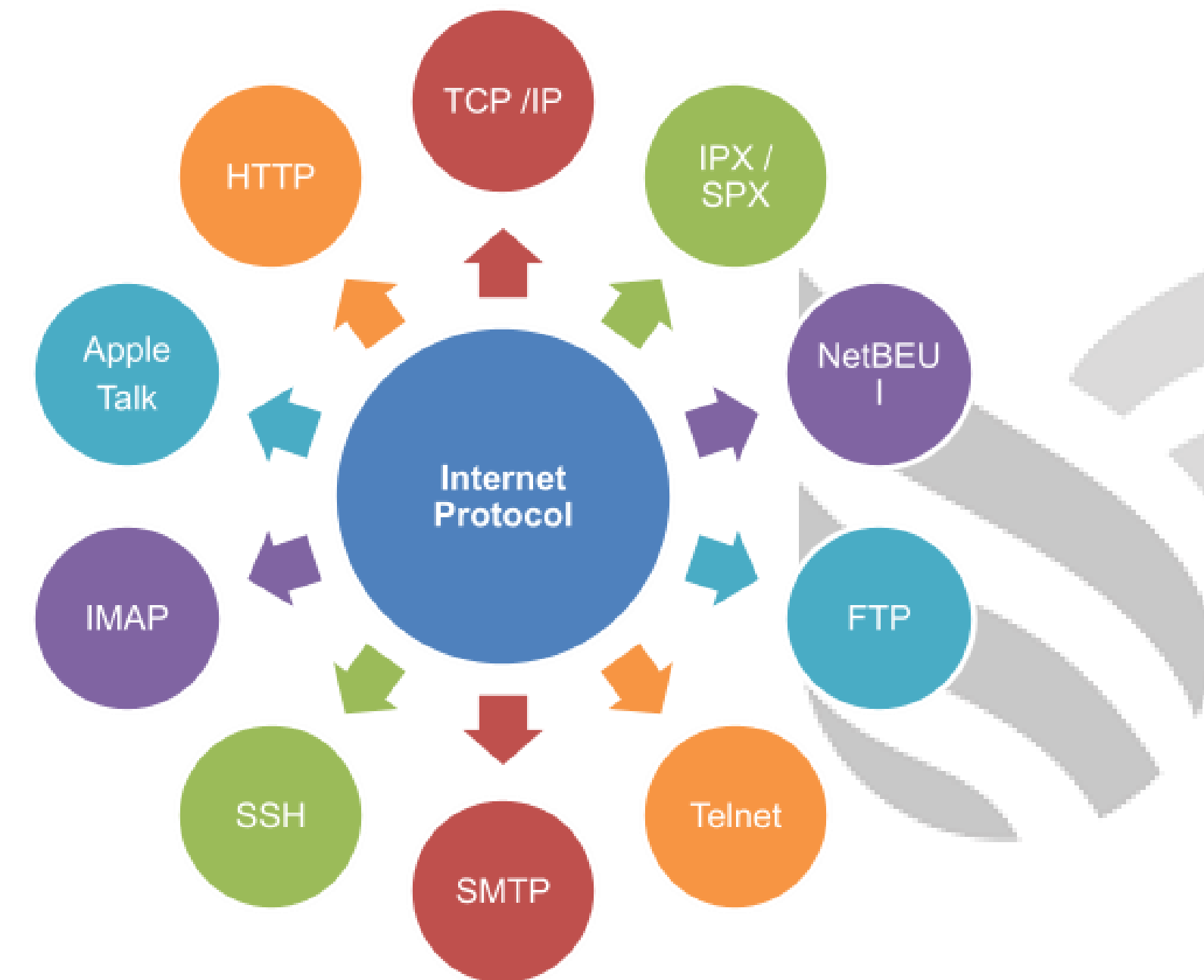


<https://www.geeksforgeeks.org/client-server-model/>

Internet Protocols are a set of rules that governs the communication and exchange of data over the internet. Both the sender and receiver should follow the same protocols in order to communicate the data.

Type of web(Internet Protocol)

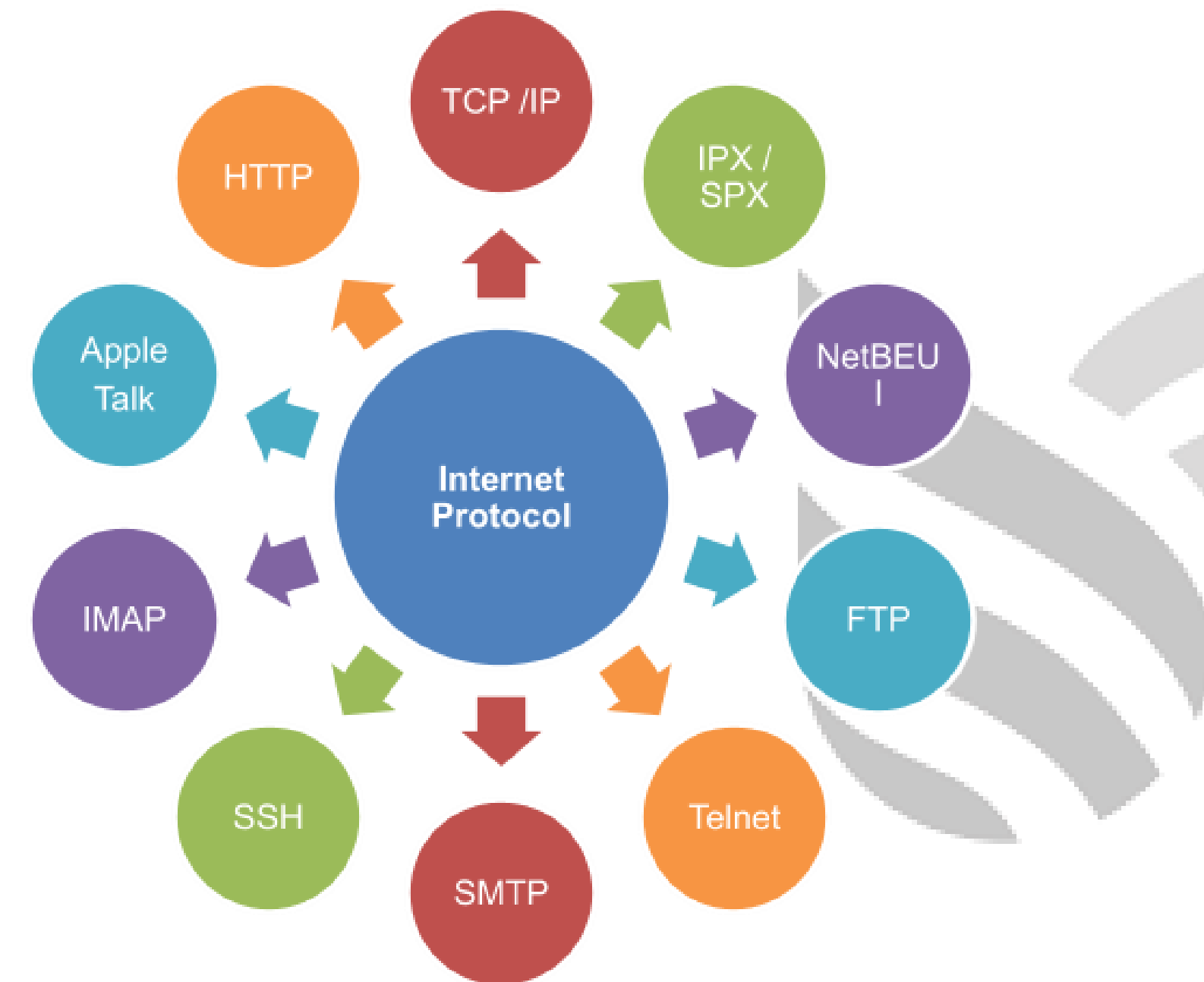
- ✓ HTTP stands for Hypertext Transfer Protocol. It is the standard protocol for transferring web pages (and their content) across the Internet. E.g When you browse a web page, the URL might be preceded by http:// or https://
- ✓ FTP stands for File Transfer Protocol. It is used to transfer files across the Internet. FTP is commonly used by web developers to publish updates to a website (i.e. to upload a new version of the website).



<https://sites.google.com/a/depd.gov.ph/mr-vallejos/home/internet-protocol/>

Web (Internet) Protocol

- ✓ SSH: Secure Shell is used to securely connect to a remote computer.
- ✓ Telnet: It is an application used to connect to a remote computer that lacks security features.
- ✓ POP3: Post Office Protocol is used to download e-mail from a remote mail server.
- ✓ IMAP: Internet Message Access Protocol is also used to download e-mail from a remote mail server.
- ✓ SMTP: Simple Mail Transfer Protocol is used to send e-mail to a remote e-mail server.



<https://sites.google.com/a/depd.gov.ph/mr-vallejos/home/internet-protocol/>

Practical Task for Lab

- ✓ Researching on different internet protocols
- ✓ Identify HTTP, POP, SMTP, FTP protocol
- ✓ Exploring web browsers, tools, and developer console.
- ✓ Analyzing web pages and understanding the request-response cycle
- ✓ Install Notepad++ source code editor



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Reference

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Thank You

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