CHAPTER 1: SETTING UP A WEB SERVER. HTTP BASICS.

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4 AREAS / NEED TO KNOW

We want to teach others to understand a **protocol** (http) to explain how a web client and a web server **communicate**. Also to explore a virtual machine network-environment.

Easiest: Virtual Machines features

Hardest: http protocol

¿Least engaging? Setting up a LOCAL web server (XAMMP, LAMPP)

Most engaging: Free webhost provider

Knowledge CALP

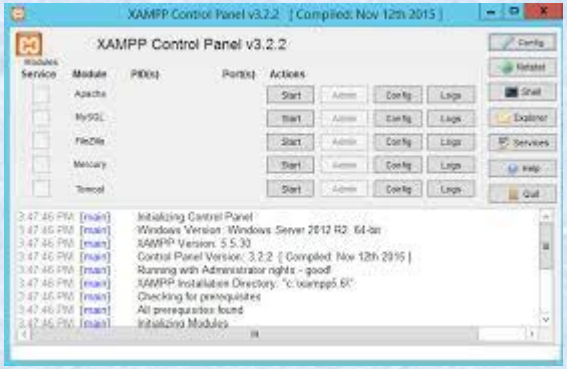
PRIOR

- Signs (#, ~, @, …)
- host/guest (physical/virtual machine)
- snapshot (of virtual machine)
- clone (virtual machines)
- client-server model
- web server
- free webhosting provider
- HTTP
- FTP

NEW

- Bridge network mode (for virtual machines)
- protocol
- TCP-IP stack
- IP addresses and TPC/UDP ports
- network sniffer
- program/proccess/service

Advanced organizer

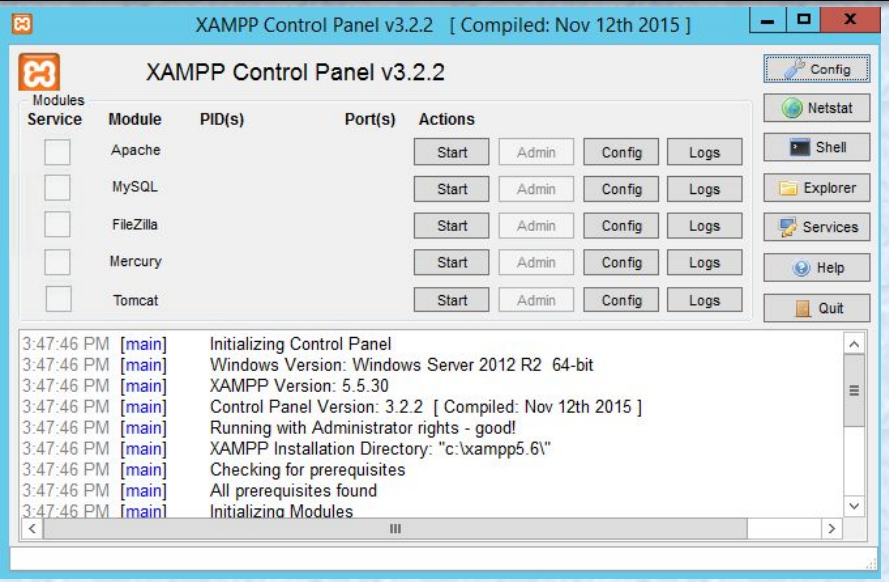


Installing XAMPP, LAMMP, and register at byethost (some free hosting web-site). Create a “Hello world” in the 3 cases.
https://www.apachefriends.org/es/index.html

DRIVING QUESTION

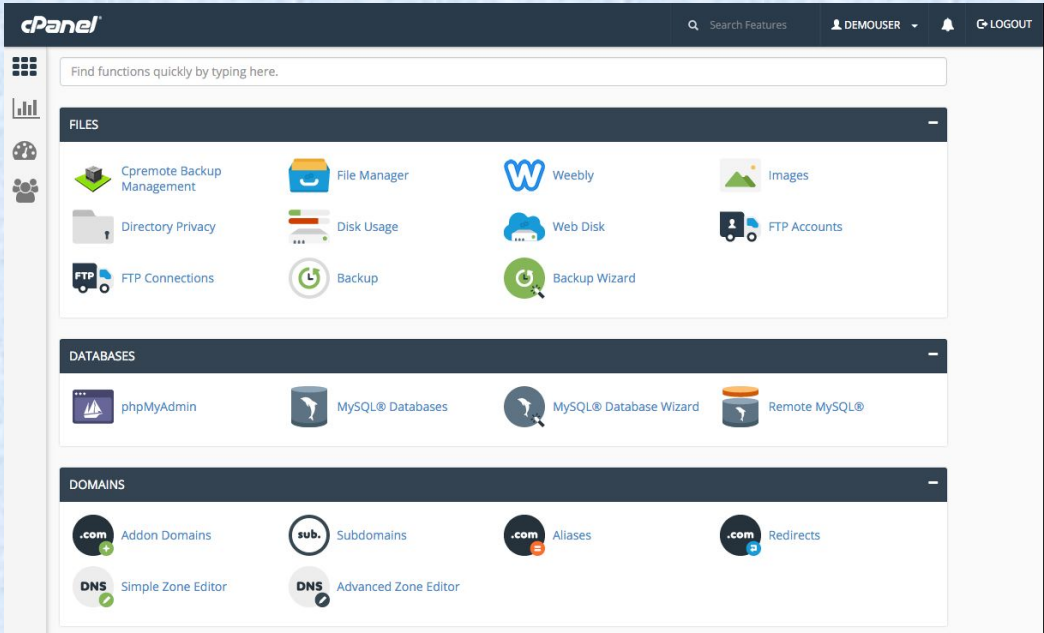
What does it happen when we type “http://www.mywebsite.com in the browser? (how does the browser communicates with the web server)

INTRODUCTION TO THE PROJECT. EXEMPLARS



LAMPP

cPanel (of a Free Hosting web server)



XAMPP

[VIDEO TUTORIAL]

HOTS

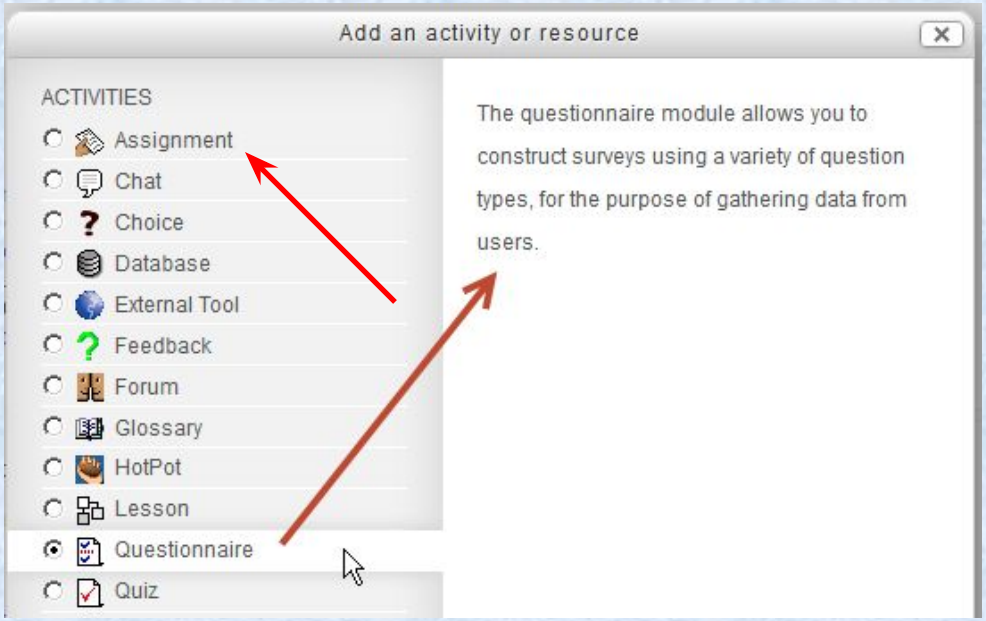
- **Analyse**: the different approaches to host your website (where local –Windows or Linux- vs remote server)

- **Evaluate**. Considering the pros and cons of each option (how create the content, how to choose a hosting service, how to upload the contents…).

- **Create** a draft (document, simple videotutorial, screenshots of the process, …) comparing the different possibilities.

Tracking the project

MOODLE TASKS: installing, configuring and testing, (FILES –pdfs, ppt- with screenshots of short videotutoriales, chats,…)
SUBMITTED (uploaded to the virtual course):



MOODLE QUESTIONNARIES (at least one at the end of the unit; maybe an introductory one to test their prior knowledge; maybe some others in the middle)

Task-Based Learning

- **Presentation (installing the XAMPP package)**: https://www.youtube.com/watch?time_continue=7&v=h6DEDm7C37A

- **Practice**: individual work: install the package and explore the configuration options of the control panel and every service. Do some research about the main configuration files and directives for each service.

- **Production**: create a document with the most important screenshots of the process and the installation and configuration issues. Share the issues with the group.

Problem-Based Learning

- **Present the Content**: Present the concept of capturing and filtering the network traffic.

- **Problem**: why should it be so difficult to understand a traffic capture without filtering?.

- **Possible solutions**: Have student brainstorm of how to filter the network traffic (different possibilities: *capture* filters and *display* filters).

Checklist

Presentation: submit a Moodle task. Share very briefly afterwards other ways of having the same task accomplished.

Project PDF: up to 5 pages, very few words, mainly screenshots of installation and configuration process, and prove that it works properly. Adding balloons with few key words.

Content:

- Configuration of the virtual machine.

- Installation and configuration of XAMMP. Create a “Hello world” program and run it.

- Installation and configuration of LAMMP. Create a “Hello world” program and run it.

- Signing up for a free hosting website. Create a “Hello world” program, UPLOAD it.

Grading Rubric

	Poor 0-33%	Average 33-66%	Excellent 66-100%
Presentation (20%)	Non fluent. Difficult to understand. Badly organized. Two short o two long (more than 4 minutes)	Fluent. Dressed correctly. Understandable but not very well organized. Slightly over the assigned time (3 min.)	Right to the point (less than 3 minutes). Very well explained. Fluent. Eye contact. Well dressed.
PDF content (30%)	I cant's see the main screenshot (that proves that It does work properly).	I see in the pdf that it works, but too few screenshots (impossible too "duplicate" the process by someone else) or too many (more than 5). No word bubbles.	It works. Right number of screenshot. Clear. Few essential explanatory bubbles.
Content (50%)	It does not work (most of it)	Something works, but not everything.	Everything works perfectly. Includes briefly solved issues and possible alternatives. Concise. Few text-bubbles with the important information.

SESSIONS

• **Session 1**: Advanced organizer. Contents: Local web server (XAMPP, LAMPP), Free webhosting.
VIRTUAL MACHINES: how to setup the network mode for a server?
• **Session 2**. Content: Choose a web server depending on your needs.
LOCAL WEBSERVER: Discuss the pros and cons. **HOTS.**
•**Session 3**. Start project. Content: Introductión to XAMPP package. Exemplars.
TASK-BASED-LEARNING: install the all-in-one package XAMPP. HOTS
PEER FEEDBACK: check if it works in local and remote machine.
• **Session 4**. Contents: Introductión to LAMPP package. Exemplars.
• **Session 5**. Contents: Introductión to Free Web Services. Exemplars (byethost.com). **HOTS**
REMOTE WEBSERVER: Discuss the pros and cons.
• **Session 6**. Contents: analysing the HTTP protocol (the communication between the client –web browser- and web server. Compare different tools: Wireshark program, Web browsers tools for network traffic.
HTTP protocol: enquiry about the secutiry (vs HTTPS). **HOTS**
PROBLEM-BASED-LEARNING: how to filter the network traffic.
• **Session 7**. Feedback session. **PEER FEEDBACK: check if all works**
• **Session 8**. Final details of projets. Brief presentation. Final debate.