Phénix

# WHAT IS WEB DEVELOPMENT

INTERNET, WWW, BACK-END, DATA BASES AND FRONT-END

Présenté par Jaafar Bendahou

# What is The Internet and The World Wide Web?

**To understand What is Web Development and how it works, we have first to understand what is the Internet, and the difference with the World Wide Web**

## The Internet

**The internet is a Physical structure composed by submarine cables, computer-servers, routers...etc that enables people to share Data from anywhere in the world, as long as they are connected to the Internet.**
**So the cables connects continent together and countries togethere: it is World Wide.**

**Therefore the Internet is constituted by a group of Hardwares:**

**If a cable is cut somwhere, the internet will not be provided in this part of the world**

# The World Wide Web

**The World Wide Web also called Web, is an application that uses the internet.**

**It's role is to enables us to access to WebSites, stored in the computer-servers that Host the website.**

**So the web can be accessed through a client-computer (can be a phone or smart tv).**

**We can know understant that Applications like whatsapp uses internet to work but don't use the web.**

**Here is the difference between the internet and the World wide Web.**

# Servers and Clients

**We've understood that the internet is a physical structure that connects peoples worldwide together.**

**But How does it work ?**

**So the internet works with a system based on the communication between:**
**A computer-server and computers-clients that exchange informations, through the internet.**

**So let's talk about what are the servers / clients computers to understand what web-development is about:**

# The computer-server

**The Server is a computer that stores Data (web-sites) in it's Hard Drive.**

**It's  goals is to: Receive Requests from the computer-clients and Provide the content he asked for.**

**The computer-server is also connected to Databases, which are softwares that run on other computers and that stores the content sent by the client in the website.**

**So the computer-server has to work 100% of the time and is directly connected to the internet.**

**in brief, the goal of the computer-server is to Receive Requests from the client, and provide him with the contents he asked for, stored in his Hard drive and in Data-bases on other computers.**

**So now we can understand what is The Back-end programing:**

# The Back-end programing

**The Back-end programing is Server-side coding:**

**It is used to:**

- **Turn computers into servers: every back-end computer language had a feature to turn the computer into a server.**
- **Save and manage the webpage's Data that is stored in the server hard-drive**
- **Save and manage user's Data that are stored in softwares called databases and that runs on a different computer: it can be logins/Passeword/Review/Purchases...etc**

**So the Back-end coding is about what goes on behind the scenes, that ensure's that everything in the client-side runs smoothly and that the user finds all the informations he saved on the website.**
**So the user can't see this part of the code**

# The Computer-client

**The client is the user's device (computer/Smartphone/Smart-TV) that is connected to the internet; it use's web-browsers to translate the webpages code and render it in a visual content that is understandable.**

**It's goal is to: Send Requests to the computer-server and Render Content**

**Unlike the computer-server, the client isn't connected directly to the internet:**
**it is connected to the internet through an Internet-Service-Provider (ISP) that the user's subscribed too.**

**So it's the ISP that will be connected directly to the Internet Network, and will provide access to the internet for all the clients that subscribe to it (in 1 city for exemple).**

**That's why we have to pay to access the internet.**

# The Front-end Programing

**The Front-end programing is the Client-side coding.**

**It is used to:**

- **Create all the visual things that we see on a Webpage: Layouts, Buttons, Menus, links, colors, shapes...etc**

**It is executed on a Web Browser that translates the code into a visual and understandable aspect.**

# Web Development

**So:**

**Web development is the process of creating and managing websites for the internet.**

**With the Front-end development / Client-side coding: We create the design of the website that the user will see on his Web Browser**

**With the Back-end development / Server-side coding: We will save and manage webpages and also the user's info that he puts on the website, using software called Database, and that runs in other computer**

Front-end= Webpage ->Web->Back-end= Server and Database

# Other important knowledge

**Know we now what is web-development and how the internet works and connects device's all over the world.**

**But we didn't talk about how a Client and a Server recognize each other.**

## The Internet Protocol adress (IP address):

**The IP is a serie of numbers that is unique to each server computer and client-device.**

**Thanks to this protocol, the client knows where to send it's request, and the server knows where to provide the content.**

**So to communicate with the server, the user has to type the IP adress of the server in the web browser of the client-device. (The user also has to use the HTTP protocol to transfer the HTML content of the webpage stored in the server)**

# Other important knowledge

**It's the Internet Service provider that gives to each Network an IP Adress:**

**We have 2 types of IP adress:**

**-IP V4: 4 Numbers separated by a dot.**
**When computers connect to a Network via Wifi for example, the first 3 numbers of the IP adress are the same for every computer.**
**But we can recognize them  with the 4th number that is unique to each computer.**

**-IP V6: A set of letters and numbers**

**If we want to know what is our IP adress, we can go on Powershell (or any terminal) and give the command: ipconfig**

# Other important knowledge 2

## The Domain Name System (DNS):

**Always having to Type the IP adress of the computer-server that hosts the websites that we want to access, is really painful**

**That's why the Domain name system (DNS) has been created:**
**It's a name that we decide to give to the IP address of the server that hosts our website, ex:**
**HTTP://www.facebook.com**

**Facebook is the DNS that correspond to the IP adress of the server that contains the website.**