Lecture 4
2026/2027

Databases, Web Programming and Interfacing

DWPI

- Databases, Web Programming and Interfacing
  - year VI, IT4T
    - 1C/1L/1P
- Timetable
  - Friday, every week (fiecare saptamana) 1C + 2L (17-20)
  - Room change: from 2.13 to **1.08**
  - Test + Project Presentation: **last week** (Weekend)

Grade

- 25% - Test/Exam – last week – 1h
- 25% - Laboratory
- 50% - Project
  - Personal(80%)/Team(20%)
- ~~Previous~~ database project
  - receives a **web user interface**
  - **split** in individual assignments
  - bonus (individual) for **supplemental embedded systems access!**
    - admin/user – web user interface
    - data supplier – embedded system (even partial)

Project

- self selected homework: available until **xx.11** (~~2 weeks from lecture 9~~)
- **only** selection from a list after xx.11

Examene online: 2024/2025

Disciplina: DWPI (Databases, Web Programming and Interfacing (eng))

Pas 3

Nr.	Title	Start	Stop	Activ	Subiecte	Sustineri	Finalizate	C
1	Individual Subject Final Homework/Project	22/11/2024; 17:00	14/12/2024; 08:00	**Activ**	Homework_project_2023.pdf	1	0	
2	Generic Test Exam	22/11/2024; 11:00	22/03/2025; 16:00	**Activ**	manual_examen_en_0.pdf	0	0	

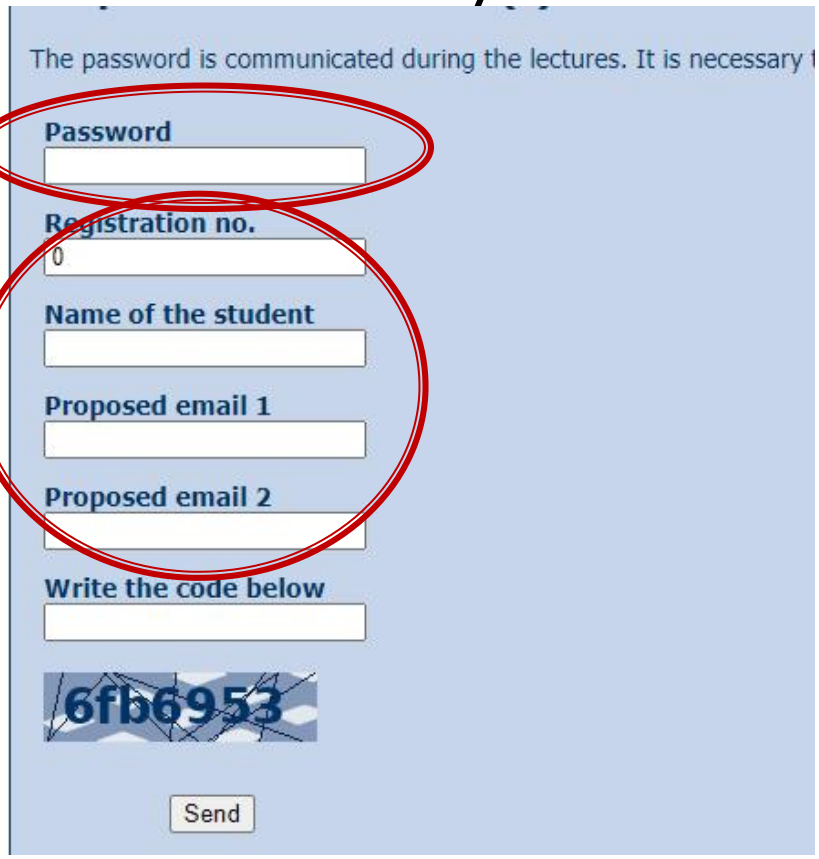
Info

- https://rf-opto.etti.tuiasi.ro/master_it.php



Online – Registration no.

- access to **online exams** requires the **password** received by email

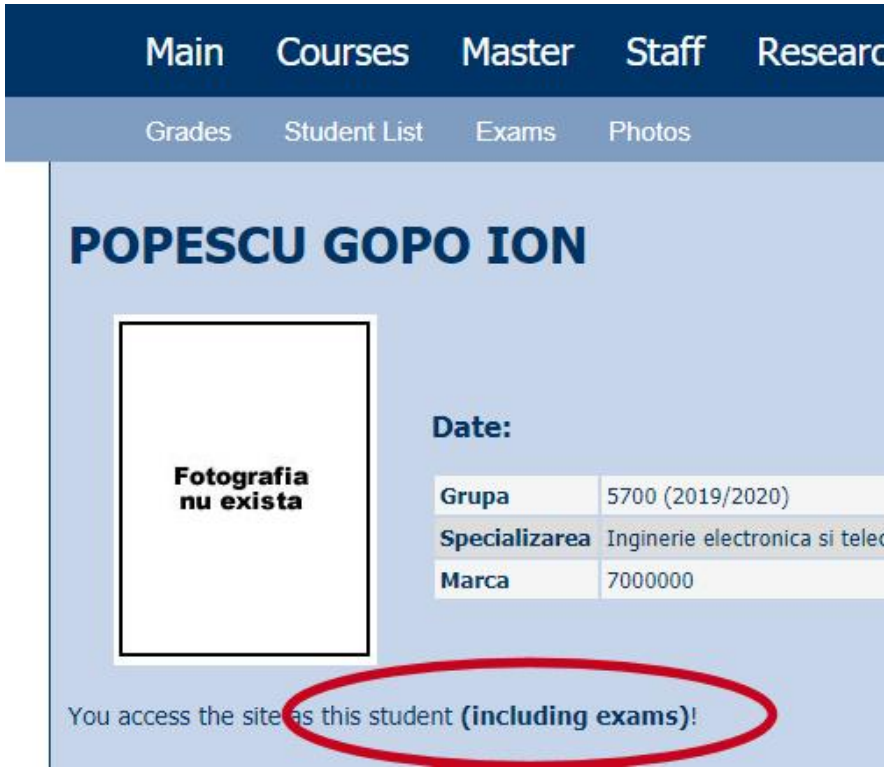




Online

- access email/password

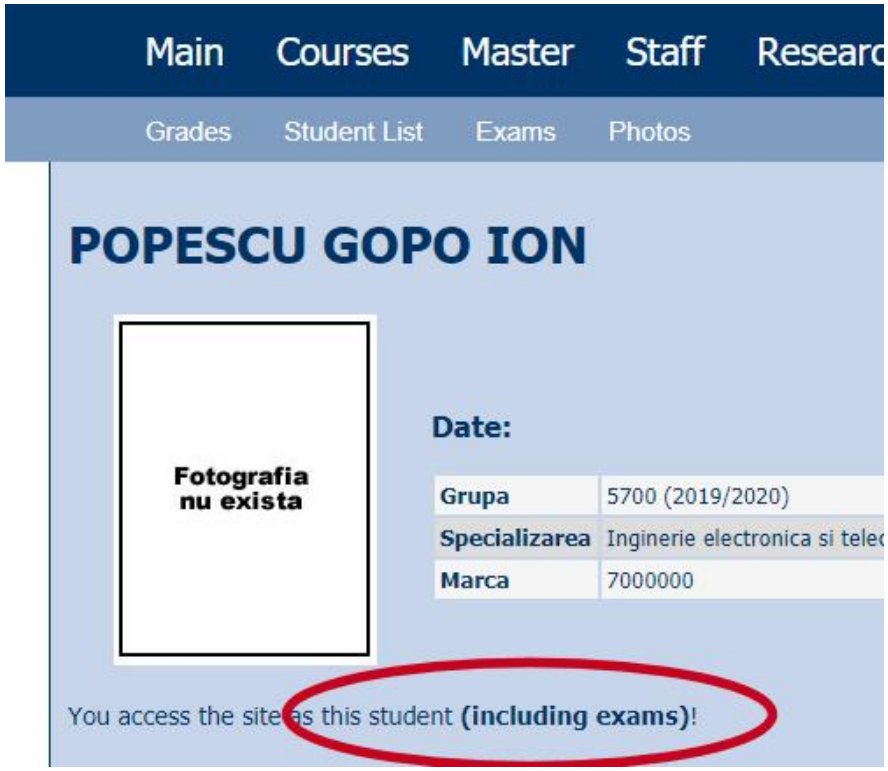




Online

- access email/password





Password

- received by email

Important message from RF-OPTO Inbox ×

Radu-Florin Damian
to me, POPESCU

Romanian › English Translate message

Laboratorul de Microunde si Optoelectronica
Facultatea de Electronica, Telecomunicatii si Tehnologia Informatiei
Universitatea Tehnica "Gh. Asachi" Iasi

In atentia: POPESCU GOPO ION

Parola pentru a accesa examenele pe server-ul **rf-opto** este
Parola: [redacted]

Identificati-va pe server, cu parola, cat mai rapid, pentru confirmare.

Memorati acest mesaj intr-un loc sigur, pentru utilizare ulterioara

---

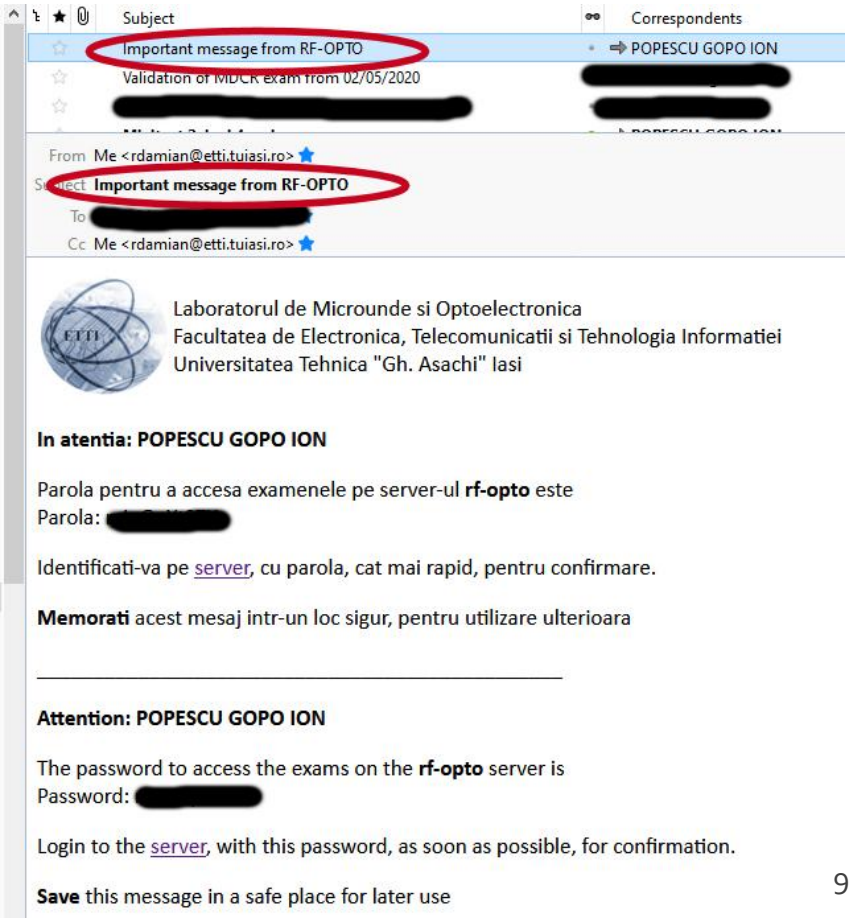
Attention: POPESCU GOPO ION

The password to access the exams on the **rf-opto** server is
Password: [redacted]

Login to the server, with this password, as soon as possible, for confirmation.

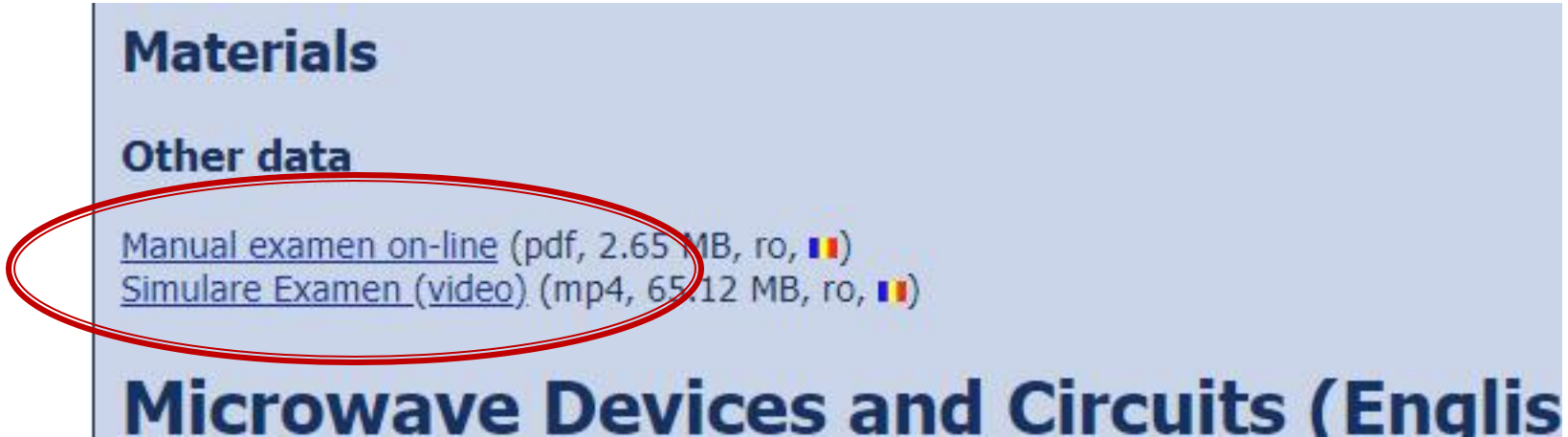
Save this message in a safe place for later use

Reply Reply all Forward



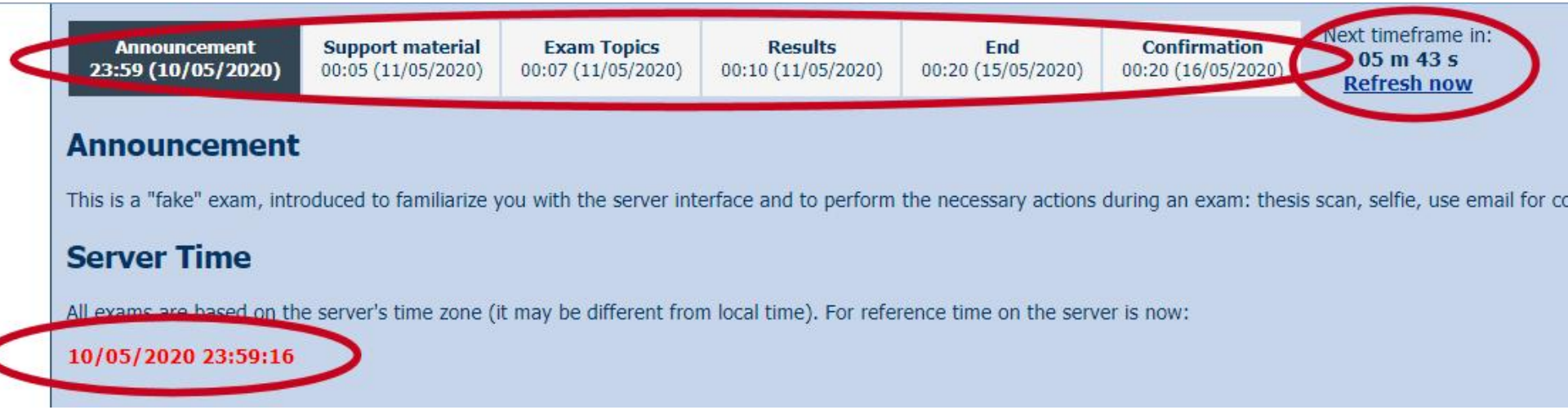
Online exam manual

- The online exam app used for:
  - lectures (attendance)
  - laboratory
  - project
  - examinations



Examen online

- always against a **timetable**
  - long period (project submission/laboratory results)
  - short period (tests: 15min, exam: 2h)



2026/2027

Project

Project

- Submission: **On-site**
- Presentation (in front of the colleagues) + files submission
- 3 files
  - **1 *.pdf** (print-screen while using the application, short usage instructions, a mini-user manual for the application) (**personal**)
  - **1 *.sql** (backup of the database required to run the application) (**team**)
  - archive of the application (inside: files *.php, *.jpg, folder tree etc., archived: ***.zip, *.7z** etc.) (**team/personal**)

Tehnici PHP avansate

HTTP headers

- Permite transmiterea unor header-e specifice protocolului HTTP
- Structura mesajului
  - <initial line, different for request vs. response>
  - Header1: value1
  - Header2: value2
  - Header3: value3
  -
  - <optional message body goes here, like file contents or query data; it can be many lines long, or even binary data $&*%@!^$@>

HTTP headers

- header(string, code)

```php
<?php header("HTTP/1.0 404 Not Found");?>

<?php header("Location: http://www.example.com/");
/* Redirect browser */?>

<meta http-equiv="refresh" content="5;
url=http://www.example.com/">
```

HTTP headers

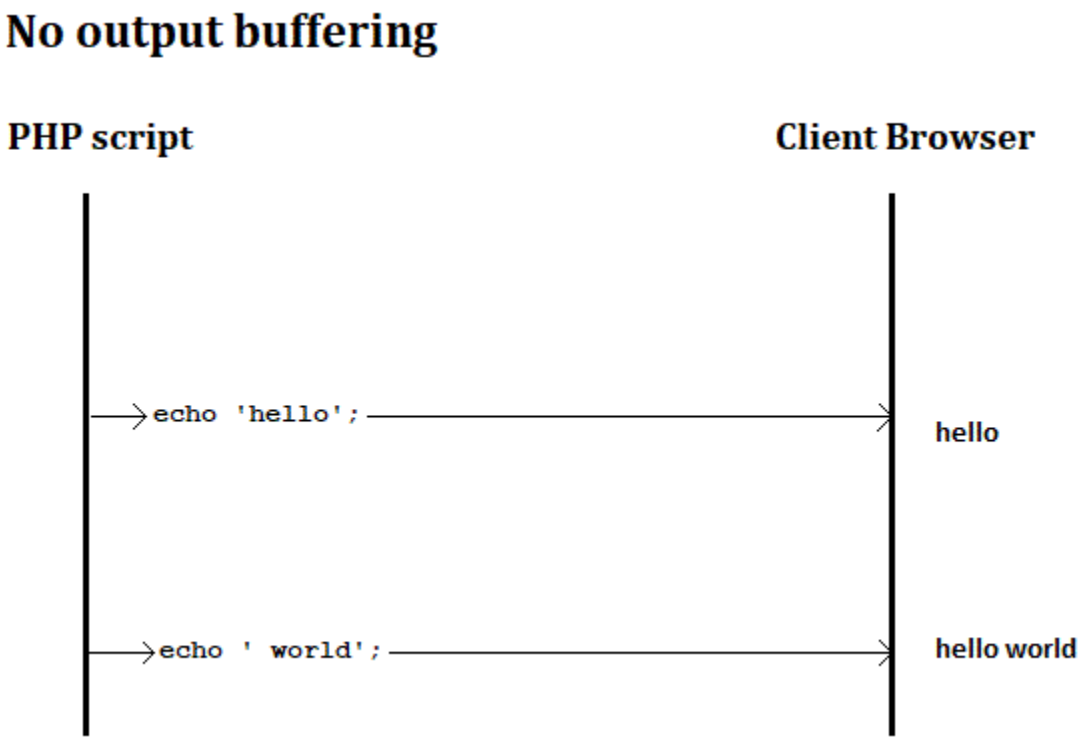
- Header-ele HTTP se trimit inaintea oricaror alte date (HTML)
  - Inceput fisier: **<?php** header("..."); ?><!DOCTYPE HTML PUBLIC ... <html>...<body>...</body></html>
  - Nici macar **un spatiu** nu trebuie sa apara inainte de primul **<?php**
  - Daca necesitatea de a trimite header-e poate aparea mai tarziu in script se foloseste obligatoriu Buffer iesire

Buffer iesire

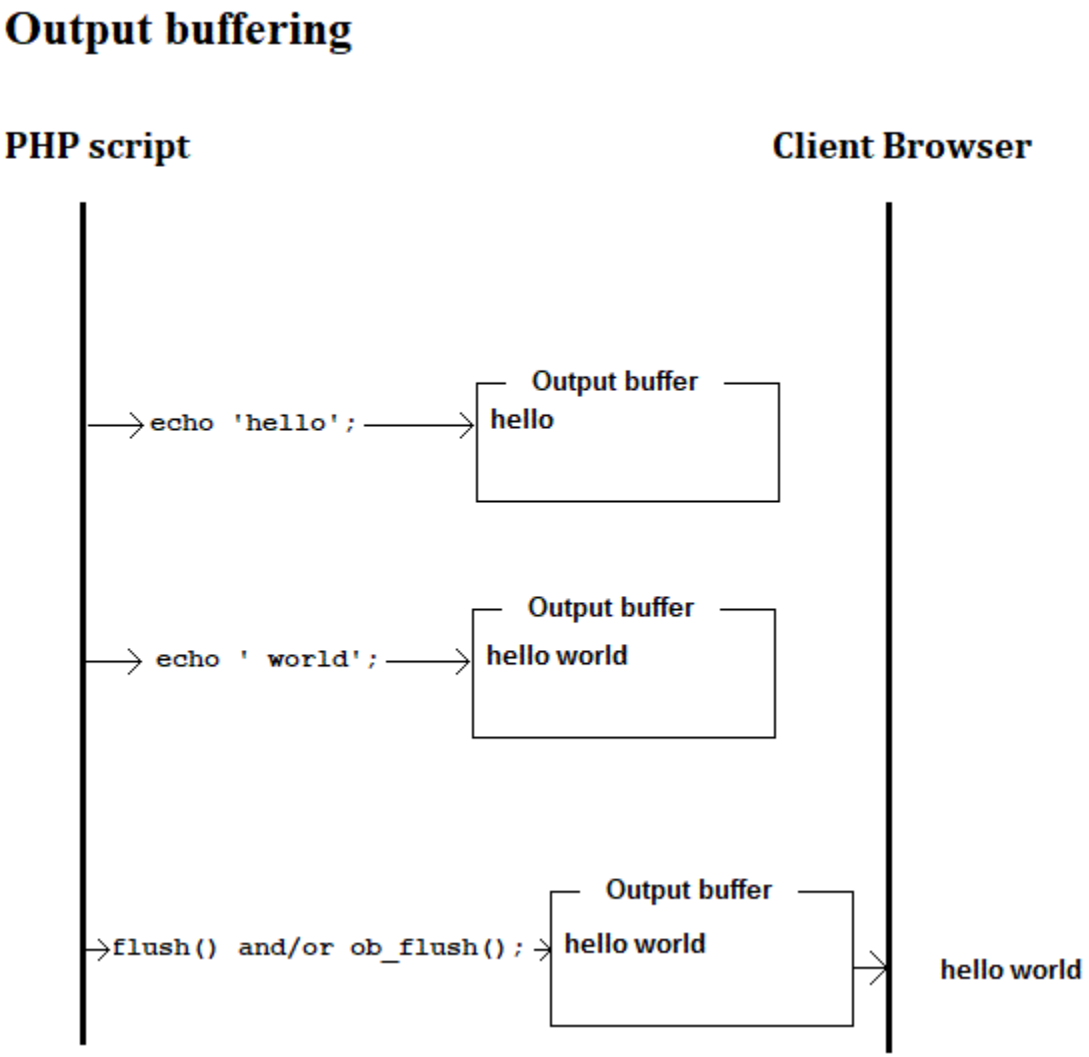
- Copie orice iesire a scriptului PHP intr-un buffer de memorie fara sa transmita nimic clientului
- Utilizat in general pentru conlucrarea cu header-e HTTP, evitarea generarii de HTML inainte de terminarea lucrului cu header-e
- ob_start();
- ob_end_flush ( );
- ob_end_clean ( );

- ob_get_contents ( )

Buffer iesire



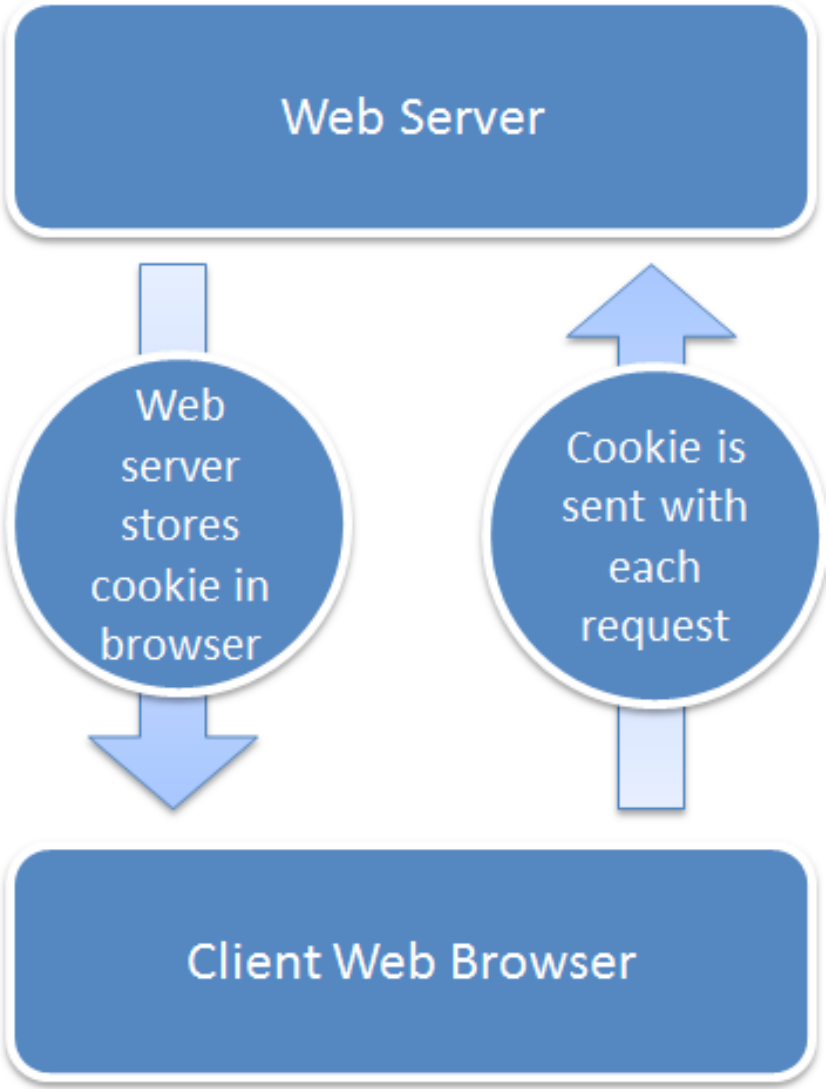
Buffer iesire



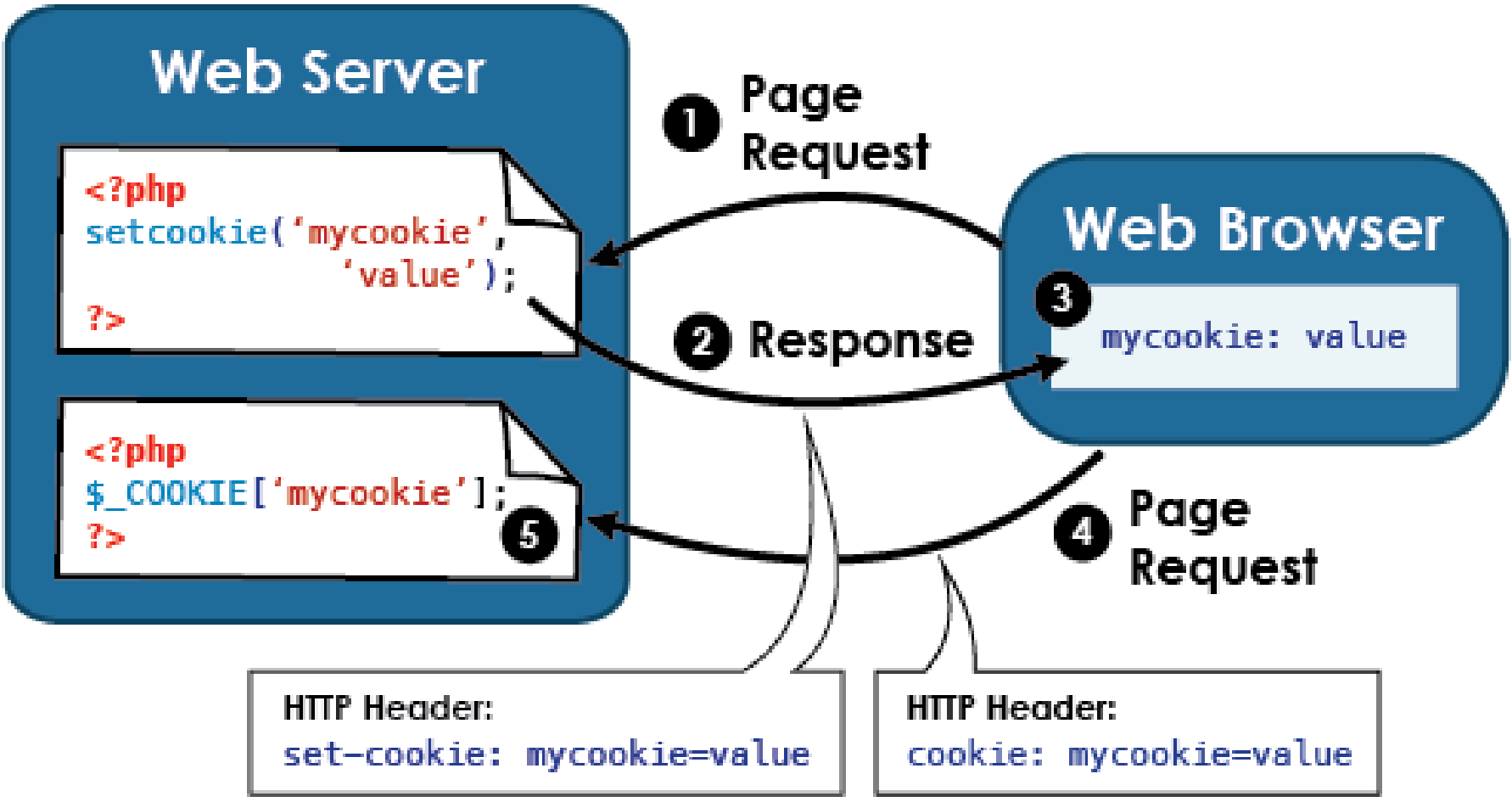
Cookies

- mici cantitati de date ce se stocheaza pe masina client (de obicei gestionat de browser)
- Circula impreuna cu (**este**) header HTTP
- setcookie (string name , string value , int expire , string path , string domain , bool secure , bool httponly)
  - nume (ptr. identificare)
  - value (valoarea/datele stocate)

Cookies


Web Server
Web server stores cookie in browser
Cookie is sent with each request
Client Web Browser

Cookies


Web Server
<?php
setcookie('mycookie',
'value');
?>
<?php
$_COOKIE['mycookie'];
?>
1 Page Request
2 Response
Web Browser
3
mycookie: value
4 Page Request
5
HTTP Header:
set-cookie: mycookie=value
HTTP Header:
cookie: mycookie=value

Cookies

- setcookie(string $name, string $value , int $expire = 0)
  - expire: UNIX time stamp, nr. sec. din 1970
  - time()+nr. sec. de viata dorite
- datele se stocheaza pe client: probleme de securitate
- Se poate obtine valoarea memorata prin variabila globala $_COOKIE['nume']
  - **NU** in acelasi script
  - daca un script php trimite un cookie cu header-ele, de-abia **urmatorul** script accesat va primi acele cookie in header-e

Cookies

```php
<?php
$value = 'something from somewhere';

setcookie("TestCookie", $value);
setcookie("TestCookie", $value, time()+3600);  /* expire in 1
hour */
setcookie("TestCookie", $value, time()+3600, "/~rasmus/",
"example.com", 1);
?>
```

```php
<?php
//Doar pe urmatoarele pagini !!!!

// Print an individual cookie
echo $_COOKIE["TestCookie"];

// Another way to debug/test is to view all cookies
print_r($_COOKIE);
?>
```

Cookies

```php
<?php
//Cookie arrays
// set the cookies
setcookie("cookie[three]", "cookiethree");
setcookie("cookie[two]", "cookietwo");
setcookie("cookie[one]", "cookieone");

// after the page reloads, print them out
if (isset($_COOKIE['cookie']))
    {
    foreach ($_COOKIE['cookie'] as $name => $value)
        {
        $name = htmlspecialchars($name);
        $value = htmlspecialchars($value);
        echo "$name : $value <br />\n";
        }
    }
?>
```

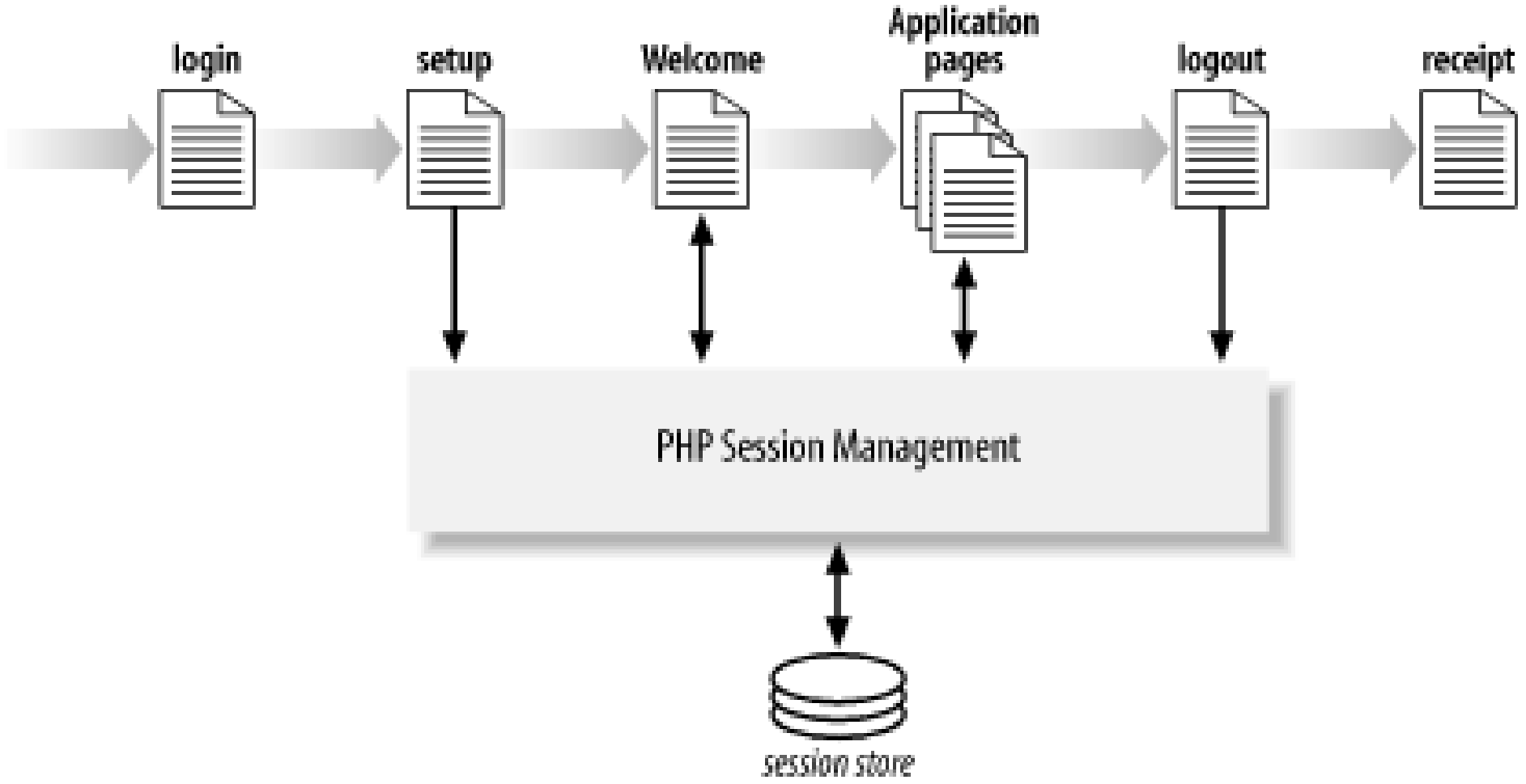
Sesiune

- cookie poate oferi "memorie" aplicatiilor web
- dezavantaje
  - datele se stocheaza la client, nu sunt in siguranta
  - nu se pot stoca oricate date (max. 20)
  - e posibil clientul sa nu accepte cookie
- Sesiunea pentru evitarea acestor dezavantaje
  - stocare pe server
  - oricat de mult date
  - daca clientul nu accepta cookie, "memoria" se realizeaza prin metoda "get"

Sesiune

- session_start(); (session_ID din GET, POST, COOKIE)
- session_write_close ( );
- session_id ([string id]);
- datele se manipuleaza prin variabila globala $_SESSION care ofera acces la citirea/scrierea datelor

Sesiune


login
setup
Welcome
Application pages
logout
receipt
PHP Session Management
session store

Sesiune


SESSIONS Management
rone
plus2net
SERVER
Maintains sessions for all currently connected users.

Sesiune

```php
<?php
// Initialize the session.
// If you are using session_name("something"), don't forget it now!
session_start();

// Unset all of the session variables.
$_SESSION = array();

// If it's desired to kill the session, also delete the session cookie.
// Note: This will destroy the session, and not just the session data!
if (isset($_COOKIE[session_name()]))
    {
    setcookie(session_name(), '', time()-42000, '/');
    }
// Finally, destroy the session.
session_destroy();?>
```

Sesiune

```php
<?php
// page1.php

session_start();

echo 'Welcome to page #1';

$_SESSION['favcolor'] = 'green';
$_SESSION['animal'] = 'cat';
$_SESSION['time'] = time();

// Works if session cookie was accepted
echo '<br /><a href="page2.php">page 2</a>';

// Or maybe pass along the session id, if needed
//echo '<br /><a href="page2.php?' . SID . '">page 2</a>';
echo '<a href="page2.php?' . session_name() . ' =' .
session_id() . ' ">page2</a>' ;
?>
```

Sesiune

```php
<?php
// page2.php

session_start();

echo 'Welcome to page #2<br />';

echo $_SESSION['favcolor']; // green
echo $_SESSION['animal'];   // cat
echo date('Y m d H:i:s', $_SESSION['time']);

// You may want to use SID here, like we did in page1.php
echo '<br /><a href="page1.php">page 1</a>';
?>
```

XML

XML

- XML - eXtensible Markup Language
- O forma a SGML - Standard Generalized Markup Language (ISO 8879:1986 SGML)
- O metoda de a descrie structura si importanta datelor si continutul lor fara a da indicatii despre afisare
- XSLT - XSL Transformations (Extensible Stylesheet Language) limbaj de conversie a XML in alte tipuri de documente XML cu sau fara reprezentare grafica

HTML/XHTML vs XML

- XML
  - proiectat pentru a **descrie** datele
  - orientat spre **continutul** datelor respective
  - o metoda de a transmite informatiile **independent** de platforma si hardware
- HTML/XHTML
  - proiectat pentru a **afisa** datele
  - orientat spre **forma** pe un ecran a datelor respective
  - o metoda de a **afisa uniform** datele indiferent de platforma si hardware

XML

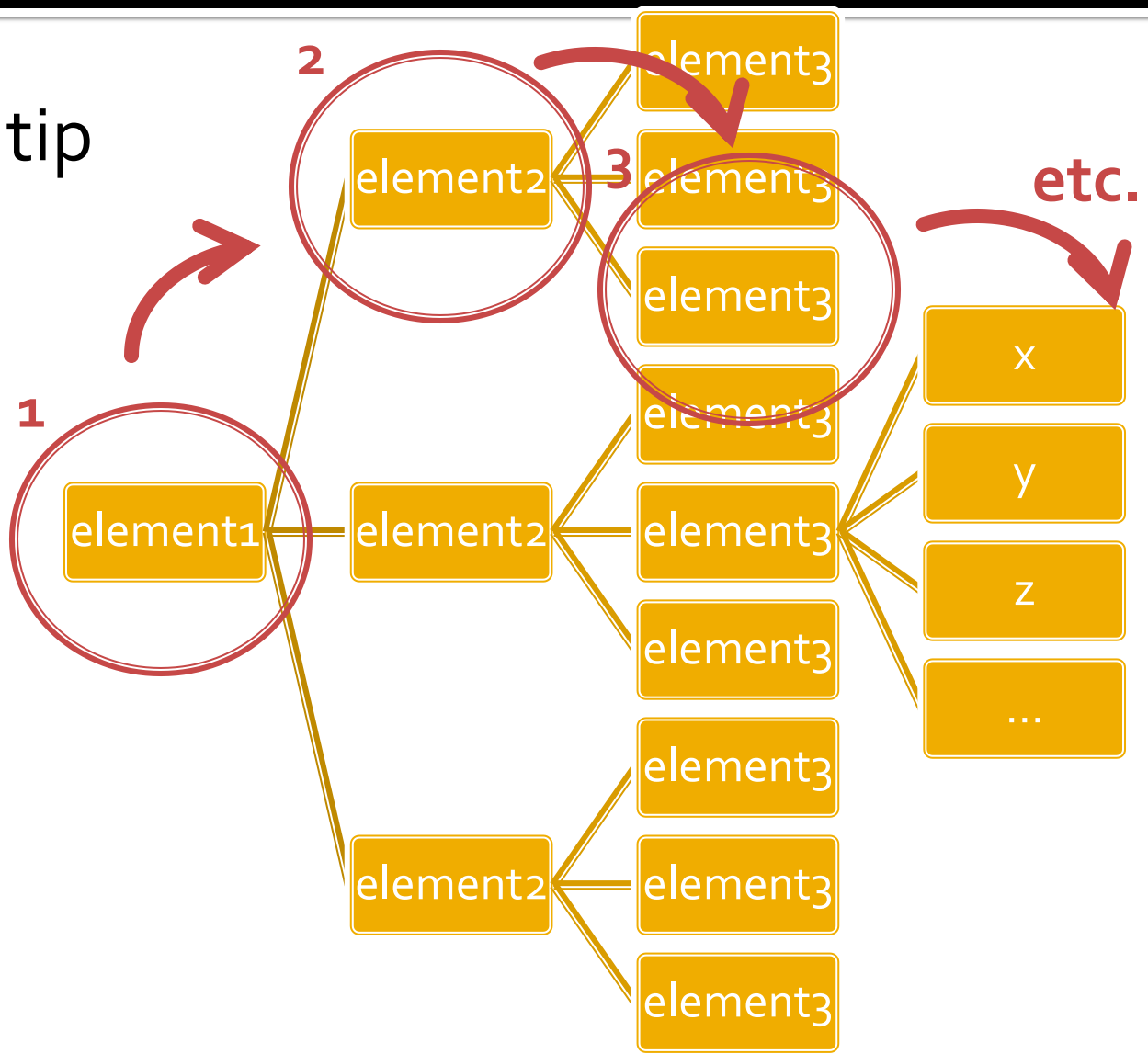
- In conceptie asemanator cu XHTML
  - etichete XHTML (“tag” - EN)
  - elemente XML (“element” - EN) descrise de etichete (“tag” - EN)
- Elementele XML accepta atribute (similar XHTML)
- Conceptele de scriere a documentului similar XHTML
- Diferenta majora:
  - HTML – etichetele si atributele sunt predefinite si orientate spre modalitatea de afisare a datelor
  - XML – etichetele de identificare a elementelor si atributele sunt la latitudinea creatorului documentului, introducand **structura** in date

XML

- <element1 atribut1 = "valoare" … >
  - <element2 atribut2 = "valoare">
    - <element3>…</element3>
    - …
  - </element2>
  - …
- </element1>
- …
- <element1>
- </element1>

XML

- structura tip "arbore"



Exemplu XML

```
<?xml version="1.0" encoding="utf-8"?>
<gallery titlu="Photomagic" thumbDir="./fotografii/thumbnails/" imageDir="./fotografii/”>
        <category nume="VIATA">
                <image>
                        <desc>curiozitate</desc>
                        <img>foto33.jpg</img>
                        <thumb>foto33TH.jpg</thumb>
                </image>
        </category>
        <category nume="NUNTA">
                <image>
                        <desc>asteptare</desc>
                        <img>foto132.jpg</img>
                        <thumb>foto132TH.jpg</thumb>
                </image>
        </category>
</gallery>
```

Avantaje

- **Redundanta**
  - fiecare element XML trebuie introdus complet
  - aceasta permite detectia si corectarea facila a erorilor
- **Auto descriptiv**
  - XML este un limbaj bazat pe text, insesi elementele si atributele descriu datele
  - usor de citit/corectat pentru utilizatori umani
- **Generalitate**
  - orice fisier XML poate fi citit de orice aplicatie XML
  - anumite aplicatii necesita o anumita structura a datelor

Reguli XML

- Aproape orice caracter UNICODE poate fi utilizat
- 107000 caractere, 90 scrieri diferite
- exceptii:
  - < <
  - > >
  - & &
  - " "
  - ' '

Reguli XML

- etichetele definire a elementelor **trebuie** inchise sau elementul declarat ca vid
  - <descriere> … </descriere>
  - <descriere></descriere>
  - <descriere />
- atributele **trebuie** scrise intre ghilimele
  - <categorie nume="papetarie">
- etichetele si atributele sunt **Case Sensitive**
  - **gresit (tehnic)** -> <descriere> … </Descriere>
  - **gresit (logic)** -> <descriere> … </descriere> <DESCRIERE> … </DESCRIERE>

Reguli XML

- Documentele XML creaza o structura ierarhica foarte stricta
- Nu sunt permise etichete suprapuse
  - <x><y></y></x> → **permis**
  - <x><y></x></y> → **interzis**
- Trebuie sa existe un singur element radacina care sa le cuprinda pe toate celelalte
  - similar cu <html></html>

Structura unui document XML

- prima linie – definitia tipului de document
  - <?xml … ?>
  - <?xml version="1.0" encoding="utf-8"?>
- element radacina
  - <radacina> …[elemente]… </radacina>

XML Concepte

- comentariile pot fi introduse oriunde in interiorul documentului cu conditia sa fie in exteriorul oricarui element
  - similare cu comentariile HTML: intre <-- si -->
- Sectiuni de date neinterpretate
  - intre <![CDATA[si]]>
  - pentru a putea introduce date care ar putea contine caracterele interzise
    - cod
    - date binare oarecare

Exemple XML

RSS

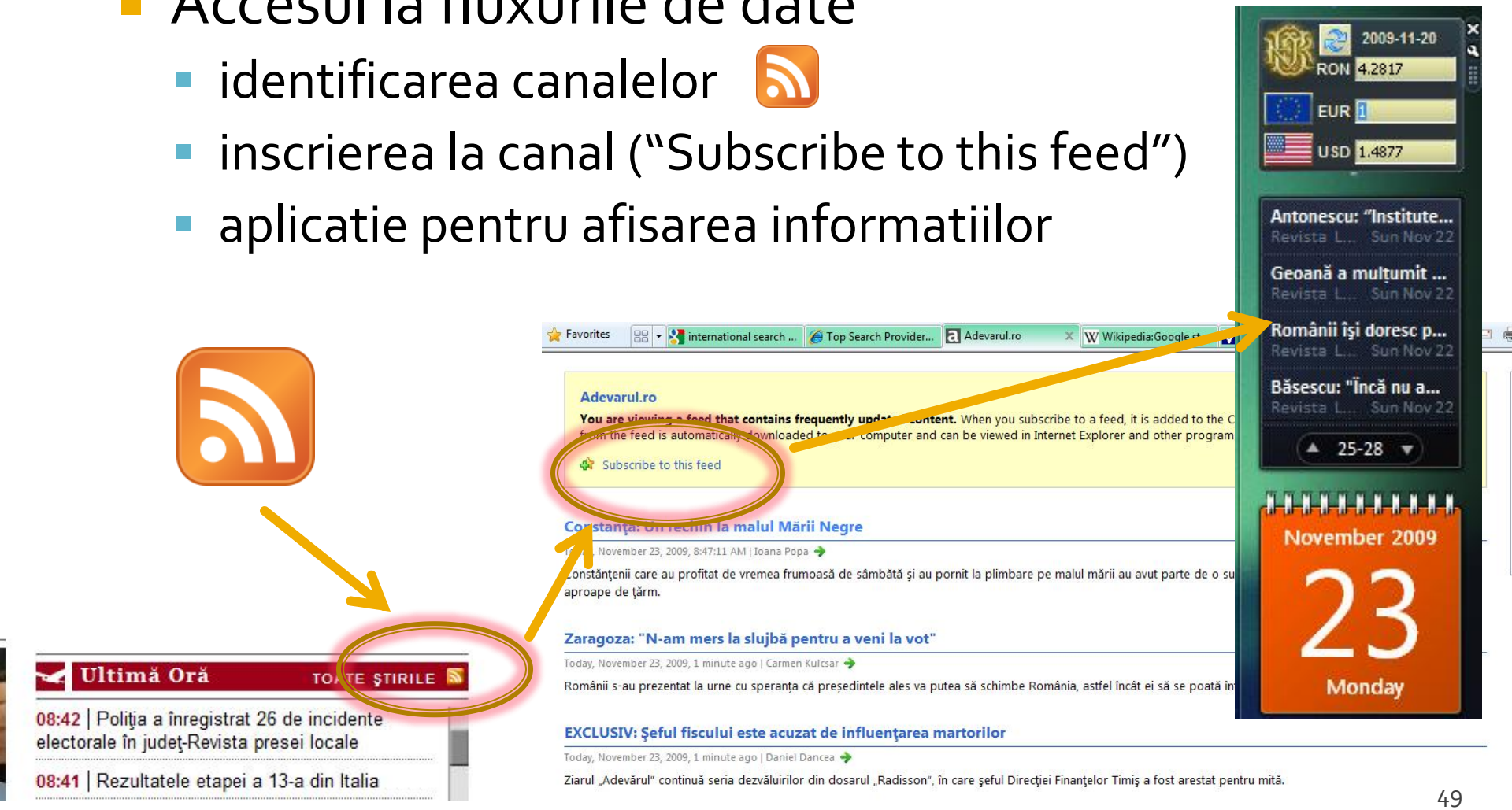


- RSS – Really Simple Syndication
- Format Web utilizat pentru a face disponibile utilizatorilor sau altor server-e informatii frecvent modificate
  - stiri
  - postari pe forum



RSS

- Accesul la fluxurile de date
  - identificarea canalelor
  - inscrierea la canal ("Subscribe to this feed")
  - aplicatie pentru afisarea informatiilor



RSS

- <link href="https://adevarul.ro/rss/index" rel="alternate" type="application/rss+xml" title="RSS 2.0">
- <link rel="alternate" type="application/rss+xml" title="Mediafax » Flux" href="https://www.mediafax.ro/feed" />
- https://feeds.feedburner.com/hotnews/yvoq
- <link rel="alternate" type="application/rss+xml" title="România Liberă » Flux" href="https://romanialibera.ro/feed/" />

BNR





BANCA NAȚIONALĂ A ROMÂNIEI

Obiectivul fundamental al BNR este asigurarea și menținerea stabilității prețurilor.

BNR | Politică monetară | Stabilitate financiară | Supraveghere | Sisteme de plăți | Monede și bancnote | Publicații | Statistică | Legislație

- Seturi de date
  - Cursul de schimb
    - Serii statistice
  - Info financiar
  - Rate dobânzi de politică monetară
  - Operațiuni de piață monetară
  - Titluri de stat
  - Statistică monetară și financiară
  - Raport inflație
  - Rapoarte asupra stabilității financiare
  - Conturile naționale financiare
  - Indicatori plăți
  - Balanța de plăți - BPM6
  - Finanțe publice
  - Situațiile financiare ale BNR
- Bază de date interactivă
- Centrala Incidentelor de Plăți (CIP)
- Centrala Riscului de Credit (CRC)
- SDDS
- Raportări către BNR

Statistică > Seturi de date > Cursul de schimb > Cursurile în format XML

Cursurile pieței valutare în format XML

Pentru diseminarea cursurilor valutare, BNR pune la dispoziția programatorilor fișiere de date în format XML.
Actualizarea acestora se face in timp real, în fiecare zi bancară, imediat după ora 13:00.

```xml
<?xml version="1.0" encoding="utf-8"?>
<DataSet xmlns="http://www.bnr.ro/xsd" xmlns:xsi="http:
    <Header>
        <Publisher>National Bank of Romania</Publisher>
        <PublishingDate>2023-03-25</PublishingDate>
        <MessageType>DR</MessageType>
    </Header>
    <Body>
        <Subject>Reference rates</Subject>
        <OrigCurrency>RON</OrigCurrency>
        <Cube date="2023-03-24">
            <Rate currency="AED">1.2499</Rate>
            <Rate currency="AUD">3.0469</Rate>
            <Rate currency="BGN">2.5183</Rate>
            <Rate currency="BRL">0.8664</Rate>
            <Rate currency="CAD">3.3324</Rate>
            <Rate currency="CHF">4.9881</Rate>
            <Rate currency="CNY">0.6674</Rate>
            <Rate currency="CZK">0.2078</Rate>
            <Rate currency="DKK">0.6611</Rate>
            <Rate currency="EGP">0.1483</Rate>
```

conținutul sau structura acestora se poate modifica fără

de trafic redundant. IP-urile care gener un volum de trafic
inala remedierea situației pe adres webmaster.

ancare autorizate să efectueze operațiuni pe piața valutară.
ranzacții efective de schimb valutar sau în înregistrări contabile.

FIȘIERE DE DATE ÎN FORMAT XML

- Seturi de înregistrări zilnice:
  - cea mai recentă
  - ultimele 10 înregistrări
- Seturi de înregistrări anuale:
  - 2017
  - 2016
  - 2015
  - 2014
  - 2013
  - 2012
  - 2011
  - 2010
  - 2009
  - 2008
  - 2007
  - 2006
  - 2005

XML in PHP

Acces prin cod PHP la date XML

- **Biblioteci** PHP de acces la XML
  - DOM XML
  - Simple XML
  - XML Parser (Reader, Writer)
  - XML Expat Parser

Simple XML

- $xml = simplexml_load_file('cale');
- $xml = simplexml_load_string($string);
- Functiile care creaza un obiect din clasa predefinita **SimpleXMLElement** prin incarcarea si interpretarea documentului sau sirului XML
- obiectul creat ($xml) contine elementul radacina
  - exemplul anterior → $xml va contine **<gallery></gallery>**

Simple XML

- fiecare **tip** de element descendent creaza o proprietate a clasei cu acel nume
  - proprietatea clasei (descendent) e o matrice de obiecte **SimpleXMLElement** daca nu e unicul descendent
  - matricea e caracterizata de elementele implicite de indexare (index intreg, pornind de la 0) dar e recomandata iteratia folosind foreach()

Exemplul anterior

- elementul <gallery> contine un numar mare de descendenti de un singur tip, <category>
- obiectul radacina a fost redenumit prin operatia de deschidere a fisierului
  - $xml = simplexml_load_file('cale');
- obiectul $xml va contine ca proprietate
  - $xml->category
  - $xml->category este o matrice deoarece nu este o singura categorie
  - descendentii se pot accesa cu
    - $xml->category[0], $xml->category[1], ...
    - foreach ($xml->category as $categ_curent)
      { //$categ_curent obiect de tip SimpleXMLElement, aceleasi reguli}

Simple XML

- atributele XML pot fi accesate in obiectul corespunzator ca si cum ar fi elementele unei matrici cu indice text, indicele fiind acelasi cu numele atributului cautat
- In exemplul anterior fiecare element <category> are un atribut nume
  - <category nume="VIATA">
  - foreach ($xml->category as $categ_curent)
    {
    echo $categ_curent['nume'];
    }

Recursivitate

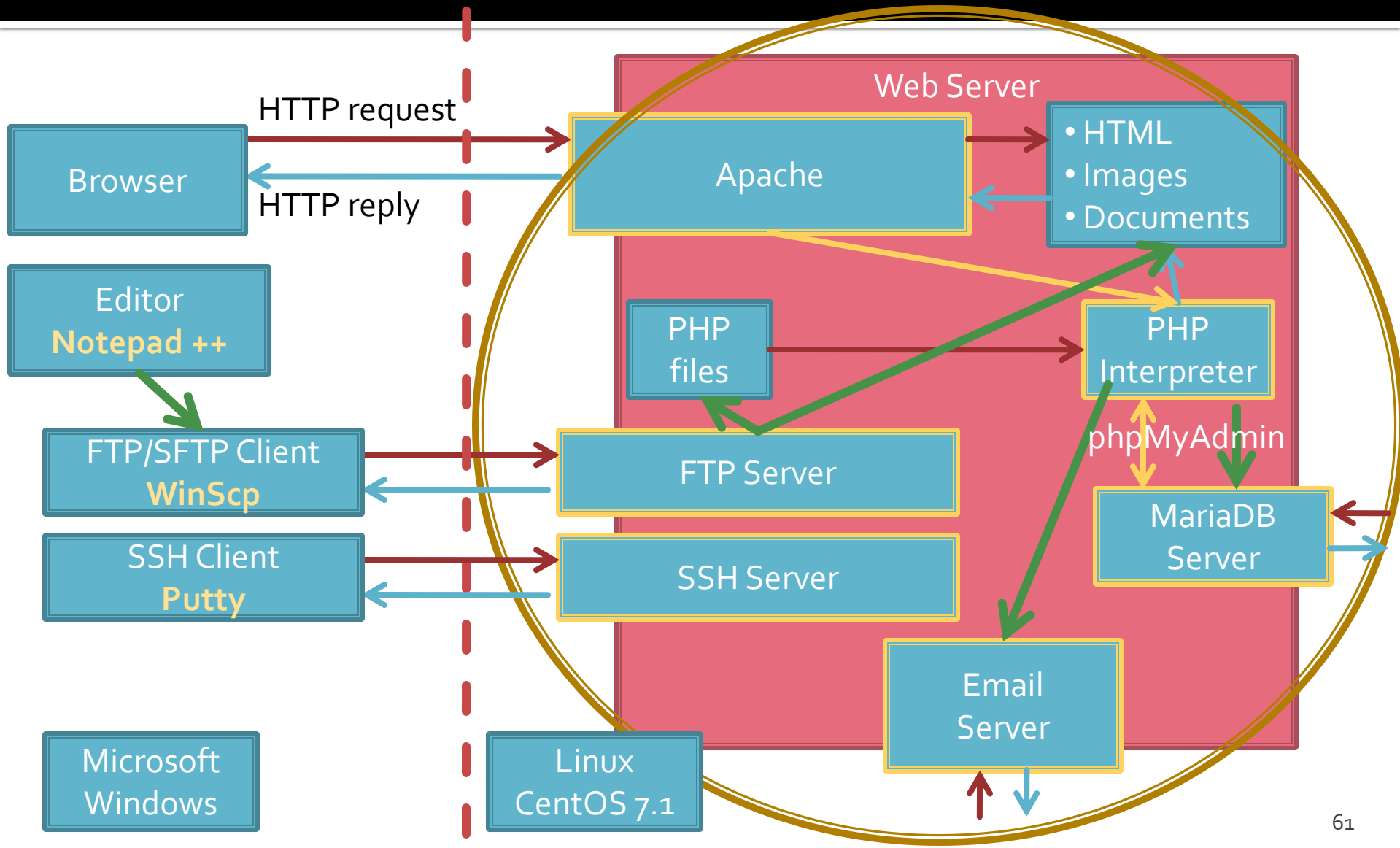
- Fiecare proprietate a clasei **SimpleXMLElement** este de asemenea un obiect din clasa **SimpleXMLElement** daca mai are descendenti
  - $xml->category[0] este de tip obiect:
    $xml->category[0] ->image …
- Proprietatea clasei contine datele elementului daca nu mai sunt alti descendenti
  - echo $xml->category[0]->image[0]->img // foto33.jpg
- Pentru ca proprietatea sa fie tratata ca fiind de tip string (implicit la afisare) trebuie fortata conversia
  - if ((string)$xml->category[0]->image[0]->img=="foto33.jpg") …

Modificare de cod XML

- incepand cu PHP 5.1.3.
- SimpleXMLElement::addChild(string nume, string valoare)
- SimpleXMLElement::addAttribute(string nume, string valoare)
- SimpleXMLElement::asXML('filename') scrie in fisierul 'filename' rezultatul sau il returneaza ca un sir
- schimbarea continutului unui element
  - $xml->category[0]->image[0]->img = "foto33.jpg"

Reference server and applications

Using LAMP


Web Server
HTTP request
HTTP reply
Browser
Apache
• HTML
• Images
• Documents
Editor
Notepad ++
PHP
files
PHP
Interpreter
FTP/SFTP Client
WinScp
FTP Server
phpMyAdmin
MariaDB
Server
SSH Client
Putty
SSH Server
Email
Server
Microsoft
Windows
Linux
CentOS 7.1

Using LAMP

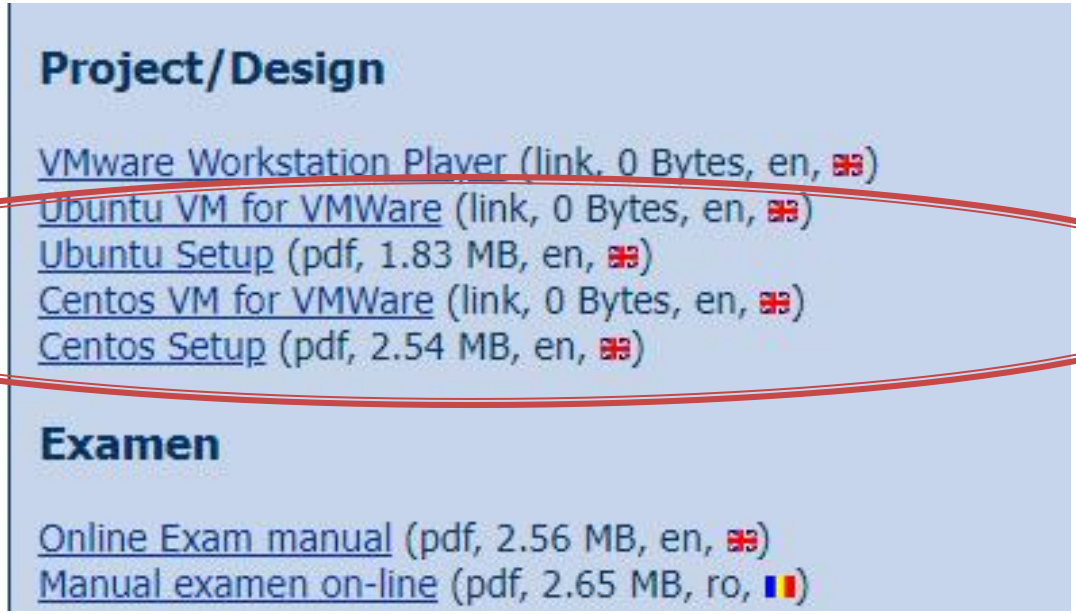
- differences from a Windows computer
  - system commands difficult
    - command prompt, SSH, Putty
  - files submitted by FTP
    - Copy/Paste unavailable
  - administration of MySql server:
    - using PhpMyAdmin (preloaded)
    - using other software on the host computer (eg. MySQL Workbench)

Using LAMP – Advantages

- Advantages
  - Available applications have newer versions (**2020 ~**)
    - CentOS/7.1, Apache/2.4.6, PHP/5.4.16, MariaDB/5.5.44, PhpMyAdmin/4.4.15
    - Ubuntu/20.04, Apache/ 2.4.41, PHP/ 7.4.3, MariaDB/ 10.3.31, PhpMyAdmin/4.9.5
    - Debian/12.5, Apache/ 2.4.57, PHP/ 8.2.7, MariaDB/ 10.11.6, PhpMyAdmin/5.2.1
  - Available applications very similar with real life hosting solutions
    - SSH
    - FTP
    - Email
      - for full functionality the network interface for the VM must be changed **Host-only** -> **Bridged**

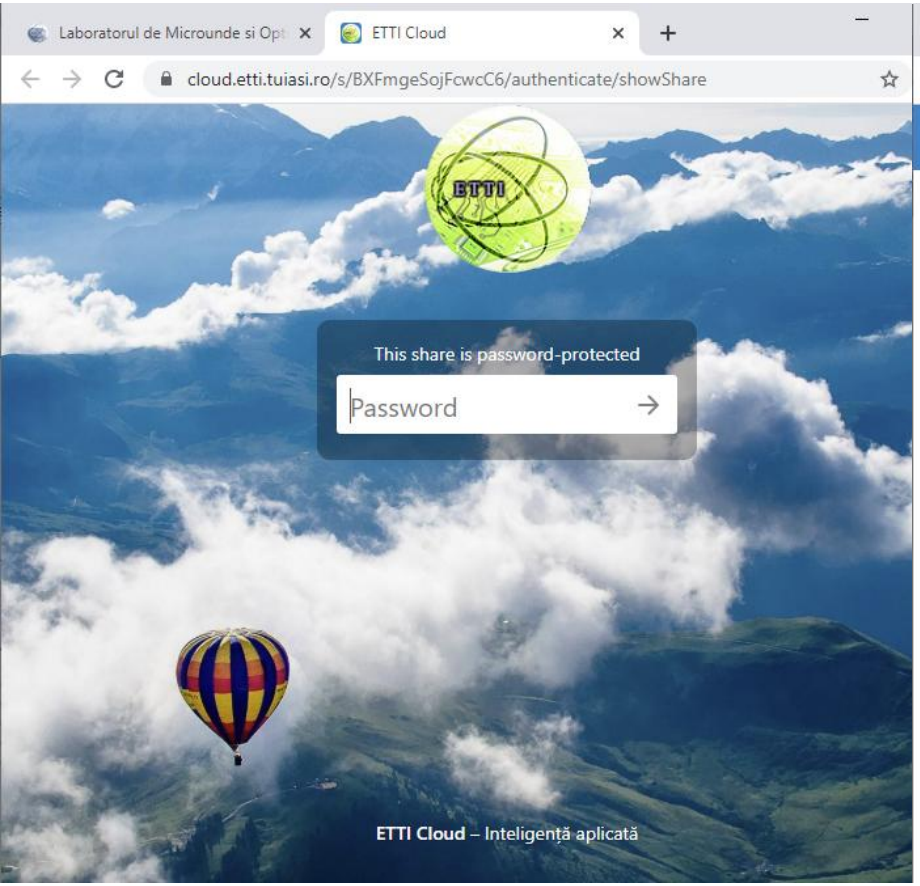
Reference Server

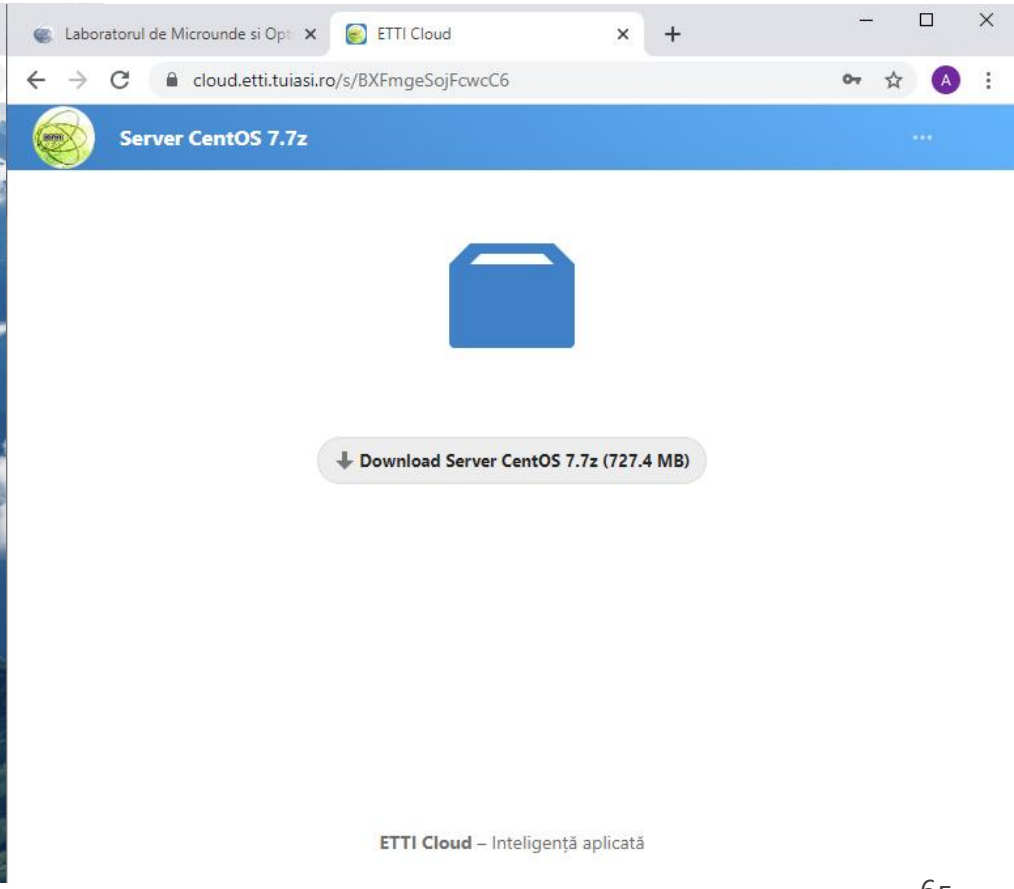
- rf-opto.etti.tuiasi.ro > Master > Web Design



Reference Server

- Cloud ETTI: **RF-opto3#**





Server referinta

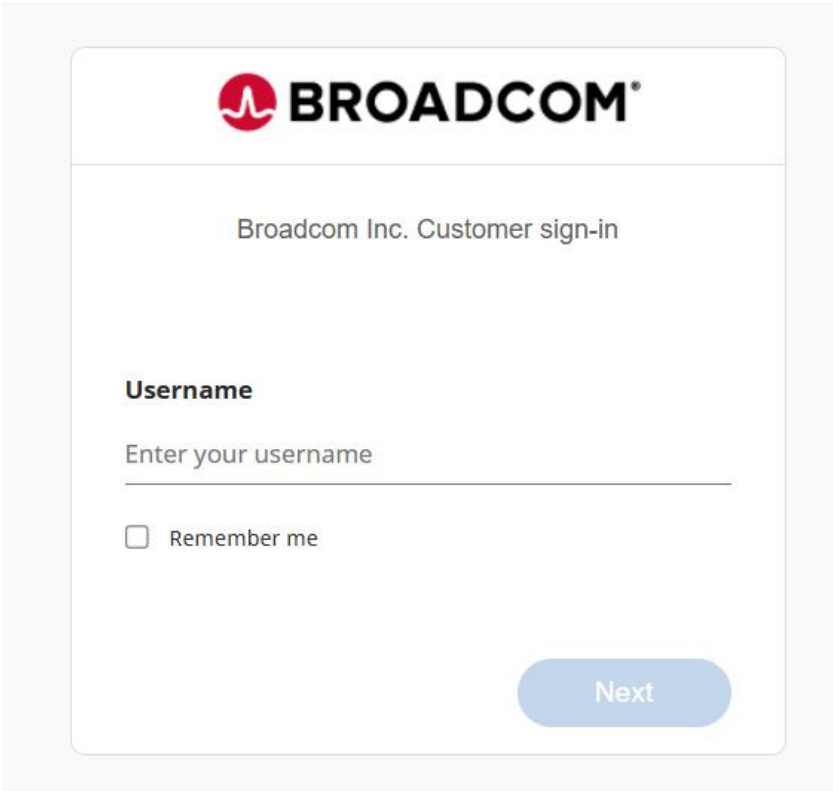
- Masina virtuala
- VMware Workstation Player
  - Gratuit (non-comercial)
  - https://www.vmware.com/products/workstation-player/workstation-player-evaluation.html
- Inlocuit de VMware Workstation Pro



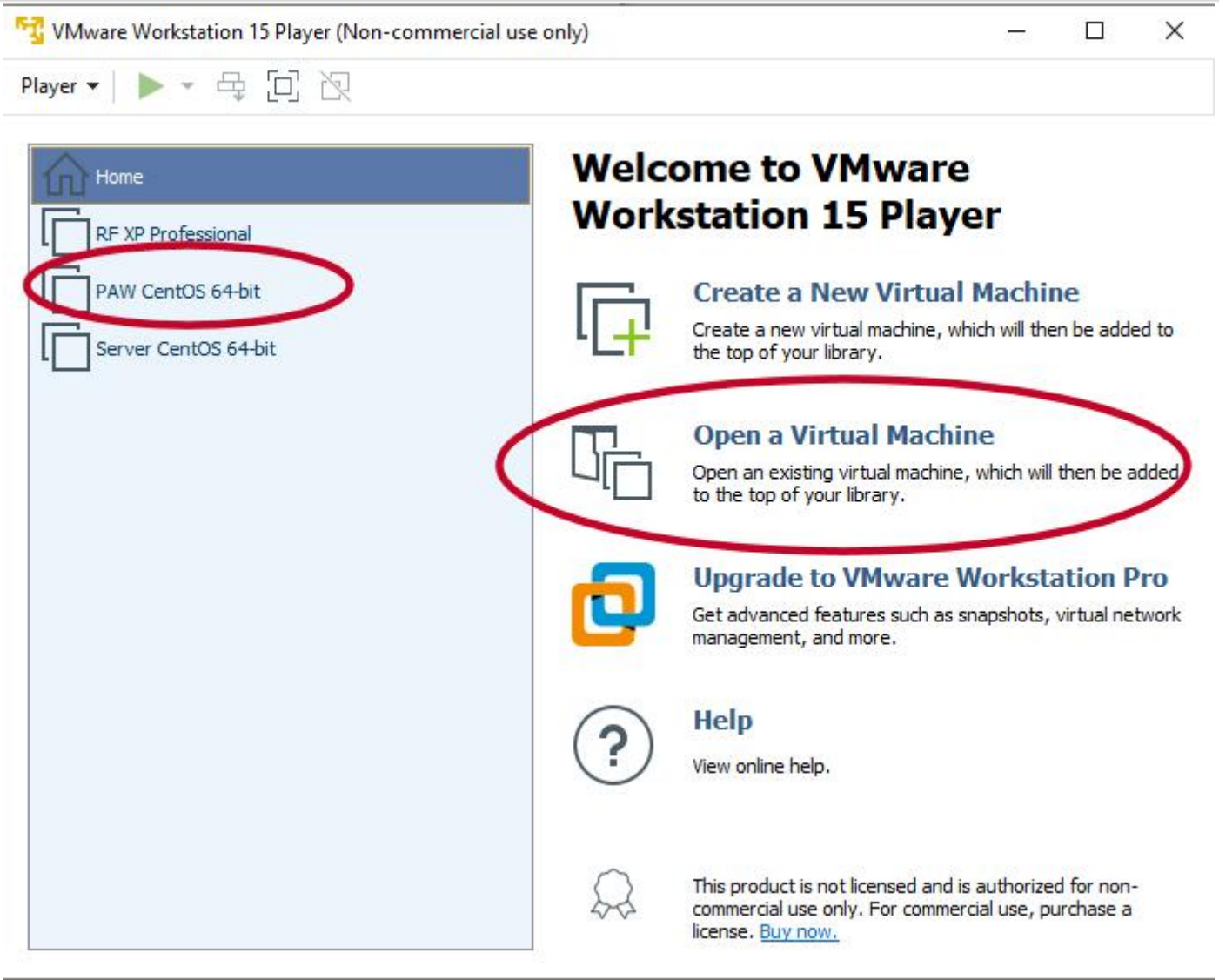
Server referinta

- Masina virtuala
- VMware Workstation Pro (Broadcom)





Reference Server

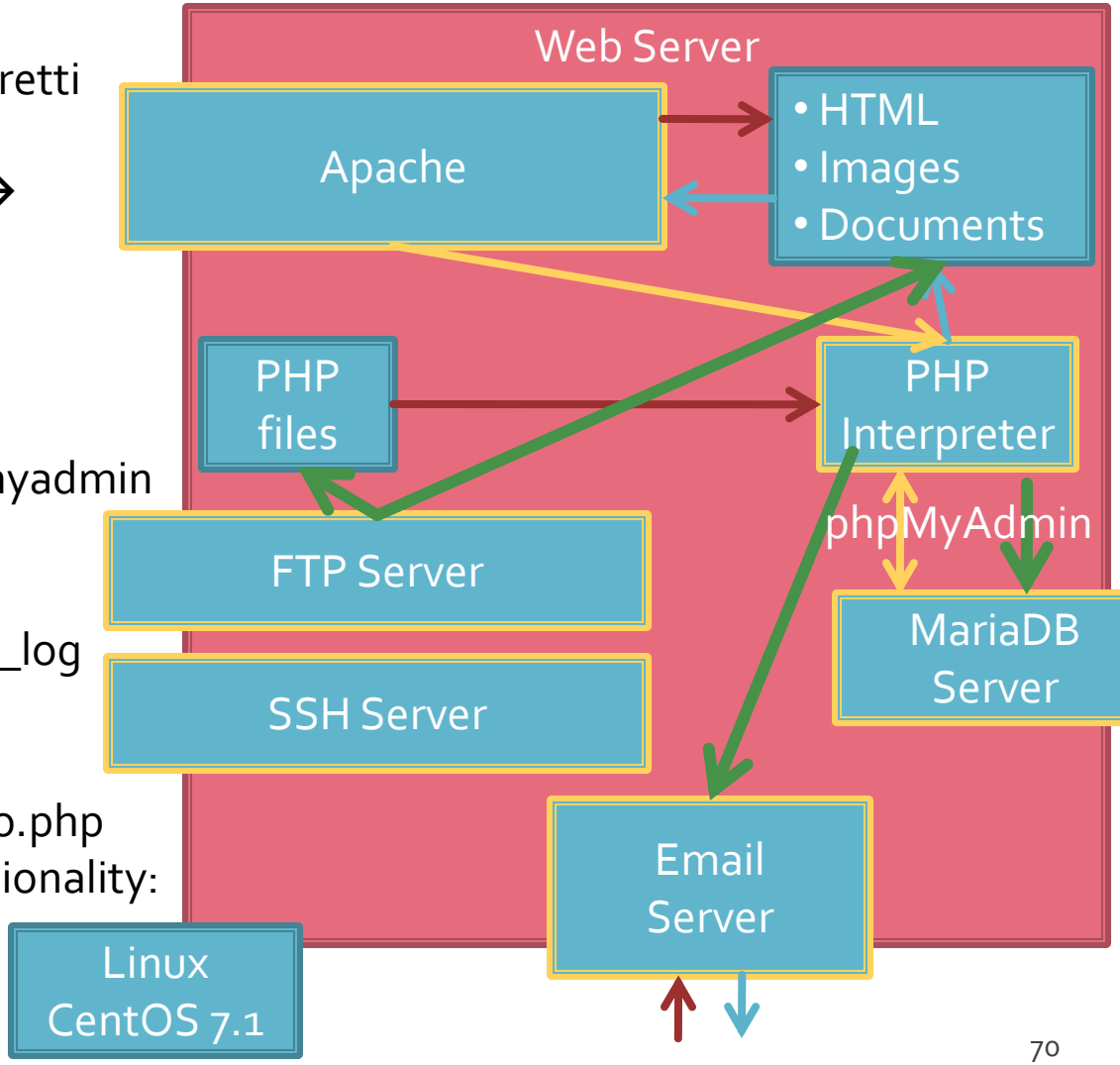


Possible problems

- Current VMWare Player runs **only** on **64bit** operating systems Windows/Linux
  - for 32bit operating systems previous (**certified originals**) can be made available on rf-opto
- The host computer **must** enable **Hardware Virtualization**
  - Hardware Virtualization is enabled in BIOS, depending on the PC manufacturer: Processor, Chipset, Northbridge
  - Options name: VT-x, AMD-V, Vanderpool, Hyper-V, SVM, Intel Virtualization Technology. if available: Intel VT-d, AMD IOMMU
- VM archive requires **7zip** native to the target operating system

Using LAMP

1. login → root:masterrc / paw:masteretti
2. ifconfig → 192.168.30.5
3. putty.exe → 192.168.30.5 → SSH → root:masterrc (remote login)
4. [other linux command line]
5. FTP → Winscp → SFTP → student:masterrc@192.168.30.5
6. MySql → http://192.168.30.5/phpmyadmin → root:masterrc / root:masteretti
7. Apache Error Log →
7a. putty → nano /var/log/httpd/error_log
7b. http://192.168.30.5/logfile.php (nonstandard)
8. PHP info → http://192.168.30.5/info.php
9. if DHCP service stops Apache functionality: service httpd restart



LAMP Reference Server 2023

- Linux, two variants
  - Centos 7.1
    - PHP 5.4.16
    - MariaDB 5.5.44
    - Apache 2.4.6
    - **root**/student:masterrc
  - Ubuntu 20.04 (**recommended**)
    - PHP 7.4.3
    - MariaDB 10.3.31
    - Apache 2.4.41
    - **paw**/student:masteretti
    - correction **paw FTP access**:
      - sudo usermod -a -G upload paw
      - sudo chmod -R 775 /var/www

LAMP Reference Server 2025

- Linux, three proposed servers
  - CentOS 7.1
  - Ubuntu 20.04
  - **Debian 12.5**

LAMP Reference Server

- Centos 7.1
  - PHP 5.4.16
  - MariaDB 5.5.44 / root:masterrc
  - Apache 2.4.6
  - PhpMyAdmin/4.4.15
  - **root**/student:masterrc
  - Python 2.7.5
  - creat: Workstation Player 12.x (**12**)

LAMP Reference Server

- Ubuntu 20.04
  - PHP 7.4.3
  - MariaDB 10.3.31 / root:masteretti
  - Apache 2.4.41
  - **paw**/student:masteretti
  - necesar suplimentar pentru **acces FTP user paw**:
    - sudo usermod -a -G upload paw
    - sudo chmod -R 775 /var/www
  - Python 3.8.10
  - creat: Workstation Player 15.x (**16**)

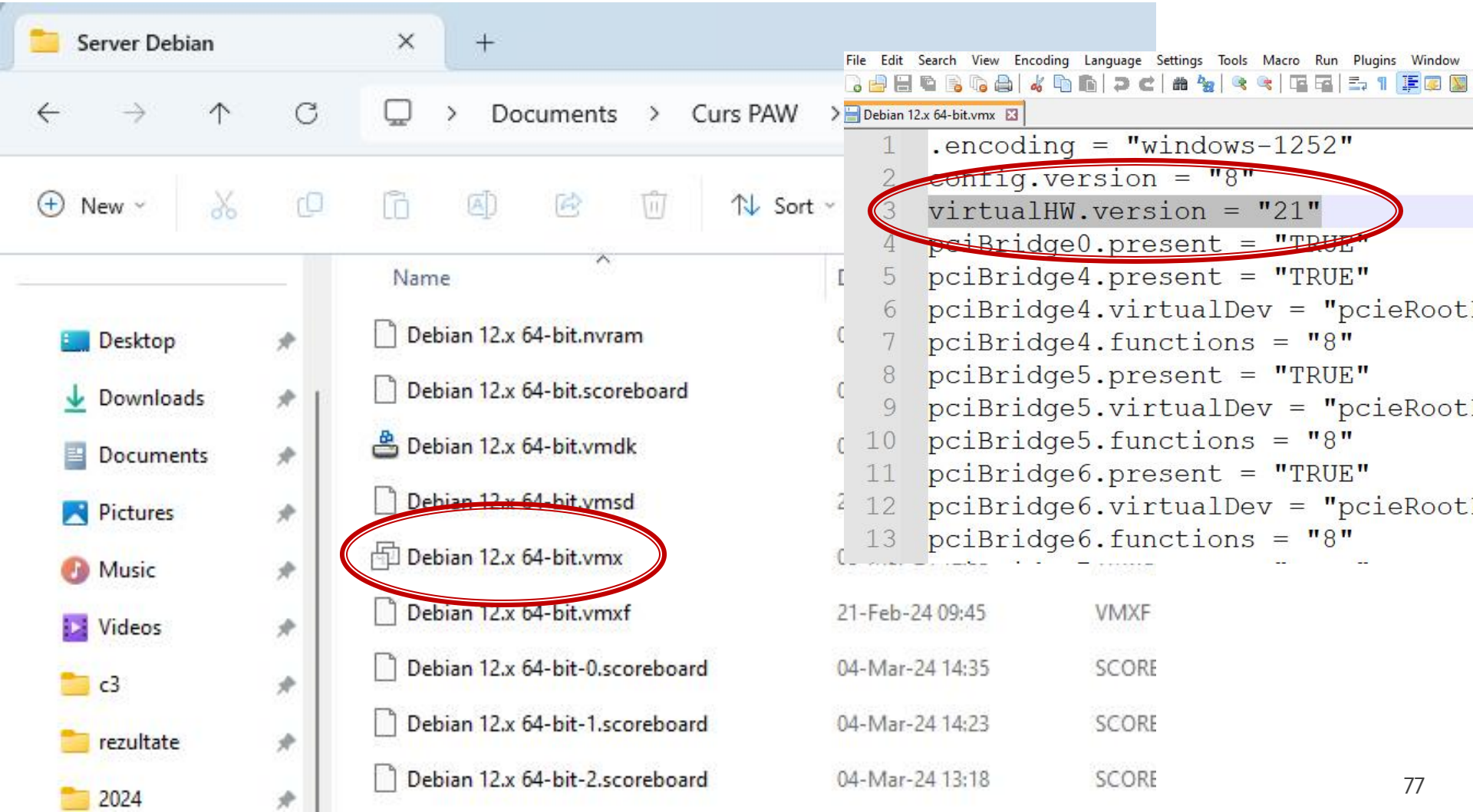
LAMP Reference Server

- Debian 12.5
  - PHP 8.2.7
  - MariaDB 10.11.6 / root:masteretti
  - Apache 2.4.57
  - PhpMyAdmin/5.2.1 deb
  - **root**/paw/student:masteretti
  - Python 3.11.2
  - creat: Workstation Player 17.5 (**21**)

LAMP Reference Server

- To run a server on an earlier version of VMware Player:
  - locate the server's "*.vmx" file
  - change virtualHW.version = "**21**" to a lower (earlier) value
    - in 2.13/1.08 -> **18**

LAMP Reference Server



Support applications

- WinSCP (client FTP, gratuit)
  - https://winscp.net/eng/download.php
- Notepad ++ (editor, avansat, gratuit)
  - https://notepad-plus-plus.org/downloads/
- Putty (remote access)
  - https://www.putty.org/
- MySQL Workbench (gratuit, cont Oracle)
  - https://www.mysql.com/products/workbench/
- Visual Studio Code (gratuit, Microsoft)
  - https://code.visualstudio.com/download

Aplicatii suport

- Variante portabile

Laboratory

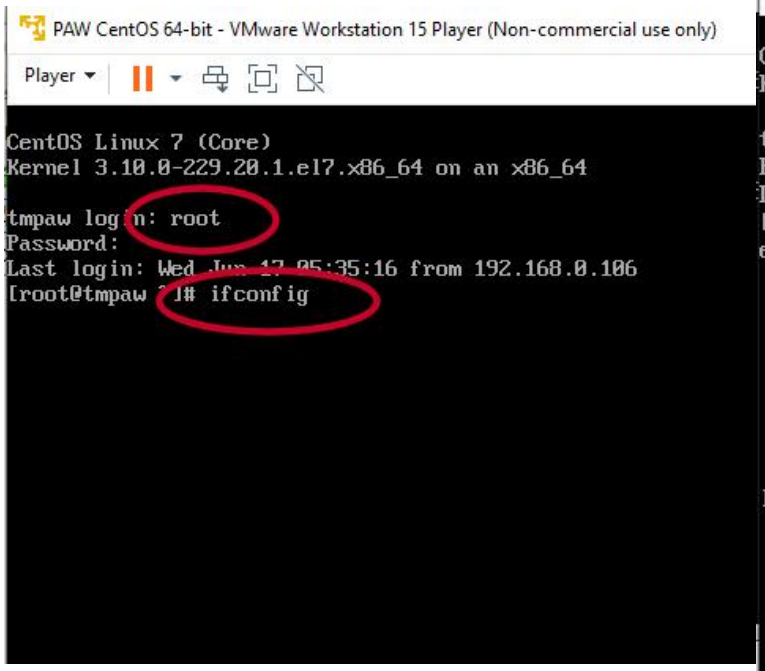
Laborator 1 (pdf, 1.48 MB, ro,)
Server Win2000 pentru VMWare Player - lab 1 (cloud) (link, 0 Bytes, en,)
Accesorii laborator (x32 - partial) (zip, 28.92 MB, en,)
Accesorii laborator (x64 - complet) (zip, 133.58 MB, en,)

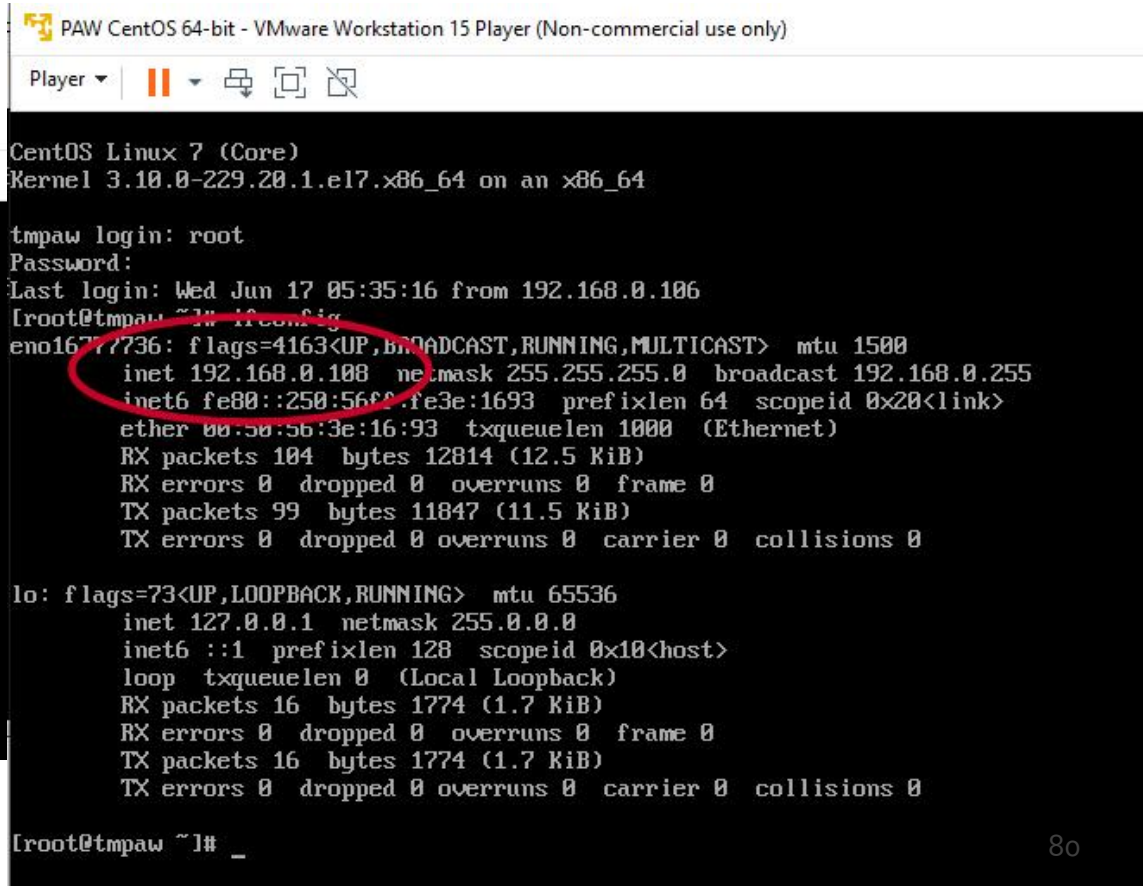
Project/Design

VMware Workstation Player (link, 0 Bytes, en,)
Server CentOS pentru VMWare Player (cloud) (link, 0 Bytes, en,)
Instalare Centos (pdf, 2.54 MB, en,)
Server Ubuntu pentru VMWare Player (cloud) (link, 0 Bytes, en,)
Instalare Ubuntu (pdf, 1.83 MB, en,)

IP address

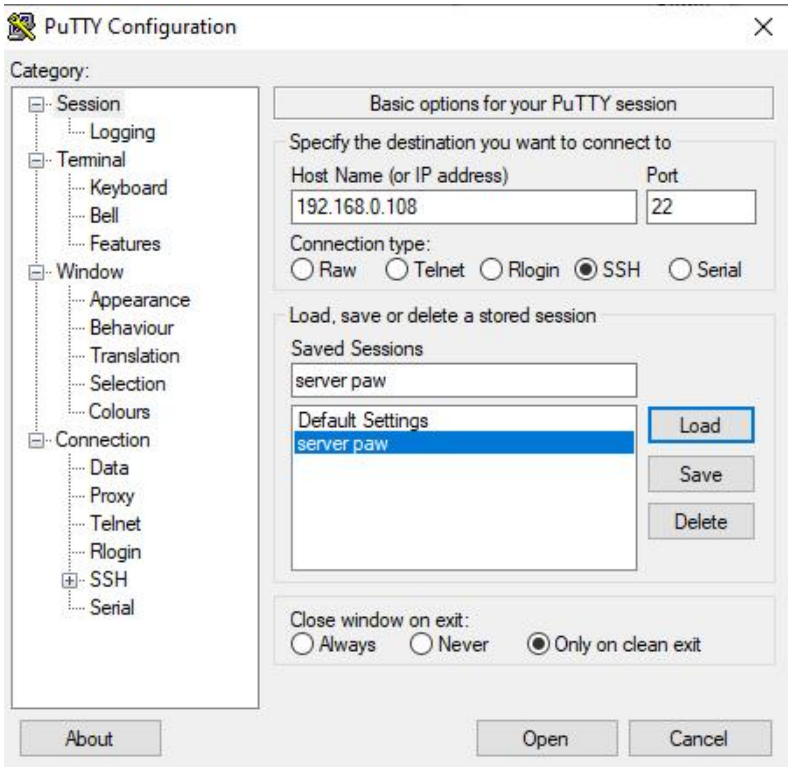
- login, ifconfig
- Ctrl + Alt + mouse

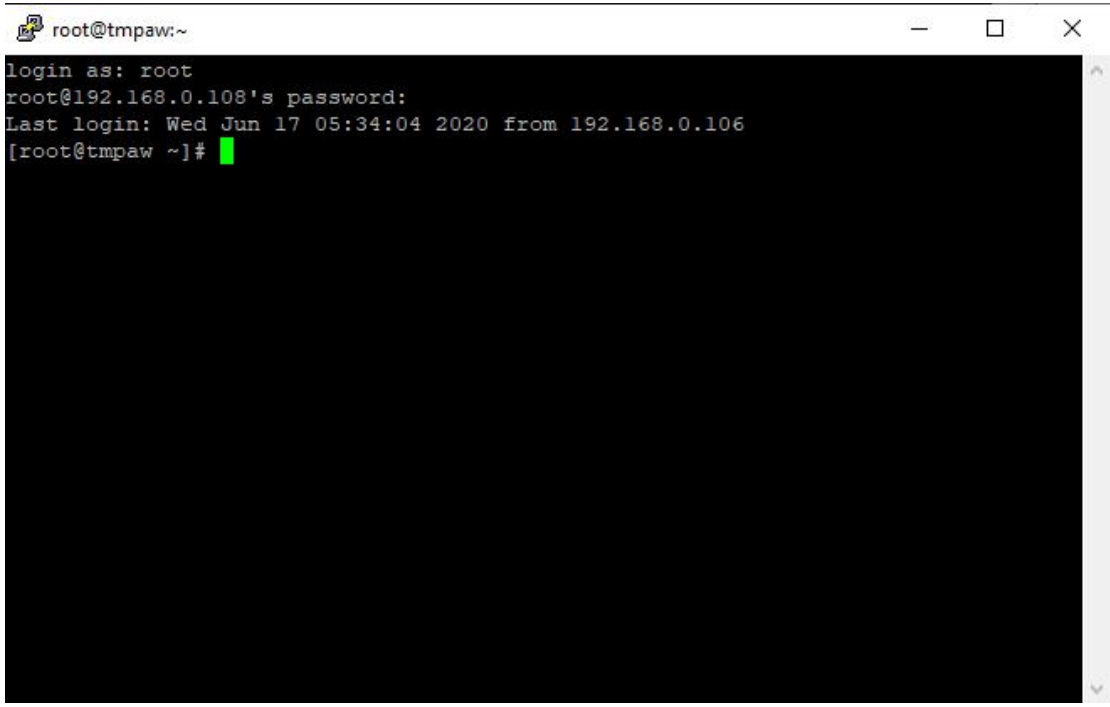




Putty

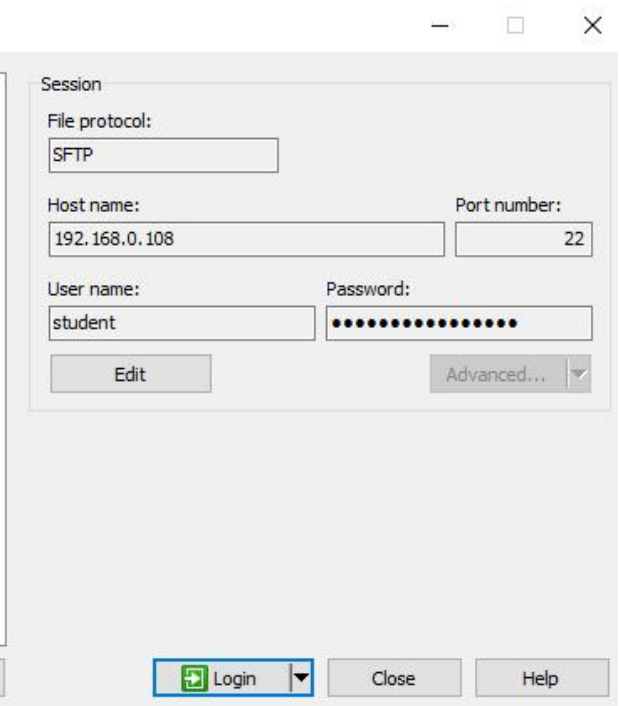
- putty.exe
- avoids mouse capture (CentOS), copy/paste etc.

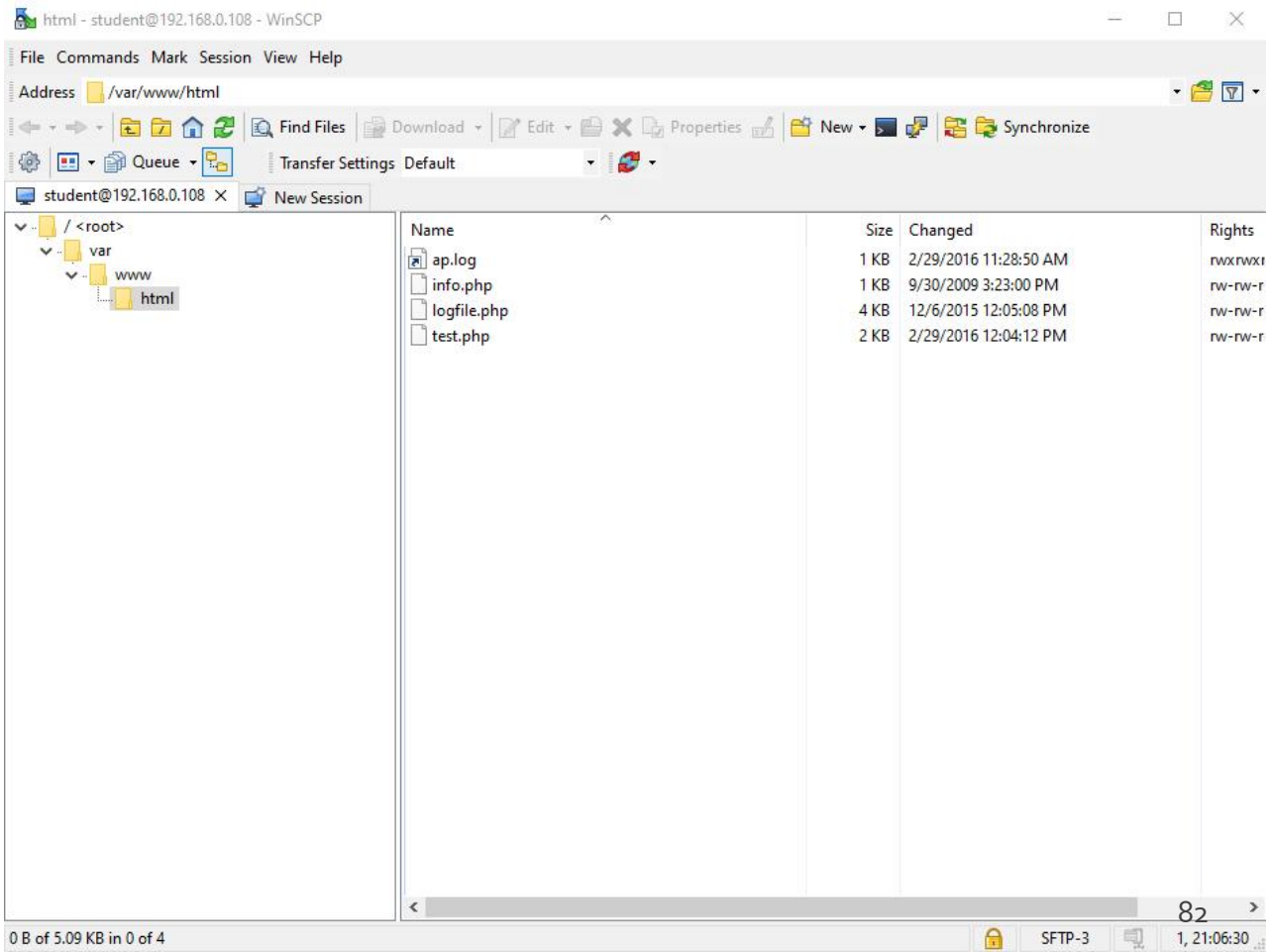




WinSCP

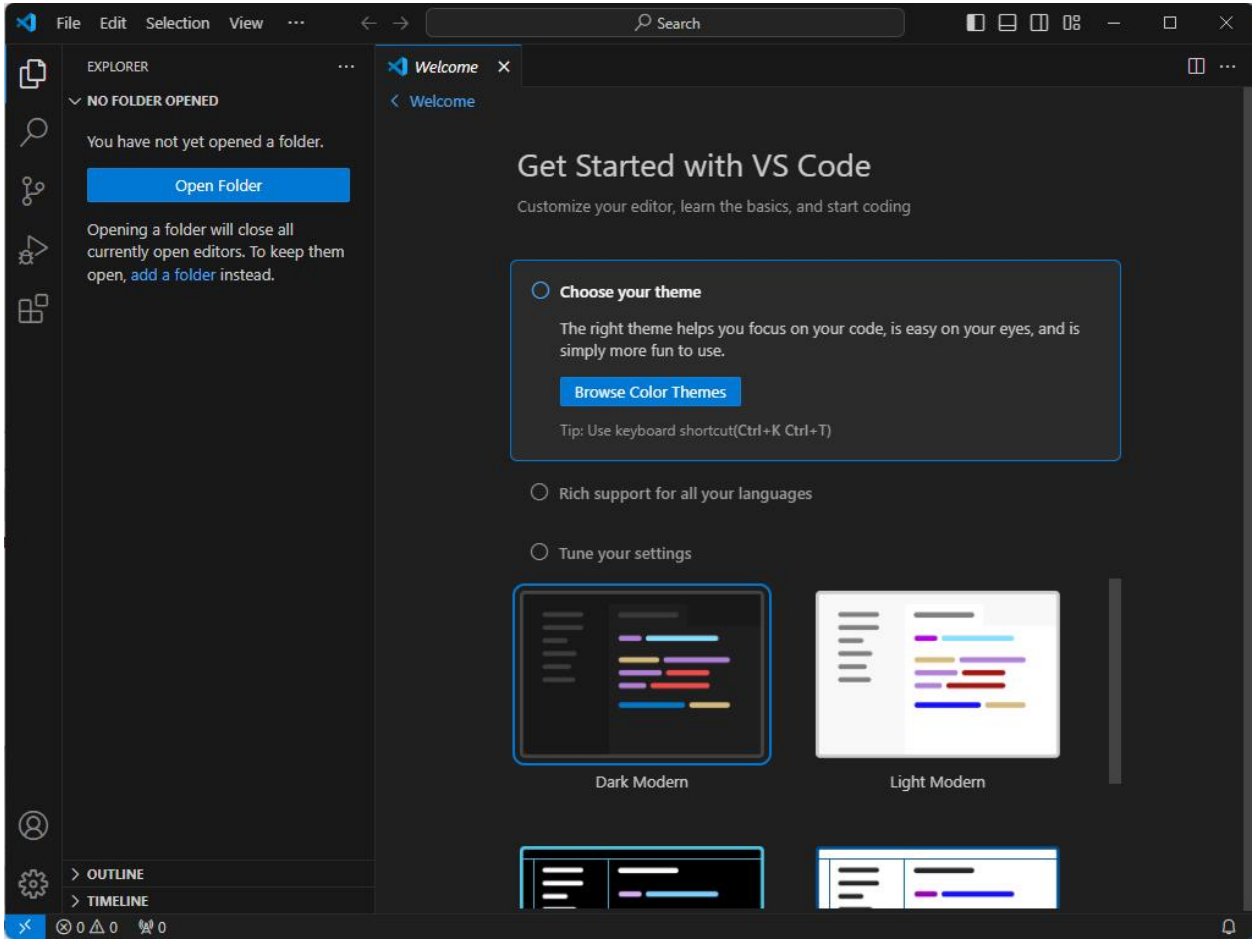
- FTP client
- upload files





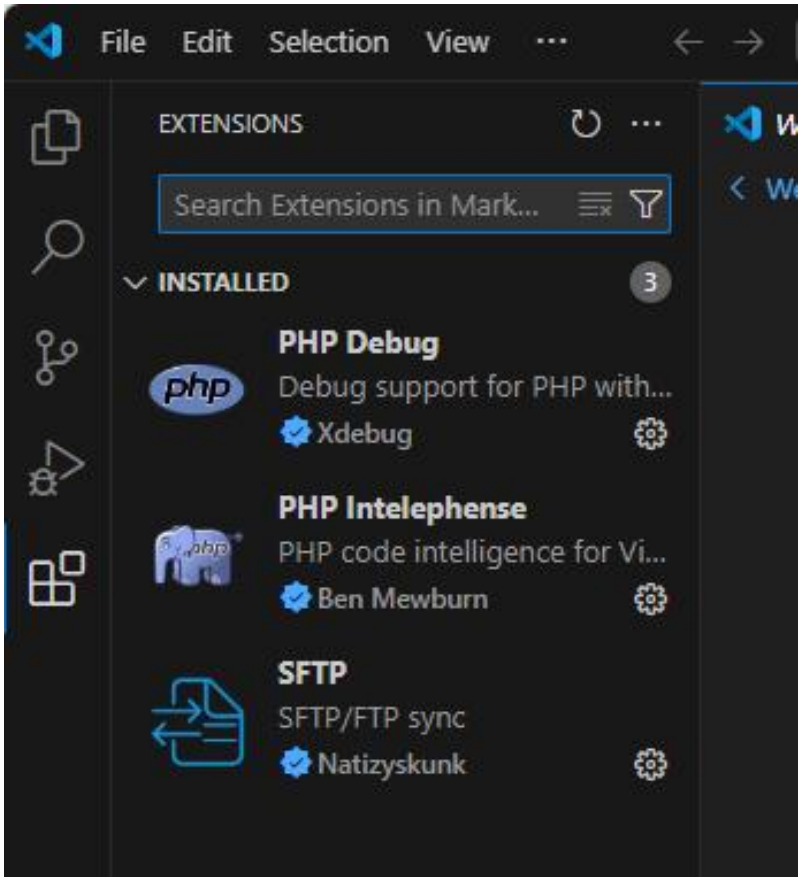
Visual Studio Code

- 1.87 Portable

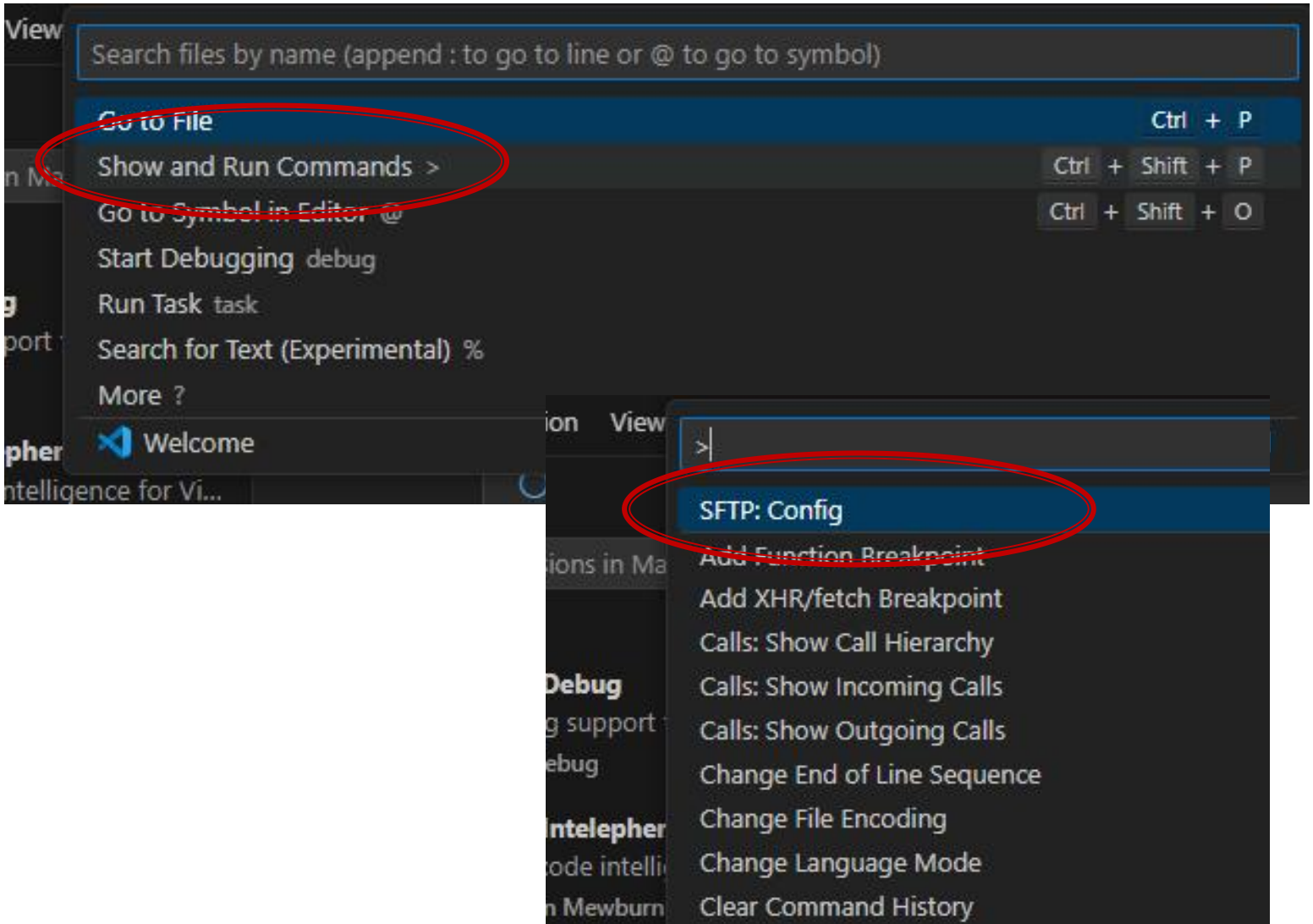


Visual Studio Code

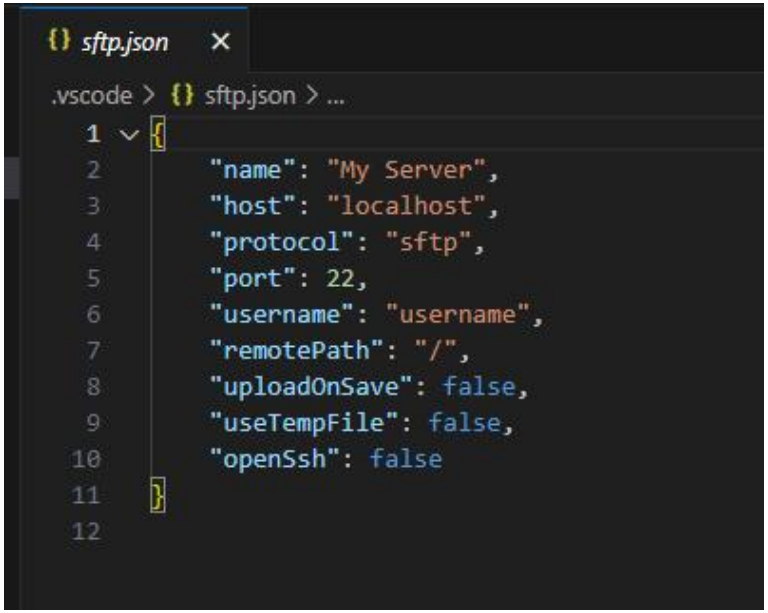
- Installed extensions
  - PHP Intelephense
    - PHP 8 -> Debian
  - PHP Debug (inactive for now)
  - SFTP – automatic save on server

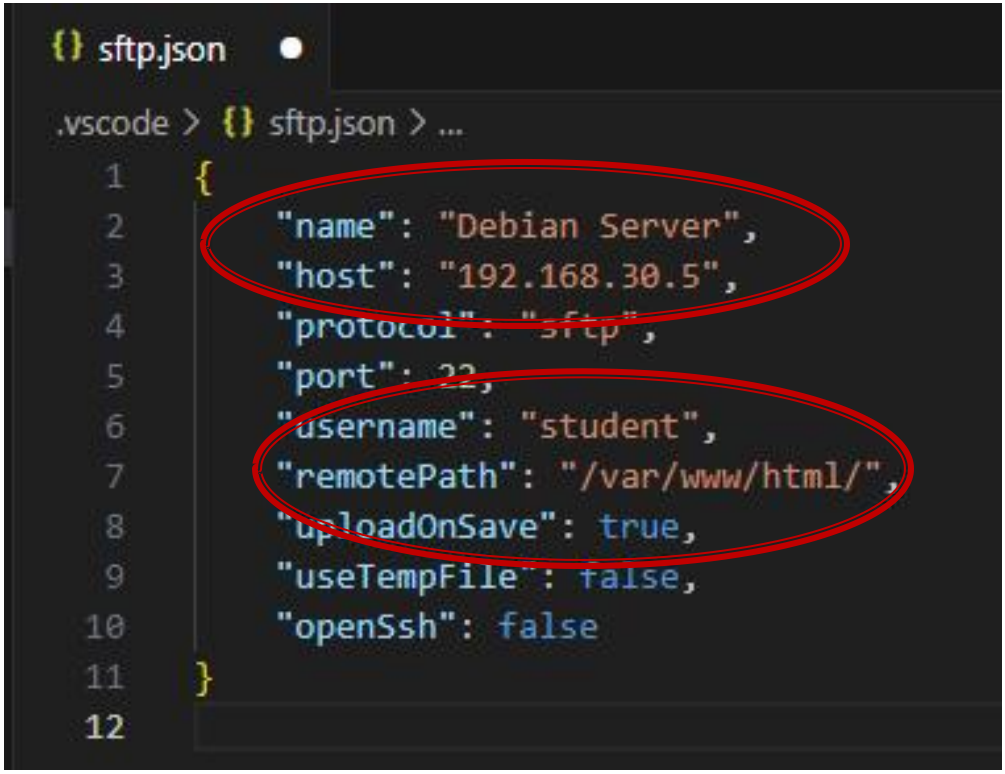


Visual Studio Code

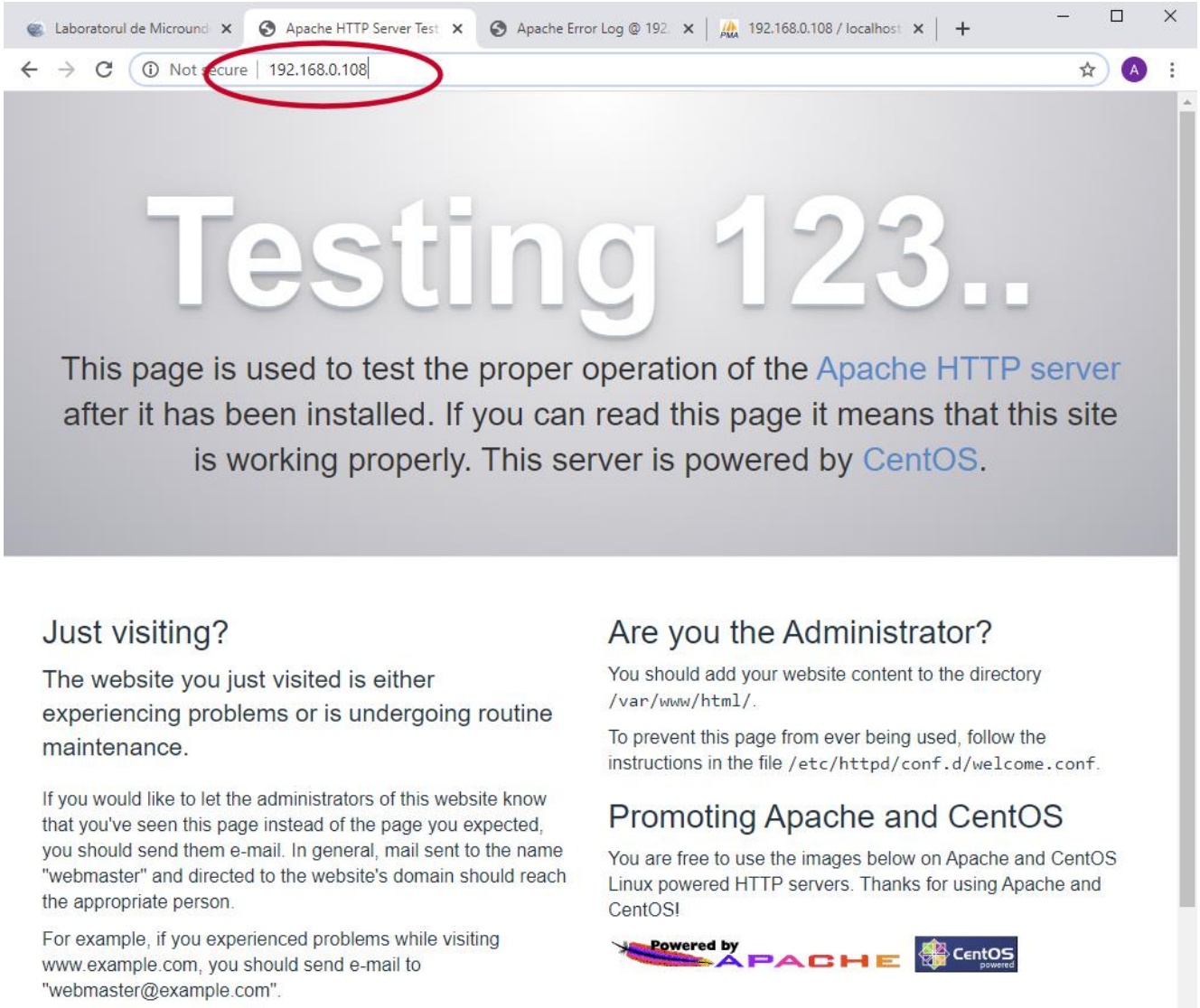


Visual Studio Code

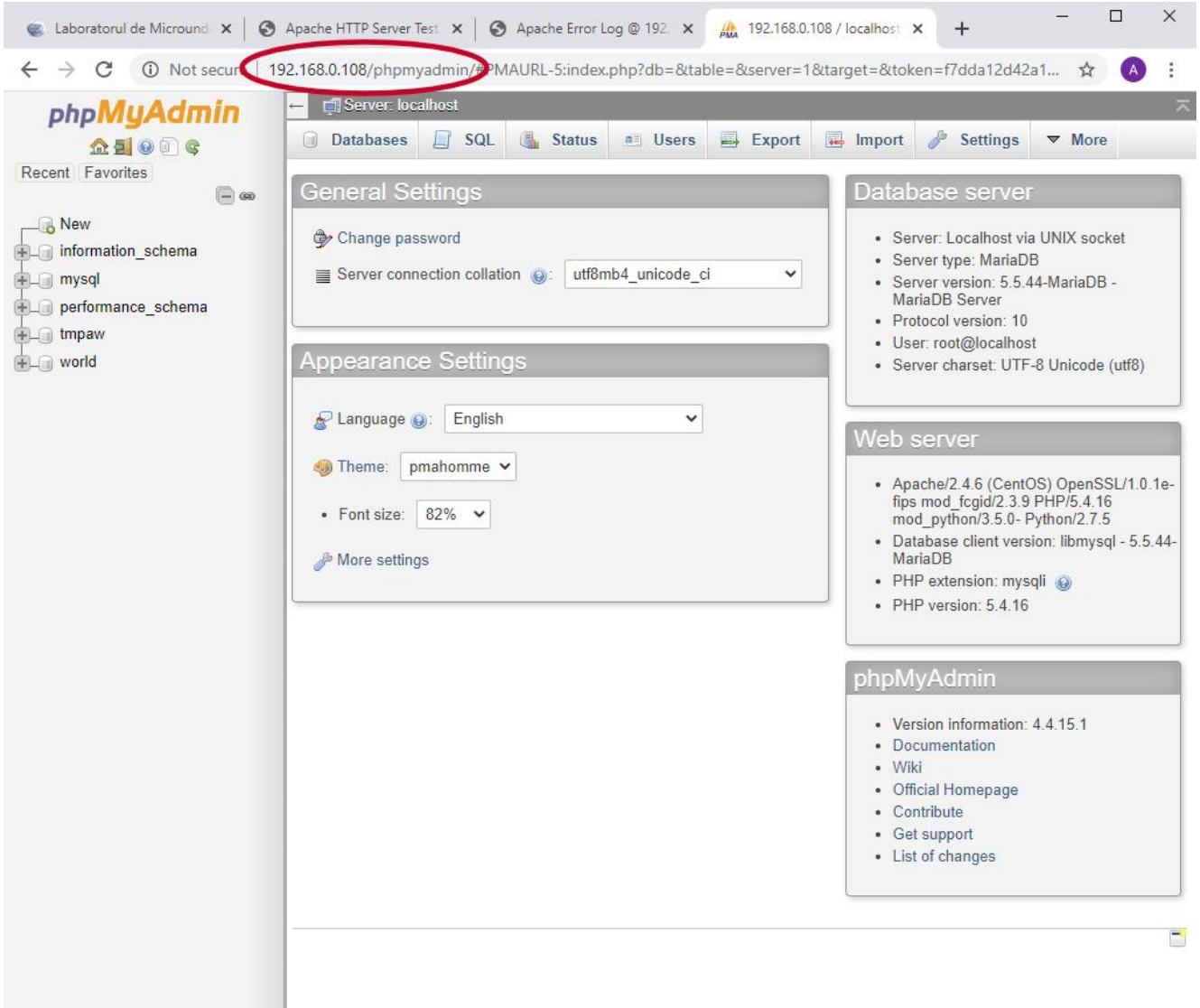




Browser


Laboratorul de Microunde
Apache HTTP Server Test
Apache Error Log @ 192.
192.168.0.108 / localhost
Not secure
192.168.0.108
Testing 123..
This page is used to test the proper operation of the Apache HTTP server after it has been installed. If you can read this page it means that this site is working properly. This server is powered by CentOS.
Just visiting?
The website you just visited is either experiencing problems or is undergoing routine maintenance.
If you would like to let the administrators of this website know that you've seen this page instead of the page you expected, you should send them e-mail. In general, mail sent to the name "webmaster" and directed to the website's domain should reach the appropriate person.
For example, if you experienced problems while visiting www.example.com, you should send e-mail to "webmaster@example.com".
Are you the Administrator?
You should add your website content to the directory /var/www/html/.
To prevent this page from ever being used, follow the instructions in the file /etc/httpd/conf.d/welcome.conf.
Promoting Apache and CentOS
You are free to use the images below on Apache and CentOS Linux powered HTTP servers. Thanks for using Apache and CentOS!
Powered by APACHE
CentOS powered

Server MySQL/MariaDB



Contact

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- rdamian@etti.tuiasi.ro