

Lecture 11 (w12)

2022/2023

Databases, Web Programming and Interfacing

- Databases, Web Programming and Interfacing
 - An VI IT4T
 - 1C/1L/1P
- Timetable
 - Friday, every week (fiecare saptamana) 1C + 2L (17-20)

Grade

- 10% - Test/Examen – last week – 1h
- 40% - Personal/Team Project

Info

- http://rf-opto.eti.tuiasi.ro/master_it.php

The screenshot shows a web browser window with the following details:

- Title Bar:** Laboratorul de Microunde și Optică
- Address Bar:** Not secure | rf-opto.eti.tuiasi.ro/master_it.php
- Header:** RF-OPTO (with logo) - Institutul Tehnologic de Telecomunicații și Informatică
- Language Links:** English | Romana |
- Main Navigation:** Main, Courses, **Master**, Staff, Research, Students
- Sub-navigation:** Radiocommunication Systems, Microwave IC, Satellite Comm., **Web Design**, Ethics
- Content Area:**
 - Databases, Web Programming and Interfacing**
 - Course:** DWPI (2021-2022)
 - Course Coordinator:** Assoc.P. Dr. Radu-Florin Damian
 - Code:** ITI.IA.601
 - Discipline Type:** DIS; Required, Specialty
 - Credits:** 5
 - Enrollment Year:** 6, Sem. 11
 - Activities**
 - Evaluation**
 - Materials**
 - Textbooks**
 - Project/Design**

Access

- Not customized



Date:

Grupa	5304 (2015/2016)
Specializarea	Tehnologii si sisteme de telecomunicatii
Marca	5184

[Acceseaza ca acest student](#)

Note obtinute

Disciplina	Tip	Data	Descriere	Nota	Puncte	Obs.
TW	Tehnologii Web					
	N	17/01/2014	Nota finala	10	-	
	A	17/01/2014	Colocviu Tehnologii Web 2013/2014	10	7.55	
	B	17/01/2014	Laborator Tehnologii Web 2013/2014	9	-	
	D	17/01/2014	Tema Tehnologii Web 2013/2014	9	-	

Nume

Email

Cod de verificare

Trimite

Online

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

English | Romana |

Main Courses Master Staff Research **Student List**

Grades Student List Exams Photos

POPESCU GOPO ION

Fotografia nu există

Date:

Grupa	5700 (2019/2020)
Specializarea	Inginerie electronica si telecomunicatii
Marca	7000000

[Access the site as this student](#) | [Request access to software](#)

Grades

Inca nu a fost notat.

Main Courses Master Staff Research

Grades **Student List** Exams Photos

Login

Use the last name and email stored in the database

Name
POPESCU GOPO

Email/Password

Write the code below

828f26b

Send

Online

- access email/password

Main Courses Master Staff Research

Grades Student List Exams Photos

POPESCU GOPO ION

Fotografia nu există

Date:

Grupa	5700 (2019/2020)
Specializarea	Inginerie electronica si telec
Marca	7000000

You access the site as **this student!**

Main Courses Master Staff Research

Grades Student List Exams Photos

POPESCU GOPO ION

Fotografia nu există

Date:

Grupa	5700 (2019/2020)
Specializarea	Inginerie electronica si telec
Marca	7000000

You access the site as **this student (including exams)!**

Password

■ received by email

Important message from RF-OPTO Inbox x

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-vă 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

Subject: Important message from RF-OPTO Correspondents: POPESCU GOPO ION

From: Me <rdamian@etti.tuiasi.ro> ★
Subject: Important message from RF-OPTO (highlighted)
To: [REDACTED]
Cc: Me <rdamian@etti.tuiasi.ro> ★

 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-vă 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

Online exam manual

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

Materials

Other data

[Manual examen on-line \(pdf, 2.65 MB, ro, !\[\]\(71ceb62b681518c82e95d615e7265d66_img.jpg\)](#)

[Simulare Examen \(video\) \(mp4, 65.12 MB, ro, !\[\]\(e10773081adcaeab632f9dd4c8931cd5_img.jpg\)](#)

Online Exam

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

Announcement 23:59 (10/05/2020)	Support material 00:05 (11/05/2020)	Exam Topics 00:07 (11/05/2020)	Results 00:10 (11/05/2020)	End 00:20 (15/05/2020)	Confirmation 00:20 (16/05/2020)	Next timeframe in: 05 m 43 s Refresh now
------------------------------------	--	-----------------------------------	-------------------------------	---------------------------	------------------------------------	---

Announcement

This is a "fake" exam, introduced to familiarize you with the server interface and to perform the necessary actions during an exam: thesis scan, selfie, use email for co...

Server Time

All exams are based on the server's time zone (it may be different from local time). For reference time on the server is now:

10/05/2020 23:59:16

2022/2023

Project

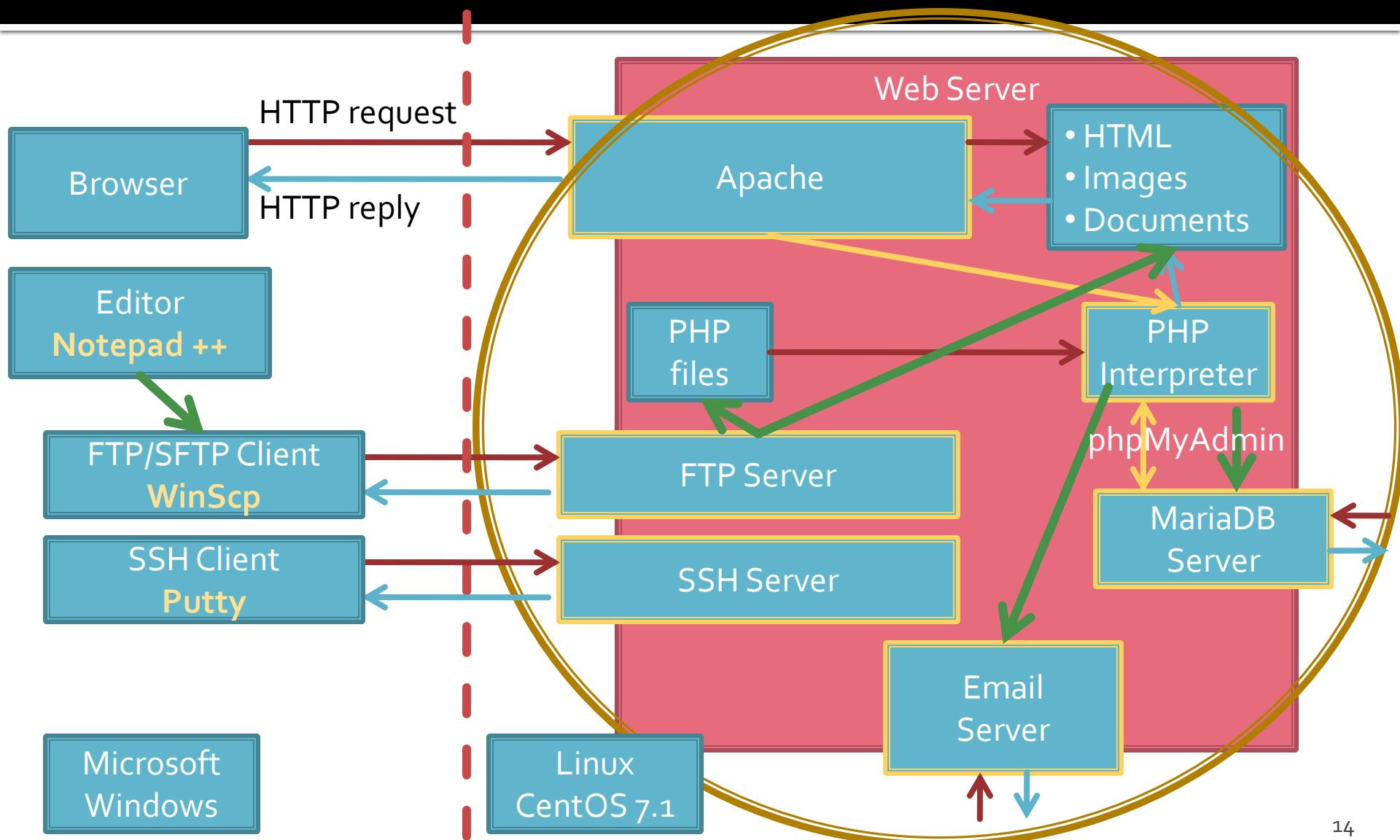
Project

- 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)
 - **1 *.sql** (backup of the database required to run the application)
 - archive of the application (inside: files *.php, *.jpg, folder tree etc., archived: ***.zip, *.7z** etc.)

Project grading

- **(2p)** the application runs on the **reference server** (can be downloaded from [rf-opto](#): Ubuntu, php 7 or CentOS 7, php 5): extract files from the ***.zip** archive in a folder on the server, restore database from the ***.sql** backup file
- **(2p)** the ***.pdf** file containing the user manual exists and is appropriate for the submitted application
- **(2p)** the application **flowchart** has been submitted and contains appropriate data
- **(4p)** presentation on-site of the **application**

Using LAMP



Reference Server

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

Project/Design

[VMware Workstation Player](#) (link, 0 Bytes, en, 

[Ubuntu VM for VMWare](#) (link, 0 Bytes, en, 

[Ubuntu Setup](#) (pdf, 1.83 MB, en, 

[Centos VM for VMWare](#) (link, 0 Bytes, en, 

[Centos Setup](#) (pdf, 2.54 MB, en, 

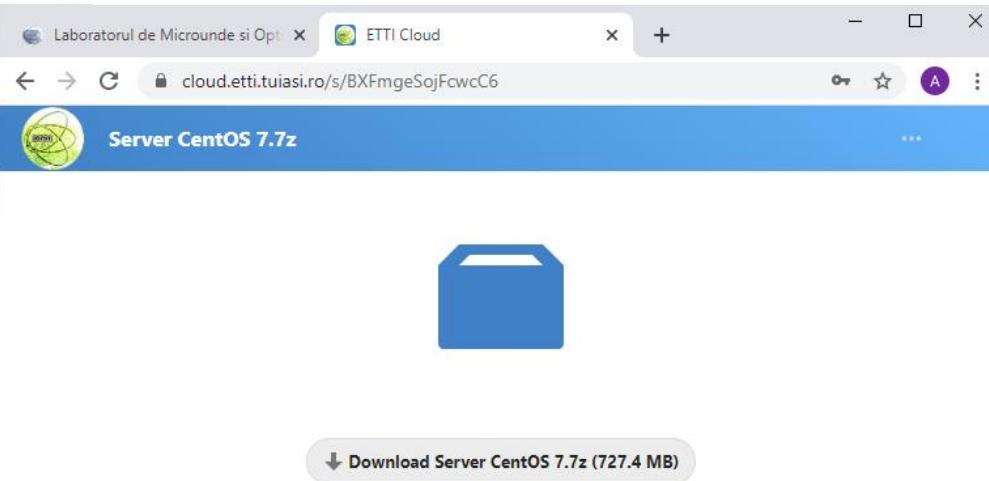
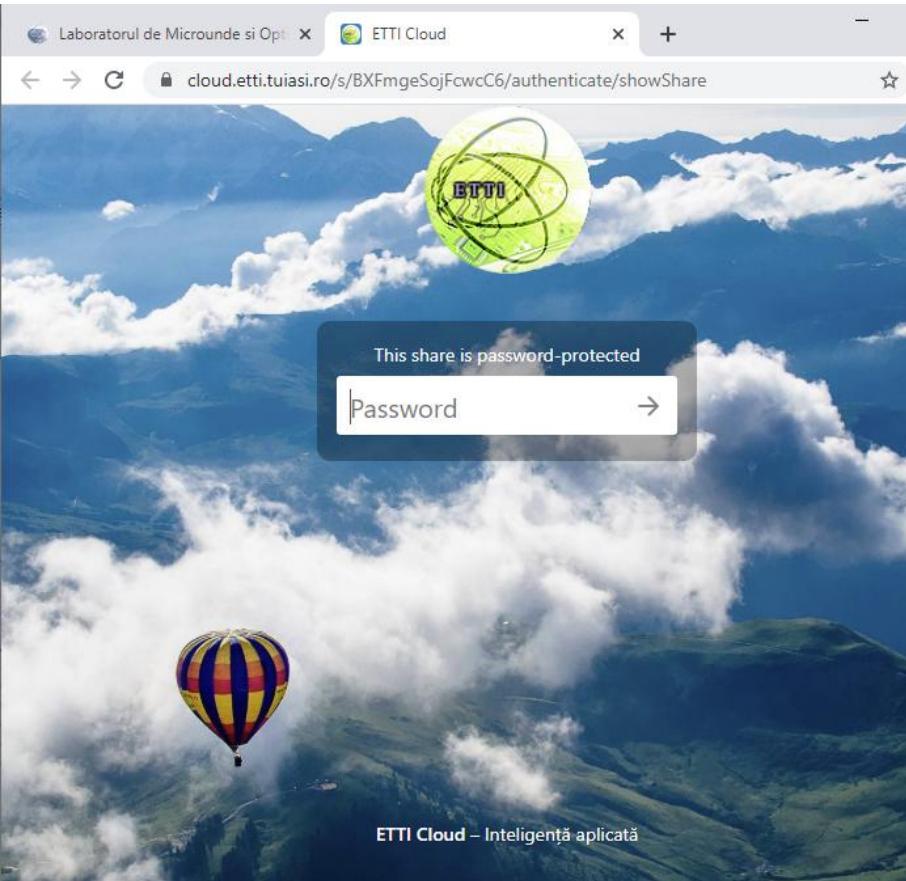
Examen

[Online Exam manual](#) (pdf, 2.56 MB, en, 

[Manual examen on-line](#) (pdf, 2.65 MB, ro, 

Reference Server

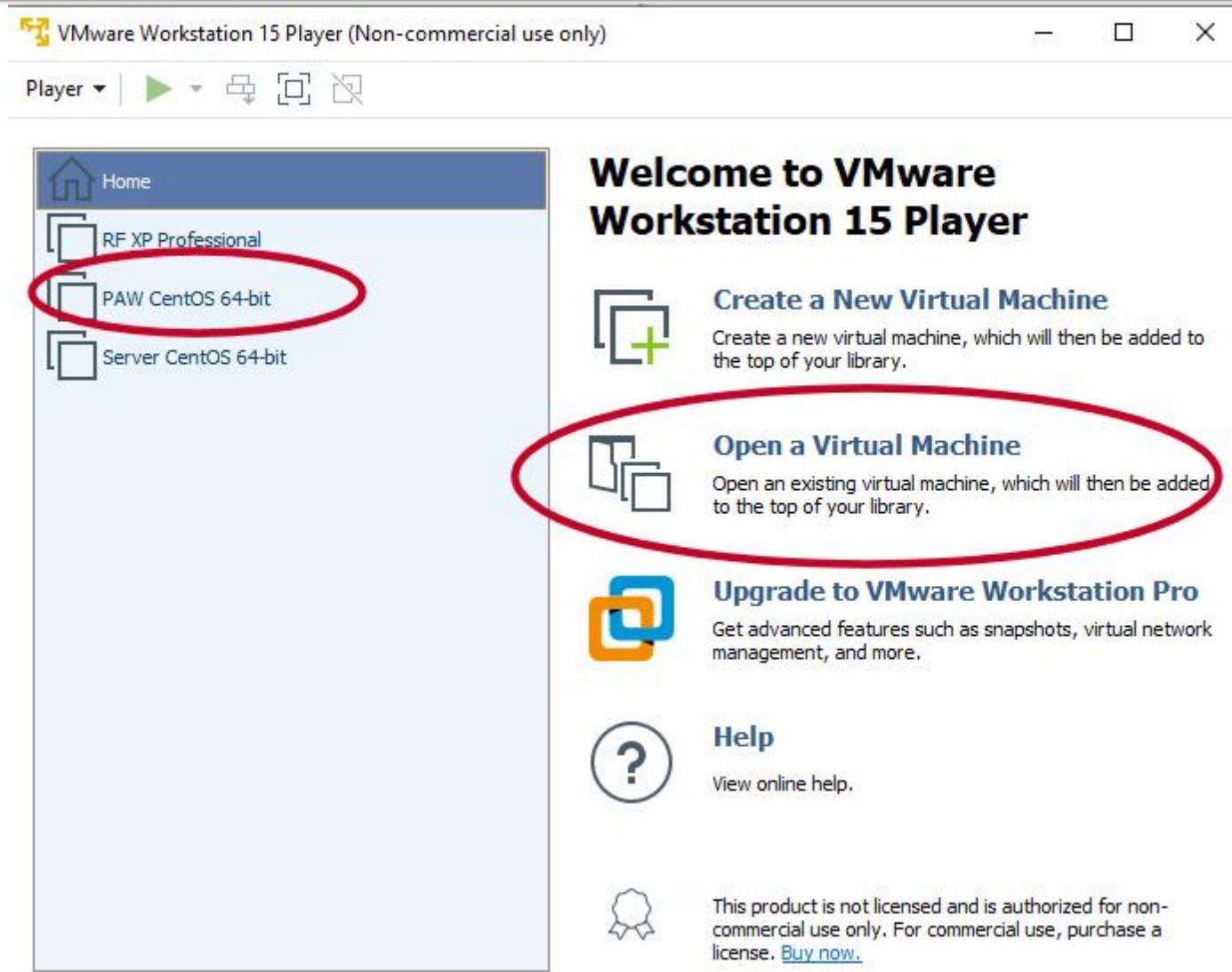
- Cloud ETTI: **RF-opto3#**



Reference Server

- Virtual Machine
- VMware Workstation Player Windows/Linux
 - Free (non-commercial use)
 - <https://www.vmware.com/products/workstation-player/workstation-player-evaluation.html>

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

Support applications

- WinSCP (FTP client, free)
 - <https://winscp.net/eng/download.php>
- Notepad ++ (text editor, advanced, free)
 - <https://notepad-plus-plus.org/downloads/>
- Putty (remote access)
 - <https://www.putty.org/>
- MySQL Workbench (gratuit, cont Oracle)
 - <https://www.mysql.com/products/workbench/>

IP address

- login, ifconfig
 - Ctrl + Alt + mouse

PAW CentOS 64-bit - VMware Workstation 15 Player (Non-commercial use only)

Player | || |

CentOS Linux 7 (Core)
Kernel 3.10.0-229.20.1.el7.x86_64 on an x86_64

tmpaw login: root
Password:
Last login: Wed Jun 17 05:35:16 from 192.168.0.106
[root@tmpaw ~]# ifconfig

PAW CentOS 64-bit - VMware Workstation 15 Player (Non-commercial use only)

Player | II |

CentOS Linux 7 (Core)
Kernel 3.10.0-229.20.1.el7.x86_64 on an x86_64

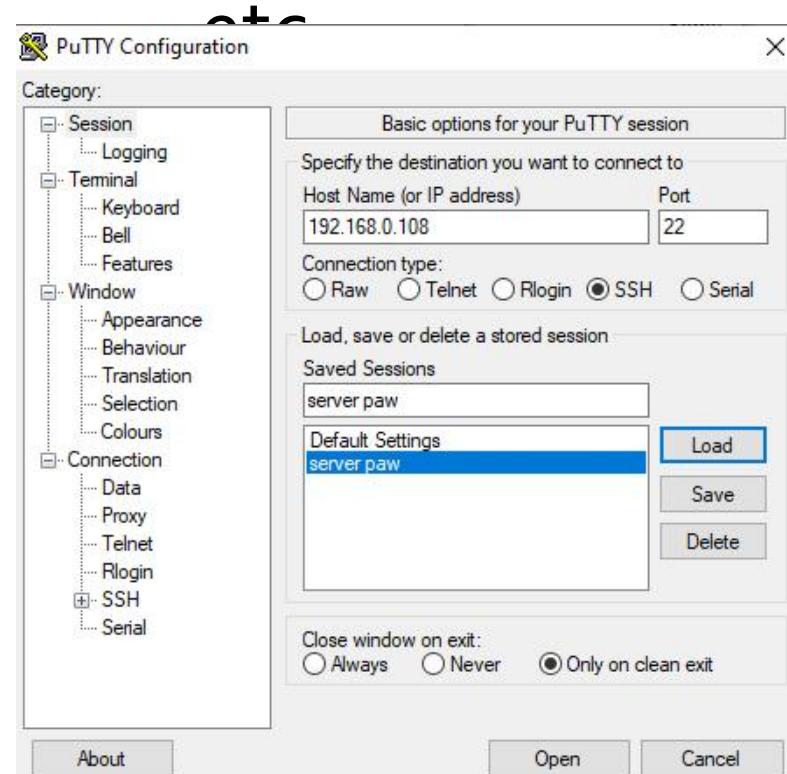
```
tmpaw login: root
Password:
Last login: Wed Jun 17 05:35:16 from 192.168.0.106
[root@tmpaw ~]# ifconfig
eno1677736: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.0.108 netmask 255.255.255.0 broadcast 192.168.0.255
       inet6 fe80::250:56ff:fe3e:1693 prefixlen 64 scopeid 0x20<link>
            ether 00:0c:0e:3e:16:93 txqueuelen 1000 (Ethernet)
            RX packets 104 bytes 12814 (12.5 KiB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 99 bytes 11847 (11.5 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
            loop txqueuelen 0 (Local Loopback)
            RX packets 16 bytes 1774 (1.7 KiB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 16 bytes 1774 (1.7 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[root@tmpaw ~]#
```

Putty

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

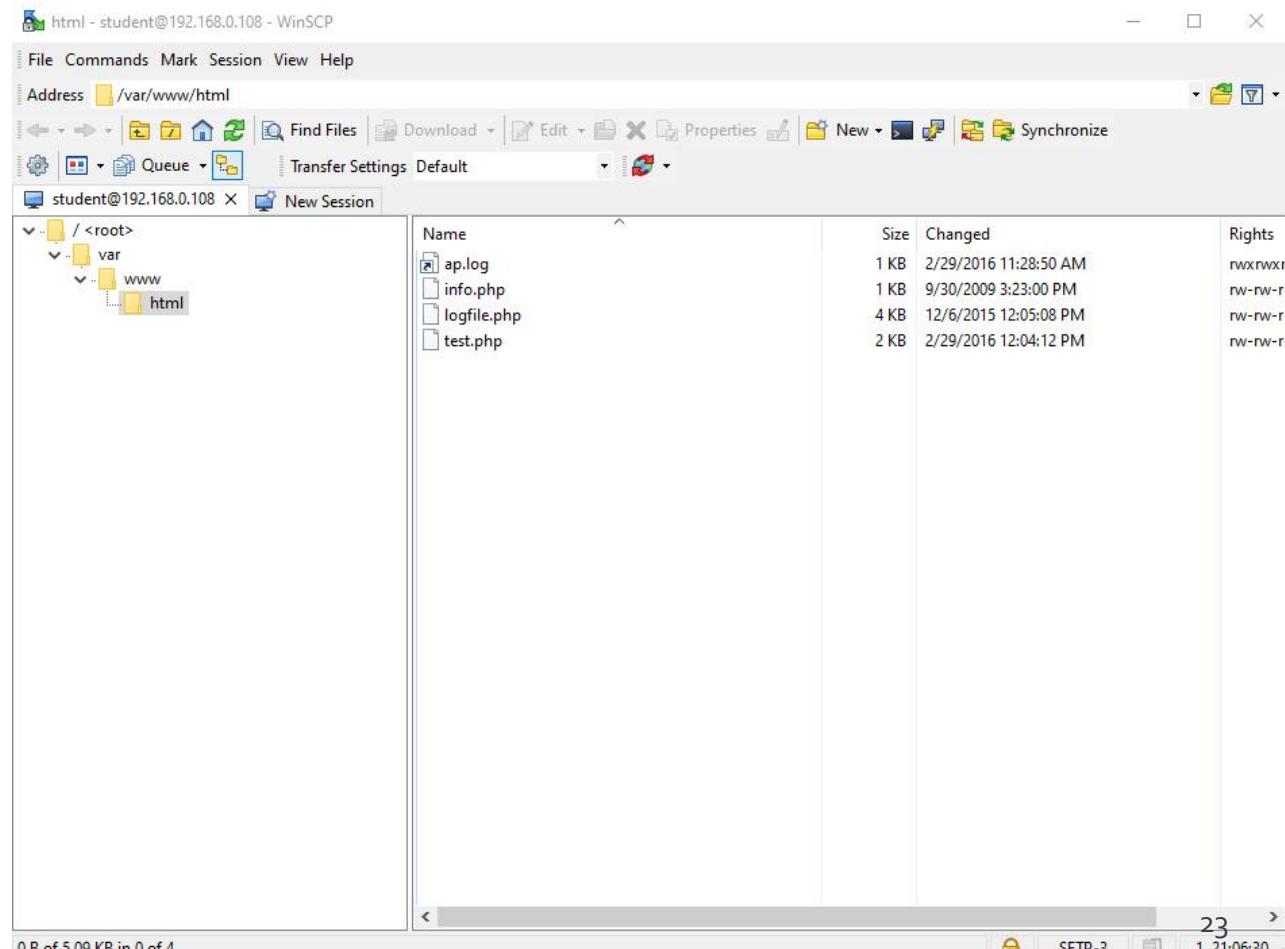
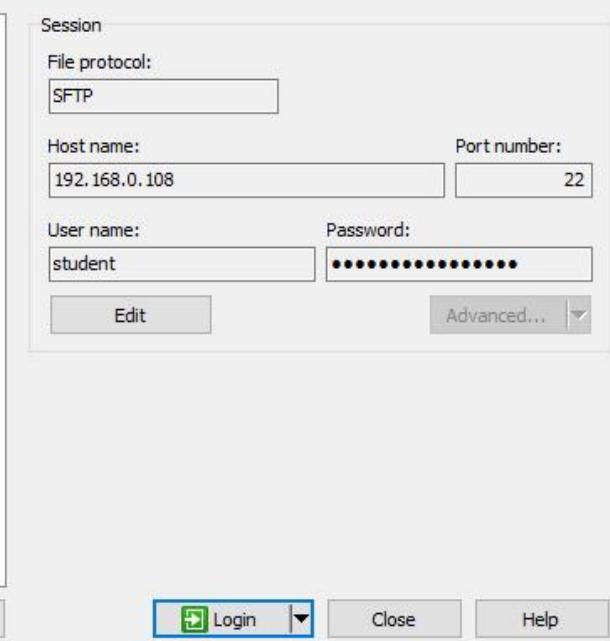


The screenshot shows a terminal window titled 'root@tmpaw:~'. The window title bar includes standard window control buttons. The terminal output is as follows:

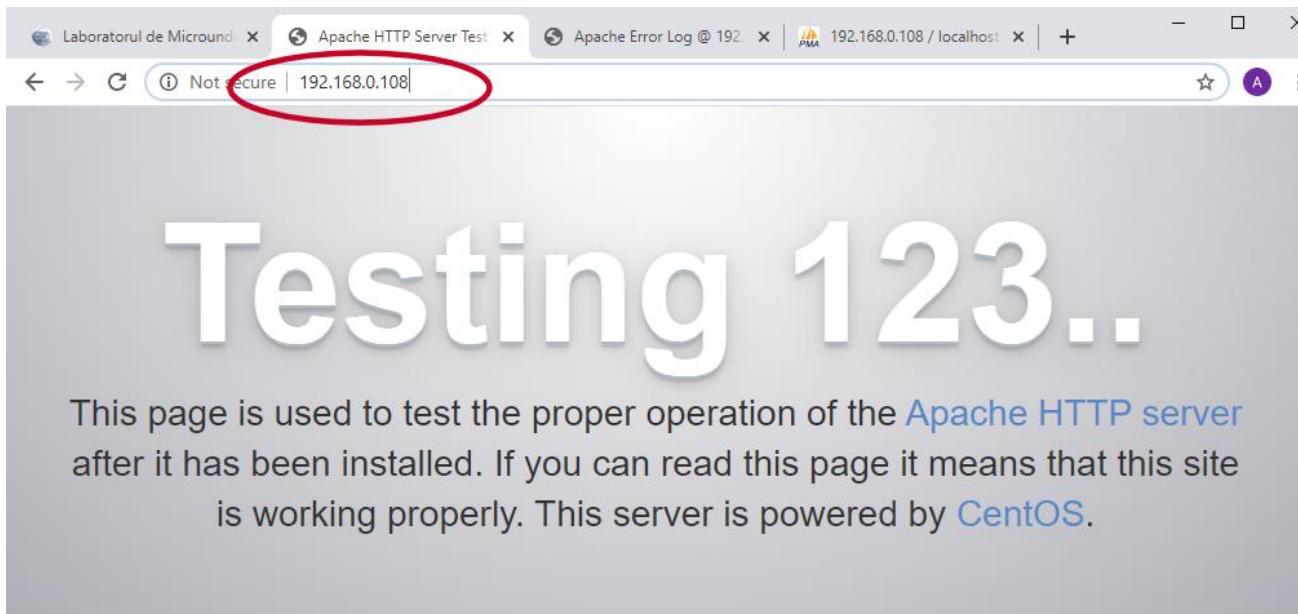
```
root@192.168.0.108's password:  
Last login: Wed Jun 17 05:34:04 2020 from 192.168.0.106  
[root@tmpaw ~]#
```

WinSCP

- FTP client
- upload files



Browser



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!



Server MySQL/MariaDB

The screenshot shows the phpMyAdmin interface running on a local host at 192.168.0.108. The browser tabs include 'Laboratorul de Micround', 'Apache HTTP Server Test', 'Apache Error Log @ 192...', and the main page '192.168.0.108 / localhost'. The address bar shows the URL: 192.168.0.108/phpmyadmin/#PMAURL-5:index.php?db=&table=&server=1&target=&token=f7dda12d42a1...'. The phpMyAdmin header shows 'Server: localhost'.

General Settings

- Change password
- Server connection collation: utf8mb4_unicode_ci

Appearance Settings

- Language: English
- Theme: pmahomme
- Font size: 82%
- More settings

Database server

- Server: Localhost via UNIX socket
- Server type: MariaDB
- Server version: 5.5.44-MariaDB - MariaDB Server
- Protocol version: 10
- User: root@localhost
- Server charset: UTF-8 Unicode (utf8)

Web server

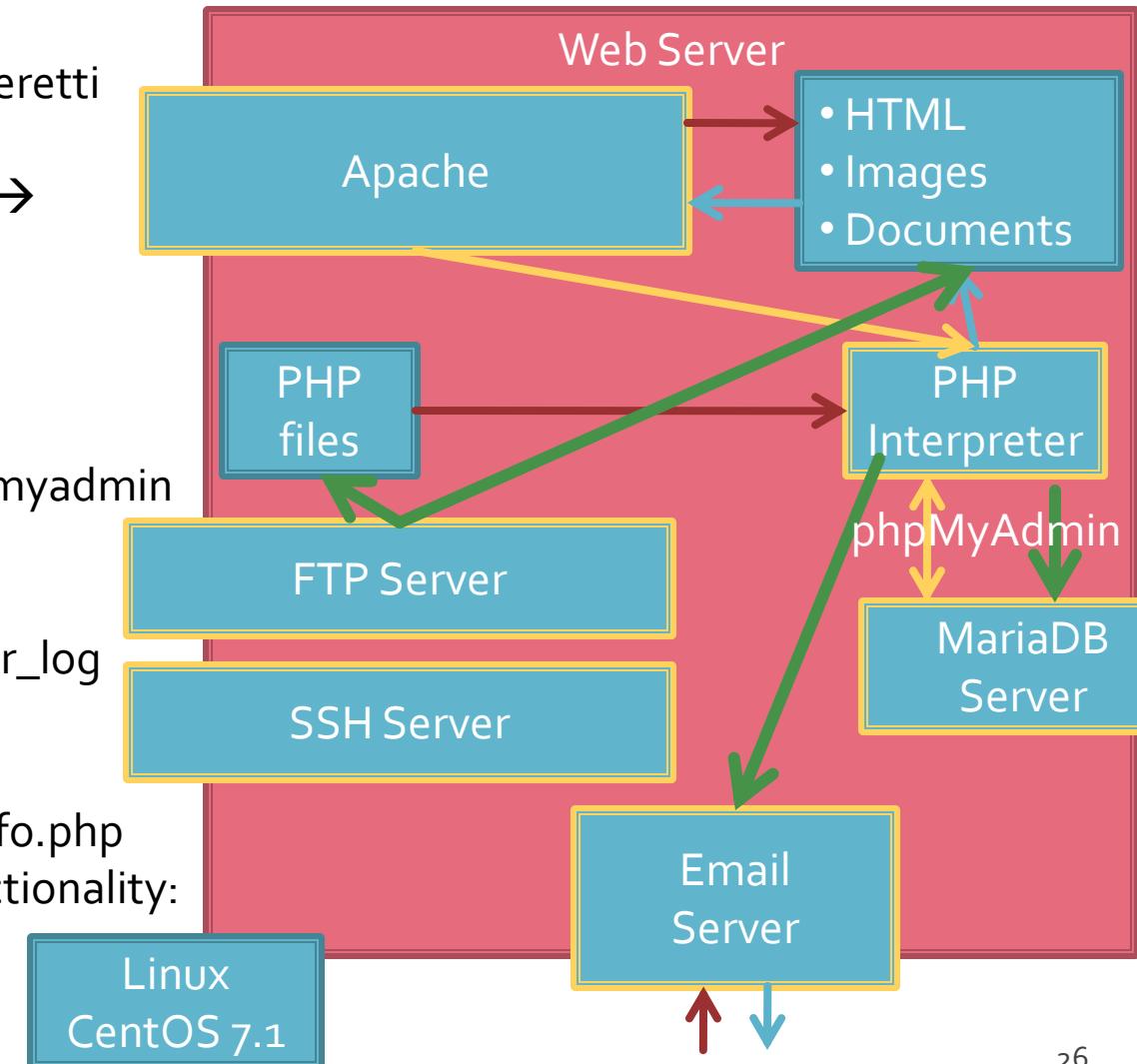
- Apache/2.4.6 (CentOS) OpenSSL/1.0.1e-fips mod_fcgid/2.3.9 PHP/5.4.16 mod_python/3.5.0- Python/2.7.5
- Database client version: libmysql - 5.5.44-MariaDB
- PHP extension: mysqli
- PHP version: 5.4.16

phpMyAdmin

- Version information: 4.4.15.1
- Documentation
- Wiki
- Official Homepage
- Contribute
- Get support
- List of changes

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

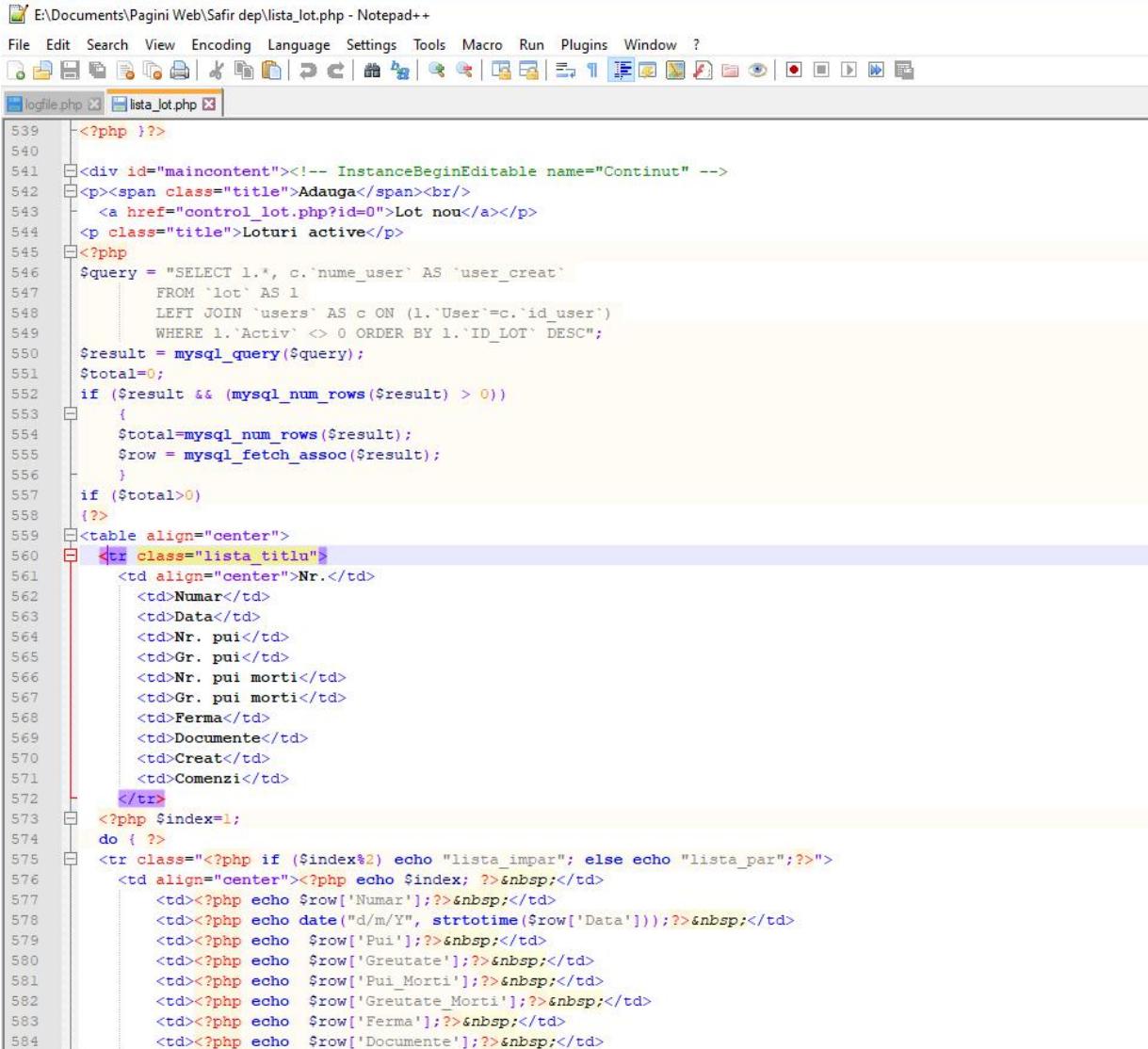


LAMP Reference Server

- 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

Introduction

Necessity



The screenshot shows a Notepad++ window displaying a PHP script. The script includes HTML and PHP code for generating a table. The table has columns for Numar, Data, Nr. pui, Gr. pui, Nr. pui morti, Gr. pui morti, Ferma, Documente, Creat, and Comenzi. The script uses MySQL queries to fetch data and loops through the results to build the table rows.

```
<?php
539 -<?php ?>
540
541 -<div id="maincontent"><!-- InstanceBeginEditable name="Continut" -->
542 -<p><span class="title">Adauga</span><br/>
543 -<a href="control_lot.php?id=0">Lot nou</a></p>
544 <p class="title">Loturi active</p>
545 <?php
546 $query = "SELECT l.* , c.`nume_user` AS `user_creat`
547     FROM `lot` AS l
548     LEFT JOIN `users` AS c ON (l.`User`=c.`id_user`)
549     WHERE l.`Activ` <> 0 ORDER BY l.`ID_LOT` DESC";
550 $result = mysql_query($query);
551 $total=0;
552 if ($result && (mysql_num_rows($result) > 0))
553 {
554     $total=mysql_num_rows($result);
555     $row = mysql_fetch_assoc($result);
556 }
557 if ($total>0)
558 {?
559 <table align="center">
560 <tr class="lista_titlu">
561 <td align="center">Nr.</td>
562 <td>Numar</td>
563 <td>Data</td>
564 <td>Nr. pui</td>
565 <td>Gr. pui</td>
566 <td>Nr. pui morti</td>
567 <td>Gr. pui morti</td>
568 <td>Ferma</td>
569 <td>Documente</td>
570 <td>Creat</td>
571 <td>Comenzi</td>
572 </tr>
573 <?php $index=1;
574 do { ?
575 <tr class="<?php if ($index%2) echo "lista_impar"; else echo "lista_par";?>">
576 <td align="center"><?php echo $index; ?>&nbsp;</td>
577 <td><?php echo $row['Numar'];?>&nbsp;</td>
578 <td><?php echo date("d/m/Y", strtotime($row['Data']));?>&nbsp;</td>
579 <td><?php echo $row['Pui'];?>&nbsp;</td>
580 <td><?php echo $row['Gruitate'];?>&nbsp;</td>
581 <td><?php echo $row['Pui_Morti'];?>&nbsp;</td>
582 <td><?php echo $row['Gruitate_Morti'];?>&nbsp;</td>
583 <td><?php echo $row['Ferma'];?>&nbsp;</td>
584 <td><?php echo $row['Documente'];?>&nbsp;</td>
```

HTML

E:\Documents\Pagini Web\Safir dep\lista_lot.php - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Win

logfile.php lista_lot.php

```
<?php }?>
540
541 <div id="maincontent"><!-- InstanceBeginEditable name="Conti
542 <p><span class="title">Adauga</span><br/>
543 <a href="control_lot.php?id=0">Lot nou</a></p>
544 <p class="title">Loturi active</p>
545 <?php
546 $query = "SELECT l.*, c.'nume_user' AS 'user_creat'
547     FROM `lot` AS l
548     LEFT JOIN `users` AS c ON (l.'User'=c.'id_user')
549     WHERE l.'Activ' <> 0 ORDER BY l.'ID_LOT' DESC";
550
551 $result = mysql_query($query);
552 $total=0;
553 if ($result && (mysql_num_rows($result) > 0))
554 {
555     $total=mysql_num_rows($result);
556     $row = mysql_fetch_assoc($result);
557 }
558 if ($total>0)
559 {
560     <table align="center">
561         <tr class="lista_titlu">
562             <td align="center">Nr.</td>
563             <td>Numar</td>
564             <td>Data</td>
565             <td>Nr. pui</td>
566             <td>Gr. pui</td>
567             <td>Nr. pui morti</td>
568             <td>Gr. pui morti</td>
569             <td>Ferma</td>
570             <td>Documente</td>
571             <td>Creat</td>
572             <td>Comenzi</td>
573         </tr>
574     <?php $index=1;
575     do { ?>
576         <tr class=<?php if ($index%2) echo "lista_in
577             <td align="center"><?php echo $index; ?>&nbsp;</td>
578             <td><?php echo $row['Numar']; ?>&nbsp;</td>
579             <td><?php echo date("d/m/Y", strtotime($row['Data'])) ?>
580             <td><?php echo $row['Pui']; ?>&nbsp;</td>
581             <td><?php echo $row['Greutate']; ?>&nbsp;</td>
582             <td><?php echo $row['Pui_Morti']; ?>&nbsp;</td>
583             <td><?php echo $row['Greutate_Morti']; ?>&nbsp;</td>
584             <td><?php echo $row['Ferma']; ?>&nbsp;</td>
585             <td><?php echo $row['Documente']; ?>&nbsp;</td>
```

Nr.	Numar	Data	Nr. pui	Gr. pui	Nr. pui morti	Gr. pui morti	Ferma	Documente	Creat	Comenzi
------------	--------------	-------------	----------------	----------------	----------------------	----------------------	--------------	------------------	--------------	----------------

HTML + PHP

E:\Documents\Pagini Web\Safir dep\lista_lot.php - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

file.php lista_lot.php

```
539 <?php }?>
540
541 <div id="maincontent"><!-- InstanceBeginEditable name="Continut" -->
542 <p><span class="title">Adauga</span><br/>
543 <a href="control_lot.php?id=0">Lot nou</a></p>
544 <p class="title">Loturi active</p>
545 <?php
546 $query = "SELECT l.*, c.'nume_user' AS 'user_creat'
547     FROM `lot` AS l
548     LEFT JOIN `users` AS c ON (l.'User'=c.'id_user')
549     WHERE l.'Activ' <> 0 ORDER BY l.'ID_LOT' DESC";
550 $result = mysql_query($query);
551 $total=0;
552 if ($result && (mysql_num_rows($result) > 0))
553 {
554     $total=mysql_num_rows($result);
555     $row = mysql_fetch_assoc($result);
556 }
557 if ($total>0)
558 {?>
559 <table align="center">
560 <tr class="lista_titlu">
561     <td align="center">Nr.</td>
562     <td>Numar</td>
563     <td>Data</td>
564     <td>Nr. pui</td>
565     <td>Gr. pui</td>
566     <td>Nr. pui morti</td>
567     <td>Gr. pui morti</td>
568     <td>Ferma</td>
569     <td>Documente</td>
570     <td>Creat</td>
571     <td>Comenzi</td>
572 </tr>
573 <?php $index=1;
574 do { ?>
575     <tr class="<?php if ($index%2) echo "lista_impar"; else echo "lista_par";?>">
576         <td align="center"><?php echo $index; ?>&ampnbsp</td>
577         <td><?php echo $row['Numar'];?>&ampnbsp</td>
578         <td><?php echo date("d/m/Y", strtotime($row['Data']));?>&ampnbsp</td>
579         <td><?php echo $row['Pui'];?>&ampnbsp</td>
580         <td><?php echo $row['Greutate'];?>&ampnbsp</td>
581         <td><?php echo $row['Pui_Morti'];?>&ampnbsp</td>
582         <td><?php echo $row['Greutate_Morti'];?>&ampnbsp</td>
583         <td><?php echo $row['Ferma'];?>&ampnbsp</td>
584         <td><?php echo $row['Documente'];?>&ampnbsp</td>
```

HTML + PHP + SQL

E:\Documents\Pagini Web\Safe dep\lista_lot.php - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

file.php lista_lot.php

```
539 <?php ?>
540
541 <div id="maincontent"><!-- InstanceBeginEditable name="Continut" -->
542 <p><span class="title">Adauga</span><br>
543 <a href="control_lot.php?id=0">Lot nou</a></p>
544 <p class="title">Loturi active</p>
545 <?php
546 $query = "SELECT l.*, c.`nume_user` AS `user_creat`
547 FROM `lot` AS l
548 LEFT JOIN `users` AS c ON (l.`User`=c.`id_user`)
549 WHERE l.`Activ` <> 0 ORDER BY l.`ID_LOT` DESC";
550 $result = mysql_query($query);
551 $total=0;
552 if ($result && (mysql_num_rows($result) > 0))
553 {
554 $total=mysql_num_rows($result);
555 $row = mysql_fetch_assoc($result);
556 }
557 if ($total>0)
558 {?>
559 <table align="center">
560 <tr class="lista_titlu">
561 <td align="center">Nr.</td>
562 <td>Numar</td>
563 <td>Data</td>
564 <td>Nr. pui</td>
565 <td>Gr. pui</td>
566 <td>Nr. pui morti</td>
567 <td>Gr. pui morti</td>
568 <td>Farma</td>
569 <td>Documente</td>
570 <td>Creat</td>
571 <td>Comenzi</td>
572 </tr>
573 <?php $index=1;
574 do { ?>
575 <tr class="<?php if ($index%2) echo "lista_impar"; else echo "lista_par";?>">
576 <td align="center"><?php echo $index; ?>&ampnbsp</td>
577 <td><?php echo $row['Numar'];?>&ampnbsp</td>
578 <td><?php echo date("d/m/Y", strtotime($row['Data']));?>&ampnbsp</td>
579 <td><?php echo $row['Pui'];?>&ampnbsp</td>
580 <td><?php echo $row['Greutate'];?>&ampnbsp</td>
581 <td><?php echo $row['Pui_Morti'];?>&ampnbsp</td>
582 <td><?php echo $row['Greutate_Morti'];?>&ampnbsp</td>
583 <td><?php echo $row['Farma'];?>&ampnbsp</td>
584 <td><?php echo $row['Documente'];?>&ampnbsp</td>
```

```
<?php
$query = "SELECT l.* , c.`nume_user` AS `user_creat`
FROM `lot` AS l
LEFT JOIN `users` AS c ON (l.`User`=c.`id_user`)
WHERE l.`Activ` <> 0 ORDER BY l.`ID_LOT` DESC";
$result = mysql_query($query);
$total=0;
if ($result && (mysql_num_rows($result) > 0))
{
    $total=mysql_num_rows($result);
    $row = mysql_fetch_assoc($result);
}
```

Hypertext PreProcessor

PHP

Escaping possibilities

- All versions offer the same HTML source for the browser
- The one that leaves the HTML structure outside the escaping tags and only the dynamic data results from PHP processing is **recommended**
- HTML + PHP code is interpreted much more elegantly in WYSIWYG editors

```
<h2>Transaction result</h2>
<?php echo '<p>Command received</p>';?>
```

```
<h2>Transaction result</h2>
<p><?php echo 'Command received';?></p>
```

```
<?php echo '<h1>Online Shop XXX SRL</h1>';?>
<?php echo '<h2>Transaction result</h2>';?>
<?php echo '<p>Command received</p>';?>
```

```
<?php
echo '<h1>Online Shop XXX SRL</h1>';
echo '<h2>Transaction result</h2>';
echo '<p>Command received</p>';
?>
```

PHP – Variables

`$var = expression`

- Controlul variabilelor se face automat, “on the fly”
 - A variable starts with the **\$** sign, followed by the name of the variable
 - PHP has no command for declaring a variable. It is created the moment you first assign a value to it
 - PHP automatically associates a data type to the variable, depending on its value
 - Variable names are case-sensitive (`$age` and `$AGE` are two different variables)

PHP – data types

- PHP automatically associates a data type to the variable, depending on its value
- automatic conversions are often **not** numerical but **“human”**
- In PHP 7, type declarations were added for function arguments, return values and class properties

```
<?php  
echo $variable ; // type Null, neinitializat – valoare NULL (doar)  
$variable = "o"; // $ variable type string (ASCII 48)  
$variable += 2; // $ variable type integer (2)  
$variable = $ variable + 1.3; // $variable type float (3.3)  
$variable = 5 + "10 obiects"; // $variable type integer (15)  
$var2=5; // $var2 type integer (5)  
$variable = $var2."10 obiects"; // $variable type string "510 obiects"  
?>
```

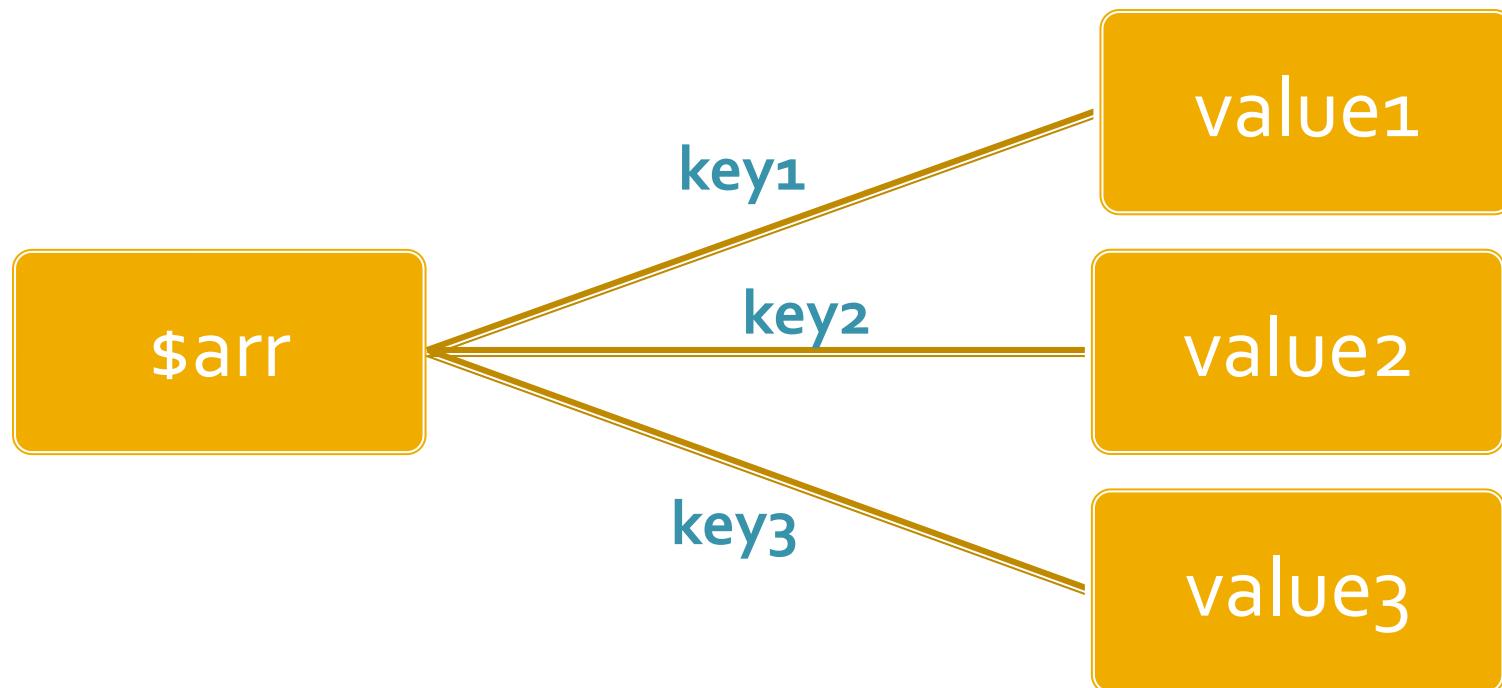
Arrays

Arrays in PHP

- An array in PHP is actually an ordered map. A map is a type that associates **values** to **keys**
- unlike C, Basic, **keys** are **not** required to be **integers**, can be **strings**
- default keys (if not otherwise specified) are consecutive integers with first key 0.
- defining a key / value pair
 - key => value
- create an array
 - `$arr = array("definition of key / value pairs")`
 - pairs: key => value, key => value, ...

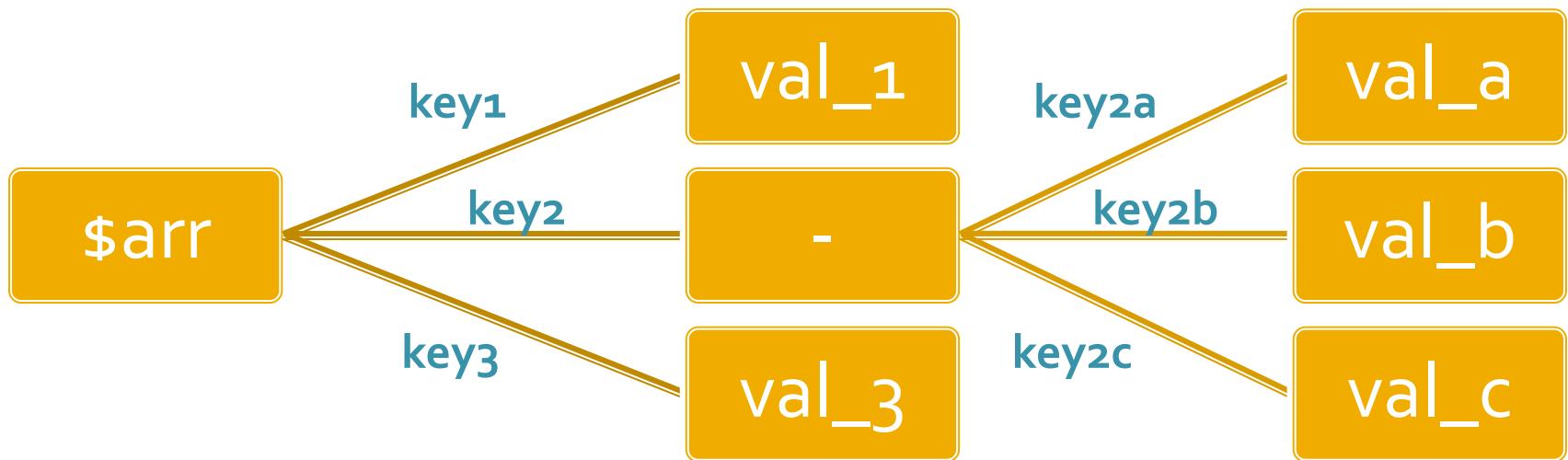
Array = Logical tree

- \$arr = array(key1 => value1, key2 => value2, key3 => value3)



Array = Logical tree

- In particular, one or more of the values can in turn be an array, leading to **branching** of the tree
- `$arr = array(key1 => val_1, key2 => array(key2a => val_a, key2b => val_b, key2c => val_c), key3 => val_3)`



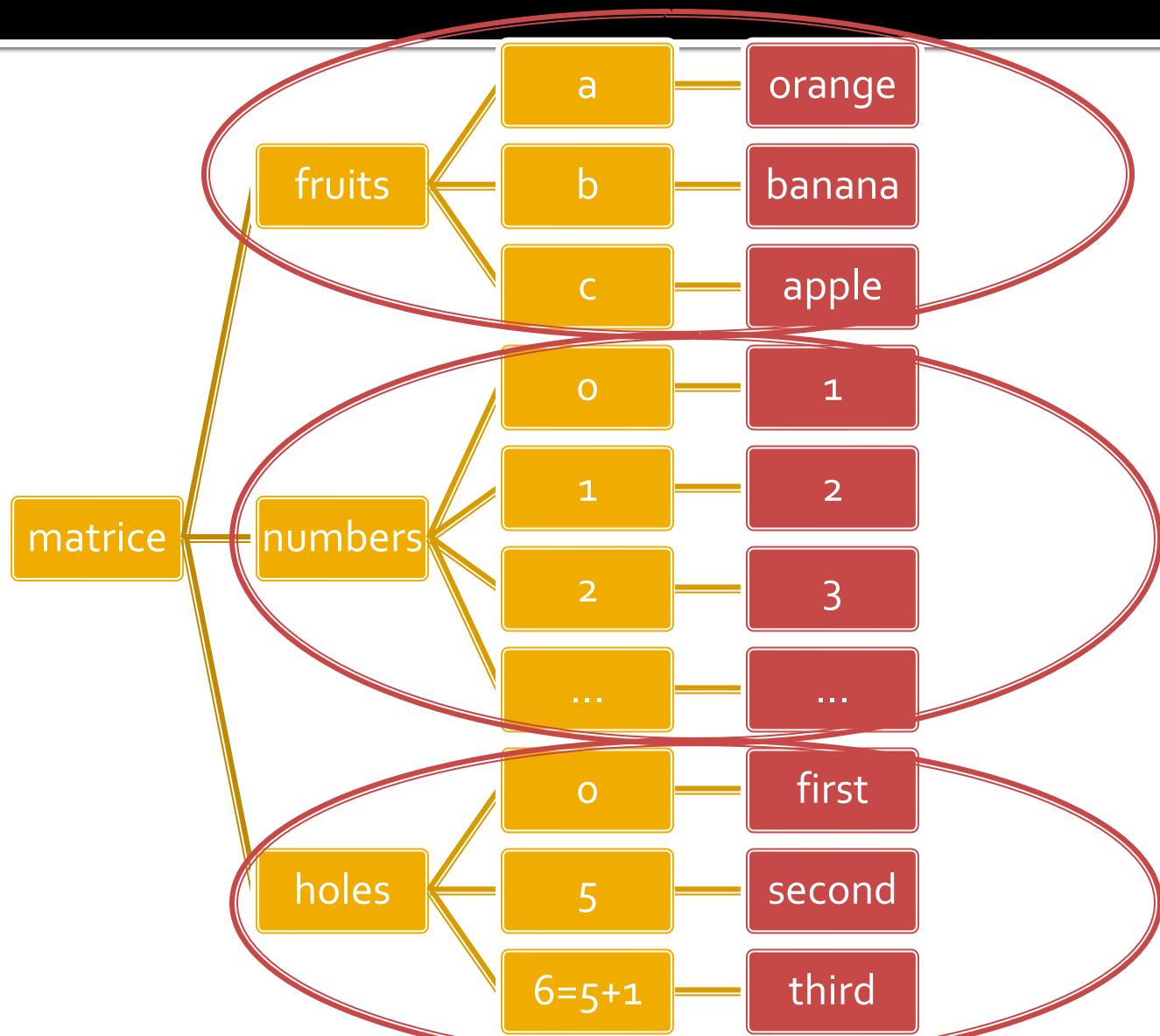
Arrays in PHP

```
$matr = array(1, 2, 3, 4, 5);  
  
$matr[0]=1  
$matr[1]=2  
$matr[2]=3  
$matr[3]=4  
$matr[4]=5
```

```
$matr = array('a' => 1, 'b' => 2, 3, 4, 5);  
  
$matr['a']=1  
$matr['b']=2  
$matr[0]=3  
$matr[1]=4  
$matr[2]=5
```

```
$matrice= array (  
    "fruits" => array("a" => "orange", "b" => "banana", "c" => "apple"),  
    "numbers" => array(1, 2, 3, 4, 5, 6),  
    "holes" => array("first", 5 => "second", "third")  
);
```

Arrays in PHP



View array content (debug)

```
echo "<pre>";
print_r ($matr);
echo "</pre>";
```

```
$matr= array (
"fruits" =>
array("a" => "orange", "b" => "banana", "c" => "apple",
"ultim"),
"numbers" =>
array(1, 2, 3, 4, 5, 6),
"holes" =>
array("first", 5 => "second", "third")
);
echo $matr;
echo "<pre>";
print_r ($matr);
echo "</pre>";
```

```
Array
(
    [fruits] => Array
    (
        [a] => orange
        [b] => banana
        [c] => apple
        [0] => ultim
    )
    [numbers] => Array
    (
        [0] => 1
        [1] => 2
        [2] => 3
        [3] => 4
        [4] => 5
        [5] => 6
    )
    [holes] => Array
    (
        [0] => first
        [5] => second
        [6] => third
    )
)
```

Foreach loop

- **foreach (array_expression as \$key => \$value) statement**
- **foreach (array_expression as \$value) statement**
- foreach construct is used to loop through each key/value pair in an array
- On each iteration assign the current element's key to the local variable **\$key** and the value of the current element is assigned to the local variable **\$value** (scope: statement)
- foreach() works with a **copy** of the array, you cannot change the original array inside the statement
 - ```
foreach ($arr as $key => $value) {
 $value = 'other value'; //doesn't work
 $arr[$key] = 'other value'; //works
}
```

# Example – foreach

```
$matr = array (
 "fruits" => array("a" => "orange", "b" => "banana", "c" => "apple", "ultim"),
 "numbers" => "in loc de numere",
 "holes" => "in loc de ce era"
);
foreach ($matr as $cheie => $continut)
 echo "matr[".$cheie."]=".$continut."
";
```

```
matr[fruits]=Array
matr[numbers]=in loc de numere
matr[holes]=in loc de ce era
```

# PHP Global Variables - Superglobals

# PHP Global Variables - Superglobals

- PHP Global Variables - Superglobals (predefined variables)
  - are always accessible, regardless of scope
  - Examples:
    - `$_SERVER` — Server and execution environment information
    - `$_GET` — HTTP GET variables
    - `$_POST` — HTTP POST variables
    - `$_FILES` — HTTP File Upload variables
    - `$_REQUEST` — HTTP Request variables
    - `$_SESSION` — Session variables
    - `$_ENV` — Environment variables
    - `$_COOKIE` — HTTP Cookies

# Forms in HTML

- required for the user to send data to the server
- <form>...</form>
- Specific attributes:
  - action: address of the document which receives the data
    - <form **action**="**<?php echo \$\_SERVER['PHP\_SELF'];?>**">
    - <form **action**="actiuni/file2.html">
  - method: method for transmitting data: post or get
    - <form **method**="post" **action**= ... >

# Methods

- **post** : data is transmitted as a block (inside the body of the HTTP request)
- **get** : appends form-data into the URL :  
`results.php?prob=81&an=2009`
- **get** must be used only for “idempotent” data,
  - no collateral effects
  - no change in server status (databases, etc)
- we can emulate a form (**get**) by writing links appropriately

# Form elements

- inside <form>...</form>
  - input
  - select/option
  - textarea
  - button
- **all** elements will have a name
  - attribute: **name=""**
  - the name will be directly present in the URI generated by get, or will be a variable sent by post
- data is effectively sent by a **type="submit"** button

# Examples

```
<input name="textfield" type="text" value="ceva" />

<input name="Ok" type="submit" value="Trimite" />

<label><input name="check" type="checkbox" value="5" checked />check1</label>

<label><input name="RG1" type="radio" value="a" checked="checked" />but1</label>
<label><input name="RG1" type="radio" value="b" />but2</label>

<input name="hid" type="hidden" value="6" />
```

The screenshot shows a web page with the following elements:

- A text input field containing the value "ceva".
- A submit button labeled "Trimite".
- A checkbox labeled "check1" which is checked.
- Two radio buttons labeled "but1" and "but2".

# TEXTAREA/SELECT

```
<textarea name="textarea" cols="20" rows="5">Un text
initial</textarea>


```

```
<select name="select." size="3">
 <option value="1" selected="selected">opt1</option>
 <option value="2">opt2</option>
 <option value="3">opt3</option>
</select>


```

```
<select name="select...">
 <option value="1" selected="selected">opt1</option>
 <option value="2">opt2</option>
 <option value="3">opt3</option>
</select>
```

The screenshot shows a web page with two main components. On the left, there is a text area containing the text "Un text initial". To its right is a larger select element with a size of 3, displaying three options: "opt1", "opt2", and "opt3", where "opt1" is currently selected. Below this is a smaller select element with a size of 1, showing the option "opt1" followed by a dropdown arrow.

# Getting user submitted data

- When a user submits the data by clicking on "Submit", the form data is found in the file specified in the **action** attribute of the <form> tag in one of the superglobal variables:
  - `$_POST` – method="post"
  - `$_GET` – method="get"
  - `$_REQUEST` – both methods
- the superglobal variables are **arrays** cu **string keys** controlled by the **name** attribute of the input element
  - `<input type="text" name="books_quant" size="3" maxlength="3" />`
  - `$_POST['books_quant']` contains the user input

# Organizing \$\_POST

- **name** attributes in the form inputs become **keys** in the superglobal array `$_POST`
  - `<input type="text" name="books_quant" size="3" maxlength="3" />`
  - `$_POST['books_quant']` contains the user input
- creating **name** "array like", we can control branching of `$_POST` grouping input elements in the form as required
  - `<input type="text" name="quant[books]" size="3" maxlength="3" />`
  - `$_POST ['quant'] ['books']` contains the user input

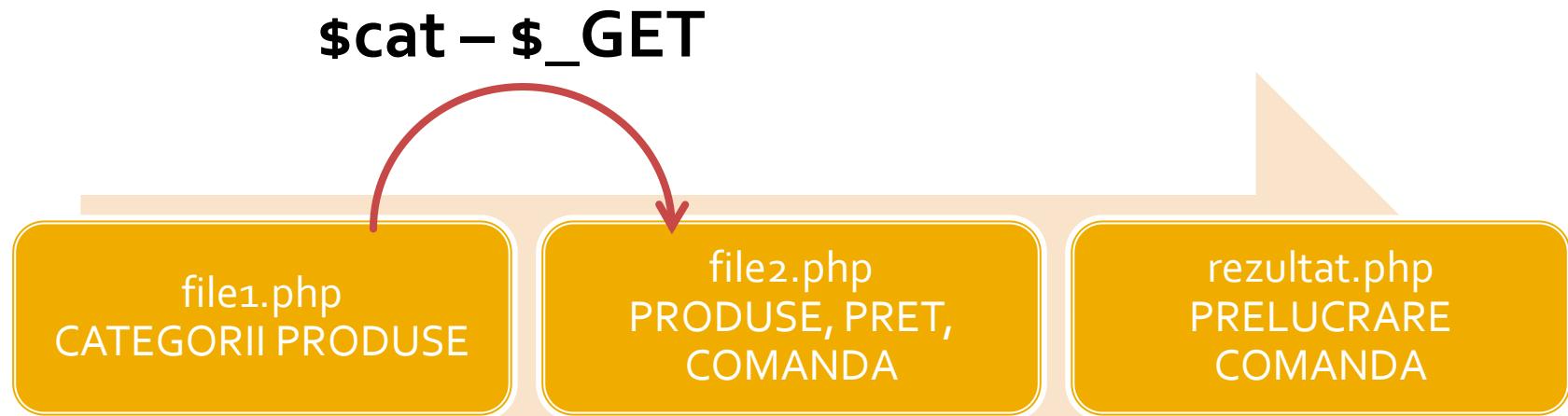
# Active Links

# Methods

- **post** : data is transmitted as a block (inside the body of the HTTP request)
- **get** : appends form-data into the URL :  
`results.php?prob=81&an=2009`
- **get** must be used only for “idempotent” data,
  - no collateral effects
  - no change in server status (databases, etc)
- we can emulate a form (**get**) by writing links appropriately

# Active Links

- used to send specific **information** to the target file
- in **file1.php**
  - <a href="**file2.php?categ=<?php echo \$cat;?>**"> <?php echo **\$cat;?>** </a>
- in **file2.php**
  - **\$\_GET['categ']**="value **\$cat** associated to that specific link"



# Accessing a MySQL server from PHP

# Accessing a MySQL server from PHP

- PHP has two extensions in order to interact with a MySQL server (local or remote), these must be activated in `php.ini`.
  - `mysql`
  - `mysqli` (improved: functions for MySQL > 4.1)
- A database can be accessed if the PHP script knows a MySQL server user with access rights
  - usually every application has its specific MySQL user with specific access rights
- A database can also be created from PHP, but it is not the recommended method if it is not necessary
  - the code is difficult to implement and used only once

# Accessing a MySQL server from PHP

- `mysql_connect`
  - Open a connection to a MySQL Server
  - resource `mysql_connect` ( string `server` , string `user`, string `password`)
  - returns a MySQL link identifier on success or false on failure
- `mysql_query`
  - Send a MySQL query
  - resource `mysql_query` ( string `query` [, resource `link_identifier`] )
  - result
    - SELECT, SHOW, DESCRIBE or EXPLAIN: returns a resource or false
    - UPDATE, DELETE, DROP, etc: returns true/false

# Accessing a MySQL server from PHP

- `mysql_fetch_assoc`
  - Returns an **associative array** that corresponds to the fetched row and moves the internal data pointer ahead, or **false** if there are no more rows. The **string** keys of the array are the field names (columns) in the DB table
  - array `mysql_fetch_assoc ( resource result )`
- `mysql_fetch_row`
  - Returns an **numerical** array that corresponds to the fetched row, or false
  - array `mysql_fetch_row ( resource result )`

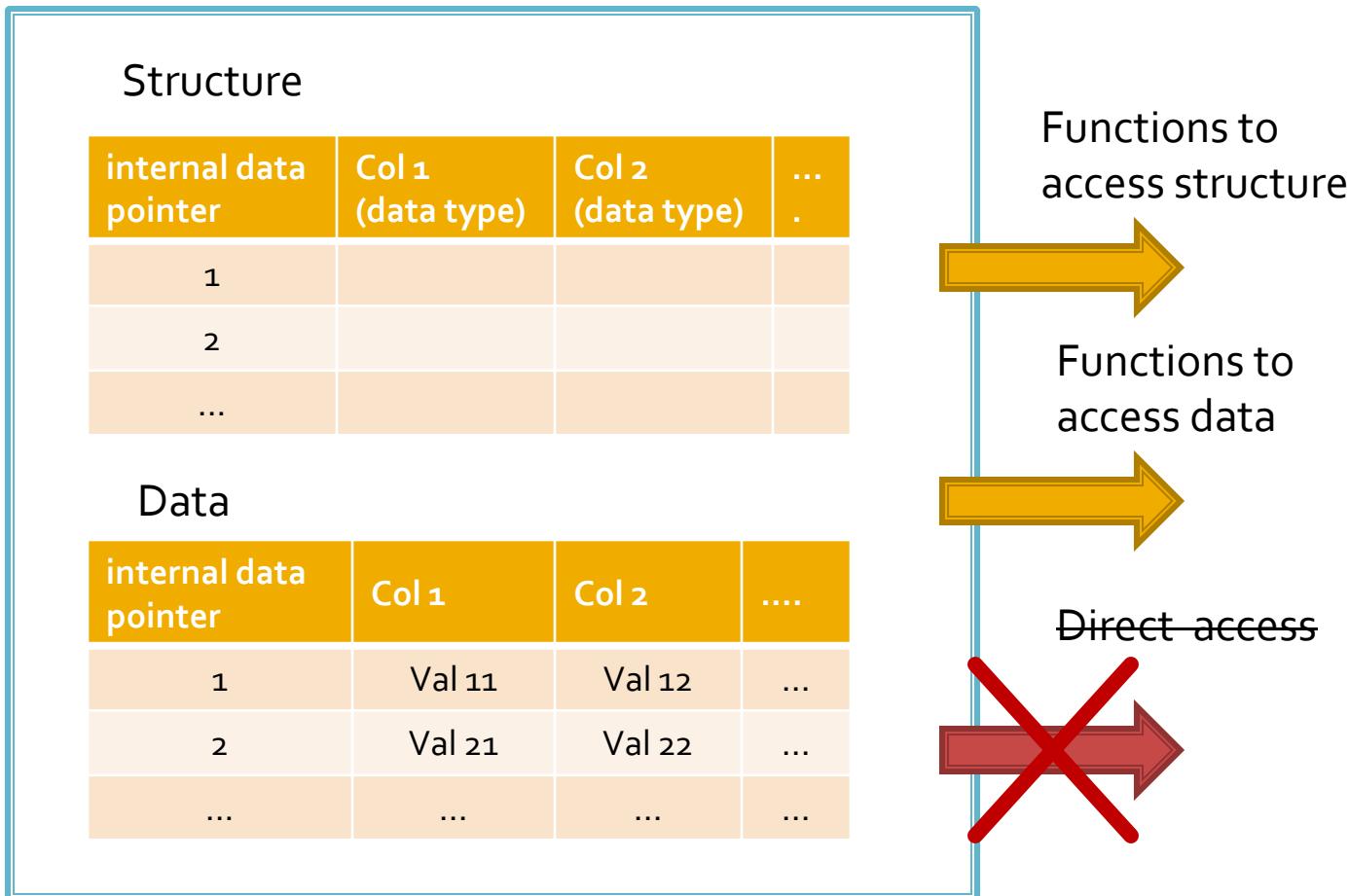
# Accessing a MySQL server from PHP

- `mysql_fetch_array`
  - groups functionality of `mysql_fetch_assoc` and `mysql_fetch_row`
  - array `mysql_fetch_array` ( resource `result` [, int `result_type`] )
  - `MYSQL_ASSOC`, `MYSQL_NUM`, `MYSQL_BOTH` (default)
- `mysql_data_seek`
  - moves the internal row pointer of the MySQL result associated with the specified result identifier to point to the specified row number. The next call to a MySQL fetch function would return that row
  - bool `mysql_data_seek` ( resource `result`, int `row_number` )

# MySQL resources

- Resources are a combination between
  - Structured data (values + structure) resulted from a SQL query
  - functions to access those values/structure
- Analogy with OOP
  - a special "class" created following a SQL query with predefined procedures to access the results of that query

# MySQL resources



# MySQL resources

- Structure access functions are rarely used
  - most applications are designed on a fixed DB structure, and the structure of the received data is known
  - exception: general DB applications, eg: PhpMyAdmin
- Most data access functions are characterized by sequential access
  - the data is read line by line
  - simultaneously, internal data pointer advances to the next position, preparing the next read

# MySQL resources

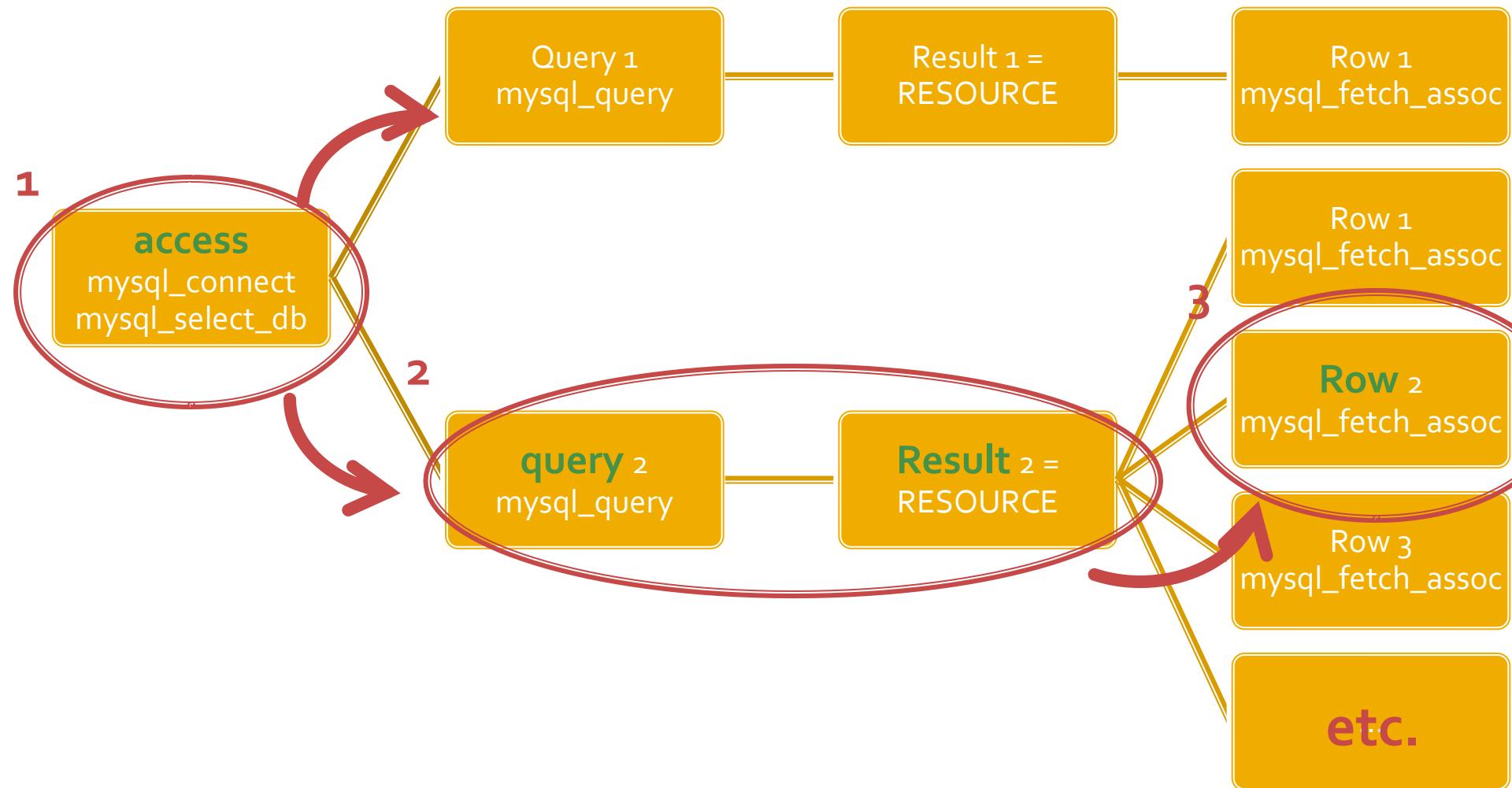
- Functions are optimized for use in a **do {} while()** loop or a **while() {}** loop
  - Returns **false** if there are no more rows
- typically we fetch a single row (`mysql_fetch_assoc`) followed by a **do {} while()** loop
  - to allow a "problem detection" code to run only once
  - or generate "single steps" for displaying a successful result (eg: table head)

# Example

```
$hostname = "localhost";
$database = "world";
$username = "web";
$password = "ceva";
$conex= mysql_connect($hostname, $username, $password);
mysql_select_db($database, $ conex);
```

```
$query = "SELECT `Code`, `Name`, `Population` FROM `country` AS c ";
$result = mysql_query($ query, $ conex) or die(mysql_error());
$row_result = mysql_fetch_assoc($ result);
$totalRows_result = mysql_num_rows($ result);
```

# Accessing a MySQL server from PHP



!! IMPORTANT

**PHP > 5.5**

# PHP 5.5, 7, 8

- Starting with PHP 5.5.0 the mysql extension was **deprecated**
  - any function from this extension generates an **E\_DEPRECATED** error/warning
  - Starting with PHP 7.0.0 the mysql extension was **removed**
- Instead we must use:
  - mysqli extension (MySQL Improved)
  - PDO extension (PHP Data Objects)

# mysqli extension

- Other than enhanced security offers access to newer facilities of the DB server:
  - Prepared Statements (speed, security)
    - server side
    - client side
  - server Stored Procedures (speed, security)
  - Multiple Statements
  - Transactions (integrity)

# mysqli extension

- Supports two interfaces
  - procedural interfaces (similar to mysql)
  - OOP (similar to PDO)
- Procedural interface (almost) identical to the original mysql extension
  - easy transition
  - small differences (parameter)

# mysqli – Procedural

```
<?php
$mysqli = mysqli_connect("example.com", "user", "password", "database");
$res = mysqli_query($mysqli, "SELECT 'Please do not use the mysql extension ' AS _msg FROM DUAL");
$row = mysqli_fetch_assoc($res);
echo $row['_msg'];

mysql = mysqli_connect("example.com", "user", "password");
mysql_select_db("test");
$res = mysql_query("SELECT ' for new developments.' AS _msg FROM DUAL", $mysql);
$row = mysql_fetch_assoc($res);
echo $row['_msg'];
?>
```

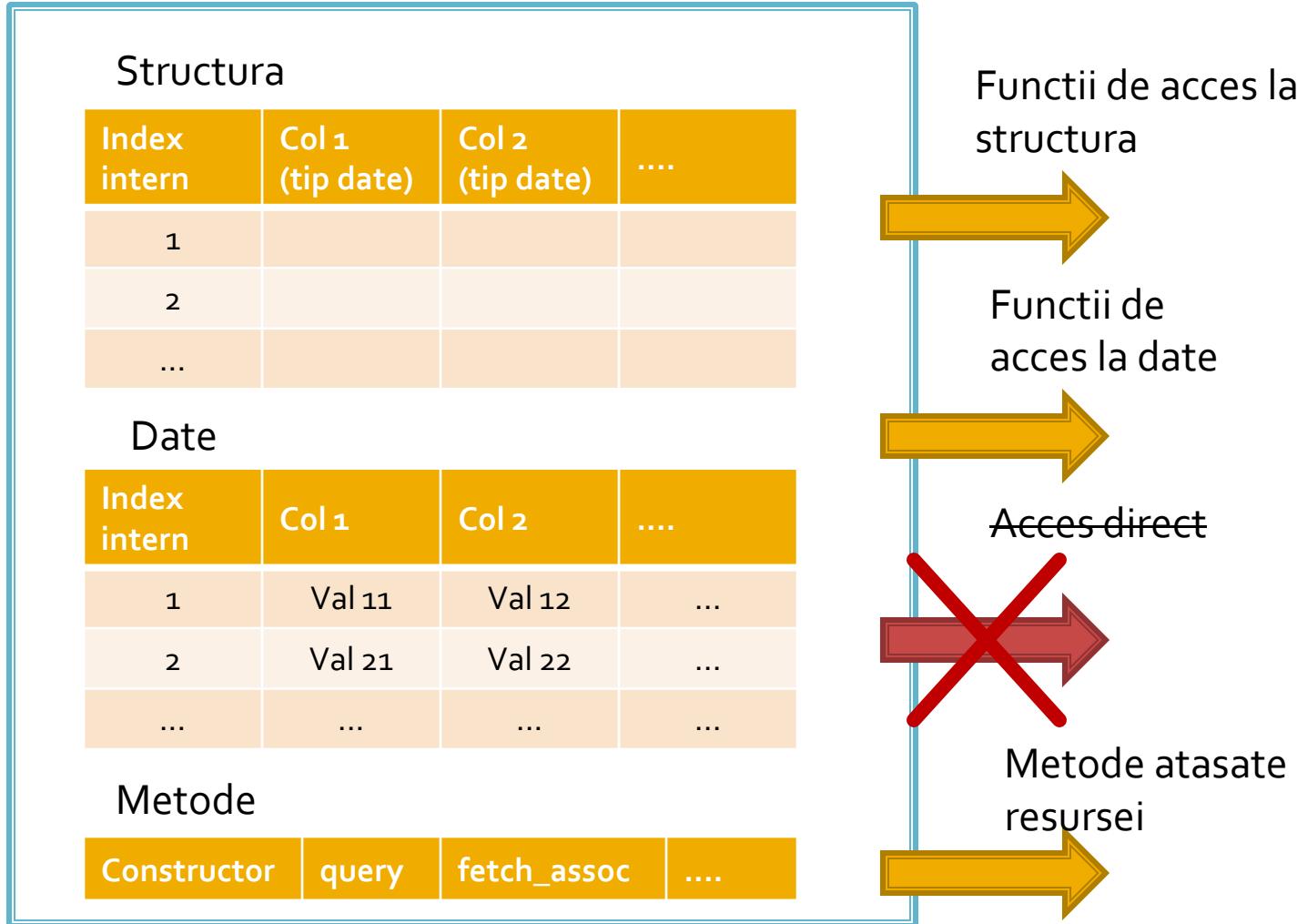
- all mysql functions have a mysqli equivalent
- most functions have the same parameters in the same order
- there are functions with small differences (Ex: **mysqli\_connect, mysqli\_query**)

# mysqli – OOP

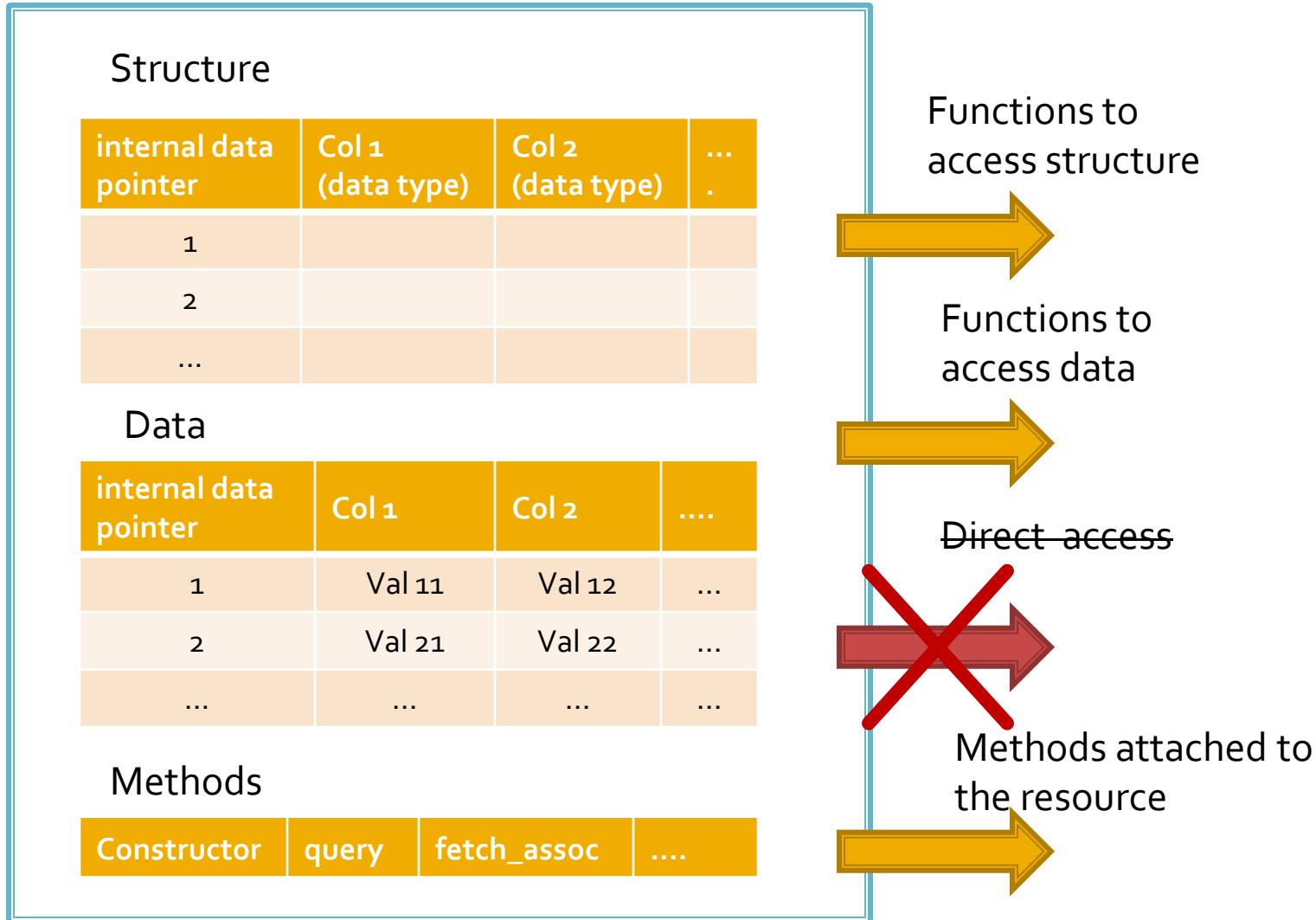
```
<?php
$var = new mysqli("example.com", "user", "password", "database");
$res = $var->query ($mysqli, "SELECT 'Please do not use the mysql extension ' AS _msg FROM DUAL");
$row = $res->fetch_assoc();
echo $row['_msg'];

$mysql = mysql_connect("example.com", "user", "password");
mysql_select_db("test");
$res = mysql_query("SELECT ' for new developments.' AS _msg FROM DUAL", $mysql);
$row = mysql_fetch_assoc($res);
echo $row['_msg'];
?>
```

# Resurse MySQL – mysqli



# MySQL resources – mysqli



# Conversion to mysqli (mandatory)

## ■ example

```
$hostname = "localhost";
$database = "dbwpi";
$username = "web";
$password = "test";
$conex= mysql_connect($hostname, $username, $password);
mysql_select_db($database, $conex);

$query = "SELECT p.*, c.`nume` AS `nume_categ` FROM `produse` AS p
 LEFT JOIN `categori` AS c ON (c.`id_categ` = p.`id_categ`)";
$result = mysql_query($query, $conex) or die(mysql_error());
$row_result = mysql_fetch_assoc($result);
$totalRows_result = mysql_num_rows($result);

do {
 $produse[$row_result['nume_categ']][$row_result['nume']] = array ("descr" => $row_result['detalii'], "pret"
=> $row_result['pret'], "cant" => $row_result['cant']);
}
while ($row_result = mysql_fetch_assoc($result));
```



# mysqli (Procedural)

```
//$conex= mysql_connect($hostname, $username, $password);
//mysql_select_db($database, $conex);
$conex = mysqli_connect($hostname, $username, $password, $database);

$query = "SELECT p.*, c.`nume` AS `nume_categ` FROM `produse` AS p
 LEFT JOIN `categorii` AS c ON (c.`id_categ` = p.`id_categ`)";
//$result = mysql_query($query, $conex) or die(mysql_error());
$result = mysqli_query($conex, $query);
//$row_result = mysql_fetch_assoc($result);
$row_result = mysqli_fetch_assoc($result);

//$totalRows_result = mysql_num_rows($result);
$totalRows_result = mysqli_num_rows($result);

do {
 $produse[$row_result['nume_categ']][$row_result['nume']] = array ("descr" => $row_result['detalii'], "pret"
=> $row_result['pret'], "cant" => $row_result['cant']);
}
//while ($row_result = mysql_fetch_assoc($result));
while ($row_result = mysqli_fetch_assoc($result));
```



# mysqli (OOP)

```
//$conex= mysql_connect($hostname, $username, $password);
//mysql_select_db($database, $conex);
//$conex = mysqli_connect($hostname, $username, $password, $database);
$conex = new mysqli($hostname, $username, $password, $database);

$query = "SELECT p.*, c.`nume` AS `nume_categ` FROM `produse` AS p
 LEFT JOIN `categorii` AS c ON (c.`id_categ` = p.`id_categ`)";
//$result = mysql_query($query, $conex) or die(mysql_error());
//$result = mysqli_query($conex, $query);
$result = $conex->query($query);

//$row_result = mysql_fetch_assoc($result);
//$row_result = mysqli_fetch_assoc($result);
$row_result = $result->fetch_assoc();

//$totalRows_result = mysql_num_rows($result);
//$totalRows_result = mysqli_num_rows($result);
$totalRows_result = $result->num_rows;

do {
 $produse[$row_result['nume_categ']][$row_result['nume']] = array ("descr" => $row_result['detalii'], "pret"
=> $row_result['pret'], "cant" => $row_result['cant']);
}
//while ($row_result = mysql_fetch_assoc($result));
while ($row_result = $result->fetch_assoc());
```

# Textbooks

- <https://www.php.net/>
- [http://rf-opto.etti.tuiasi.ro/master\\_it.php](http://rf-opto.etti.tuiasi.ro/master_it.php)
  - **2 X PHP and MySQL Bible !!**

# Contact

- Laboratorul de microunde si optoelectronica
- <http://rf-opto.etti.tuiasi.ro>
- [rdamian@etti.tuiasi.ro](mailto:rdamian@etti.tuiasi.ro)