



UNIVERSITÀ DI PAVIA

Collegio Alessandro Volta  
Via Adolfo Ferrata, 17, Pavia (PV)



# WEB DESIGN

Lecture 1 – Getting started

**Giovanni Nicola D'Aloisio**

Department of Physics – University of Pavia  
Classe di Scienze, Tecnologie e Società – IUSS Pavia

E-Mail: [giovanninicola.daloisio01@universitadipavia.it](mailto:giovanninicola.daloisio01@universitadipavia.it)

# Goals of this seminar

- To «learn how to learn» markup languages (TeX, HTML, Markdown, ...), a text-encoding system used to control its structure, formatting, or the relationship between its parts;
- To acquire skills in designing more or less complex web pages and websites, using the skills acquired in HTML, CSS and JavaScript;
- To make you feel like Mark Zuckerberg while writing lines and lines of code just for evaluating the beauty of a college girl.



*I'm a little intoxicated, not gonna lie. So what if it's not even 10 p.m. and it's a Tuesday night? What? The Kirkland facebook is open on my desktop and some of these people have pretty horrendous facebook pics. I almost want to put some of these faces next to pictures of farm animals and have people vote on which is more attractive.*

*9:48 pm*

# Internet and the WWW

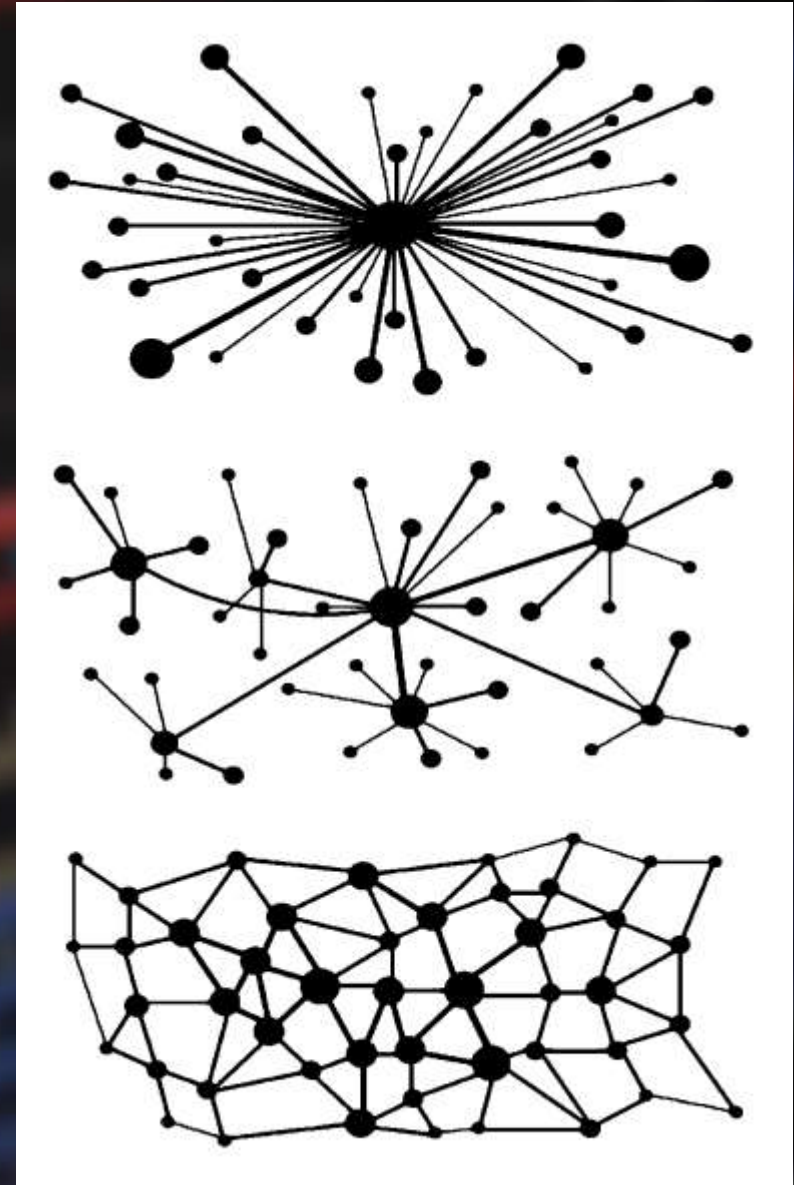
- Internet is an interconnecting hardware infrastructure between IT networks, based on the TCP/IP protocol;
- The World Wide Web, is a virtual space with resources identified by a URL and interconnected by hypertextual links;
- It is based on the http and https protocols;
- The WWW uses Internet.



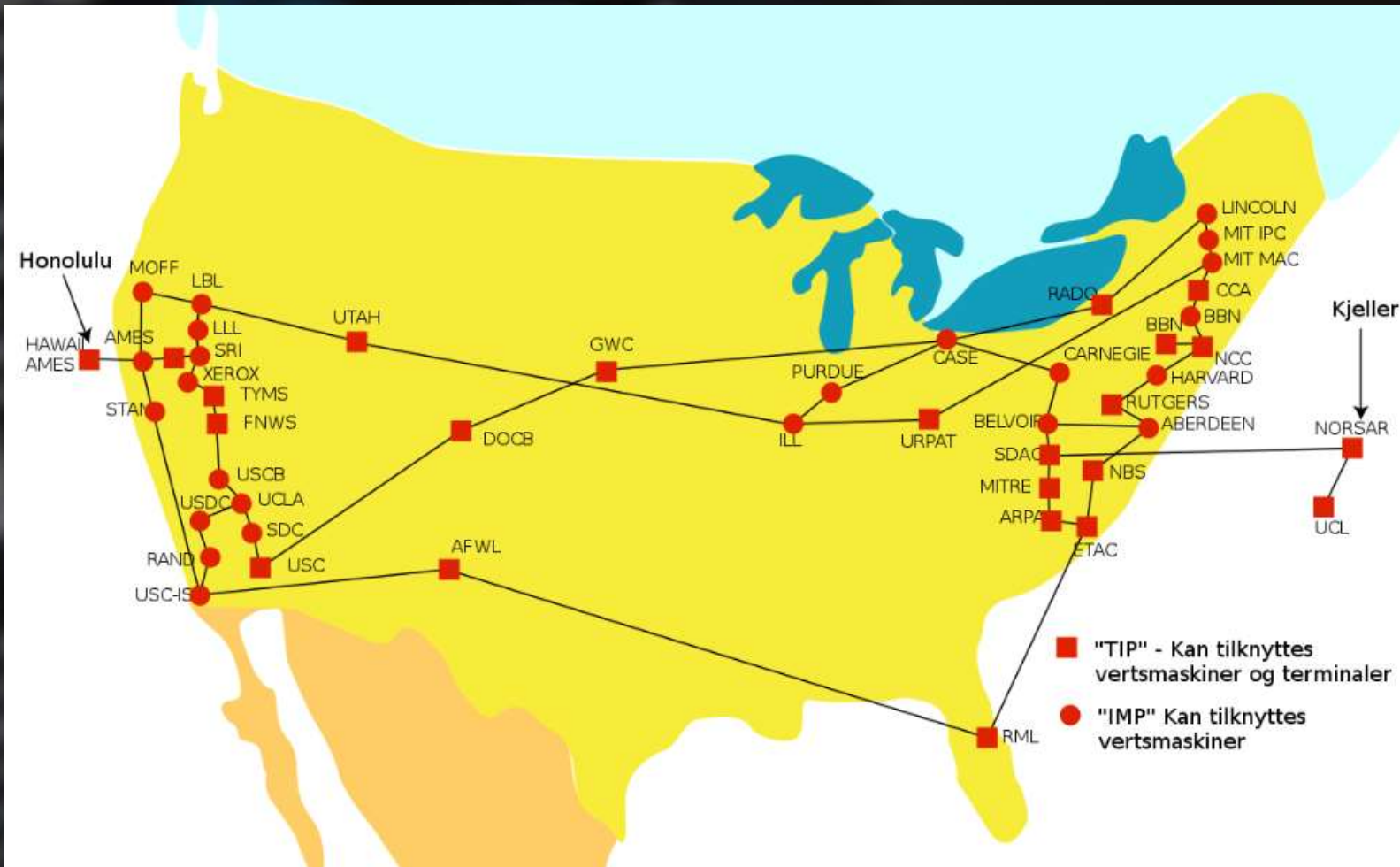


# Pills of Internet history

- 1957 – The first Sputnik satellite is in orbit;
- 1958 – Advanced Research Projects Agency (ARPA), for working on innovative technological solutions, under the DoD supervisioning;
- Made in the Sixties with collaborations from several USA universities, it had to build a vaste network that could even resist nuclear attacks;
- 1964 – Distributed network
- 1965 – Packet switching
- The messages are now divided into packets and send individually (through different paths) to their destination, where they are riassembled together.



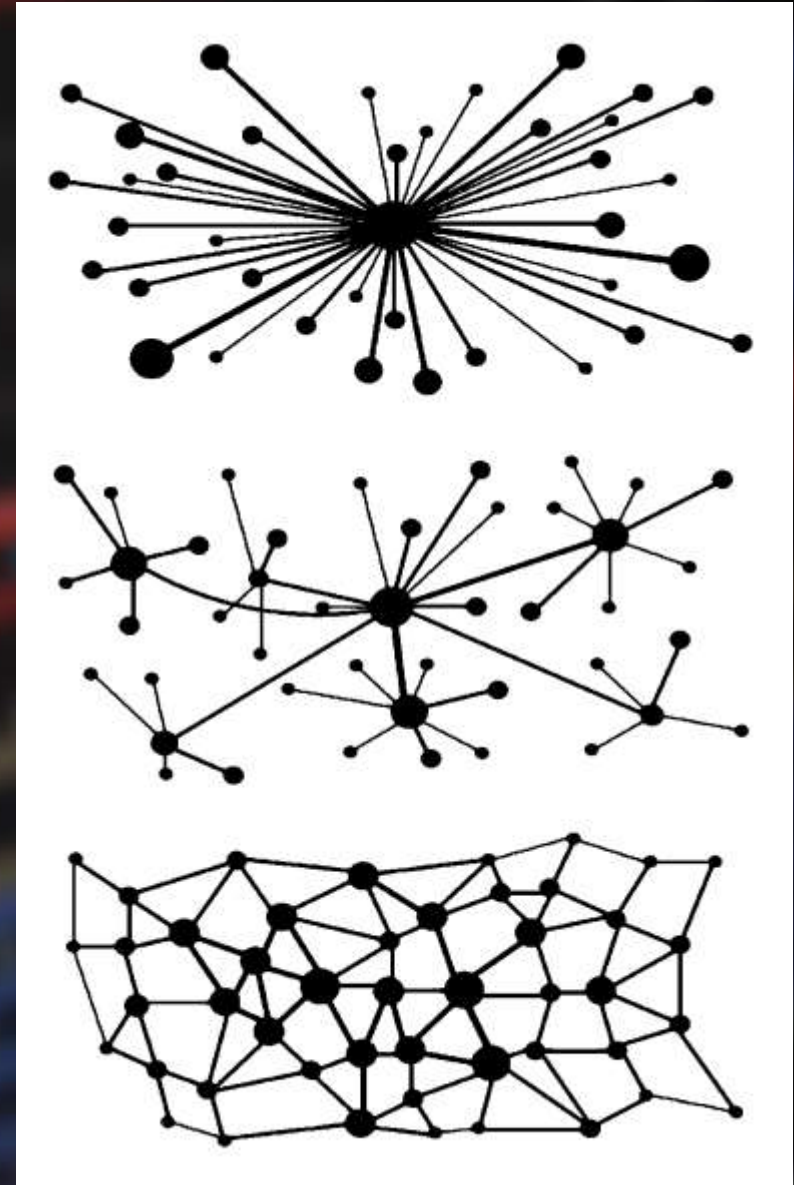
# ARPANET in 1974



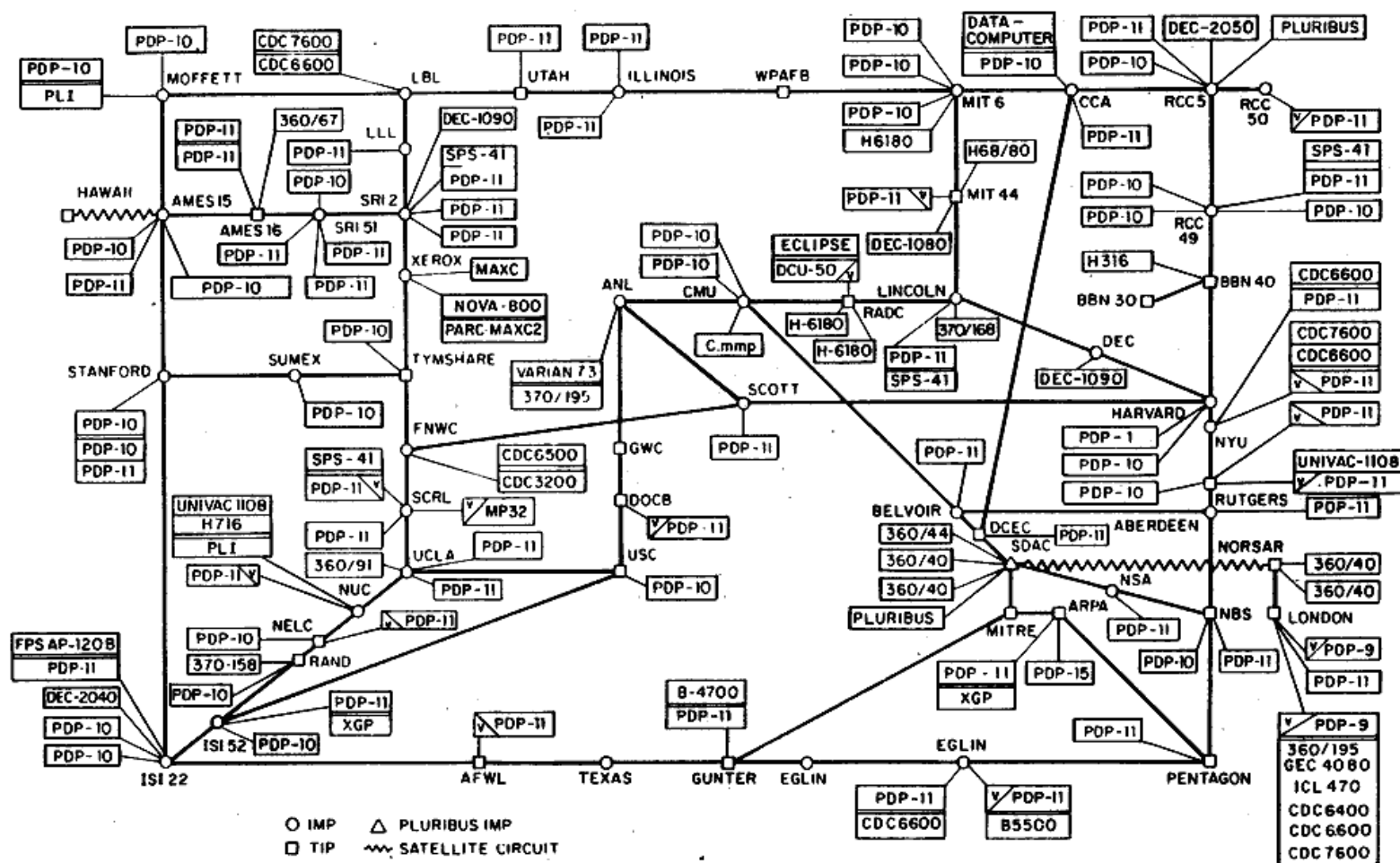


# Pills of Internet history

- 1969 – First packet switching IT network, based at UCLA, UCSB, SRI (Stanford), Univ. of Utah
- 1974 – TCP/IP (common and open standard)
- TCP (Transmission Control Protocol) manages the data transmission between the nodes, identified by the IP (Internet Protocol)
- Each packet contains the destination IP; each intermediate node reads the IP and sends the packet to the right node
- ARPANET + TCP/IP → Internet



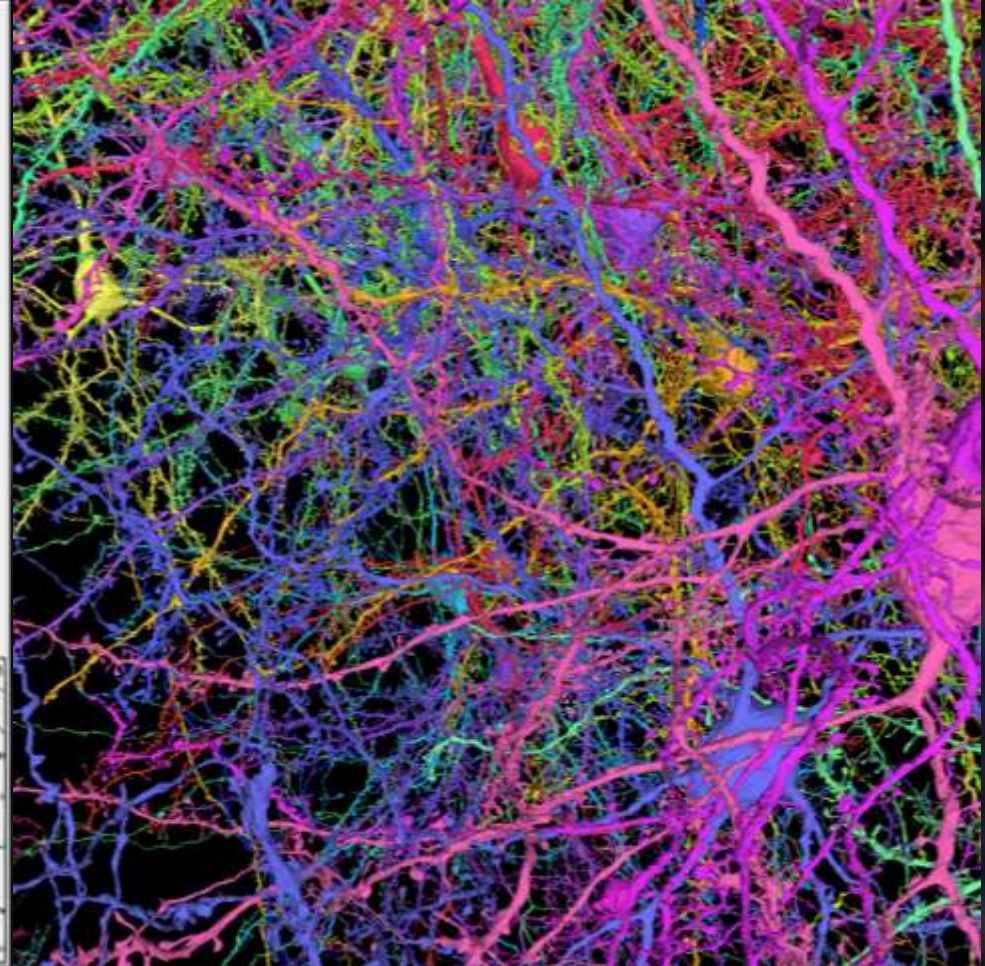
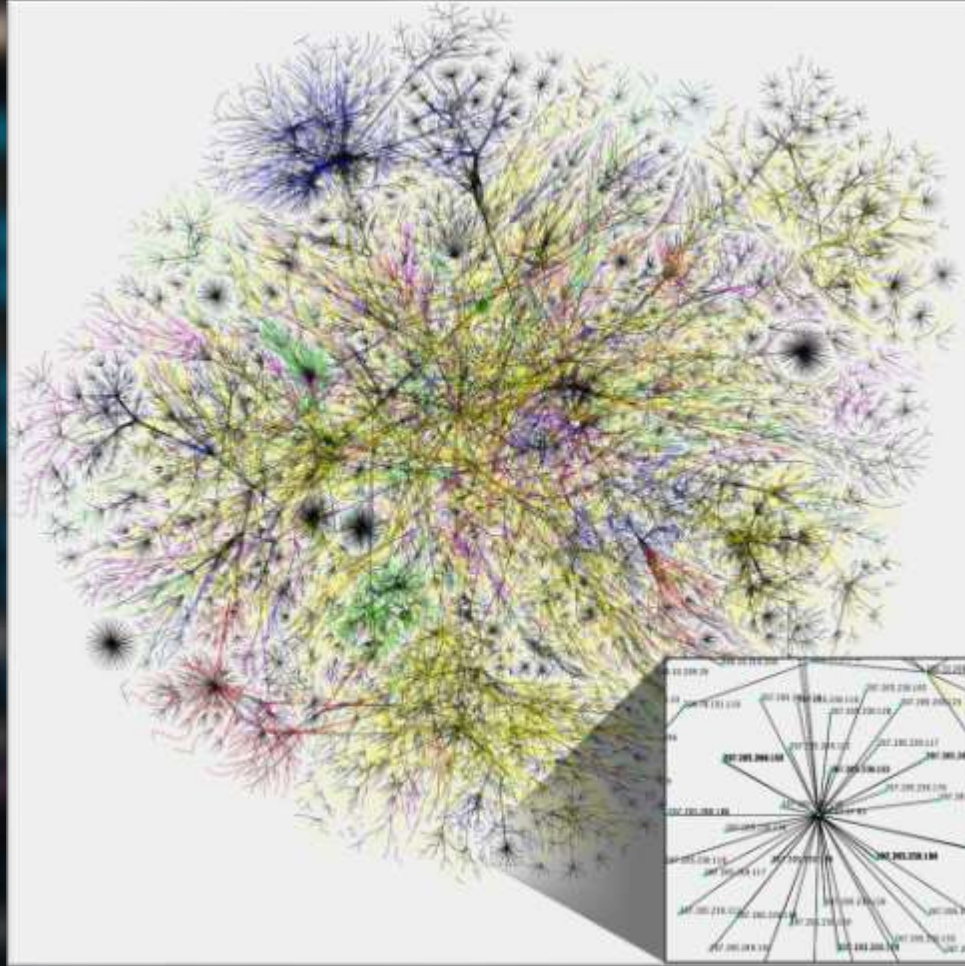
# ARPANET LOGICAL MAP, MARCH 1977



(PLEASE NOTE THAT WHILE THIS MAP SHOWS THE HOST POPULATION OF THE NETWORK ACCORDING TO THE BEST INFORMATION OBTAINABLE, NO CLAIM CAN BE MADE FOR ITS ACCURACY)

NAMES SHOWN ARE IMP NAMES, NOT (NECESSARILY) HOST NAMES

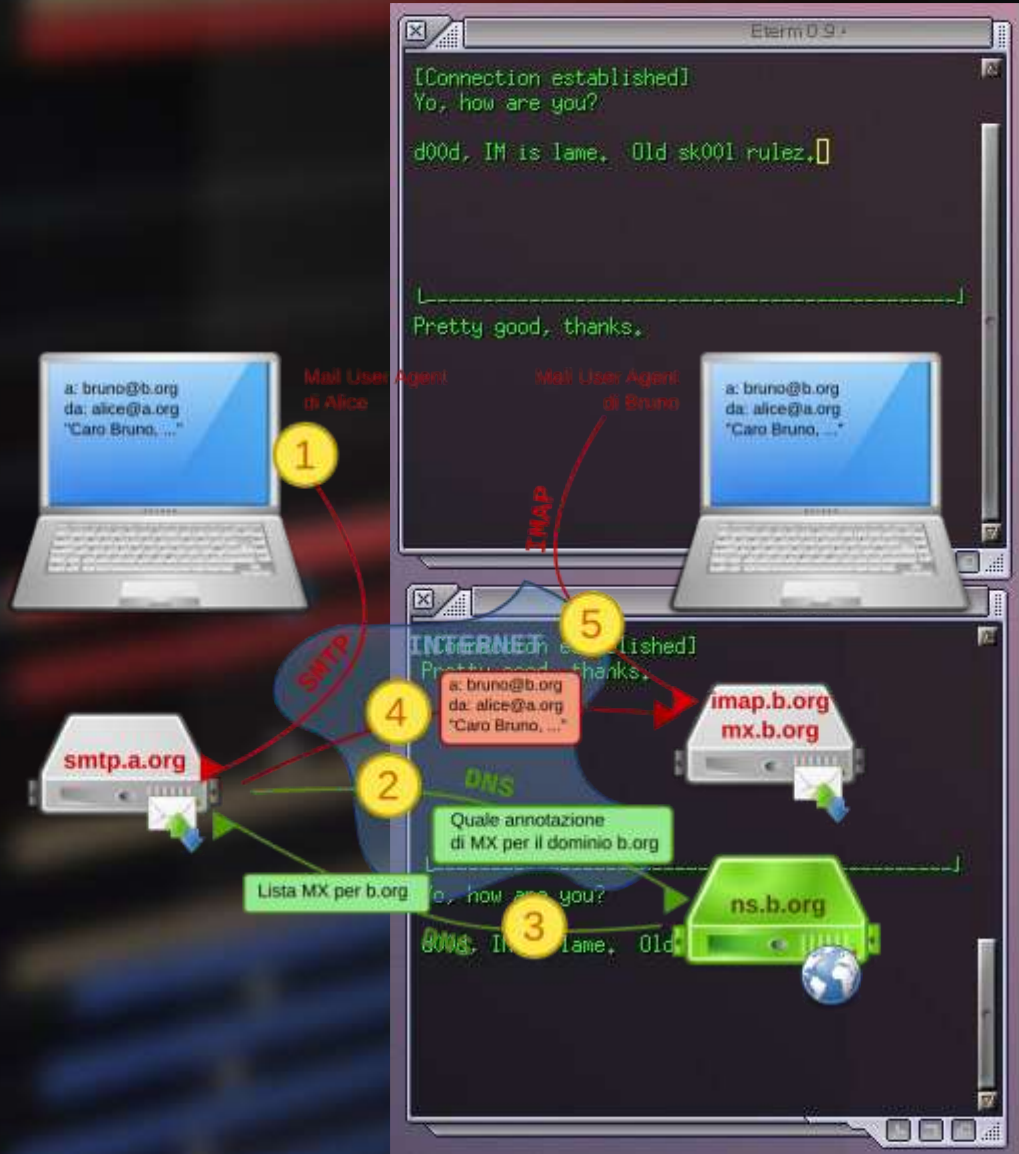






# Internet before 1990

- Email – Used since 1973 (SMTP/IMAP)
- Telnet – Connection to remote computers
- Talk – Chat between users connected to the same node
- Newsgroup – Information sharing between users connected to the same node
- It was a closed network, so you had to know the destination and to have explicit access to it.



Vague but exciting ...

CERN DD/OC

Tim Berners-Lee, CERN/DD

Information Management: A Proposal

March 1989

---

## Information Management: A Proposal

### Abstract

This proposal concerns the management of general information about accelerators and experiments at CERN. It discusses the problems of loss of information about complex evolving systems and derives a solution based on a distributed hypertext system.

Keywords: Hypertext, Computer conferencing, Document retrieval, Information management, Project control



Vague but exciting ...

Tim Berners-Lee, CERN/DD

proposal

March 1989

---

## Information Management: A Proposal

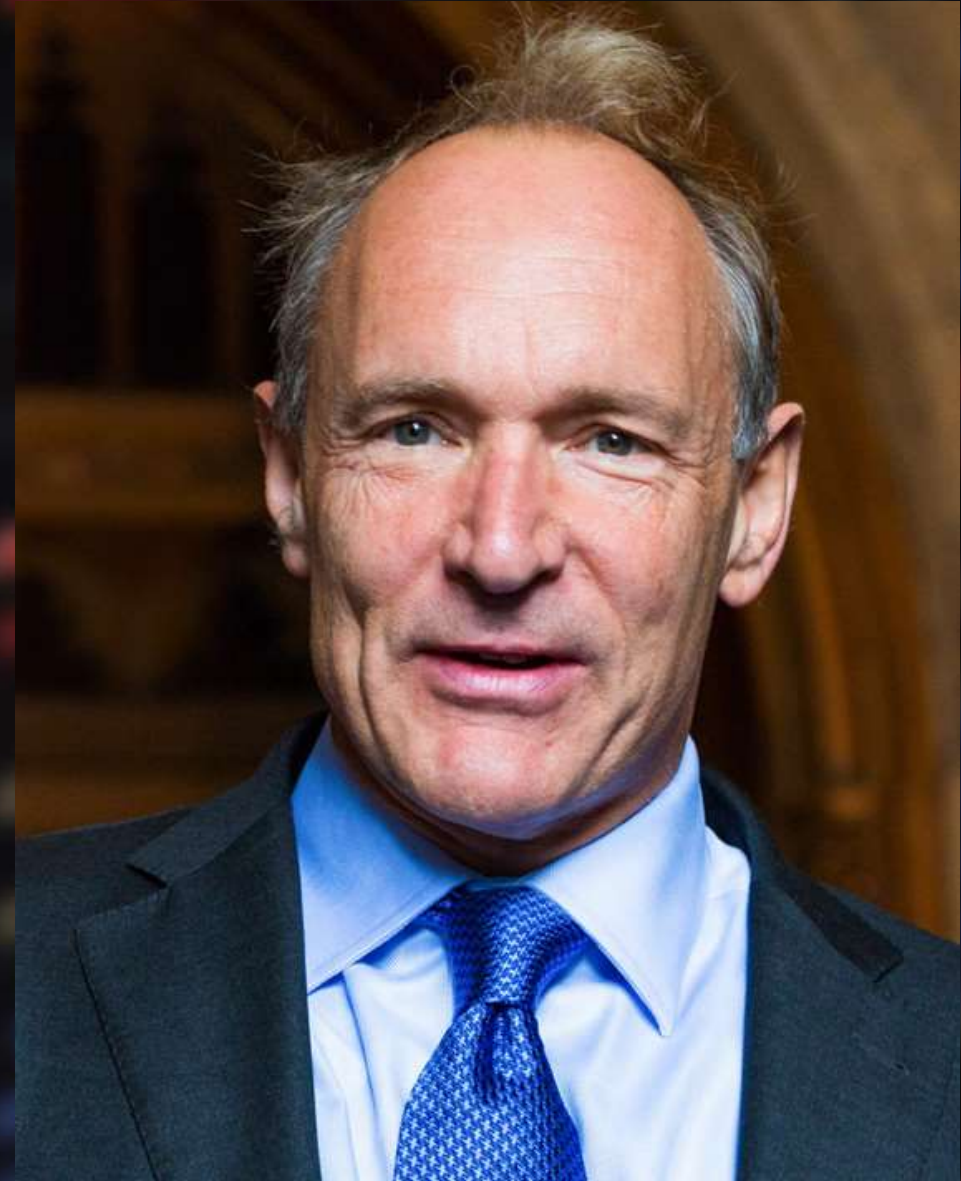
Abstract

# The WWW

- HTML – For coding hypertextual links that connect network contents, unambiguously identified by an Uniform Resource Locator (URL);
- Introduction of HTTP and browsers;
- 1991 – Open source code and protocols, permitting everyone to use them and improve them freely;
- World Wide Web Consortium (W3C).

*Dream behind the Web: a common information space in which we communicate by sharing information. Its universality is essential: a hypertext link can point to anything...*

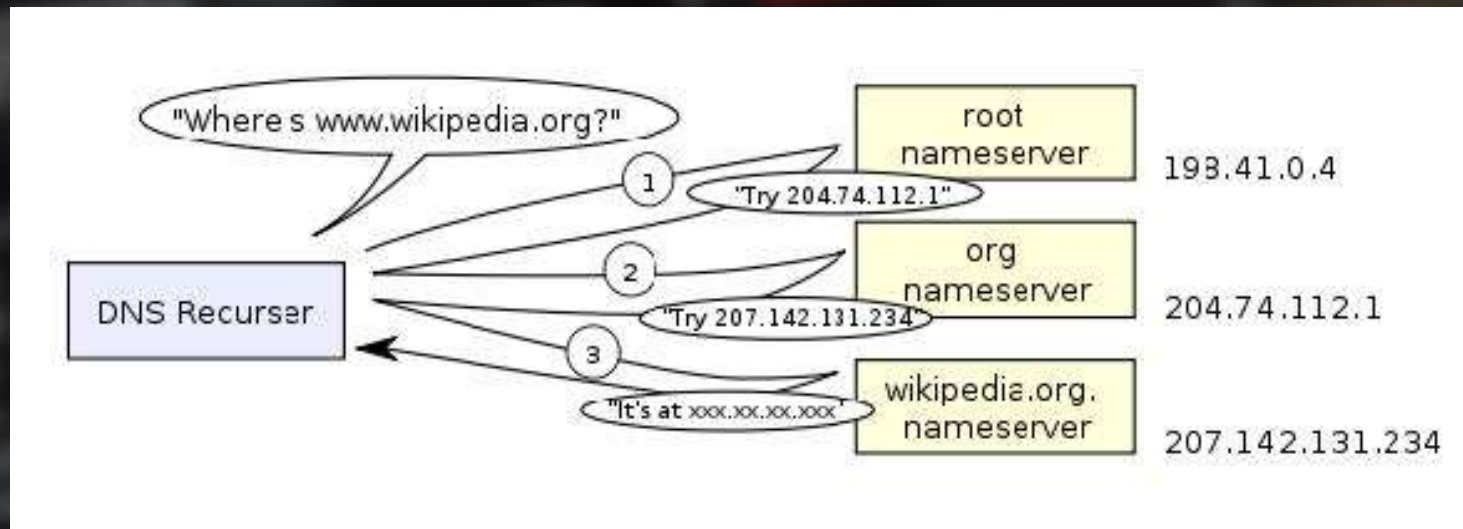
*Tim Berners-Lee*





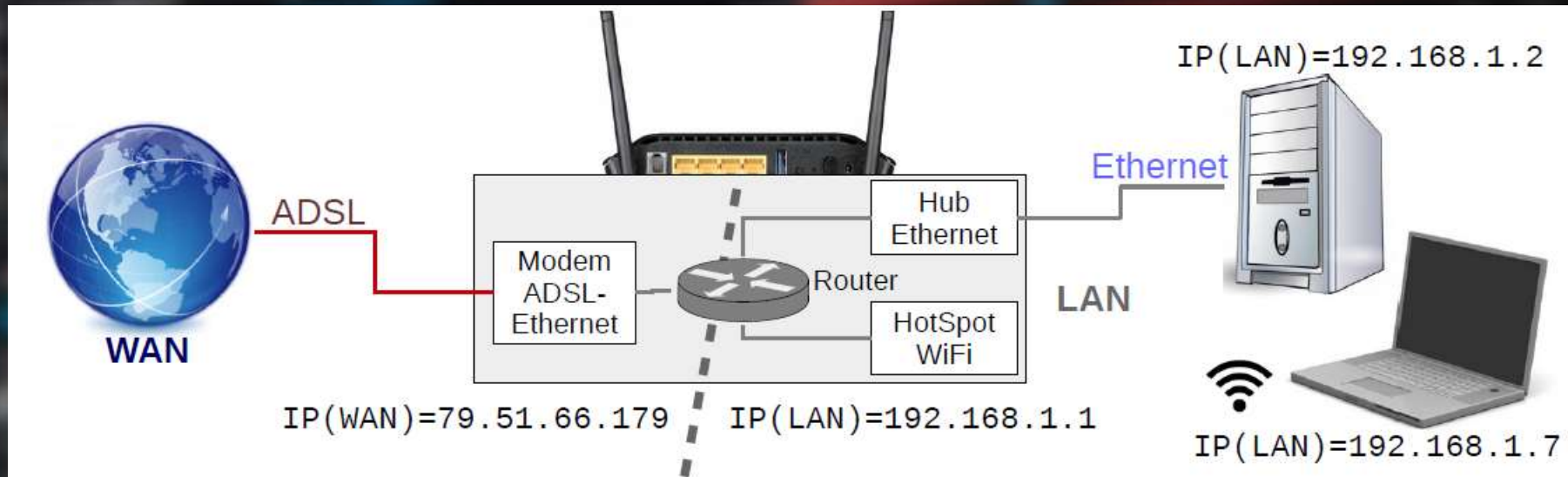
# Implementation of WWW

- Write a URL on your browser or click on a link; the browser starts a few communications with the web server hosting that web page, in order to get the page and show it to the user;
- Humans prefer names like [www.infn.it](http://www.infn.it), [web.unipv.it](http://web.unipv.it), so the Domain Name System (DNS) converts those names into machine-friendly IPs. DHCP can do this job automatically;
- Examples of custom DNS: CloudFlare (IPv4 1.1.1.1, 1.0.0.1), Google (IPv4 8.8.8.8, 8.8.4.4).



# Local Area Network

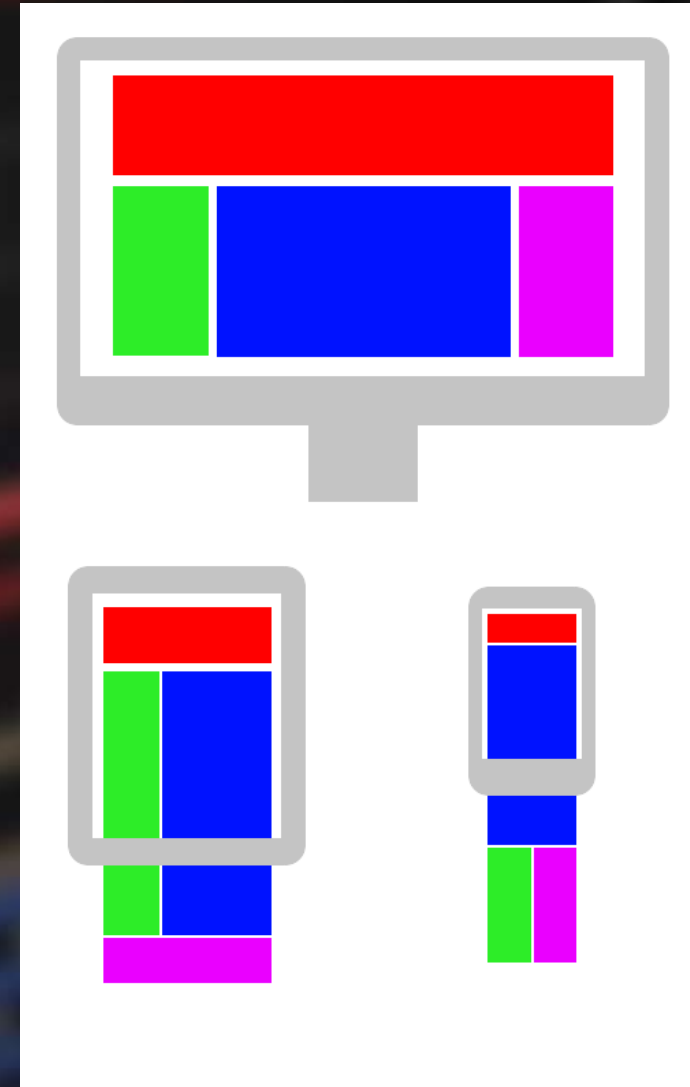
- Internal network whose nodes aren't directly connected to Internet (that's the WAN);
- LAN Ips are assigned by the router, usually using DHCP, of the kind 192.168.x.x or 10.x.x.x;
- In the Internet there can be a lot of users identified as 192.168.1.7, but only one as 79.51.66.179.





# Implementation of WWW

- When a connection is established the browser asks for informations, usually starting from the HTML text that will be enriched by images and other files in a second time.
- Once the text is caught, the browser does the formatting using CSS web language, implementing also the graphics, and then the page is showed to the user.
- Obviously, crucial in this sense were those elements of usability and accessibility for every kind of user, that start from the design phase and reach the implementation one on the basis of precise schemes.





Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum

**Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum**

LOREM IPSUM DOLOR SIT AMET, CON  
TEMPOR INCIDIDUNT UT LABORE ET  
VENIAM, QUIS NOSTRUD ESERCIZIO  
COMMODO CONSEQUAT. DUIS AUTE  
VELIT ESSE CILLUM DOLORE EU FUG  
OCCAECAT CUPIDATAT NON PROID  
MOLLIT ANIM ID EST LABORUM

*Lorem ipsum dolor sit amet,  
eiusmod tempor incididunt  
enim ad minim veniam, qu  
ut aliquip ex ea commodo c  
reprehenderit in voluptate  
pariatur. Excepteur sint occ  
culpa qui officia deserunt n*

**Hello world**

*Hello world*

**HELLO WORLD**

Hello world

[Clicca qui](#) per ulteriori inform

Ulteriori informazioni su Wiki

CORRETTO

Ulteriori informazioni su [Wikipedia](#)



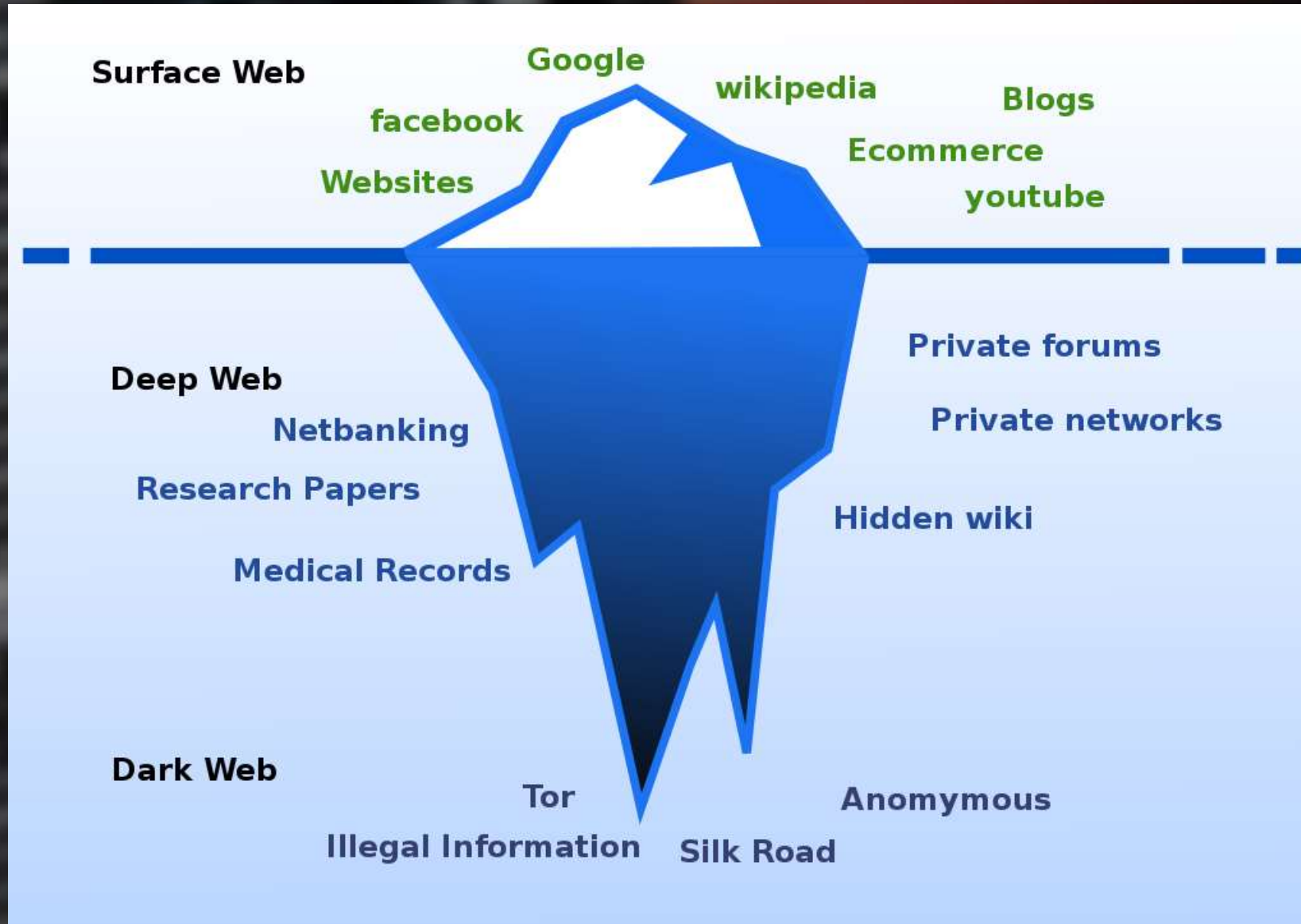
# CONTENT IS LIKE WATER



“ You put water into a cup it becomes the cup.  
You put water into a bottle it becomes the bottle.  
You put it in a teapot, it becomes the teapot. ”

Josh Clark (originally Bruce Lee) - Seven deadly mobile myths

Illustration by Stéphanie Walter



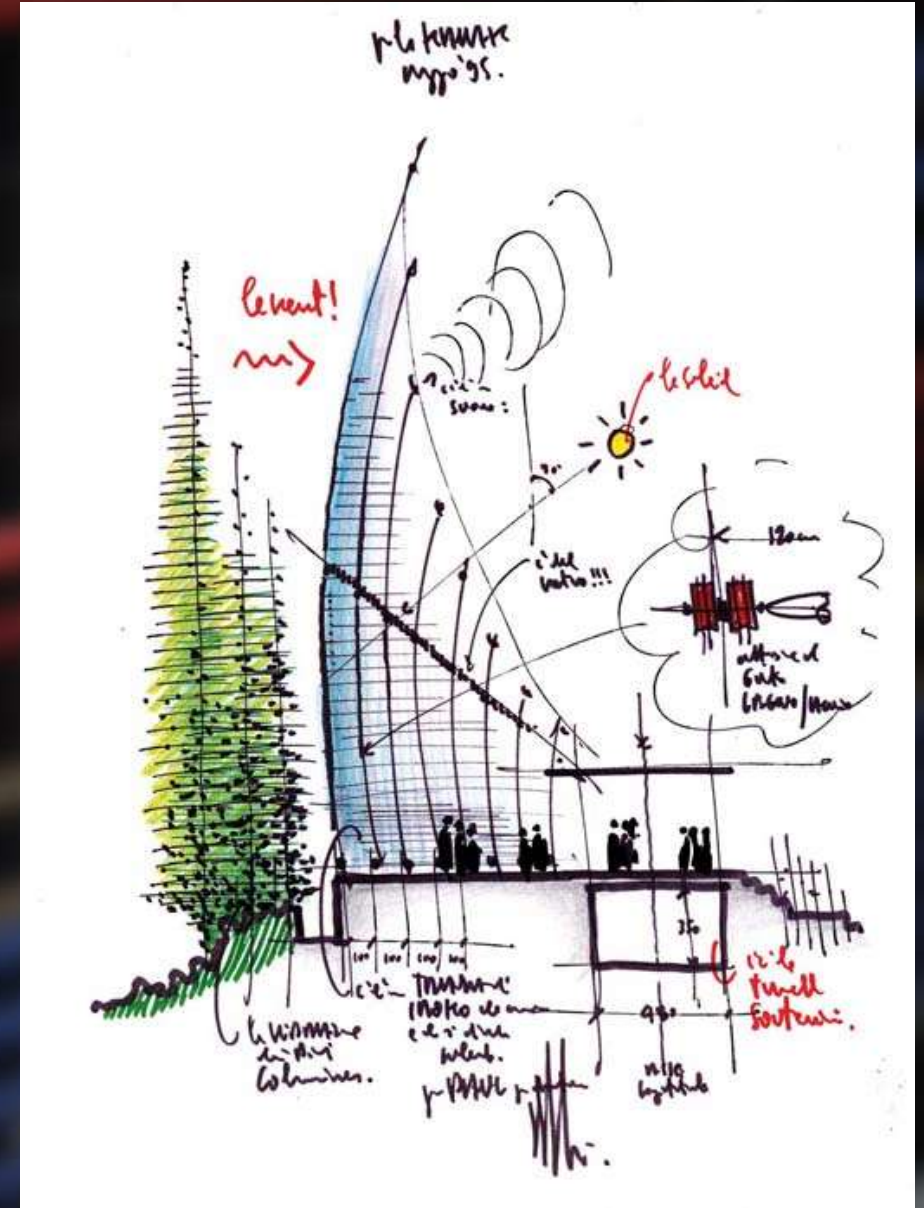


# Let's start!

- Web design is design for the world wide web, and is an expression used for indicating the technical design and development of a website.
- A web designer is responsible to the technical working of the website, the communication, the user interface, the graphics, and the user experience.
- A web designer needs to combine design and navigation using the available digital technologies.

Costruire è una bellissima cosa. Costruire non ci vuole un miracolo. Un po' di magia sì. Ci vuole un po' di magia, perché costruire è partire da qualcosa che non ha forma e dargli forma. Eh beh, questa magia c'è. Costruire è una cosa bellissima. Costruire è l'opposto di distruggere. Costruire è edificare.

Renzo Piano



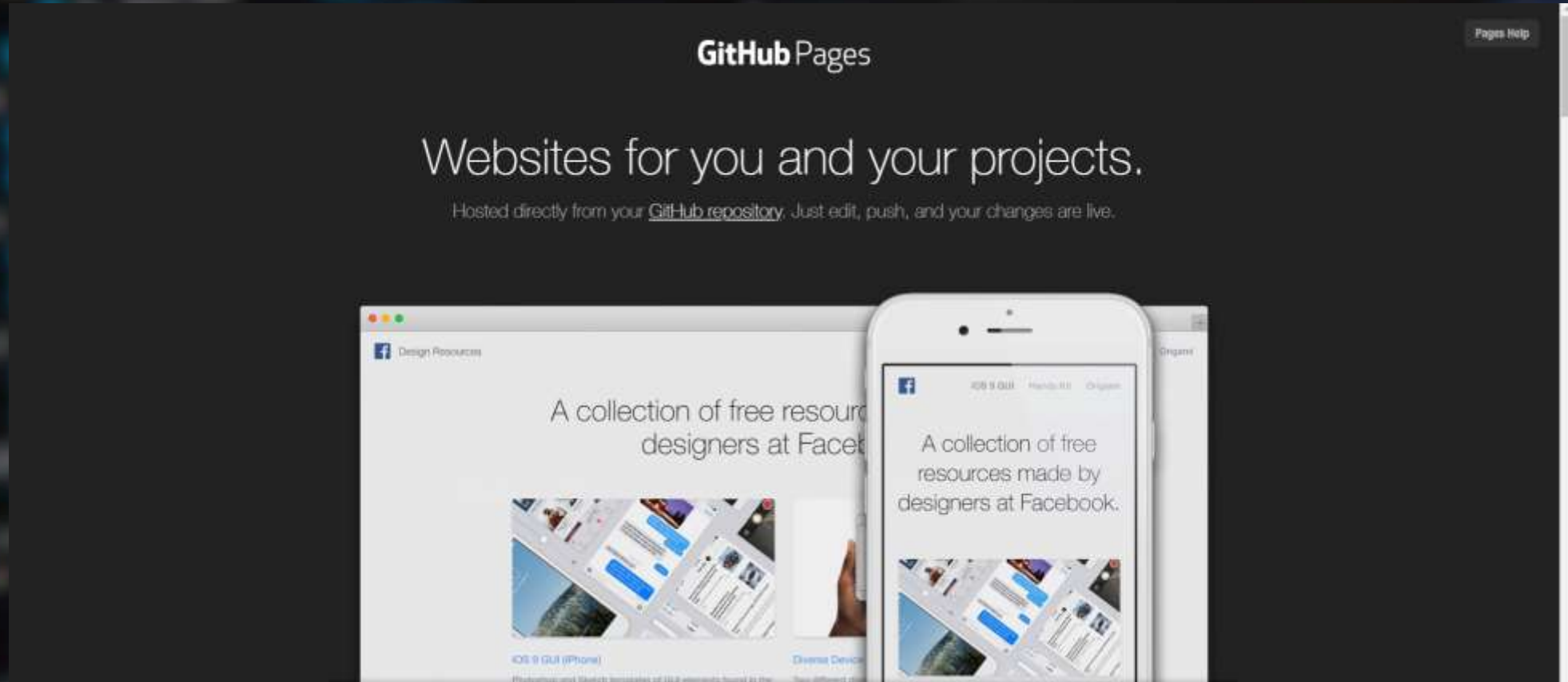
# My web designer toolbox

- A [GitHub](#) account (or [GitLab](#), if you are a radical);
- Latest [Google Chrome](#) and [Mozilla Firefox](#) versions;
- A text editor (I suggest you [Code](#), [Atom](#), [Notepad++](#));
- A graphics editor ([Paint](#), [GIMP](#), [Photoshop](#), [Paint.NET](#));
- Libraries and frameworks (we won't use a lot);
- If you want, [GitHub Desktop](#).





# GitHub Pages - Quickstart



[An example](#)

# My languages as a web designer





The more you know, the better it is



# References

- [Wikipedia](#)
- [W3C Schools](#)
- [MDN Web Docs](#)
- Prof. Andrea Negri's «[Metodi informatici per la fisica](#)» course
- [GitHub](#)
- [Web.dev](#)
- [Kasperky Resource Center](#)
- [Personal professional experience](#)