Curs 7

2023/2024

Programarea aplicațiilor web

PAW

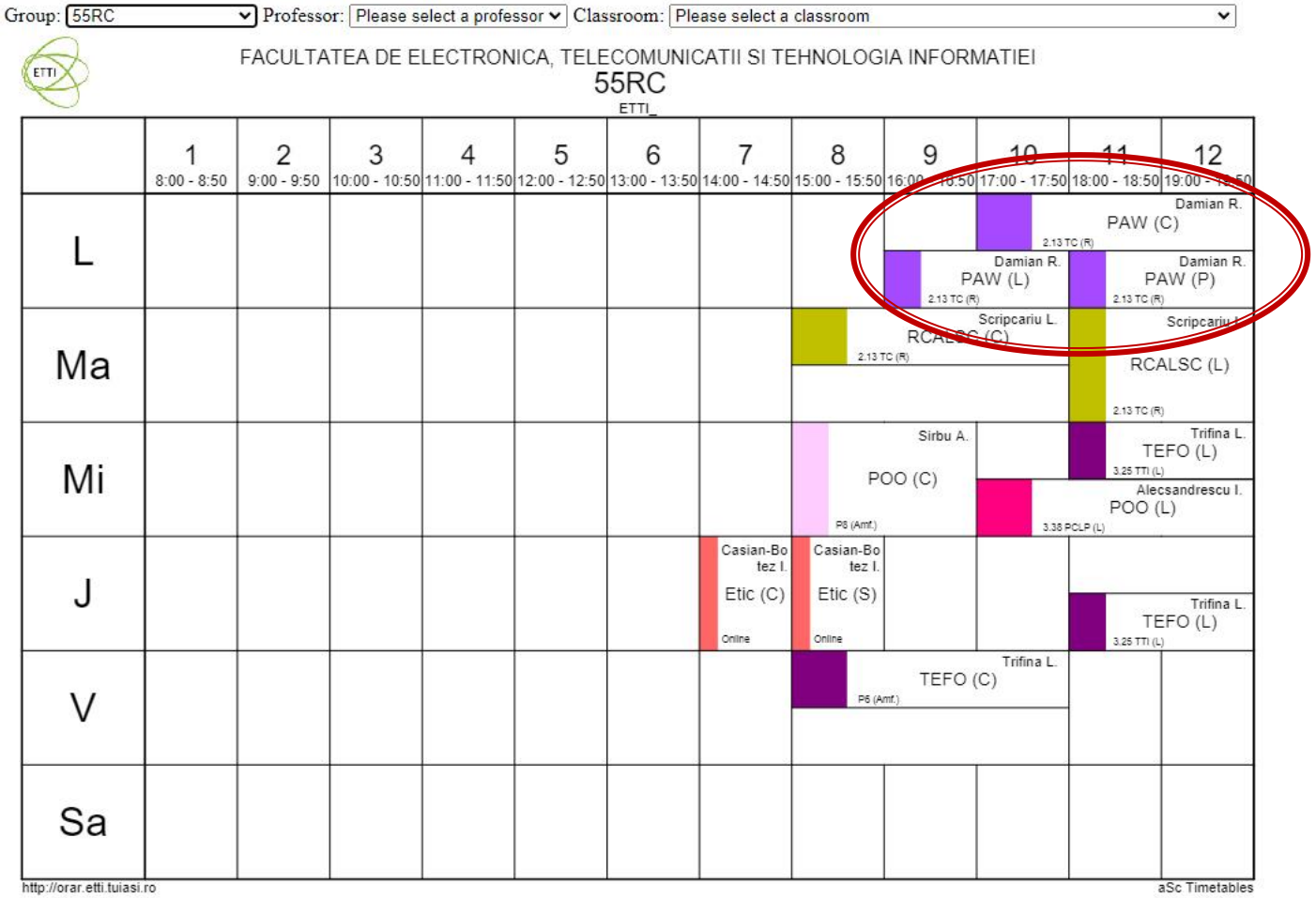
- Programarea aplicațiilor web
  - An V RC
    - 1.5C/1L/1P

Program

- An V
  - Saptamana 1
    - Luni 17-20 Curs (Intro/HTML/CSS)
  - Saptamanile 2-8
    - Luni 16:30-18 Curs
    - Luni 18-20 Laborator
  - Saptamanile 9-14
    - Luni 16:30-18 Curs
    - Luni 18-20 Proiect
  - **Curs recuperare?**

Orar

- https://orar.etti.tuiasi.ro/ : C->16:30-18, L/P -> 18



Nota

- An V
  - 33% E
  - 66% Aplicatii
    - 33% L
    - 33% P

Site

Main Courses Master Staff Research Students

Microwave and Optoelectronics Laboratory

We are enlisted in the Telecommunications Department of the Electronics, Telecommunication and Information Technology Faculty (**ETTI**) from the "Gh. Asachi" Technical University (**TUIASI**) in Iasi, Romania

We currently cover inside **ETTI** the fields related to:

- Microwave Circuits and Devices
- Optoelectronics
- Information Technology

Courses

Nr.	Course	Shortcut	Code	Type	Semester	Credits	Weekly	Examination	Link
1	Microwave Devices and Circuits for Radiocommunications	**DCMR**	DOS412T	DOS	7	4	0P,1L,0S,2C	Exam	details
2	Monolithic Microwave Integrated Circuits	**CIMM**	RD.IA.207	DOMS	11	6	1.5L,0S,2C,0P	Exam	details
3	Advanced Techniques in the Design of the Radio-communications Systems	**TAPSR**	RD.IA.103	DIMS	9	6	1.5P,0L,0S,2C	Exam	details
4	Optical Communications	**CO**	DOS409T	DOS	7	5	0P,1L,0S,3C	Colloquium	details
5	Optical Communications	**OC**	EDOS409T	DOS	7	5	0P,1L,0S,3C	Exam	details
6	Satellite Communications	**CS**	RC.IA.104	DIMS	9	6	0L,0S,2C,1.5P	Exam	details
7	Applied Informatics 1	**IA1**	DOF135	DOF	1	4	0P,1L,0S,2C	Verification	details
8	Applied Informatics 1	**AI1**	EDOF135	DOF	1	4	0P,1L,0S,2C	Verification	details
9	Databases, Web Programming and Interfacing	**DWPI**	ITT.IA.601	DIS	11	5	1P,1L,0.25S,1C	Verification	details
10	Web Applications Design	**PAW**	RC.IA.108	DIMS	10	5	1L,0S,1.5C,1P	Exam	details
11	Optoelectronics	**OPTO**	DID405M	DID	8	4	0P,1L,0S,2C	Colloquium	details
12	Microwave Devices and Circuits for Radiocommunications (English)	**MDCR**	EDOS412T	DOS	8	4	0P,1L,0S,2C	Exam	details

Curs

- Curs strict orientat spre laborator/proiect
  - se preda ceea ce se foloseste in aceeasi zi la laborator/proiect
  - curs **exact** inainte de laborator/proiect
- Orientat spre practica
  - 90% practica
  - 10% teorie
- Memorarea lui inutila la examen
- Prezenta
  - 3pz = 0.5p Examen (maxim 2p)

Documentatie

- RF-OPTO
  - **http://rf-opto.etti.tuiasi.ro**
- Fotografie
  - ~~de trimis prin email~~: **examen online**
  - necesara la laborator/curs
  - +1p ex. (S4), +0.5p ex (S6)
- Adresa de email
  - necesara pentru accesul la zonele sensibile de pe server
  - **obligatorie** pentru activitatea **online**
- Exemplu de teme si specificatii detaliate pentru proiect

Server referinta LAMP 2024

- 3 variante acceptate
  - CentOS 7.1
  - Ubuntu 20.04
  - Debian 12.5

Tema bonus

- logfile.php
  - Afiseaza log Apache (erori php majore)
- **2p suplimentar** la laborator/examen
- Modificare logfile.php pentru a afisa **toate** erorile PHP
  - php.ini – activare erori
  - php.ini – locatie erori
  - logfile.php – afisare log PHP

CURS

I.	HTML si XHTML (recapitulare)	1 oră
II	CSS	2 ore
III	Baze de date, punct de vedere practic	1 oră
IV	Limbajul de interogare SQL	4 ore
V	PHP - HyperText Preprocessor	8 ore
VI	XML - Extended Mark-up Language si aplicatii	4 ore
VII	Conlucrare intre PHP/MySql, PHP/XML, Javascript/HTML	2 ore
VIII	Exemple de aplicatii	6 ore
	Total	28 ore

LABORATOR

I.	Implementarea unui sistem de dezvoltare a aplicatiilor Web, instalare PHP, MySql, Apache si legaturile dintre ele	2 ore
II	Design web avansat folosind CSS	2 ore
III	Interogarea unei baze de date. Exercitii SQL	2 ore
IV	Utilizare PHP I	2 ore
V	Utilizare PHP II	2 ore
VI	Utilizare PHP pentru accesul la o baza de date	2 ore
VII	Aplicatie distribuita complexa	2 ore
	Total	14 ore

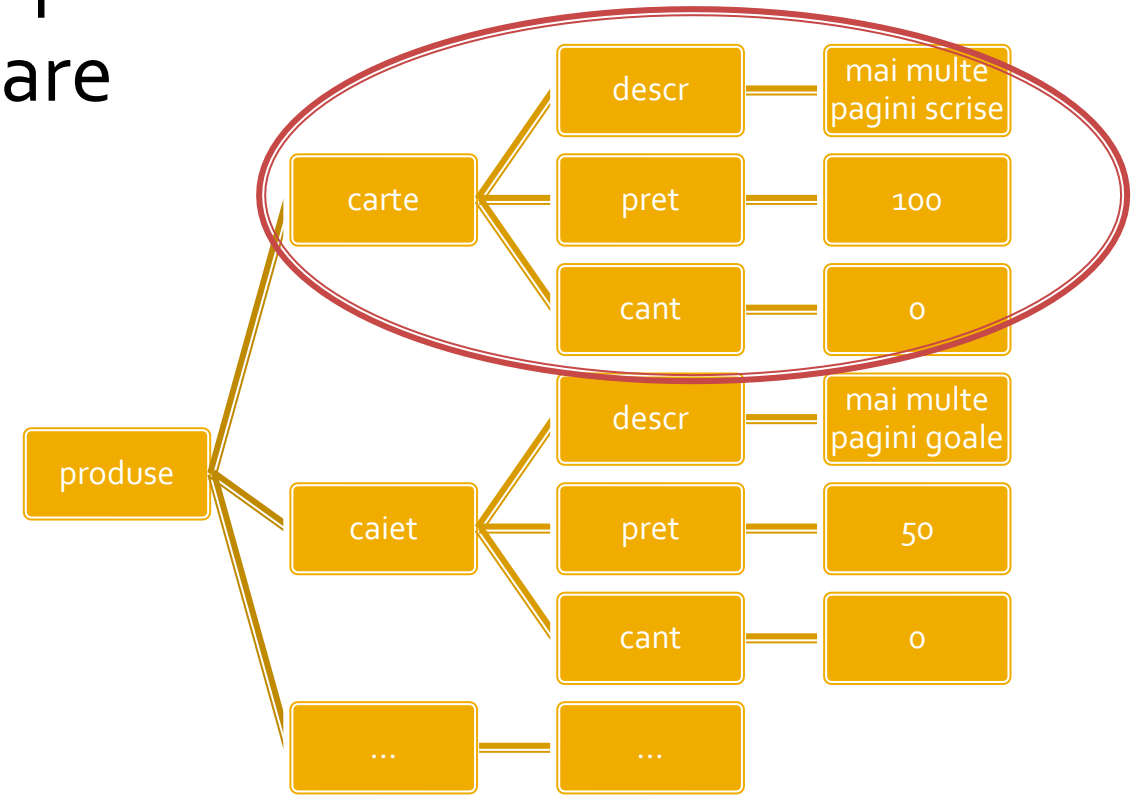
Laborator 5

Laborator 5

- Sa se continue magazinul virtual cu:
  - produsele sunt grupate pe **categorii** de produse
  - sa prezinte utilizatorului o lista de categorii de produse pentru a alege
  - sa prezinte utilizatorului o lista de produse si preturi **in categoria** aleasa la pasul anterior
  - lista de produse si preturi se citeste dintr-un **fisier text**
  - se preia comanda si se calculeaza suma totala
- Optional
  - se creaza o pagina prin care vanzatorul poate **modifica** preturile si produsele
  - fisierul care contine date in format **XML**

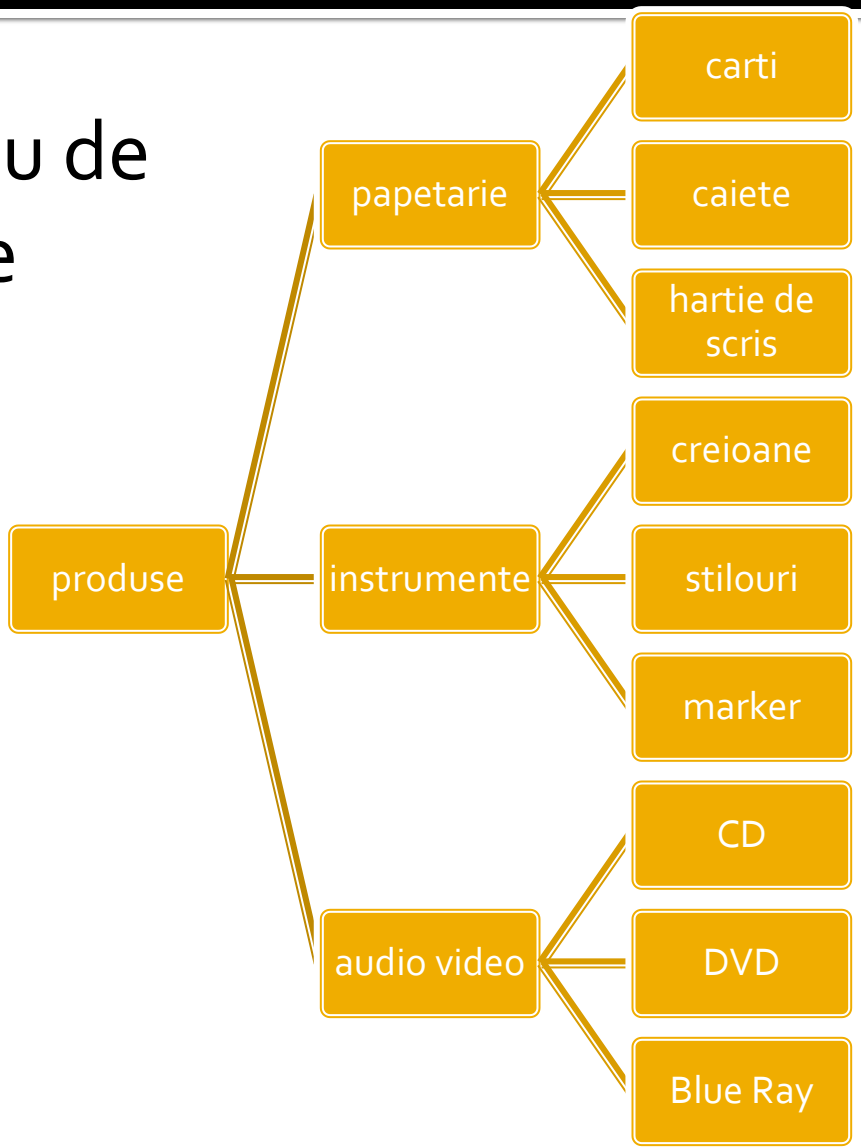
Laborator 4 – Tablou produse

- exemplu de grupare



Laborator 5 – Tablou produse

- exemplu de grupare



Rezultat

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
3	Audio-video	3
4	Calculatoare	3
5	Jucarii	2

Total produse: 14

Magazin online Firma X SRL

Realizati comanda

Nr.	Produs	Pret	Cantitate
1	Carti	100	1
2	Caiete	50	2
3	Penare	150	1
4	Stilouri	125	0
5	Creioane	25	0

Trimite

Magazin online Firma X SRL

Rezultate comanda

Pret total (fara TVA): 350

Pret total (cu TVA): 416.5

Comanda receptionata la data: 17/03/2010 ora 08:24

PHP

Artificii de programare utilizate

Template

antet.php

```
<html>
<head>
<title>Magazin online Firma X
SRL</title>
</head>
<body bgcolor="#CCFFFF"><?php
define('PRET_CARTE',100);
define('PRET_CAIET',50);
define('PRET_PENAR',150);
define('PRET_STILOU',125);
define('PRET_CREION',25);
//orice cod comun PHP
?><table width="600" border="0"
align="center">
<tr><td><img src="images/antet.gif"
width="600" height="100" /></td></tr>
<tr><td height="600" valign="top"
bgcolor="#FFFFCC">
<h1>Magazin online Firma X SRL</h1>
```

subsol.php

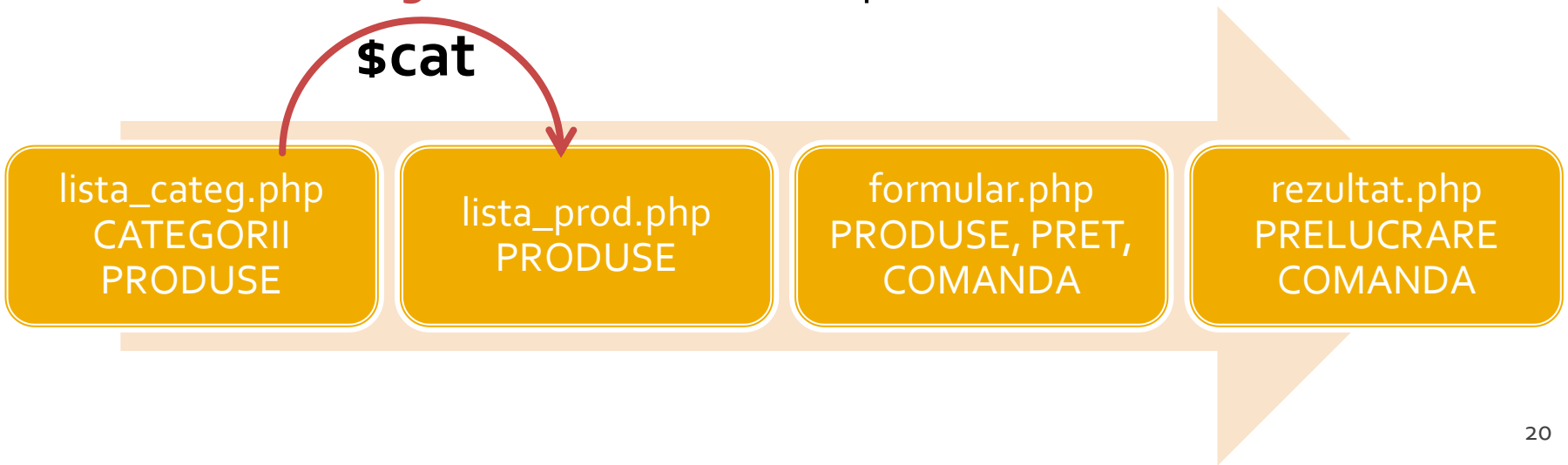
```
</td></tr>
</table>
</body>
</html>
```

*.php

```
<?php require('antet.php');?>
<h2>Lista Produse</h2>
<table border="1">
...
</table>
<?php require('subsol.php');?>
```

Link purtator de informatie

- get datele sunt atasate adresei documentului de procesare : results.php?prob=81&an=2009
- se poate simula realizarea unei forme (get) prin scrierea corespunzatoare a link-urilor
- in lista_categ.php
  - <a href="lista_prod.php?categ=<?php echo $cat;?>"> <?php echo $cat;?>
- are efect in lista_prod.php
  - $_GET['categ']="valoarea $cat corespunzatoare"



Elemente de control – foreach

- **foreach (array_expression as $key => $value) statement**
- **foreach (array_expression as $value) statement**
- iterarea prin **fiecare** element al tabloului
- la fiecare element variabila declarata in instructiune variabila locala **$key** ofera acces la cheia curenta iar variabila locala **$value** ofera acces la valoarea asociata
- foreach() lucreaza cu o **copie** a tabloului deci tabloul original nu va fi modificat prin schimbarea continutului variabilelor $key si $value

Fisier text

- Fisier text pentru stocarea informatiilor

carte	mai multe pagini scrise legate	100	0
caiet	mai multe pagini goale legate	75	0
penar	loc de depozitat instrumente de scris	150	0
stilou	instrument de scris albastru	125	0

papetarie	carte	mai multe pagini scrise legate	100	0	
papetarie	caiet	mai multe pagini goale legate	75	0	
instrumente	penar	loc de depozitat instrumente de scris		150	0
instrumente	stilou	instrument de scris albastru	125	0	

Cod

- Extragere valori din text

```
$vect=file("produse.txt");
foreach ($vect as $linie)
        {
        $valori=explode("\t",$linie,4);
        $produse[$valori[0]]=array ("descr" => $valori[1], "pret" => $valori[2], "cant" => $valori[3]);
        }
```

```
$vect=file("produse.txt");
foreach ($vect as $linie)
        {
        $valori=explode("\t",$linie,5);
        $produse[$valori[0]] [$valori[1]]=array ("descr" => $valori[2], "pret" => $valori[3], "cant" =>
$valori[4]);
        }
```

Utilizare date

- Utilizare, cu doua bucle foreach

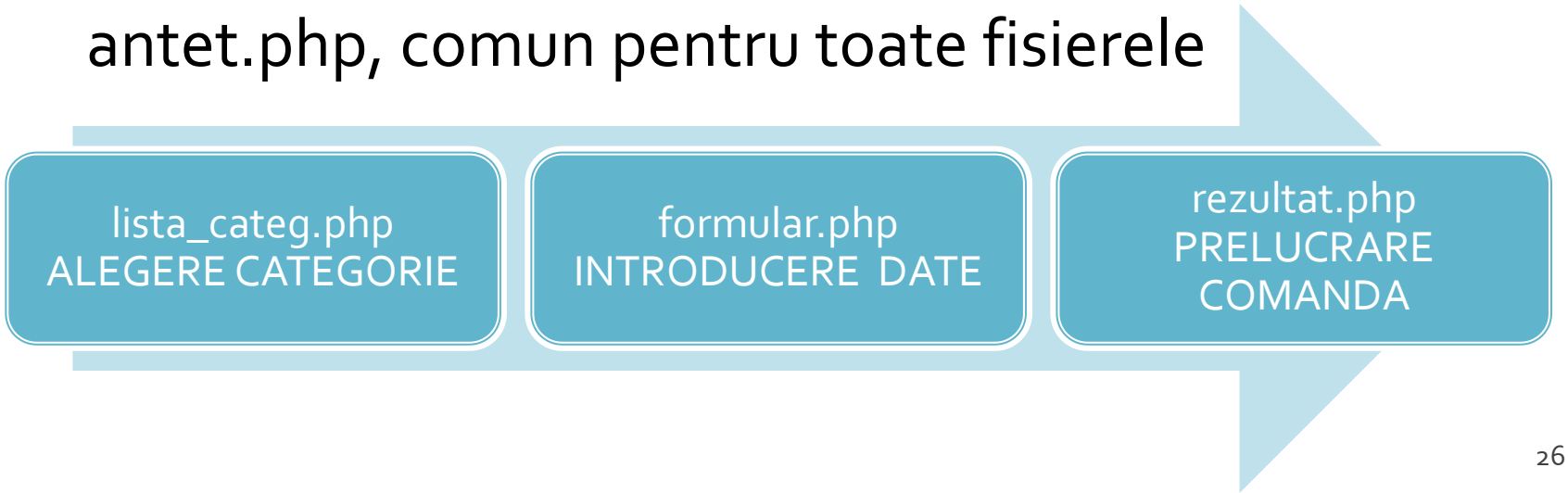
```
$index=1;
foreach ($produse as $prod => $detalii) //primul indice in $produse imi da produsul
                {?>
<tr><td><?php echo $index;?></td><td><?php echo ucfirst(strtolower($prod));?></td><td><?php echo
$detalii['descr'];?></td><td align="center"><?php echo $detalii['pret'];?></td></tr>
<?php $index++;
                }
```

```
$index=1;
foreach ($produse as $categ => $lista_categ) //primul indice in $produse imi da categoria
                foreach ($lista_categ as $prod => $detalii) //al doilea indice in $produse imi da produsul
                                                                //din categoria stabilita cu primul indice
                                {?>
<tr><td><?php echo $index;?></td><td><?php echo $categ;?></td><td><?php echo
ucfirst(strtolower($prod));?></td><td><?php echo $detalii['descr'];?></td><td align="center"><?php
echo $detalii['pret'];?></td></tr>
<?php $index++;
                                }
```

Laborator 6

Plan aplicatie – Cumparator

- Pe masura ce aplicatia paraseste un fir liniar de executie este necesara introducerea unui plan (graf) al aplicatiei
- Cumparator
  - citirea fisierului text (text/XML) se realizeaza in antet.php, comun pentru toate fisierele



Rezultat (cumparator)

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
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5	Jucarii	2

Total produse: 14

Magazin online Firma X SRL

alizati comanda

Nr.	Produs	Pret	Cantitate
1	Carti	100	1
2	Caiete	50	2
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Trimite

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Rezultate comanda

Pret total (fara TVA): 350

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Comanda receptionata la data: 17/03/2010 ora 08:24

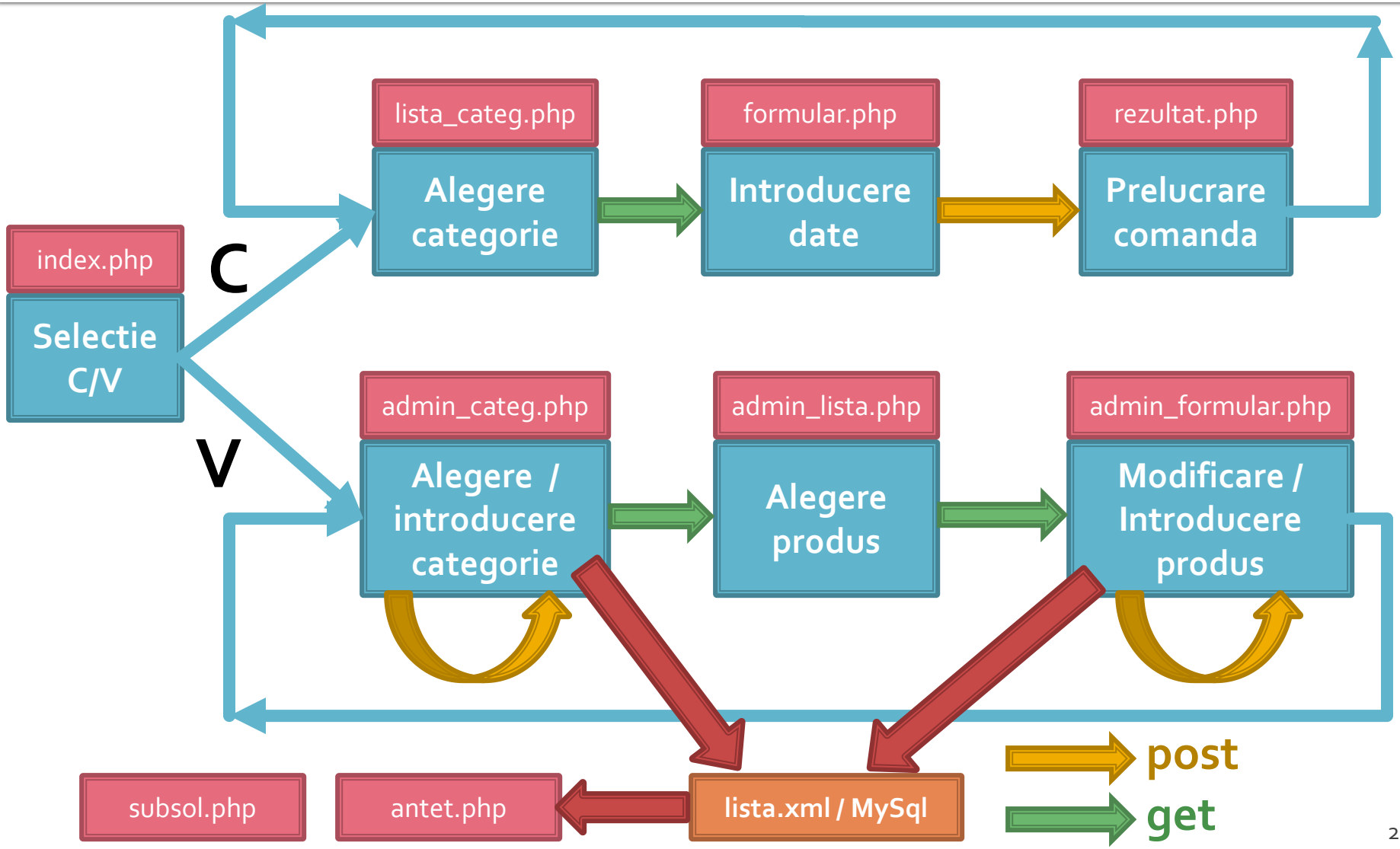
post

get

Plan aplicatie – Vanzator

- Aparitia aplicatiei pentru vanzator
  - introduce un fir paralel de executie cu necesitatea alegerii initiale: cumparator/vanzator
  - aduce posibilitatea scrierii fisierului XML
  - diverse operatii de scriere
    - introducere categorie de produse
    - introducere produs nou intr-o categorie existenta
    - modificare produs existent
  - modificarea fisierului implica 2 actiuni:
    - colectare date
    - prelucrare

Plan aplicatie (Proiect !!)



Rezultat (vanzator)

Magazin Firma X

Inceput | Inapoi

Magazin online Firma X SRL

Alegeti:

- Cumparator
- Vanzator

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
3	Audio-video	3
4	Calculatoare	3
5	Jucarii	2

Total produse: 14

Categorie noua de produse: Trimite

Lista produse in categoria Calculatoare

Nr.	Produs	Descriere	Pret	Cantitate	Actiuni
1	Laptop	calculator mic	2000	2	modifica
2	Desktop	calculator mare	1000	5	modifica
3	Imprimanta	prn	200	2	modifica
-	**Produs nou**				adauga

Produs in categoria Calculatoare

Produs	laptop
Descriere	calculator mic
Pret	2000
Cantitate	2

Trimite

post

get

Laborator 6(7)

- Sa se continue magazinul virtual cu:
  - produsele sunt grupate pe categorii de produse
  - sa prezinte utilizatorului o lista de grupe de produse pentru a alege
  - sa prezinte utilizatorului o lista de produse si preturi in grupa aleasa
  - lista de produse si preturi se citeste dintr-o baza de date **MySQL**
  - se preia comanda si se calculeaza suma totala
  - **se creaza <u>paginile</u> prin care vanzatorul poate modifica preturile, produsele, <u>categoriile</u>**

PHP

Artificii de programare utilizate

Rezultat (vanzator)

Magazin Firma X

Inceput | Inapoi

Magazin online Firma X SRL

Alegeti:

- Cumparator
- Vanzator

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
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Categorie noua de produse: Trimite

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3	Imprimanta	prn	200	2	modifica
-	**Produs nou**				adauga

Produs in categoria Calculatoare

Produs	laptop
Descriere	calculator mic
Pret	2000
Cantitate	2

Trimite

post

get

Fisier unic pentru colectare SI prelucrare date

- De multe ori se prefera aceasta varianta
- Permite pastrarea unitara a tuturor operatiilor pentru indeplinirea unei actiuni
  - acces mai simplu
  - usurinta la programare
  - evitarea erorilor: File does not exist: produs.php…
- Acelasi fisier e folosit initial pentru a colecta date si apoi, daca se detecteaza prezenta acestora, pentru prelucrarea lor

Fisier unic pentru colectare SI prelucrare date

- Fisierul de receptie pentru <form> va fi fisierul curent
- se recomanda utilizarea variabilei globale $_SERVER['SCRIPT_NAME']
  - flexibilitate la redenumirea fisierelor
- alternativ $_SERVER['PHP_SELF'] nu este recomandata
  - probleme de securitate
- Sectiunea de colectare date se afiseaza numai in absenta datelor

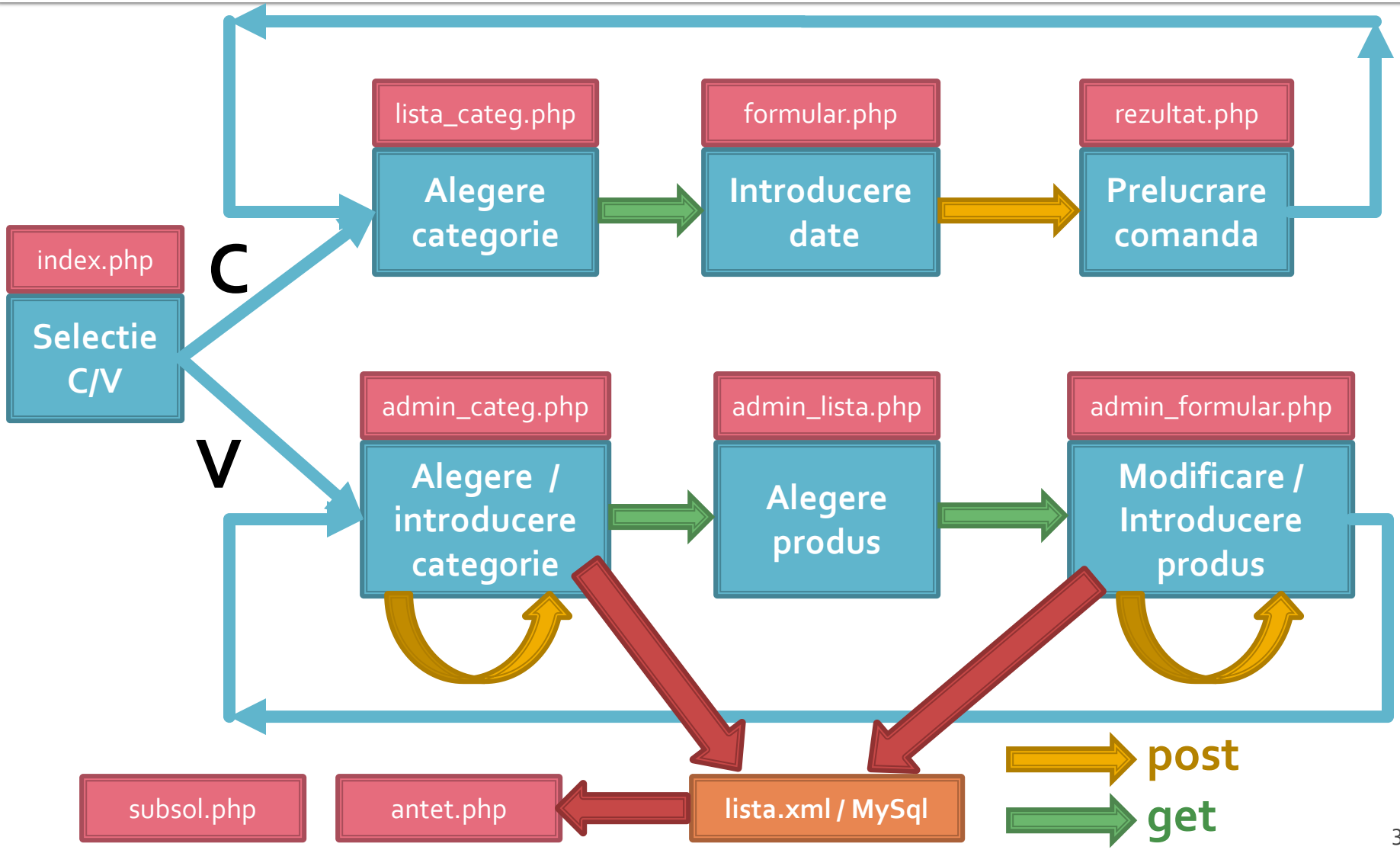
```
<form action="<?php echo $_SERVER['SCRIPT_NAME '];?>" method="post">
<p><input name="date_ok" type="submit" value="Trimite" /></p>
</form>
```

Fisier unic pentru colectare SI prelucrare date

- Detectia existentei datelor se face prin verificarea existentei (isset($variabila)) valorilor introduse
  - eventual pentru un plus de protectie se poate verifica si continutul lor

```
if (isset($_POST[" date_ok "]))
        { //date trimise
        if ($_POST[" date_ok "]=="Trimite" )
                { //date trimise de fisierul curent
                //prelucrare
                }
        }
else
        {
        //colectare date
<form action="<?php echo $_SERVER['SCRIPT_NAME '];?>" method="post">
<p><input name="date_ok" type="submit" value="Trimite" /></p></form>
        }
```

Plan aplicatie



Stocare eficienta a datelor

MySql

MySql

- Baza de date – instrument pentru stocarea si manipularea informatiei eficient si efectiv
  - datele sunt protejate de corupere sau pierderi accidentale
  - nu se utilizeaza mai multe resurse decat minimul necesar
  - datele pot fi accesate cu performanta acceptabila
- Baze de date relationale
  - model relational (matematic eficient) – Codd ~1970

DBMS, RDBMS

- DBMS – database management system aplicatii incluse in baza de date pentru accesul la informatii
- RDBMS – Relational DBMS. Majoritatea sistemelor de baze de date tind la aceasta titulatura
  - ~300 de reguli trebuie respectate
  - nici un sistem actual nu implementeaza total aceste reguli

Relatii

- Toate sistemele de baze de date sunt caracterizate de:
  - toate informatiile sunt reprezentate intr-o aranjare ordonata **bidimensionala** numita **relatie**
  - toate valorile (atribute) stocate sunt scalare (in orice celula din tabel se stocheaza **o singura** valoare)
  - toate operatiile se aplica asupra unei intregi relatii si rezulta o intreaga relatie
- Terminologii (MySql)
  - tabel – table / recordset / result set
  - linie – record / row
  - coloana – field / column

Chei

- Din toate combinatiile de coloane care pot fi utilizate pentru identificarea unica a unei linii se alege **macar** una utilizata intern de RDBMS pentru ordonarea datelor – **cheie primara**
  - Celelelte chei candidate devin **chei alternative** si pot fi folosite pentru eficientizarea prelucrarilor (crearea de "index" dupa aceste chei)
- In cazul in care nu exista o combinatie de coloane utilizabila ca si cheie cu utilitate practica se introduce artificial o cheie, cu numere intregi incrementate automat de DBMS (autoincrement)
  - de multe ori este recomandata o astfel de actiune, numerele intregi fiind mult mai usor de controlat, ordonat, cautat decat alte tipuri de date
  - cheile de tip autoincrement nu e **nevoie** sa contina informatie

MySql

Relatii in Bazele de date

Relatii in Bazele de date

- Legaturile intre tabele pot fi
  - One to One
  - One to Many
  - Many to Many
    - Unare (auto referinta)

One to One

- Fiecare tabel poate avea corespondenta **o singura linie (row) sau nici una** de cealalta parte a relatiei
- echivalent cu o relatie "bijectiva"
- analogie cu casatorie:
  - o persoana poate fi casatorita sau nu
  - daca este casatorita va fi casatorita cu o singura persoana din tabelul cu persoane de sex opus
  - persoana respectiva va fi caracterizata de aceeasi relatie "one to one" – primeste simultan un singur corespondent in tabelul initial

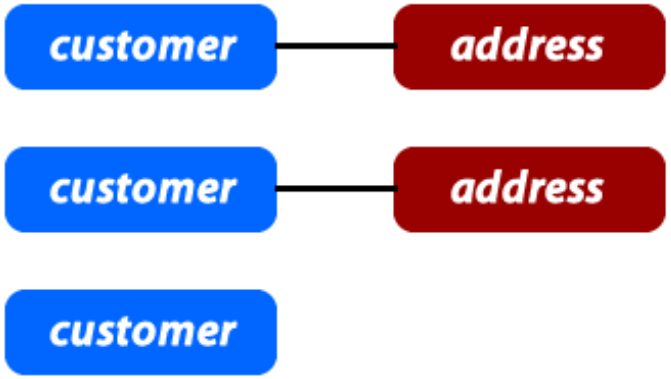
One to One

- de multe ori legaturile "one to one" se bazeaza pe reguli externe
- de obicei se poate realiza usor si eficient gruparea ambelor tabele in unul singur

CUSTOMERS		
customer_id	customer_name	address_id
101	John Doe	301
102	Bruce Wayne	302

ADDRESSES	
address_id	address
301	12 Main St., Houston TX 77001
302	1007 Mountain Dr., Gotham NY 10286

CUSTOMERS		
customer_id	customer_name	customer_address
101	John Doe	12 Main St., Houston TX 77001
102	Bruce Wayne	1007 Mountain Dr., Gotham NY 10286



One to Many

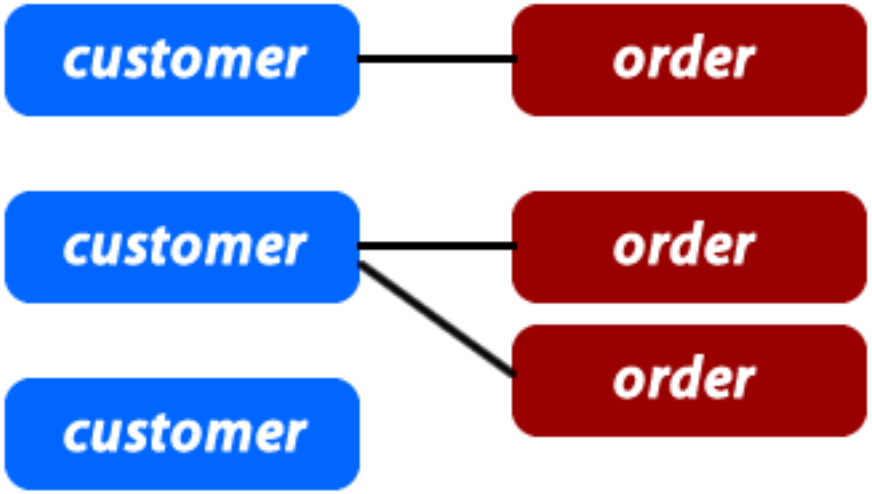
- O linie dintr-un tabel (row), identificata prin cheia primara, poate avea: **nici una, una sau mai multe linii corespondente** in celalalt tabel. In acesta o linie poate fi legata cu o **singura** linie din tabelul primar.
- Analogie cu relatii parinte/copil:
  - fiecare om are o singura mama
  - fiecare femeie poate avea nici unul, unul sau mai multi copii

One to Many, Many to One

- de obicei aceste legaturi se implementeaza prin introducerea cheii primare din tabelul **One** in calitate de coloana in tabelul **Many** (cheie externa – foreign key)

CUSTOMERS	
customer_id	customer_name
101	John Doe
102	Bruce Wayne

ORDERS			
order_id	customer_id	order_date	amount
555	101	12/24/09	$156.78
556	102	12/25/09	$99.99
557	101	12/26/09	$75.00



Many to Many

- Fiecare linie (row) din **ambele tabele** implicate in legatura poate fi legat cu **oricate (niciuna, una sau mai multe) linii** din tabelul corespondent.
- Analogie cu relatii de rudenie (veri de exemplu), tabel 1 – barbati, tabel 2 – femei :
  - fiecare barbat poate fi ruda cu una sau mai multe femei
  - la randul ei fiecare femeie poate fi ruda cu unul sau mai multi barbati

Many to Many

- de obicei aceste legaturi se implementeaza prin introducerea unui tabel **suplimentar** (numit tabel **asociat** sau de **legatura**) care sa memoreze legaturile

ORDERS

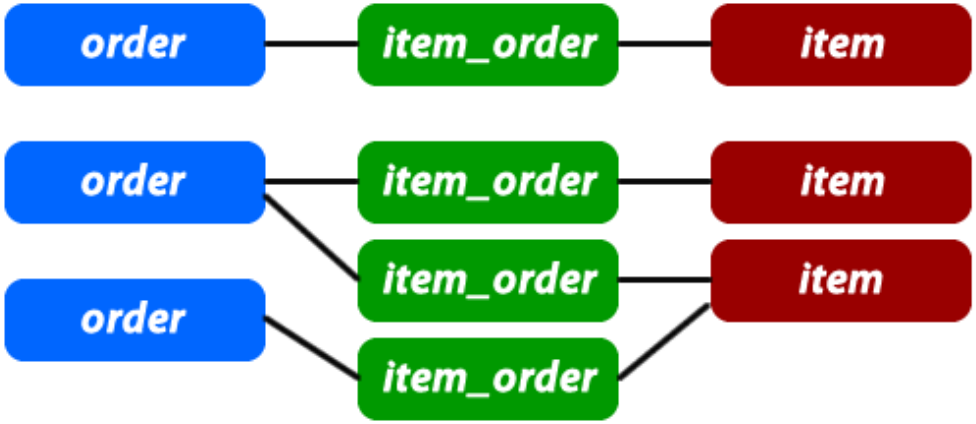
order_id	customer_id	order_date	amount
555	101	12/24/09	$156.78
556	102	12/25/09	$99.99

ITEMS

item_id	item_name	item_description
201	Tickle Me Elmo	It wants to be tickled
202	District 9 DVD	Awesome sci-fi movie
203	Batarang	It is very sharp

ITEMS_ORDERS

order_id	item_id
555	201
555	202
556	202
556	203

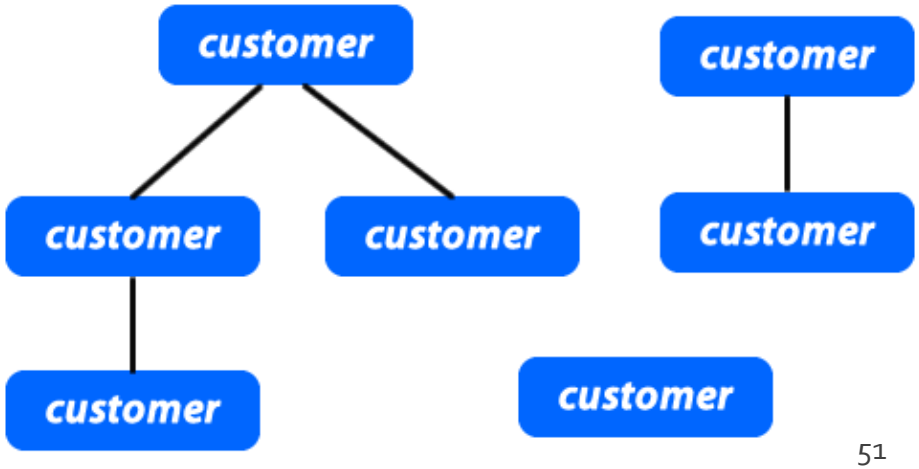


Self Referencing (unare)

- Un caz particular de legatura “one to many” in care legatura e in interiorul aceluiasi tabel
- rezolvarea este similara, introducerea unei coloane suplimentara, cu referinta la cheia primara din tabel
- analogie cu relatii parinte copil cand ambele persoane se regasesc in acelasi tabel

CUSTOMERS

customer_id	customer_name	referrer_customer_id
101	John Doe	0
102	Bruce Wayne	101
103	James Smith	101



Relatii in Bazele de date

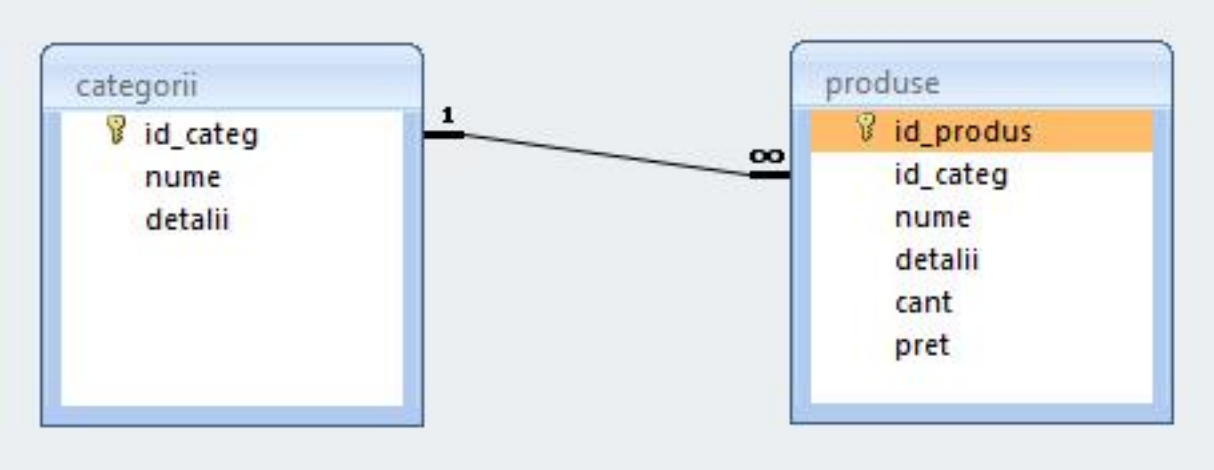
- Respectarea formelor normale ale bazelor de date aduce nenumarate avantaje
- Efectul secundar este dat de necesitatea separarii datelor intre mai multe tabele
- In exemplul utilizat avem doua concepte diferite din punct de vedere logic
  - produs
  - categorie de produs

Relatii in Bazele de date

- In exemplul utilizat avem doua concepte diferite din punct de vedere logic
  - **produs**
  - **categorie** de produs
- Cele doua tabele nu sunt independente
- Intre ele exista o legatura data de functionalitatea dorita pentru aplicatie: **un produs va apartine unei anumite categorii de produse**

Relatii in Bazele de date

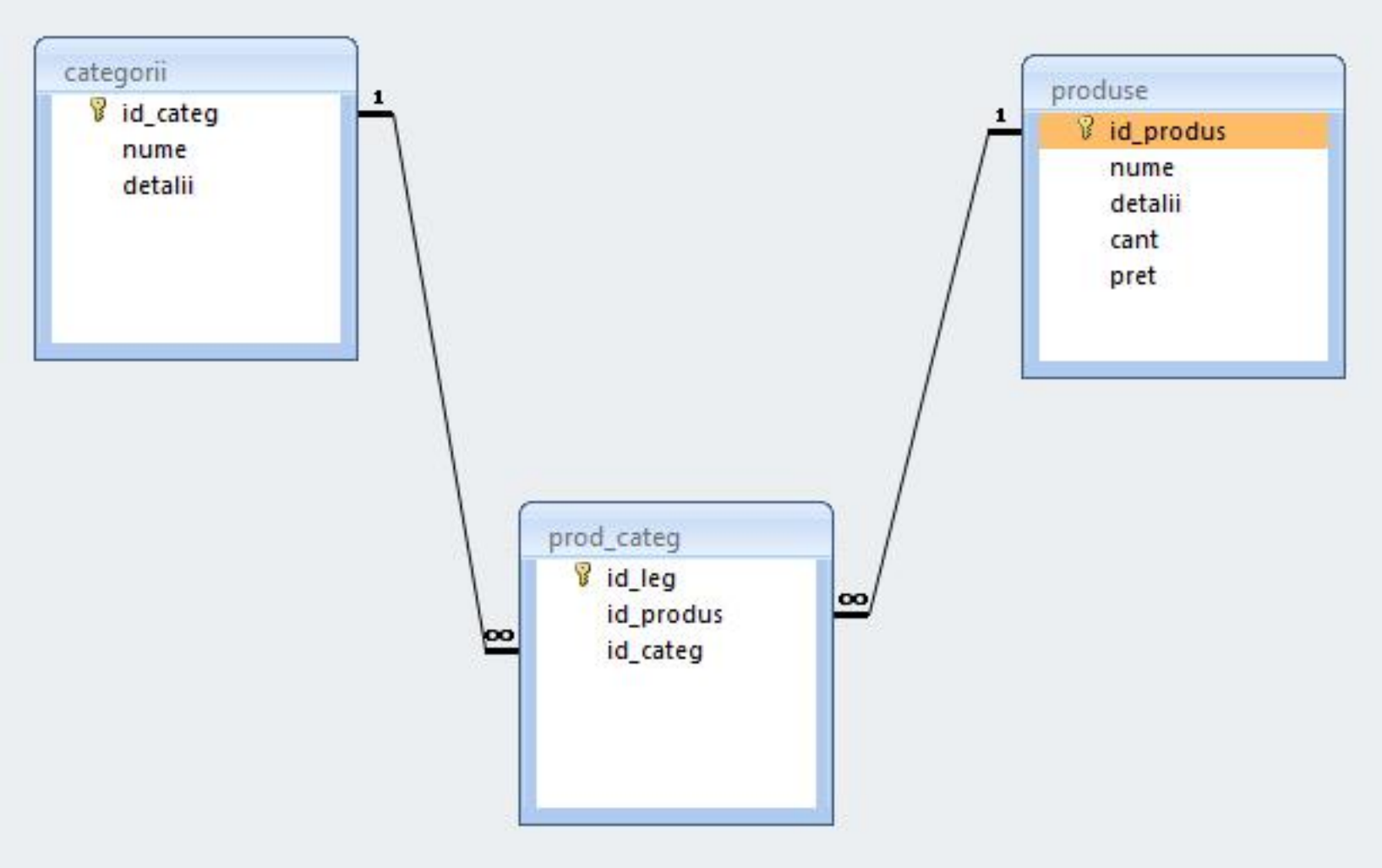
- Legaturile implementata
  - One to Many
  - in tabelul "produse" apare cheia externa (foreign key): "id_categ"



Relatii in Bazele de date

- Daca se doreste o situatie cand un produs poate apartine **mai multor categorii** (o carte cu CD poate fi inclusa si in "papetarie" si in "audio-video")
  - relatia devine de tipul **Many to Many**
  - e necesara introducerea unui tabel de legatura cu coloanele "id_leg" (cheie primara), "id_categorie" si "id_produs" (chei externe)

Relatii in Bazele de date



Relatii

- **Nu** trebuie evitate relatiile
  - Many to Many
  - One to Many
- Prelucrarea cade in sarcina server-ului de baze de date (**R**DB**MS**)
  - JOIN – **esential** in aplicatii cu baze de date

MySql – eficienta

- eficienta unei aplicatii web
  - 100% - **toate prelucrarile "mutate" in RDBMS**
  - PHP **doar** afisarea datelor
- eficienta unei aplicatii MySql
  - 25% **alegerea corecta a tipurilor de date**
  - 25% **crearea indecsilor necesari in aplicatii**
  - 25% **normalizarea corecta a bazei de date**
  - 20% **cresterea complexitatii interogarilor pentru a "muta" prelucrarile pe server-ul de baze de date**
  - 5% **scrierea corecta a interogarilor**

MySql

Tipuri de date

MySql – tipuri de date

- numeric
  - intregi
    - BIT (implicit 1 bit)
    - TINYINT (implicit 8 biti)
    - SMALLINT (implicit 16 biti)
    - INTEGER (implicit 32biti)
    - BIGINT (implicit 64biti)
  - real
    - FLOAT
    - DOUBLE
    - DECIMAL – fixed point

MySql – tipuri de date

- data/timp
  - DATE ('YYYY-MM-DD')
    - '1000-01-01' pana la '9999-12-31'
  - DATETIME ('YYYY-MM-DD HH:MM:SS')
    - '1000-01-01 00:00:00' pana la '9999-12-31 23:59:59'
  - TIMESTAMP ('YYYY-MM-DD HH:MM:SS')
    - '1970-01-01 00:00:00' pana la partial 2037

MySql – tipuri de date

- sir
  - CHAR (M)
    - sir de lungime constanta M, M<255
  - VARCHAR (M)
    - sir de lungime variabila, maxim M, M<255 (M<65535)
- cantitati mari de date
  - TEXT
    - au alocat un set de caractere, operatiile tin cont de acesta
  - BLOB
    - sir de octeti, operatiile tin cont de valoarea numerica
  - TINYBLOB/TINYTEXT, BLOB/TEXT, MEDIUMBLOB/MEDIUMTEXT, LARGEBLOB/LARGETEXT
    - date 2^8-1, 2^{16}-1, 2^{24}-1, 2^{32}-1 = 4GB

MySql – tipuri de date

- enumerare
  - ENUM('val1','val2',...)
    - una singura din cele maxim 65535 valori distincte posibile
  - SET('val1','val2',...)
    - niciuna sau mai multe din cele maxim 64 valori distincte
    - echivalent cu "setare de biti" intr-un intreg pe 64 biti cu tabela asociata

Metode de stocare

Metode de stocare

- Metoda de stocare a datelor nu e o caracteristica a server-ului ci a fiecarui tabel in parte
- Exemplu ulterior CREATE: "ENGINE = InnoDB"
- MySql suporta diferite metode de stocare, fiecare cu avantajele/dezavantajele sale
- Implicit se foloseste metoda MyISAM, dar la instalarea server-ului (laborator 1) o anumita selectie poate schimba valoarea implicita in InnoDB
- **Alegerea metodei de stocare potrivita are implicatii majore asupra performantei aplicatiei**

Metode de stocare

- MyISAM
- InnoDB
- Memory
- Merge
- Archive
- Federated
- NDBCLUSTER
- CSV
- Blackhole
- Example

Metode de stocare

- **MyISAM**
  - metoda de stocare implicita in MySql
  - performanta ridicata (resurse ocupate si viteza)
  - posibilitatea cautarii in intregul text (index FULLTEXT)
  - blocare acces la nivel de tabel
  - nu accepta tranzactii
  - nu accepta FOREIGN KEY
    - probleme relative la integritatea datelor
- **InnoDB**
- **Memory**

Metode de stocare

- MyISAM
- InnoDB
  - devine metoda de stocare implicita in MySql daca la instalare se alege model tranzactional
  - performanta medie (resurse ocupate si viteza)
  - blocare acces la nivel de linie
  - nu accepta index FULLTEXT
    - incepand cu MySql 5.6.4 este introdus index FULLTEXT
  - accepta tranzactii
  - accepta FOREIGN KEY
    - probleme mai putine la integritatea datelor prin constrangeri intre tabele
- Memory

Metode de stocare

- MyISAM
- InnoDB
- Memory
  - metoda de stocare recomandata pentru tabele temporare
  - performanta maxima (viteza – datele sunt stocate in RAM)
    - la oprirea server-ului datele se pierd, tabelul este pastrat dar va fi fara nici o linie
  - nu accepta tipuri de date mari (BLOB, TEXT) – maxim 255 octeti
  - nu accepta index FULLTEXT
  - nu accepta tranzactii
  - nu accepta FOREIGN KEY
    - probleme relative la integritatea datelor

Acces la server-ul MySql din PHP

Acces la server-ul MySql din PHP

- Bibliotecile corespunzatoare trebuie activate in php.ini – vezi laboratorul 1.
  - mysql
  - mysqli (improved accesul la functionalitati ulterioare MySql 4.1)
- O baza de date existenta poate fi accesata daca exista un utilizator cunoscut in PHP cu drepturi de acces corespunzatoare – vezi laboratorul 1.
- O baza de date poate fi creata si din PHP dar nu e metoda recomandata daca nu e necesara
  - cod dificil de implementat pentru **o singura** utilizare
  - necesita existenta unui utilizatori cu drepturi mai mari pentru crearea bazei de date si alocarea de drepturi unui utilizator restrans

Functii PHP de acces MySql

- mysql_connect
  - realizarea unei conexiuni cu server-ul MySQL
  - resource **mysql_connect** (string server, string user, string password)
  - rezultatul
    - succes – resursa (conexiune, link_identifier)
    - esec – false
- mysql_select_db
  - selecteaza **baza de date** de pe server cu care se va lucra in continuare
  - bool **mysql_select_db** (string database [, resource link_identifier])

Functii PHP de acces MySql

- mysql_query
  - trimiterea unei interogari SQL spre server
  - resource **mysql_query** (string query [, resource link_identifier])
  - rezultatul
    - SELECT, SHOW, DESCRIBE sau EXPLAIN – resursa (tabel)
    - UPDATE, DELETE, DROP, etc – true/false
- mysql_fetch_assoc
  - returneaza o **matrice asociativa** corespunzatoare liniei de la indexul intern (indecsi de tip sir corespunzatori denumirii coloanelor – field – din tabelul de date) si incrementeaza indexul intern sau **false** daca nu mai sunt linii
  - array **mysql_fetch_assoc** (resource result)

Functii PHP de acces MySql Parcurgerea resurselor rezultat

- mysql_fetch_assoc
  - returneaza o **matrice asociativa** corespunzatoare liniei de la indexul intern (indecsi de tip sir corespunzatori denumirii coloanelor – field – din tabelul de date) si incrementeaza indexul intern sau **false** daca nu mai sunt linii
  - array **mysql_fetch_assoc** (resource result)
- mysql_fetch_row
  - returneaza o matrice cu indecsi intregi
  - array mysql_fetch_row (resource result)

Functii PHP de acces MySql Parcurgerea resurselor rezultat

- mysql_fetch_array
  - grupeaza functionalitatea mysql_fetch_assoc si mysql_fetch_row
  - array **mysql_fetch_array** (resource result [, int result_type])
  - MYSQL_ASSOC, MYSQL_NUM, MYSQL_BOTH (implicit)
- mysql_data_seek
  - muta indexul intern la valoarea indicata
  - bool **mysql_data_seek** (resource result, int row_number)

Resurse MySQL

- Resursele reprezinta o combinatie intre
  - date structurate (valori + structura) rezultate in urma unor interogari SQL
  - functii de acces la aceste date/structuri
- Analogie cu POO
  - o "clasa speciala" creata in urma interogarii cu functii predefinite de acces la datele respective

Resurse MySQL

Structura

Index intern	Col 1 (tip date)	Col 2 (tip date)	....
1			
2			
...			

Date

Index intern	Col 1	Col 2	....
1	Val 11	Val 12	...
2	Val 21	Val 22	...
...	...	...	...

Functii de acces la structura

Functii de acces la date

~~Acces direct~~

Resurse MySQL

- Functiile de acces la structura sunt rareori utilizate
  - majoritatea aplicatiilor sunt concepute pe structura fixa, si cunosc structura datelor primite
  - exceptie: aplicatii generale, ex.: PhpMyAdmin
- Majoritatea functiilor de acces la date sunt caracterizate de acces secvential
  - se citesc in intregime valorile stocate pe o linie
  - simultan se avanseaza indexul intern pe urmatoarea pozitie, pregatindu-se urmatoarea citire

Resurse MySQL

- Functiile sunt optimizate pentru utilizarea lor intr-o structura de control **do { } while()**, sau **while() { }** de control
  - returneaza FALSE cand "s-a ajuns la capat"
- tipic se realizeaza o citire (mysql_fetch_assoc) urmata de o bucla **do { } while()**
  - pentru a se putea introduce cod de detectie probleme rulat o singura data

Exemplu de utilizare

```
$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 );
```

Exemplu de utilizare

```
<?php
do { ?>
<tr>
        <td><?php echo $index; ?> </td>
        <td><?php echo $ row_result ['Code']; ?> </td>
        <td><?php echo $ row_result ['Name']; ?> </td>
        <td><?php echo $ row_result ['Population']; ?> </td>
</tr>
<?php
        $index++;
        }
while ($ row_result = mysql_fetch_assoc($ result )); ?>
```

Modificari laborator cu date stocate text

- Codul aplicatiei ramane in mare parte acelasi
- Se modifica doar citirea valorilor pentru popularea matricii $produse ("antet.php")

```
$vect=file("produse.txt");
foreach ($vect as $linie)
        {
        $valori=explode("\t",$linie,5);
        $produse[$valori[0]] [$valori[1]]=array ("descr" => $valori[2], "pret" => $valori[3], "cant" =>
$valori[4]);
        }
```

Modificari laborator cu date stocate XML

```
$xml = simplexml_load_file("lista.xml");
if ($xml)
{
foreach ($xml->categorie as $categorie)
        {
        $produse[(string)$categorie["nume"]]=array();
        foreach ($categorie->produs as $prod_cur)
                {
                $produse[(string)$categorie["nume"]][(string)$prod_cur->nume]=array
                ("descr" => (string)$prod_cur->desc, "pret" => (string)$prod_cur->pret,
                "cant" => (string)$prod_cur->cant);
                }
        }
}
```

Modificari laborator cu date stocate MySQL

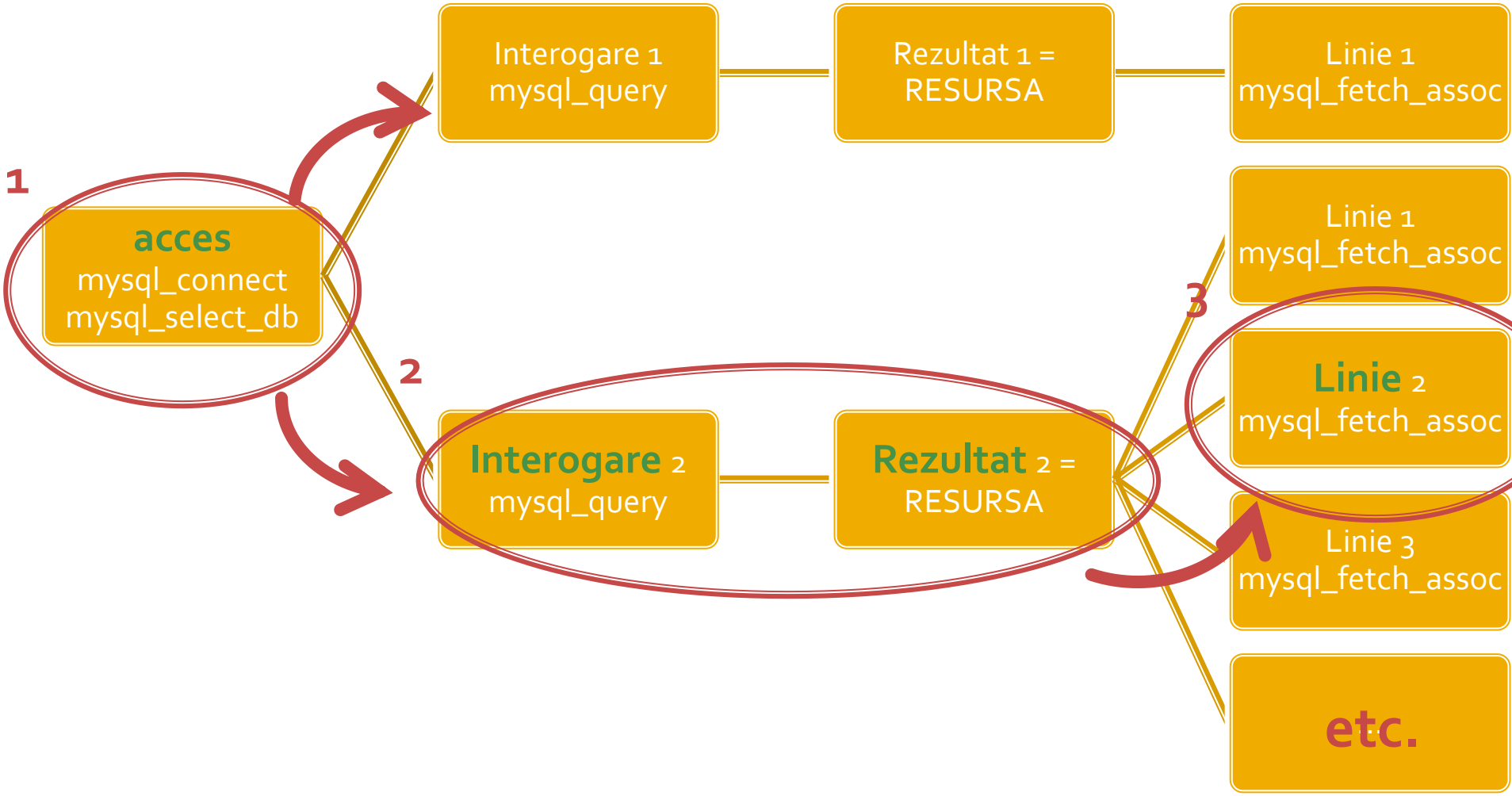
```
$hostname = "localhost";
$database = "tmpaw";
$username = "web";
$password = "test";
$conex= mysql_connect($hostname, $username, $password);
mysql_select_db($database, $conex);
$query = "SELECT * FROM `categorii` AS c";
$result_c = mysql_query($query, $conex) or die(mysql_error());
$row_result_c = mysql_fetch_assoc($result_c);
$totalRows_result = mysql_num_rows($result_c);
do {
        $query = "SELECT * FROM `produse` AS p WHERE `id_categ` = ".$row_result_c['id_categ'];
        $result_p = mysql_query($query, $conex) or die(mysql_error());
        $row_result_p = mysql_fetch_assoc($result_p);
        $totalRows_result = mysql_num_rows($result_p);
        $produse[$row_result_c['nume']]=array();
        do {
                $produse[$row_result_c['nume']][$row_result_p['nume']]=array ("descr" =>
$row_result_p['detalii'], "pret" => $row_result_p['pret'], "cant" => $row_result_p['cant']);
                }
        while ($row_result_p = mysql_fetch_assoc($result_p));
        }
while ($row_result_c = mysql_fetch_assoc($result_c));
```

Optimizare

- o singura interogare SQL, unirea tabelelor (JOIN) lasata in baza server-ului MySql

```
$hostname = "localhost";
$database = "tmpaw";
$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 `categorii` 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));
```

Functii de acces la server-ul MySql



!! IMPORTANT

PHP > 5.5

PHP 5.5

- Incapand cu versiunea 5.5 a PHP extensia mysql este declarata **depreciata**
  - orice utilizare a unei functii genereaza eroare de tip **E_DEPRECATED**
  - se preconizeaza ca in PHP > 6 aceasta extensie va fi eliminata total (**realizat**)
- Alternativele de utilizare sunt
  - extensia **mysqli** (MySQL Improved)
  - extensia **PDO** (PHP Data Objects)

Extensia mysqli

- Inafara securitatii sporite ofera acces la facilitatile curente ale server-ului MySQL
  - accesul la interogari predefinite (Prepared Statements) (viteza, securitate)
    - server side
    - client side
  - proceduri stocate pe server (viteza, securitate)
  - interogari multiple
  - tranzactii (integritate)

Extensia mysqli

- Doua modalitati de utilizare
  - procedurala (similar mysql)
  - POO (similar PDO)
- Utilizarea procedurala (aproape) similara cu utilizarea extensiei originale mysql
  - tranzitie facila
  - tranzitie cu mici diferente de parametri

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 = 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'];
?>
```

- toate functiile mysql au un echivalent mysqli
- majoritatea functiilor au aceeasi parametri in aceeasi ordine
- sunt totusi functii cu mici diferente (Ex: **mysqli_connect**, **mysqli_query**)

mysqli – Programare orientata obiect

```
<?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

Structura

Index intern	Col 1 (tip date)	Col 2 (tip date)	....
1			
2			
...			

Date

Index intern	Col 1	Col 2	....
1	Val 11	Val 12	...
2	Val 21	Val 22	...
...	...	...	...

Metode

Constructor	query	fetch_assoc	....

Functii de acces la structura

Functii de acces la date

~~Acces direct~~

Metode atasate resursei

Conversia la mysqli (obligatorie)

- exemplul anterior

```
$hostname = "localhost";
$database = "tmpaw";
$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 `categorii` 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 (POO)

```
//$conex= mysql_connect($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());
```

Laborator 6

Plan aplicatie – Cumparator

- Pe masura ce aplicatia paraseste un fir liniar de executie este necesara introducerea unui plan (graf) al aplicatiei
- Cumparator
  - citirea fisierului text (XML) se realizeaza in antet.php, comun pentru toate fisierele

Rezultat (cumparator)

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
3	Audio-video	3
4	Calculatoare	3
5	Jucarii	2

Total produse: 14

Magazin online Firma X SRL

alizati comanda

Nr.	Produs	Pret	Cantitate
1	Carti	100	1
2	Caiete	50	2
3	Penare	150	1
4	Stilouri	125	0
5	Creioane	25	0

Trimite

Magazin online Firma X SRL

Rezultate comanda

Pret total (fara TVA): 350

Pret total (cu TVA): 416.5

Comanda receptionata la data: 17/03/2010 ora 08:24

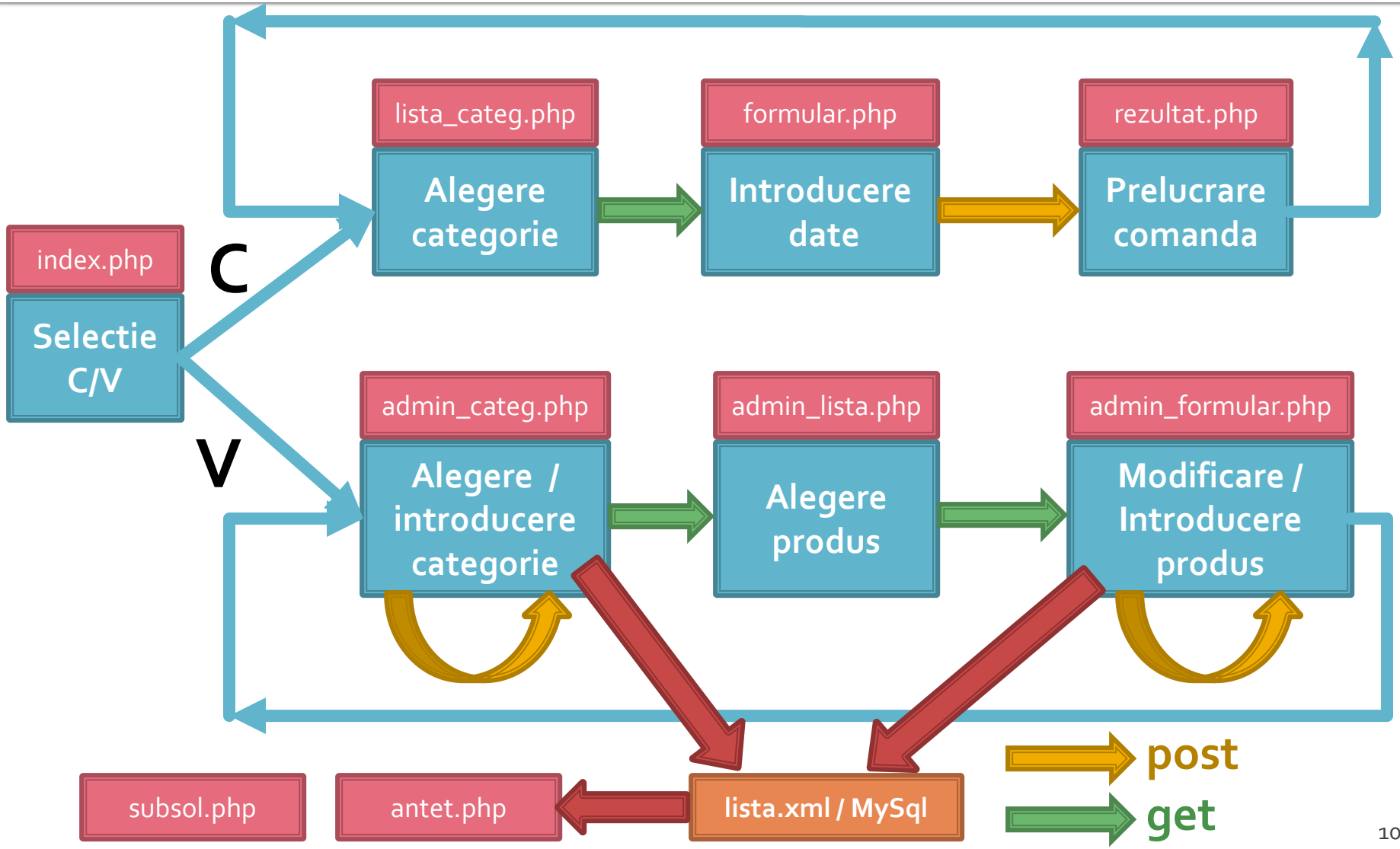
post

get

Plan aplicatie – Vanzator

- Aparitia aplicatiei pentru vanzator
  - introduce un fir paralel de executie cu necesitatea alegerii initiale: cumparator/vanzator
  - aduce posibilitatea scrierii fisierului XML
  - diverse operatii de scriere
    - introducere categorie de produse
    - introducere produs nou intr-o categorie existenta
    - modificare produs existent
  - modificarea fisierului implica 2 actiuni:
    - colectare date
    - prelucrare

Plan aplicatie (Proiect !!)



Rezultat (vanzator)

Magazin Firma X

Inceput | Inapoi

Magazin online Firma X SRL

Alegeti:

- Cumparator
- Vanzator

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
3	Audio-video	3
4	Calculatoare	3
5	Jucarii	2

Total produse: 14

Categorie noua de produse:

Trimite

Lista produse in categoria Calculatoare

Nr.	Produs	Descriere	Pret	Cantitate	Actiuni
1	Laptop	calculator mic	2000	2	modifica
2	Desktop	calculator mare	1000	5	modifica
3	Imprimanta	prn	200	2	modifica
-	**Produs nou**				adauga

Produs in categoria Calculatoare

Produs	laptop
Descriere	calculator mic
Pret	2000
Cantitate	2

Trimite

post

get

Laborator 6

- Sa se continue magazinul virtual cu:
  - produsele sunt grupate pe categorii de produse
  - sa prezinte utilizatorului o lista de grupe de produse pentru a alege
  - sa prezinte utilizatorului o lista de produse si preturi in grupa aleasa
  - lista de produse si preturi se citeste dintr-o baza de date **MySQL**
  - se preia comanda si se calculeaza suma totala
  - **se creaza <u>paginile</u> prin care vanzatorul poate modifica preturile, produsele, <u>categoriile</u>**

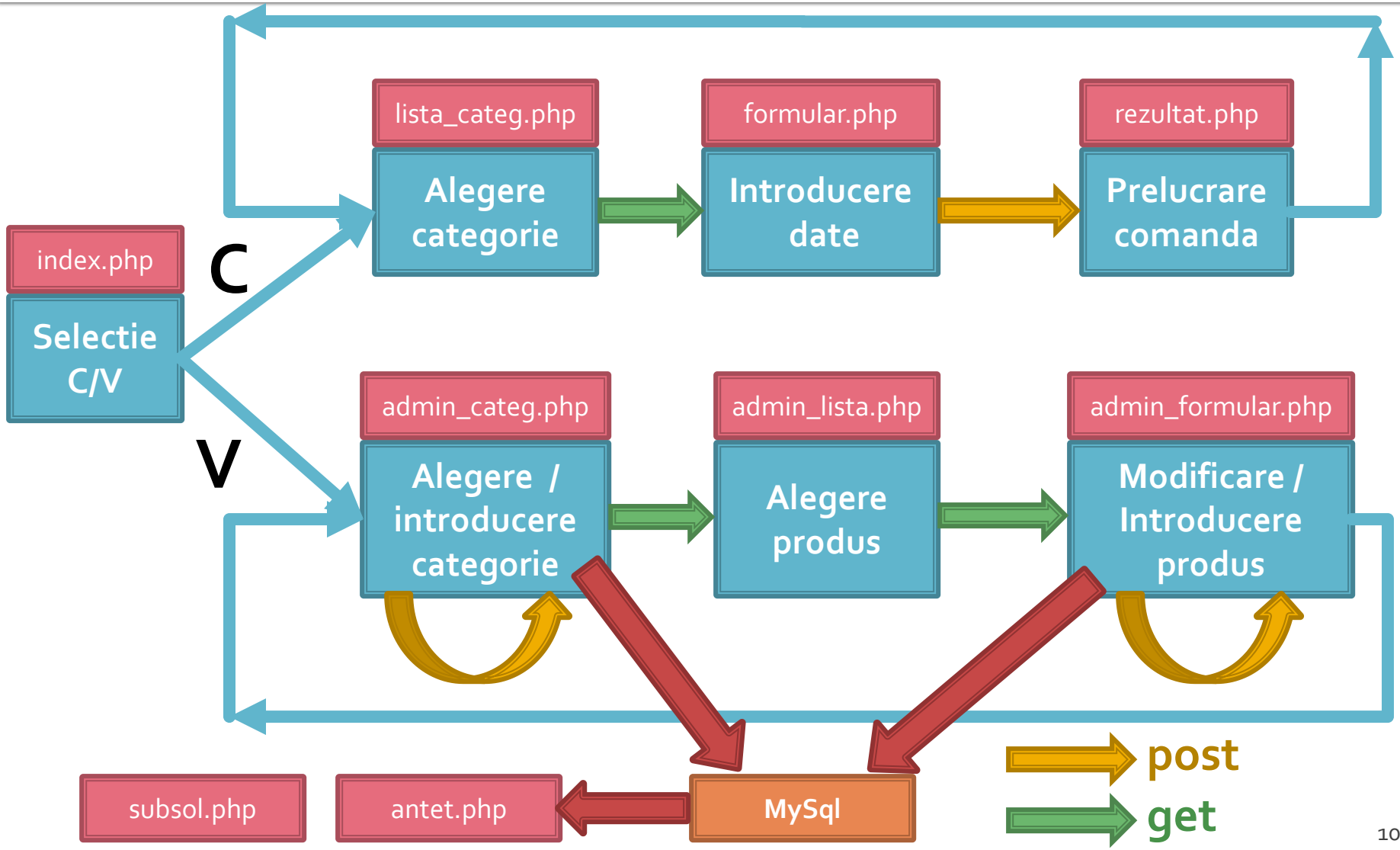
Laborator 6/7 – Mod de lucru

- Se continua lucrul la aplicatie (L5)
- Se recomanda laboratorul **asincron** – S2
- Se poate folosi fisierul cu surse cpypaste.txt (site-http://rf-opto.etti.tuiasi.ro)

Laborator 6/7 – Mod de lucru

- Se ia o decizie relativ la relatia dintre produse si categorii (S50-S53)
  - One to Many
  - Many to Many
- Se creaza cele 2(3) tabele corespunzatoare
- Se populeaza cu date
- Se actualizeaza planul aplicatiei pentru a corespunde cu aplicatia proprie
  - nume de fisiere, tipuri de transfer a datelor

Plan aplicatie



Rezultat (cumparator)

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
3	Audio-video	3
4	Calculatoare	3
5	Jucarii	2

Total produse: 14

Magazin online Firma X SRL

alizati comanda

Nr.	Produs	Pret	Cantitate
1	Carti	100	1
2	Caiete	50	2
3	Penare	150	1
4	Stilouri	125	0
5	Creioane	25	0

Trimite

Magazin online Firma X SRL

Rezultate comanda

Pret total (fara TVA): 350

Pret total (cu TVA): 416.5

Comanda receptionata la data: 17/03/2010 ora 08:24

post

get

Rezultat (vanzator)

Magazin Firma X

Inceput | Inapoi

Magazin online Firma X SRL

Alegeti:

- Cumparator
- Vanzator

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
3	Audio-video	3
4	Calculatoare	3
5	Jucarii	2

Total produse: 14

Categorie noua de produse: Trimite

Lista produse in categoria Calculatoare

Nr.	Produs	Descriere	Pret	Cantitate	Actiuni
1	Laptop	calculator mic	2000	2	modifica
2	Desktop	calculator mare	1000	5	modifica
3	Imprimanta	prn	200	2	modifica
-	**Produs nou**				adauga

Produs in categoria Calculatoare

Produs	laptop
Descriere	calculator mic
Pret	2000
Cantitate	2

Trimite

post

get

Laborator 6/7 – Mod de lucru

- Se creaza firul de executie paralel pentru vanzator
  - fisierele pentru cumparator reprezinta o buna cale de pornire (Save As, Copy/Paste) pentru 2 din cele 3 fisiere
- Se lucreaza cat mai mult la conversia text -> MySQL
  - activitatea se continua la laboratorul 7

Plan aplicatie – vanzator

- Deoarece citirea datelor se face in fisierul antet.php (modificat anterior) vor aparea modificari doar la nivelul scrierii datelor noi introduse
- Fisiere
  - admin_lista.php – nemodificat
  - admin_categ.php – scrie categorii noi in baza de date: se incuieste cod XML cu cod MySql
  - admin_formular.php – scrie produse noi / corectii in baza de date: se incuieste cod XML cu cod MySql

admin_categ.php

```
if (isset($_POST["c_nou"]))
        {//categorie noua introdusa
        $categ_nou=$xml->addChild("categorie");
        $categ_nou->addAttribute("nume", $_POST["nou"]);
        $xml->asXML("lista.xml"); // salvare fisier
        $produse[$_POST["nou"]]=array(); // update matrice produse
        echo "<p>Categoria ".$_POST["nou"]." adaugata!</p>";
        }
```

```
if (isset($_POST["c_nou"]))
        {//categorie noua introdusa
        $query = "INSERT INTO `categorii` (`nume`, `detalii`) VALUES ('
".$_POST["nou_nume"]."', '".$_POST["nou_desc"]."')";
        echo $query;//util in perioada de testare
        $result = mysql_query($query, $conex) or die(mysql_error());
        $record=mysql_insert_id();//obtinerea id-ului nou
        $produse[$_POST["nou_nume"]]=array(); // update matrice produse
        echo "<p>Categoria ".$_POST["nou_nume"]." adaugata! Are id = ".$record."</p>";
        }
```

admin_categ.php

Magazin Firma X SRL

Inceput | Inapoi

Magazin online Firma X SRL

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
3	Audio-video	3

Total produse: 9

Categorie noua de produse:
Nume: jucarii
Descriere: pentru copii
Trimite

Magazin Firma X SRL

Inceput | Inapoi

Magazin online Firma X SRL

INSERT INTO `categorii` (`nume`, `detalii`) VALUES ('jucarii', 'pentru copii')

Categoria jucarii adaugata! Are id = 4

Categorii Produse

Alegeti categoria:

Nr.	Categorie	Total Produse
1	Papetarie	3
2	Instrumente	3
3	Audio-video	3
4	Jucarii	0

Total produse: 9

Categorie noua de produse:
Nume:
Descriere:
Trimite

Magazin online Firma X SRL

INSERT INTO `categorii` (`nume`, `detalii`) VALUES ('jucarii', 'pentru copii')

Categoria jucarii adaugata! Are id = 4

admin_formular.php

- Pentru inlocuire/adaugare produs apare o tratare diferita a celor doua situatii:
  - Adaugarea de produs face apel la interogarea SQL **INSERT INTO `produse` ...**
  - Modificarea unui produs existent va face apel la interogarea SQL **UPDATE `produse` SET ...**

admin_formular.php

```
if (isset($_POST["prod_ant"]))//exista deja acest produs anterior?
		{//exista deja acest produs UPDATE
		unset($produse[$_POST['categ']][$_POST['prod_ant']]);//trebuie sters produsul anterior inlocuit
		$query = "UPDATE `produse` SET `nume`='".$_POST["prod"]."', `detalii`='".$_POST["descriere"]."',
`cant`=".$_POST["cantitate"]."., `pret`=".$_POST["pret"]." WHERE `nume`='".$_POST["prod_ant"]."'";
		echo $query;//util in perioada de testare
		$result = mysql_query($query, $conex) or die(mysql_error());
		echo "<p>Produsul \"".$_POST["prod"]."\" modificat in categoria \"".$_POST['categ']."\"!</p>";
		}
else
		{//NU exista acest produs INSERT
		$query = "INSERT INTO `produse` (`nume`, `detalii`, `pret`, `cant`, `id_categ`) VALUES
('".$_POST["prod"]."', '".$_POST["descriere"]."', ".$_POST['pret']."., ".$_POST['cantitate']".,
		(SELECT `id_categ` FROM categorii WHERE `nume` = '".$_POST['categ']."') )";
		echo $query;//util in perioada de testare
		$result = mysql_query($query, $conex) or die(mysql_error());
		$record=mysql_insert_id();//obtinerea id-ului nou
		echo "<p>Produsul \"".$_POST["prod"]."\" adaugat in categoria \"".$_POST['categ']."\"! Are id =
".$record."</p>";
		}
$produse[$_POST['categ']][$_POST['prod']]=array("descr" => $_POST['descriere'], "pret" => $_POST['pret'], "cant" =>
$_POST['cantitate']);
```

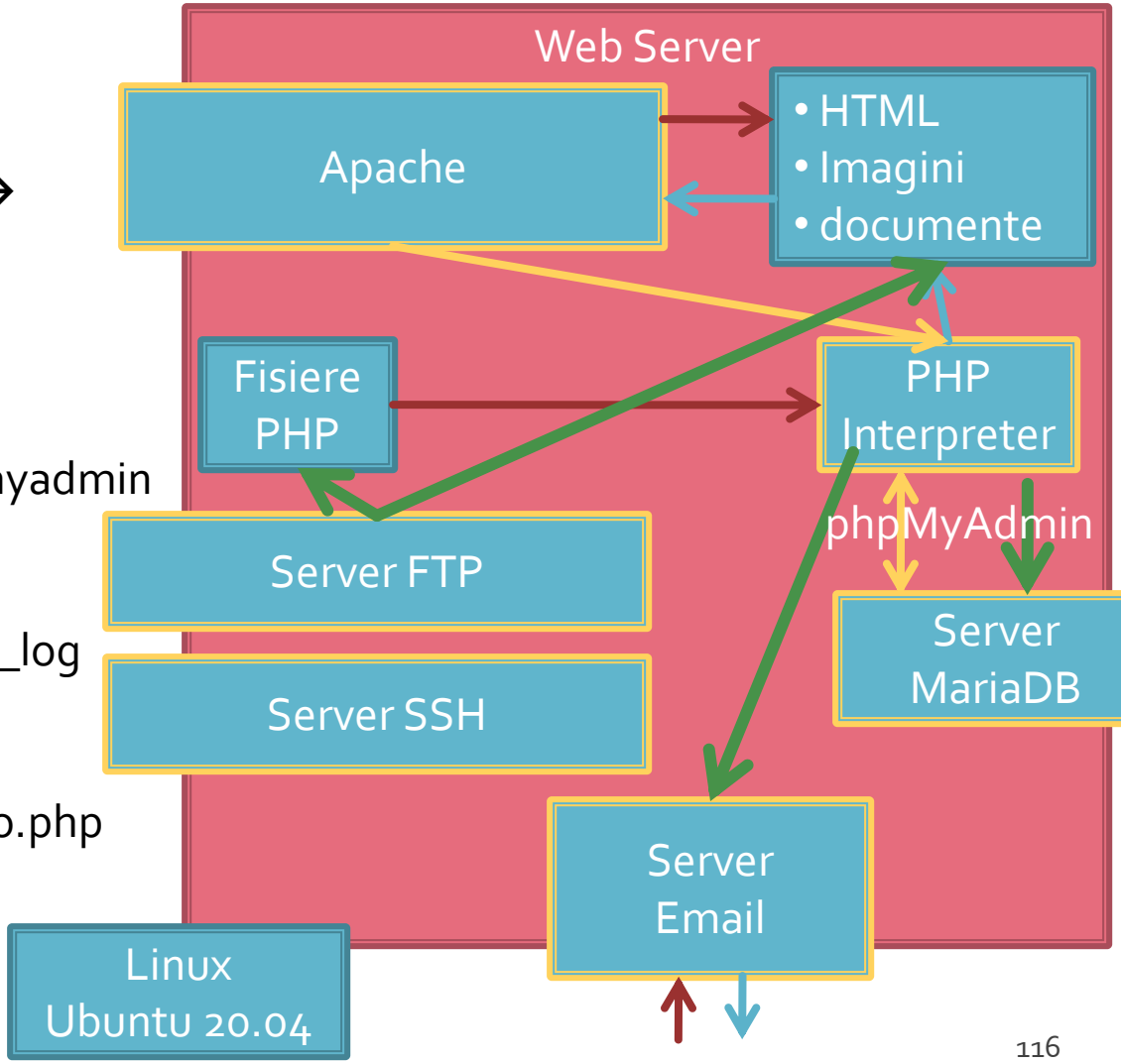
Faza de verificare/depanare

- Se recomanda utilizarea posibilitatii vizualizarii matricilor
  - In fisierul care receptioneaza datele
  - temporar pina la definitivarea codului
- utilizarea de cod "verbose" (manual) in etapele initiale de scriere a surselor PHP poate fi extinsa si la alte tipuri de date
  - singura (aproape) metoda de depanare(debug) in PHP
  - temp <?php echo "a=";echo $a; ?>

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

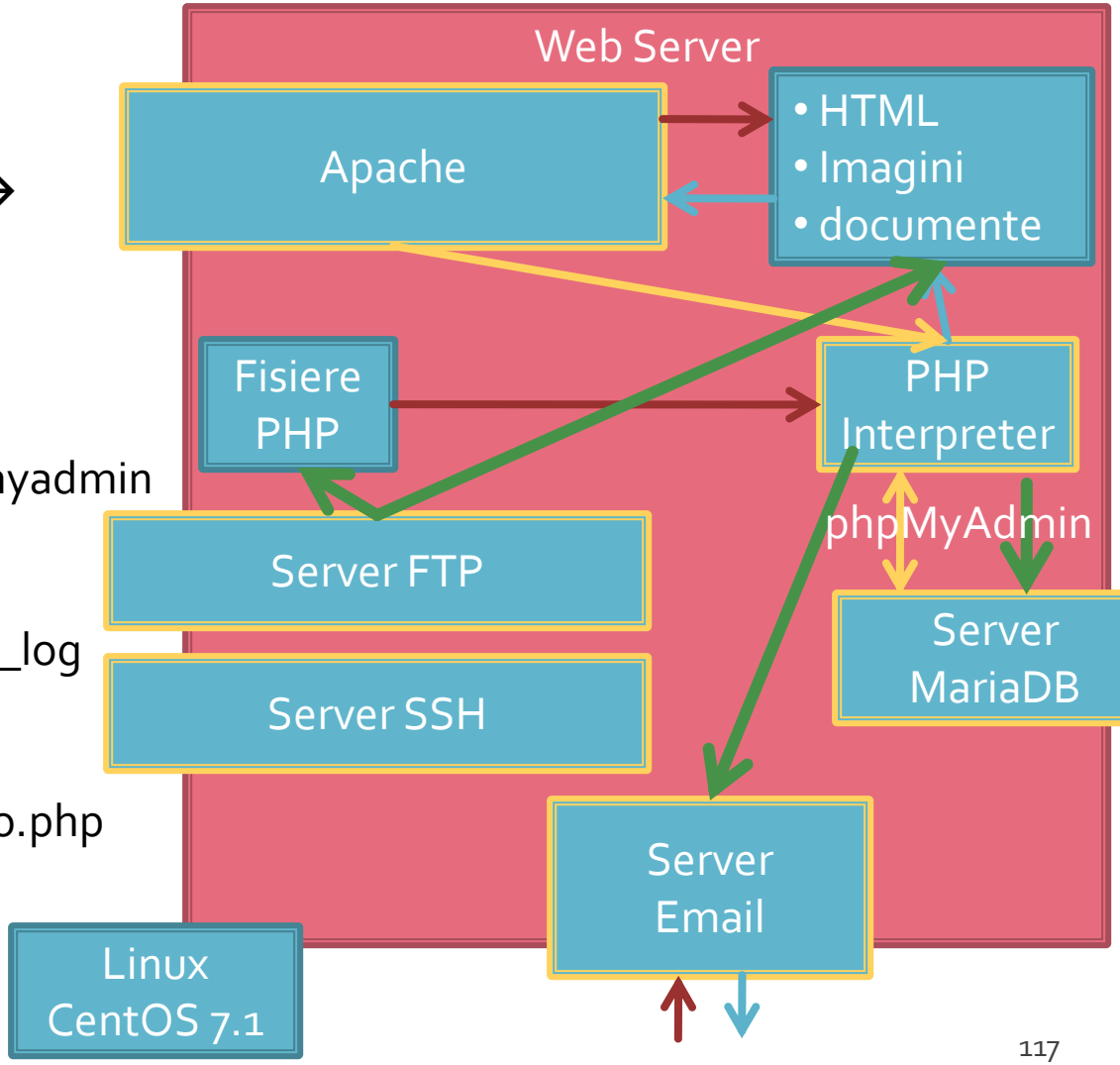
Utilizare LAMP

1. login → **paw**:masteretti
2. ifconfig → 192.168.30.5
3. putty.exe → 192.168.30.5 → SSH → **paw**:masteretti (remote login)
4. [alte comenzi linux dorite]
5. FTP → Winscp → SFTP → student:masterrc@192.168.30.5
6. MySql → http://192.168.30.5/phpmyadmin → **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

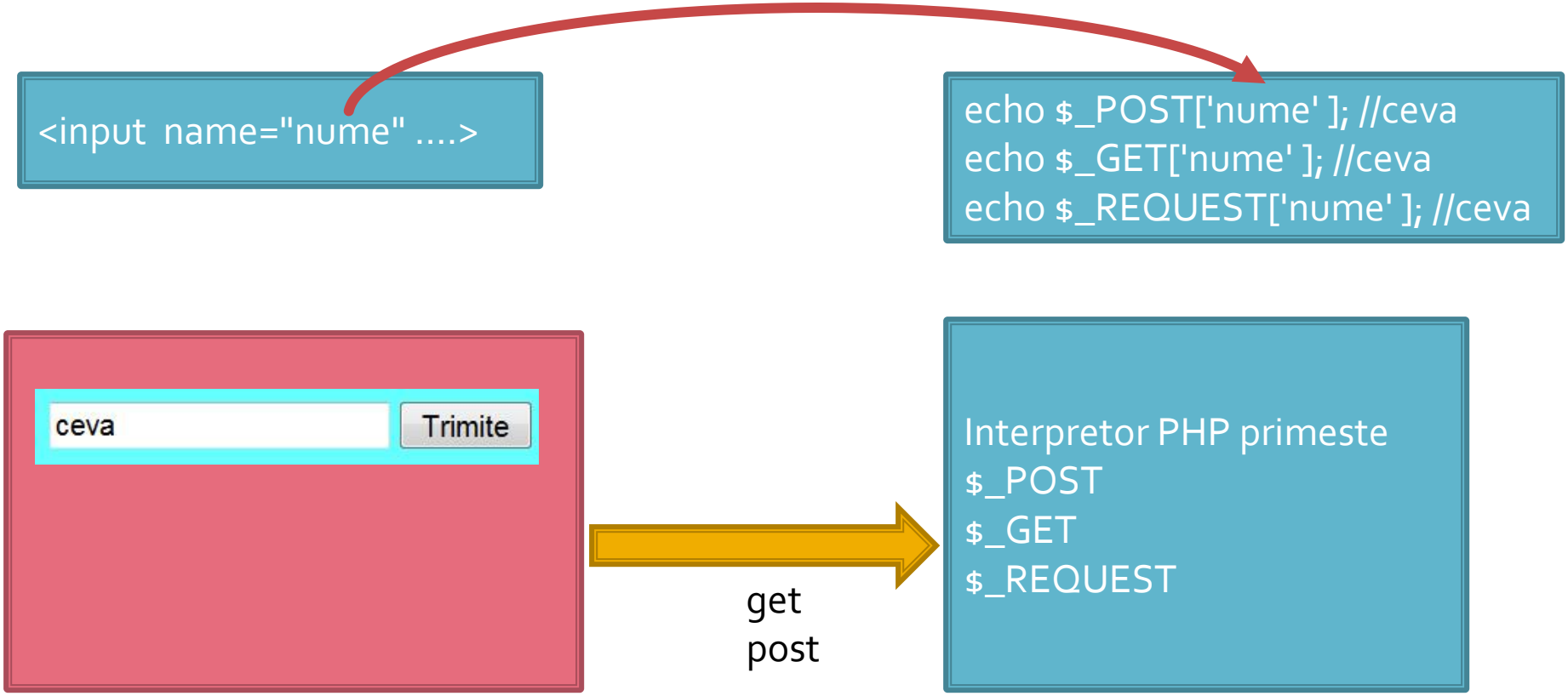


Utilizare LAMP

1. login → root:masterrc
2. ifconfig → 192.168.30.5
3. putty.exe → 192.168.30.5 → SSH → root:masterrc (remote login)
4. [alte comenzi linux dorite]
5. FTP → Winscp → SFTP → student:masterrc@192.168.30.5
6. MySql → http://192.168.30.5/phpmyadmin → root:masterrc
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



Client / Server



Depanare

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

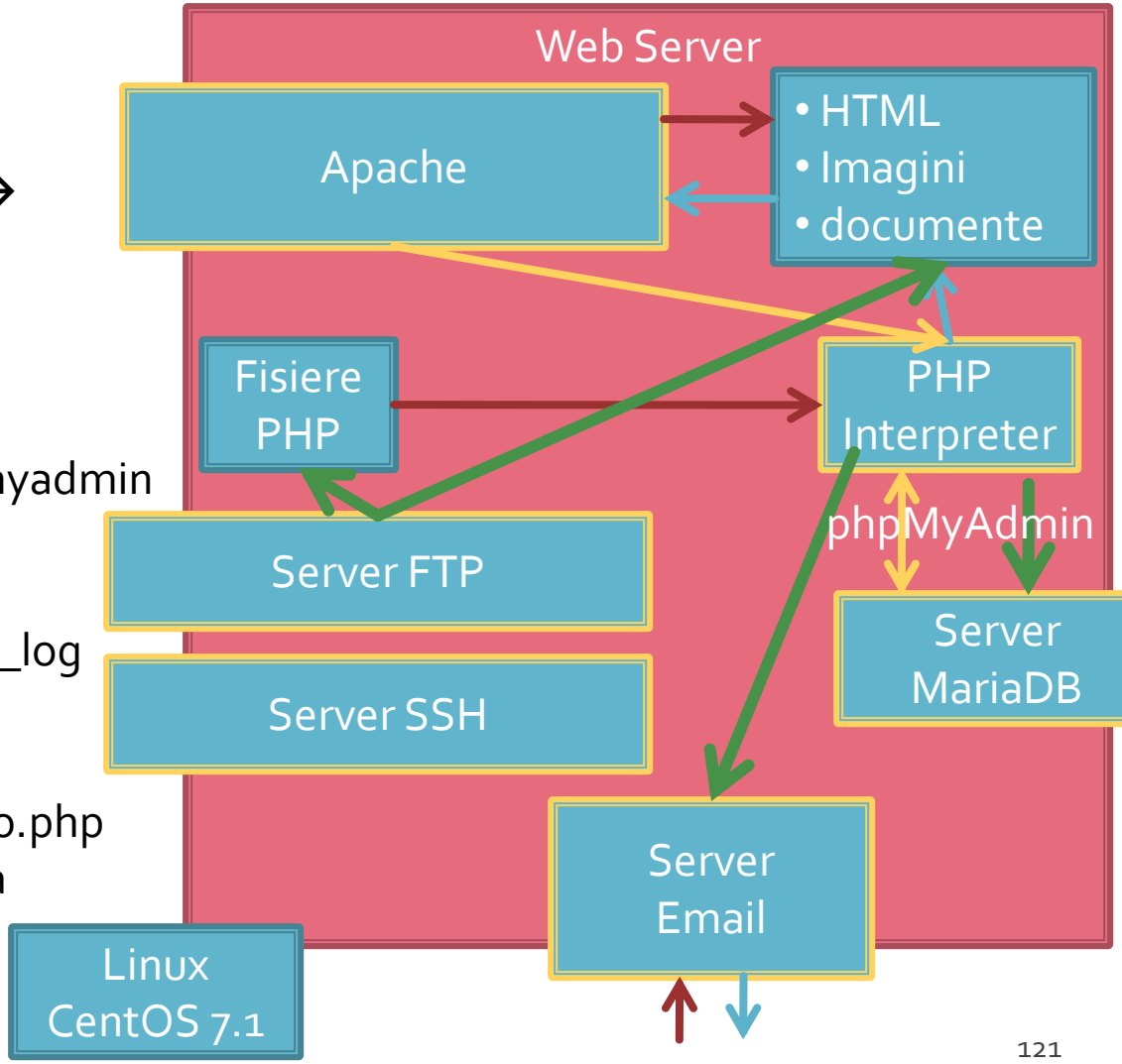
```
<p>temp <?php echo
"a=";echo $a; ?> </p>
```

MySql – Server Ubuntu/Debian

Mini – Indrumar practic Lucru cu bazele de date

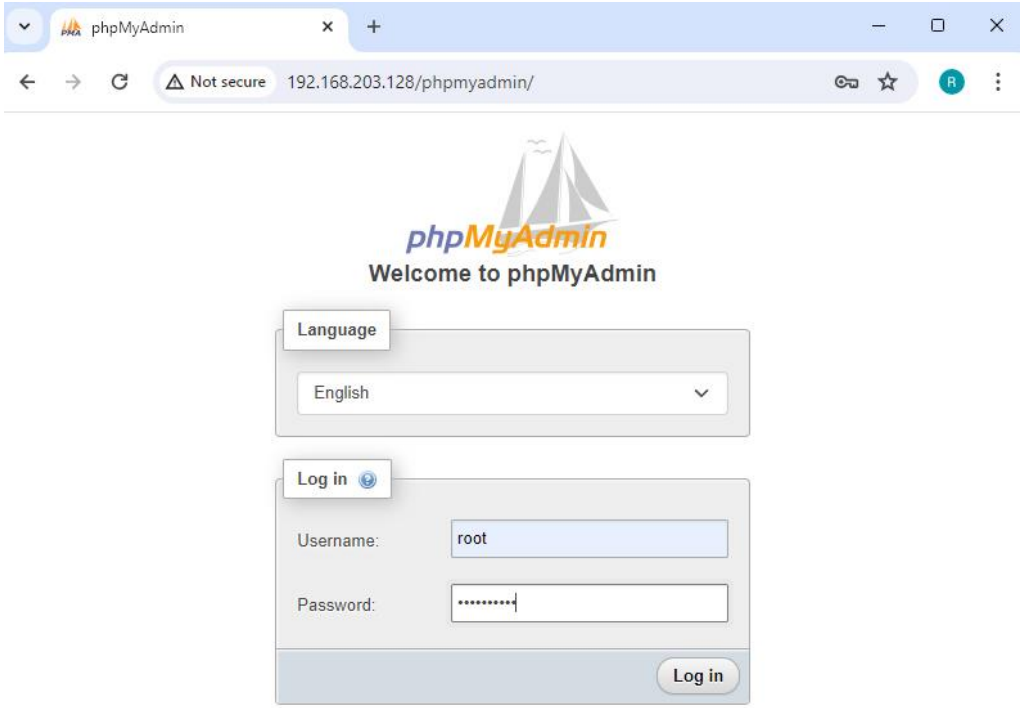
Utilizare LAMP

1. login → root:masterrc
2. ifconfig → 192.168.30.5
3. putty.exe → 192.168.30.5 → SSH → root:masterrc (remote login)
4. [alte comenzi linux dorite]
5. FTP → Winscp → SFTP → student:masterrc@192.168.30.5
6. MySql → http://192.168.30.5/phpmyadmin → root:masterrc
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. daca serviciul DHCP duce la oprirea Apache: service httpd restart



PhpMyAdmin

- http://192.168.30.5/phpmyadmin
  - root
  - parola administrator **MySql/MariaDB** (masteretti)



PhpMyAdmin

192.168.203.128 / localhost | ph

Not secure 192.168.203.128/phpmyadmin/index.php?route=/&route=%2F

phpMyAdmin

Recent Favorites

- New
- information_schema
- mysql
- performance_schema
- phpmyadmin
- sys
- world

Server: localhost:3306

Databases | SQL | Status | User accounts | Export | Import | Settings | Replication | Variables | Charsets | More

General settings

Change password

Server connection collation: utf8mb4_unicode_ci

More settings

Appearance settings

Language English

Theme pmahomme View all

Database server

- Server: Localhost via UNIX socket
- Server type: MariaDB
- Server connection: SSL is not being used
- Server version: 10.11.6-MariaDB-0+deb12u1 - Debian 12
- Protocol version: 10
- User: root@localhost
- Server charset: UTF-8 Unicode (utf8mb4)

Web server

- Apache/2.4.57 (Debian)
- Database client version: libmysql - mysqlnd 8.2.7
- PHP extension: mysqli curl mbstring sodium
- PHP version: 8.2.7

phpMyAdmin

- Version information: 5.2.1deb1
- Documentation
- Official Homepage
- Contribute
- Get support
- List of changes
- License

Creare Baza de Date

- Databases →"nume" →Create

192.168.203.128 / localhost | ph

Not secure 192.168.203.128/phpmyadmin/index.php?route=/server/databases

phpMyAdmin

Recent Favorites

New
information_schema
mysql
performance_schema
phpmyadmin
sys
world

localhost:3306

Databases | SQL | Status | User accounts | Export | Import

Databases

Create database

lab | utf8mb4_general_ci | Create

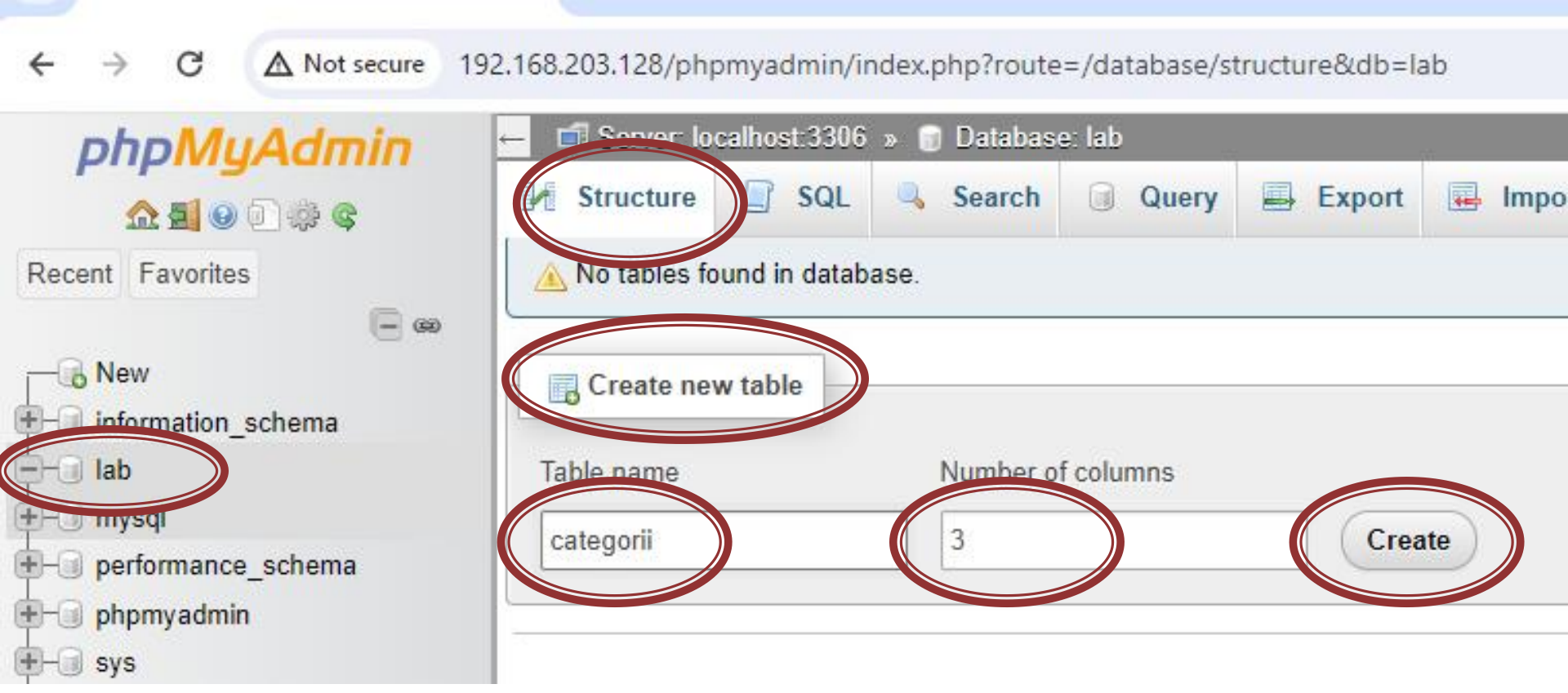
Check all | Drop

Database	Collation	Action
information_schema	utf8mb3_general_ci	Check privileges
mysql	utf8mb4_general_ci	Check privileges
performance_schema	utf8mb3_general_ci	Check privileges
phpmyadmin	utf8mb4_general_ci	Check privileges
sys	utf8mb3_general_ci	Check privileges
world	utf8mb4_general_ci	Check privileges

Total: 6

Creare tabele in baza de date

- Baza de date (in lista) → Structure → div Create new table → nume/coloane → Create



Introducere coloane, tabel categorii

- (eventual) Adaugare coloane / Stabilire nume
- Name / Type / Length / Default

192.168.203.128 / localhost / la

Not secure 192.168.203.128/phpmyadmin/index.php?route=/database/structure&db=lab

phpMyAdmin

Recent Favorites

New
information_schema
lab
mysql
performance_schema
phpmyadmin
sys
world

Server: localhost:3306 » Database: lab

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers Tracking More

Table name: categorii Add 1 column(s) Go

Structure

Name	Type	Length/Values	Default	Collation	Attributes	Null	Index	A_I	Comments
d_categ (Pick from Central Columns)	INT		None			☐	PRIMARY (PRIMARY)	☑	
nume (Pick from Central Columns)	VARCHAR	45	As defined:			☐	---	☐	
detalii (Pick from Central Columns)	VARCHAR	150	None			☑	---	☐	

Table comments: Collation: Storage Engine: InnoDB

Introducere coloane

- (eventual) NOT NULL / Index / Auto Increment

Server: localhost:3306 » Database: lab

Structure | SQL | Search | Query | Export | Import | Operations | Privileges | Routines | Events | Triggers | Tracking | More

Table name: categorii Add 1 column(s) Go

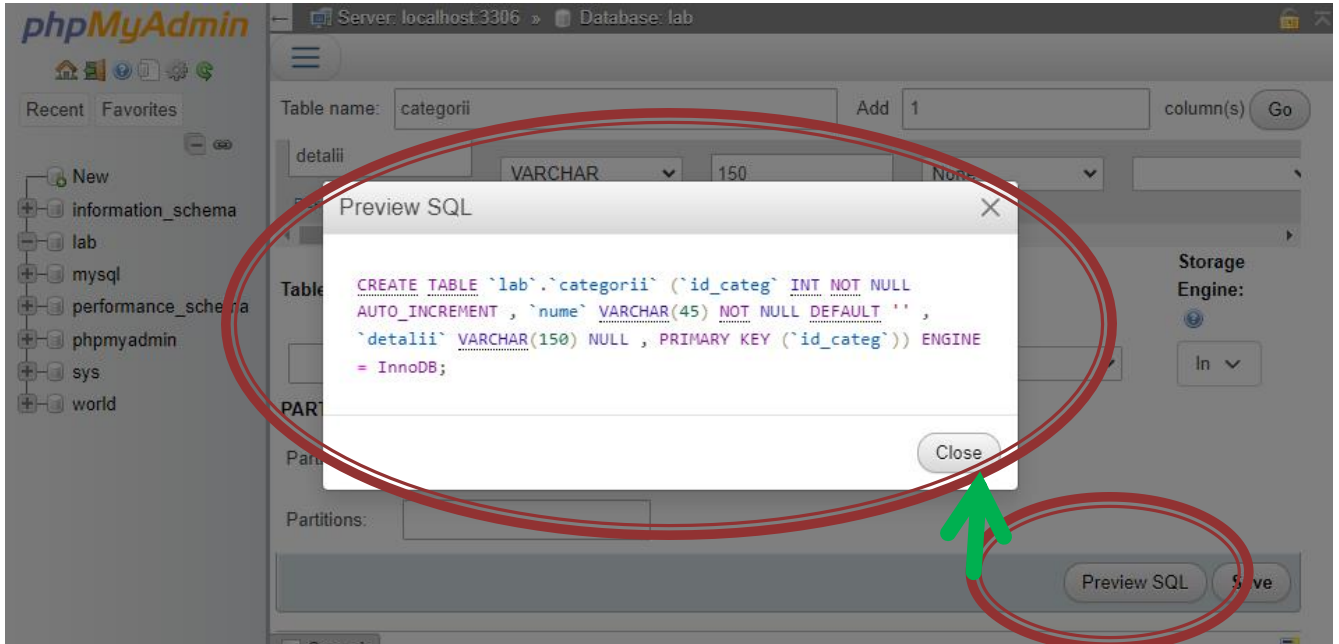
Structure

Name	Type	Length/Values	Default	Collation	Attributes	Null	Index	A_I	Comments
id_categ (Pick from Central Columns)	INT		None			☐	PRIMARY	☑	
nume (Pick from Central Columns)	VARCHAR	45	As defined:			☐	---	☐	
detalii (Pick from Central Columns)	VARCHAR	150	None			☑	---	☐	

Table comments: Collation: Storage Engine: InnoDB

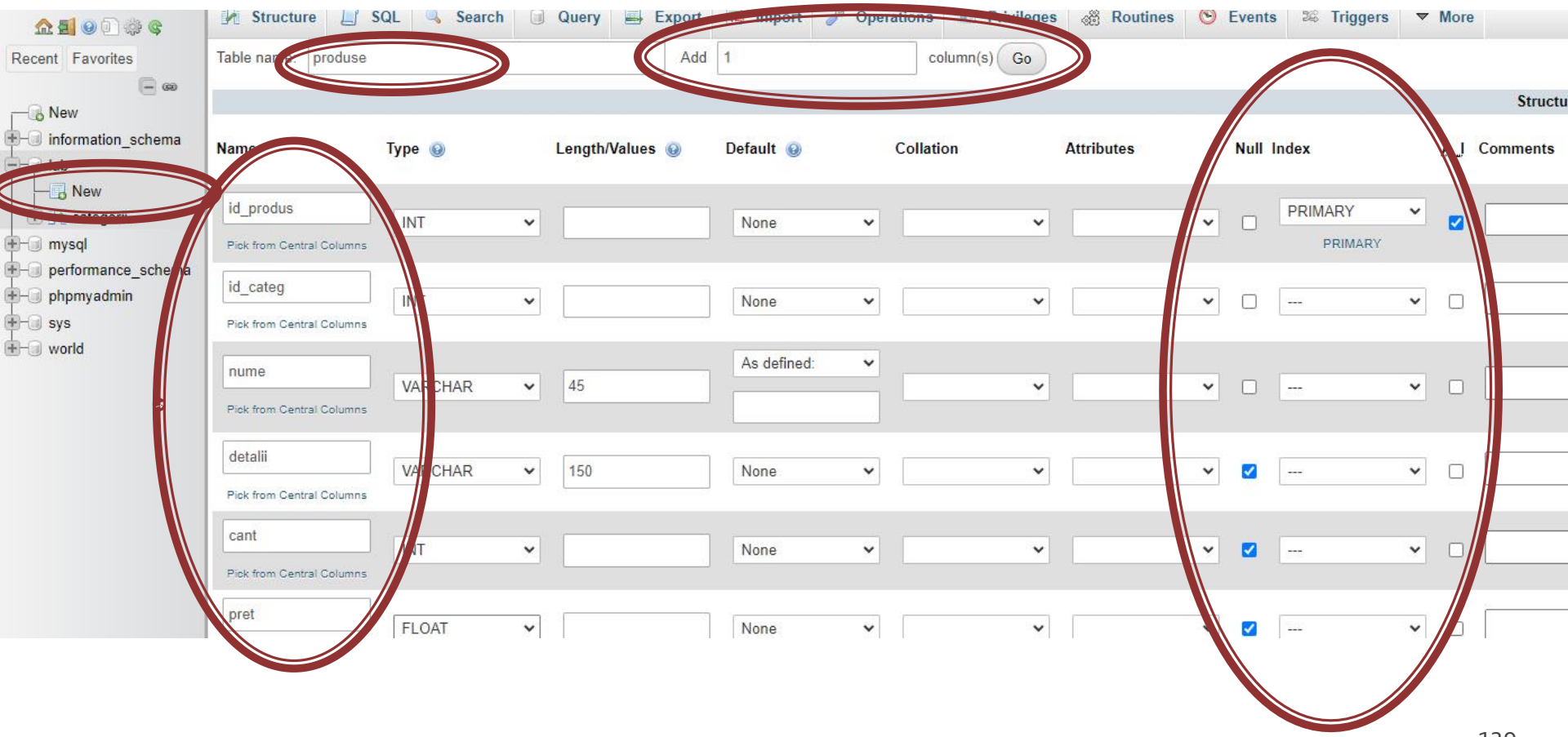
Preview SQL

- in aproape toate etapele in PhpMyAdmin
  - exemplu de cod SQL/schelet utilizabil (copy/paste) in aplicatia PHP
  - modificari de finete absente din interfata
    - copy → Sectiune "SQL" in interfata → paste → modificare



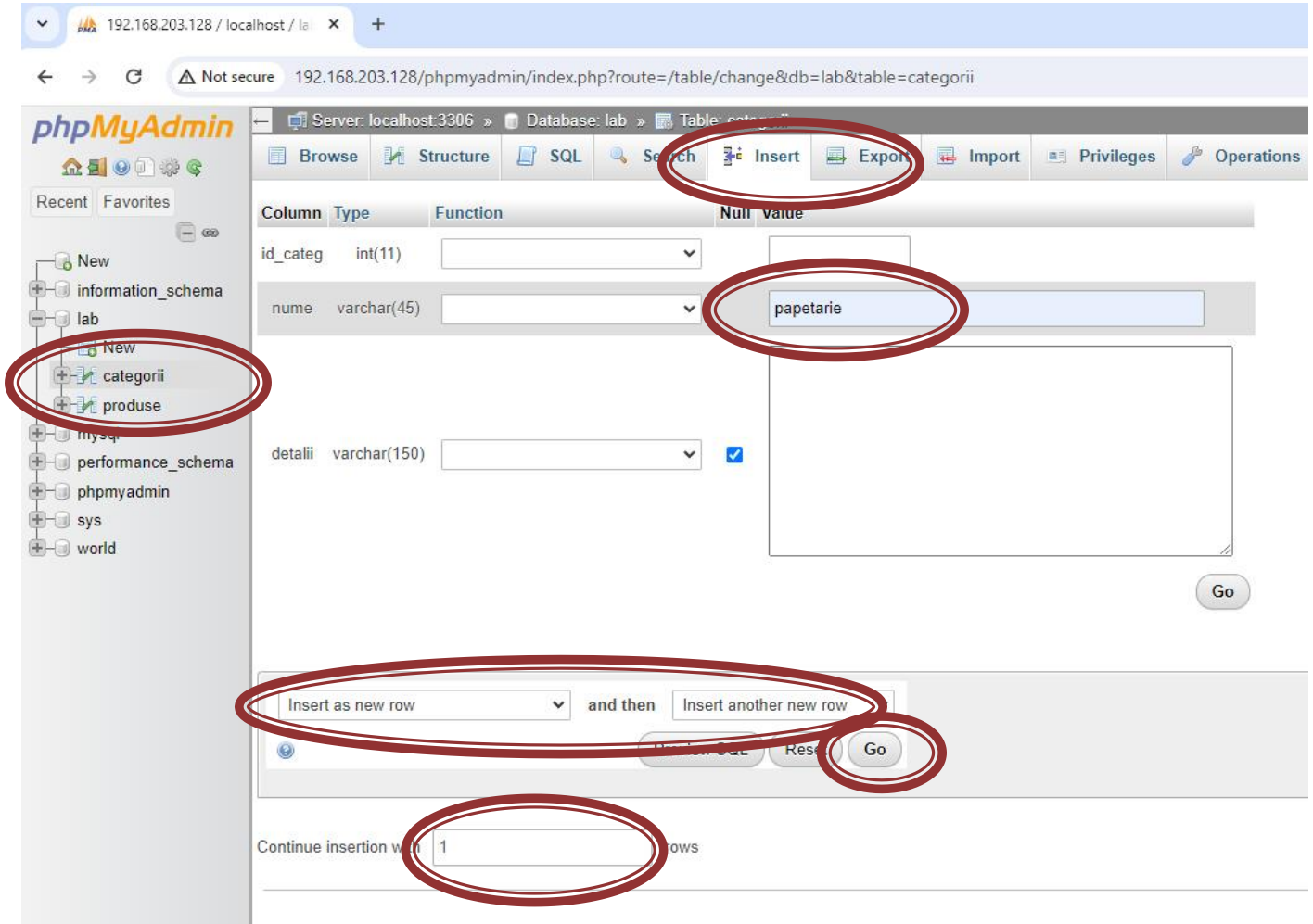
Introducere coloane, tabel produse

- New → Nume → Add Columns → …



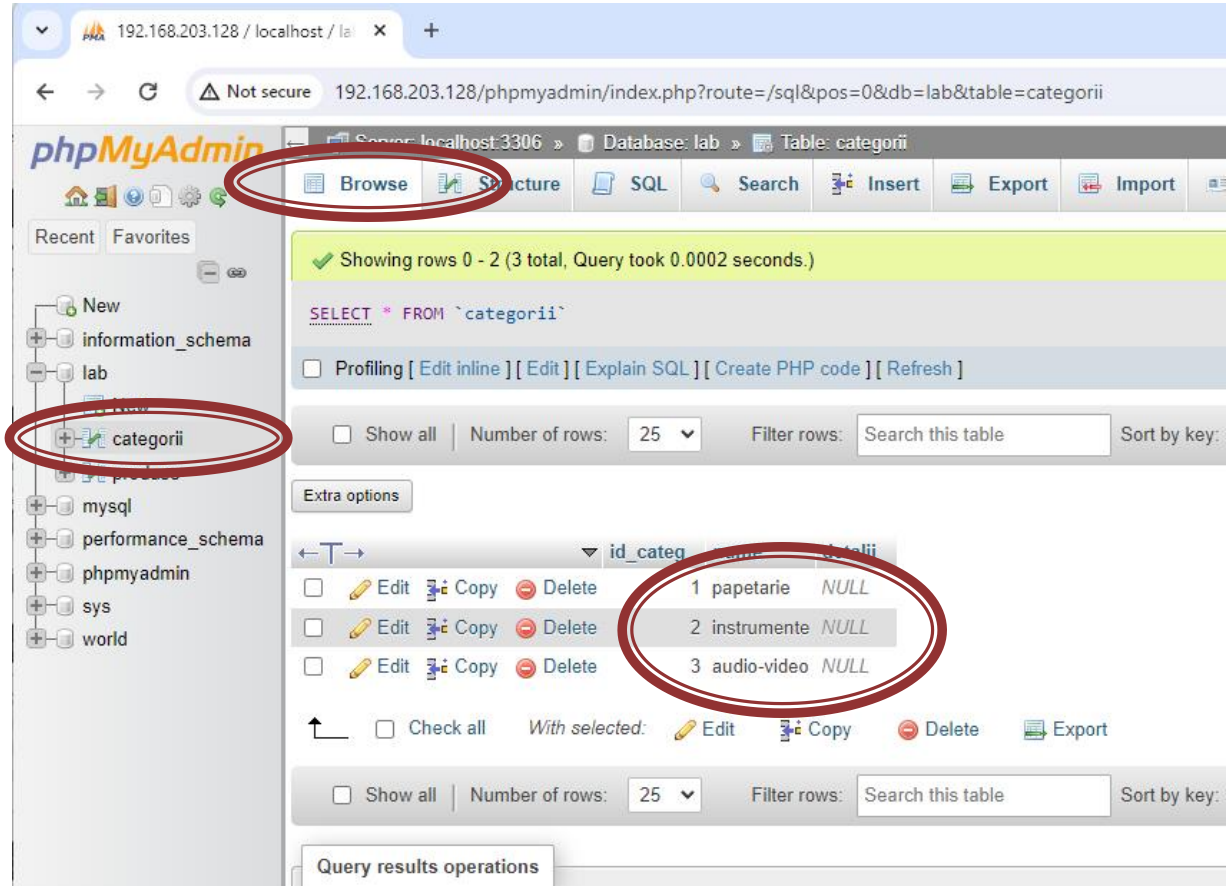
Introducere date initiale (interfata)

- Tabel → Insert → Completare → Go



Vizualizare date existente

- Tabel → Browse → salt la pagina (numar de linii pe pagina)



Introducere date initiale (SQL)

- Tabel → SQL → completare → Go

192.168.203.128 / localhost / la

Not secure 192.168.203.128/phpmyadmin/index.php?route=/table/sql&db=lab&table=produse

phpMyAdmin

Recent Favorites

New
information_schema
lab
New
categorii
produse
mysql
performance_schema
phpmyadmin
sys
world

Server: localhost:3306 Database: lab Table: produse

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking More

Run SQL query/queries on database lab:

```
INSERT INTO `produse` (`id_produs`,`id_categ`,`nume`,`detalii`,`cant`,`pret`) VALUES
(1,1,'carte','mai multe pagini scrise legate',0,100),
(2,1,'caiet','mai multe pagini goale legate',0,75),
(3,1,'hartie scris','mai multe pagini goale NElegate',0,50),
(4,2,'penar','loc de depozitat instrumente de scris',0,150),
(5,2,'stilou','instrument de scris albastru',0,125),
(6,2,'creion','instrument de scris gri',0,25),
(7,3,'cd','canta',0,50),
(8,3,'dvd','vizual',0,100),
(9,3,'blue ray','vizual extrem',0,500);
```

id_produs
id_categ
nume
detalii
cant
pret

SELECT * | SELECT | INSERT | UPDATE | DELETE | Clear | Format | Get auto-saved query | <<

Bind parameters

Bookmark this SQL query:

Delimiter ; | Show this query here again | Retain query box | Rollback when finished | Enable foreign key checks | Go

Tabel produse

192.168.203.128 / localhost / la

Not secure 192.168.203.128/phpmyadmin/index.php?route=/sql&db=lab&table=produse&pos=0

phpMyAdmin

Recent Favorites

- New
- information_schema
- lab
  - New
  - categorii
  - produse
- mysql
- performance_schema
- phpmyadmin
- sys
- world

Server: localhost:3306 » Database: lab » Table: produse

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations

Showing rows 0 - 8 (9 total, Query took 0.0003 seconds.)

```
SELECT * FROM `produse`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

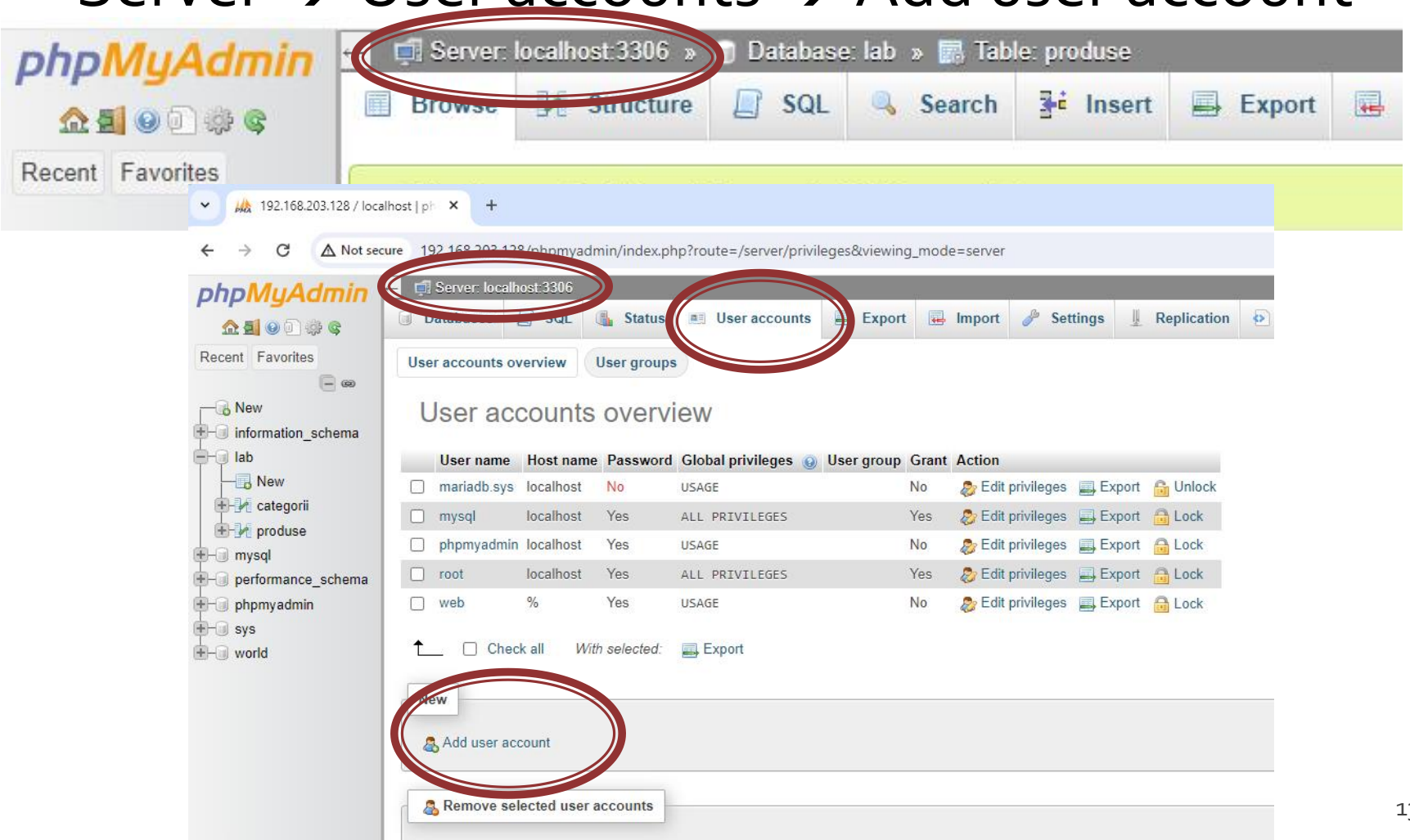
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

←T→			id_produs	id_categ	nume	detalii	cant	pret
Edit	Copy	Delete	1	1	carte	mai multe pagini scrise legate	0	100
Edit	Copy	Delete	2	1	caiet	mai multe pagini goale legate	0	75
Edit	Copy	Delete	3	1	hartie scris	mai multe pagini goale NElegate	0	50
Edit	Copy	Delete	4	2	penar	loc de depozitat instrumente de scris	0	150
Edit	Copy	Delete	5	2	stilou	instrument de scris albastru	0	125
Edit	Copy	Delete	6	2	creion	instrument de scris gri	0	25
Edit	Copy	Delete	7	3	cd	canta	0	50
Edit	Copy	Delete	8	3	dvd	vizual	0	100
Edit	Copy	Delete	9	3	blue ray	vizual extrem	0	500

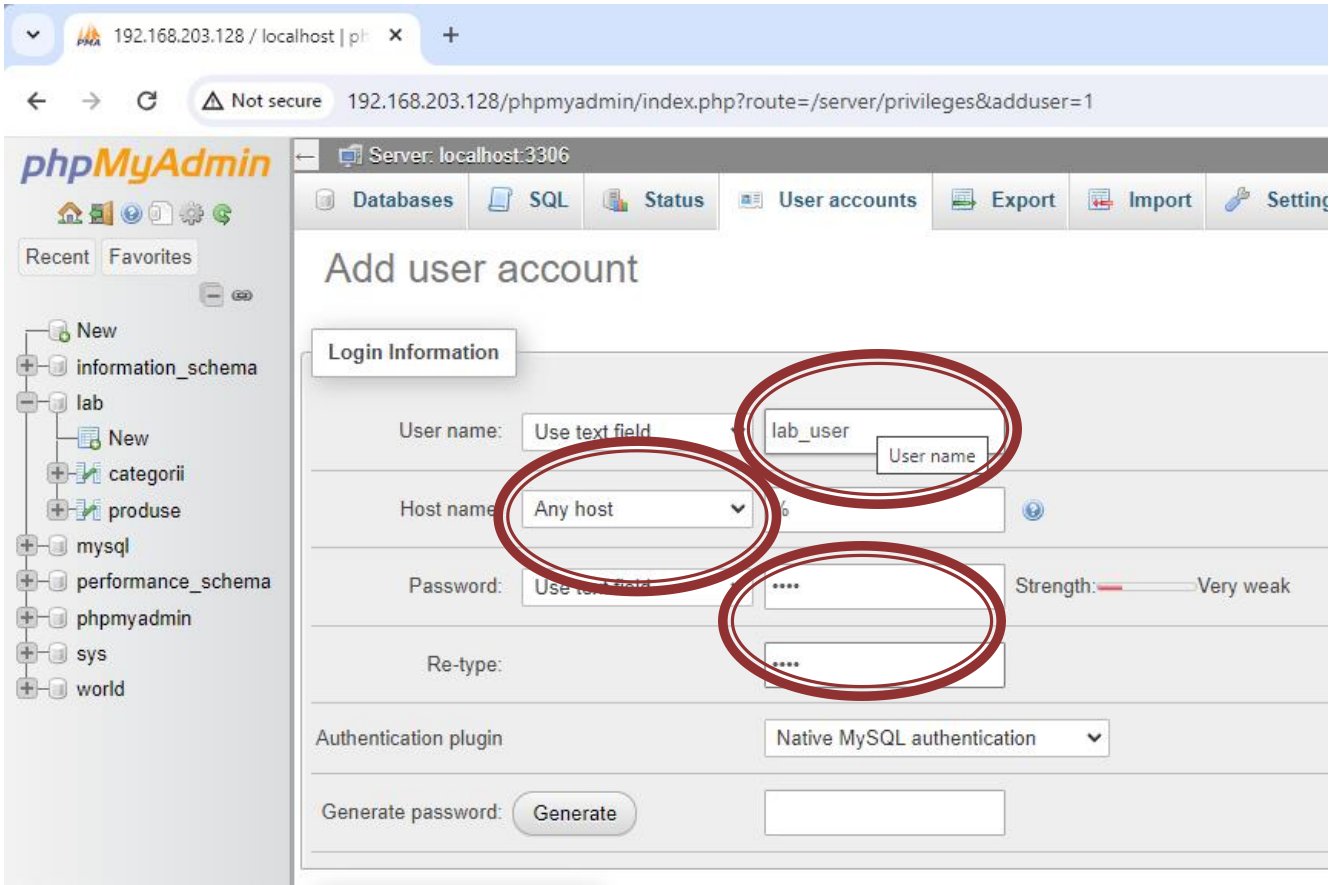
Adaugare utilizator

- Server → User accounts → Add user account



Adaugare utilizator

- Nu e recomandabil/**posibil** sa se utilizeze user-ul MySql “root” pentru aplicatii



Drepturi de acces

- Server → User accounts → Edit Privileges

phpMyAdmin

Recent Favorites

- New
- information_schema
- lab
  - New
  - categorii
  - produse
- mysql
- performance_schema
- phpmyadmin
- sys
- world

Server: localhost:3306

Databases | SQL | Status | User accounts | Export | Import | Settings | Replication

User accounts overview | User groups

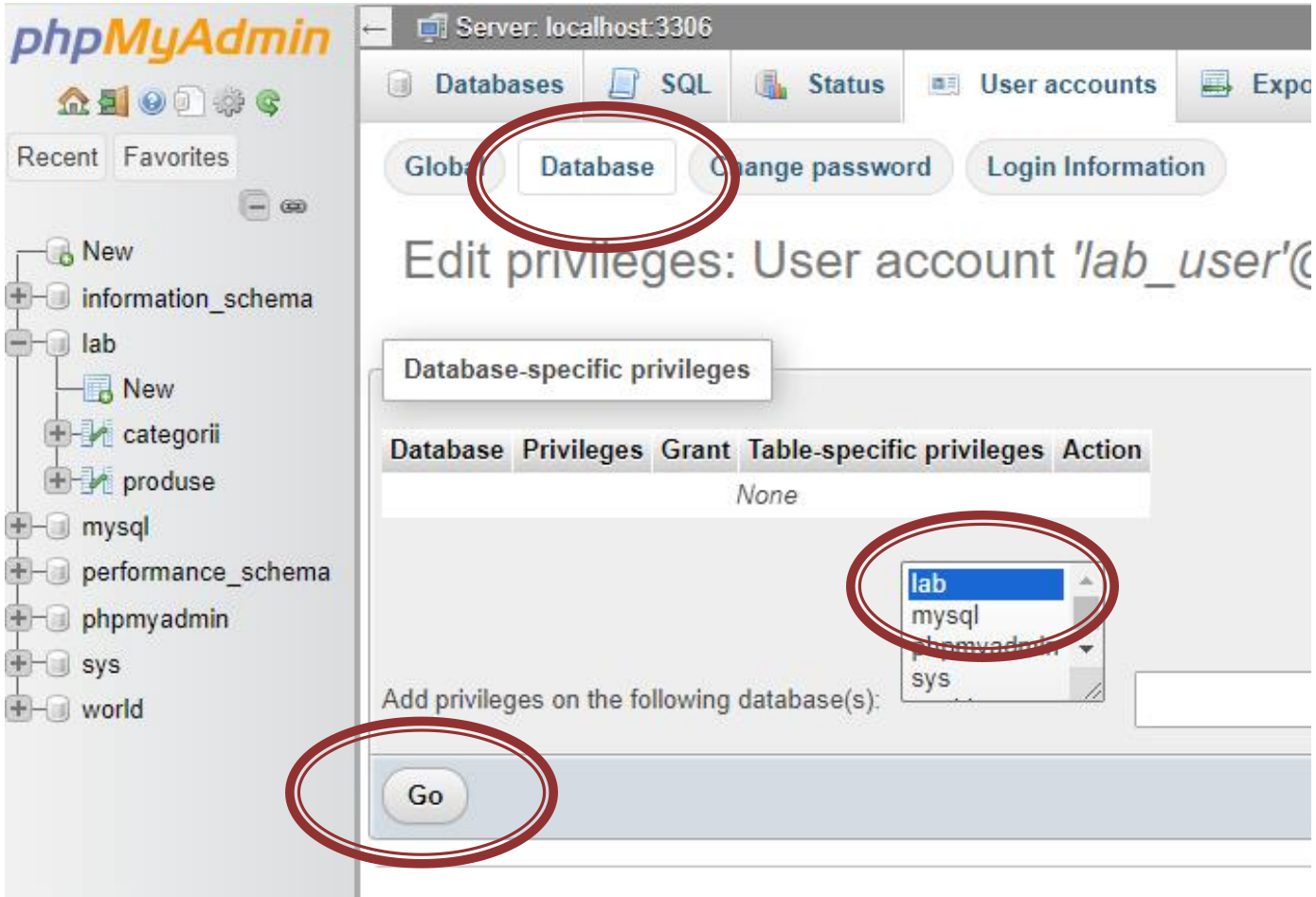
User accounts overview

	User name	Host name	Password	Global privileges	User group	Grant	Action		
☐	lab_user	%	Yes	USAGE		No	Edit privileges	Export	Lock
☐	mariadb.sys	localhost	No	USAGE		No	Edit privileges	Export	Unlock
☐	mysql	localhost	Yes	ALL PRIVILEGES		Yes	Edit privileges	Export	Lock
☐	phpmyadmin	localhost	Yes	USAGE		No	Edit privileges	Export	Lock
☐	root	localhost	Yes	ALL PRIVILEGES		Yes	Edit privileges	Export	Lock
☐	web	%	Yes	USAGE		No	Edit privileges	Export	Lock

Check all *With selected:* Export

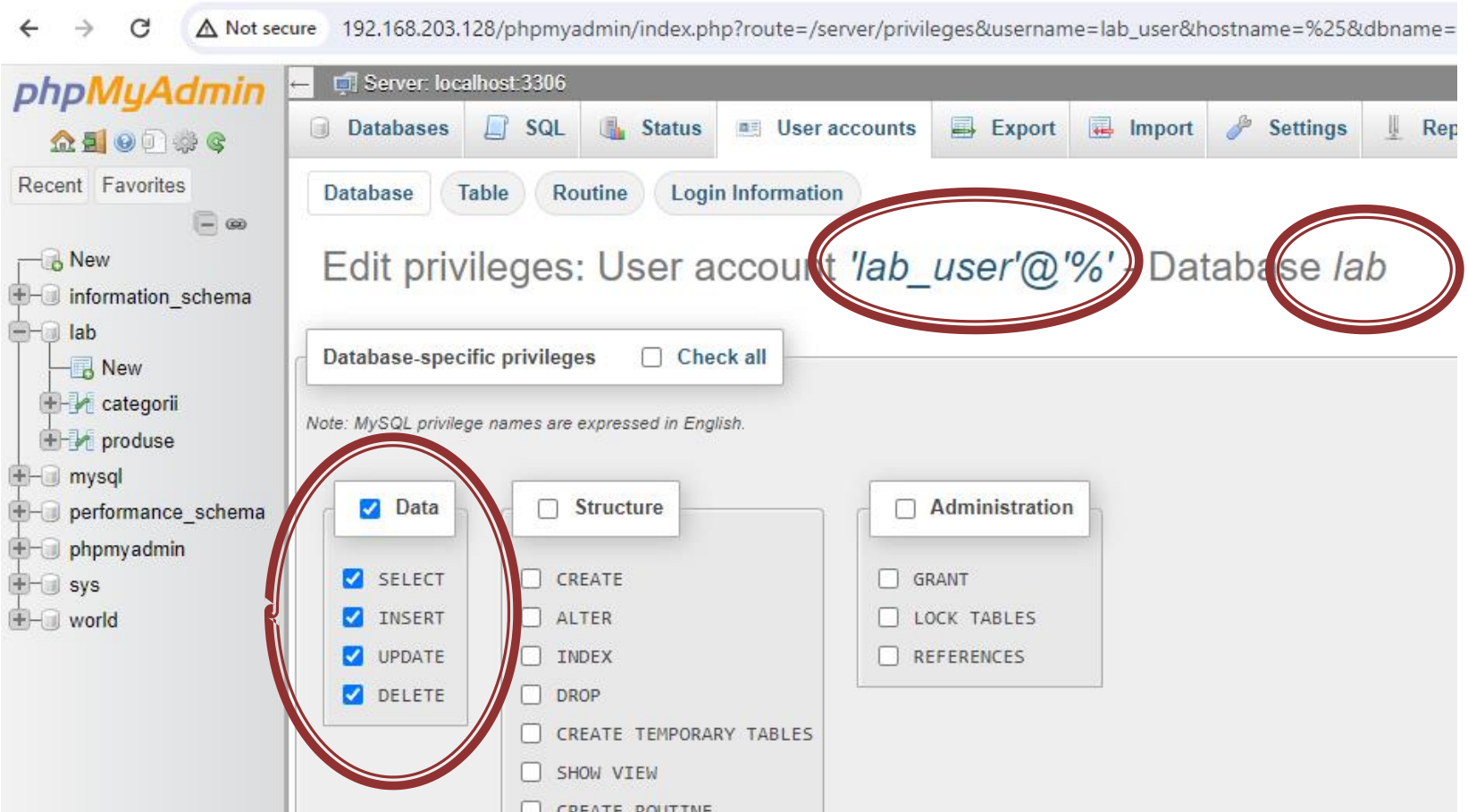
Drepturi de acces

- Database → nume → Go



Drepturi de acces

- Se aloca drepturile SELECT + INSERT + UPDATE + DELETE asupra bazei de date create



Drepturi de acces, verificare

- Nume → Privileges
- Marea majoritate a aplicatiilor **nu** au nevoie de drepturi de acces la structura/administrare

Not secure 192.168.203.128/phpmyadmin/index.php?route=/server/privileges&db=lab&checkprivsdb=lab&viewing_mode=db

phpMyAdmin

Recent Favorites

New
information_schema
lab
New
categorii
produse
mysql
performance_schema
phpmyadmin

Server: localhost:3306 » Database: lab

Structure | SQL | Search | Query | Export | Import | Operations | Privileges | Ro

Users having access to "lab"

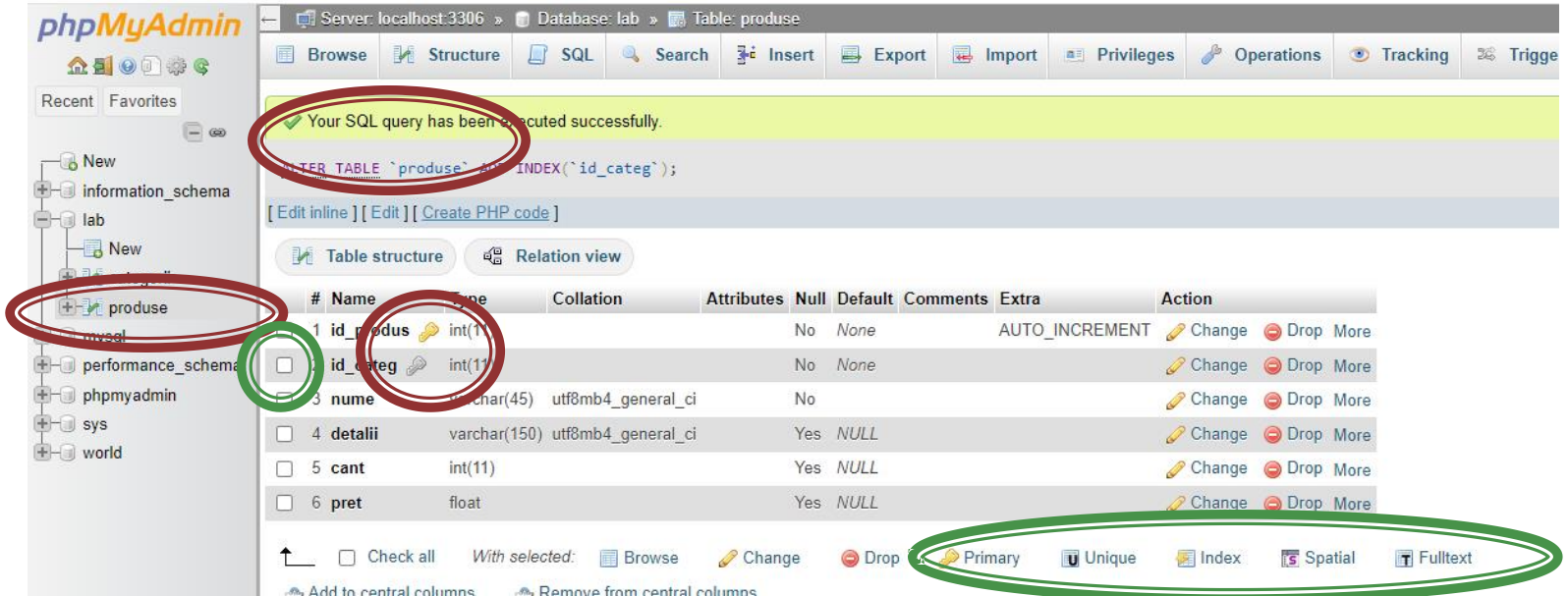
User name	Host name	Type	Privileges	Grant	Action
lab_user	%	database-specific	SELECT, INSERT, UPDATE, DELETE	No	Edit privileges Export
mysql	localhost	global	ALL PRIVILEGES	Yes	Edit privileges Export
root	localhost	global	ALL PRIVILEGES	Yes	Edit privileges Export

Check all With selected: Export

New

Index

- Adaugare index e esentiala pentru viteza
  - exemplu, produse grupate pe categorii, selectia produselor dintr-o categorie se face cu :
  - SELECT * FROM `produse` WHERE `id_categ` = 1
- Tabel → Structure → Index / Selectare + Index



Verificare/Stergere index

- Zona Indexes, vizualizare/control lista de indecsi

Indexes

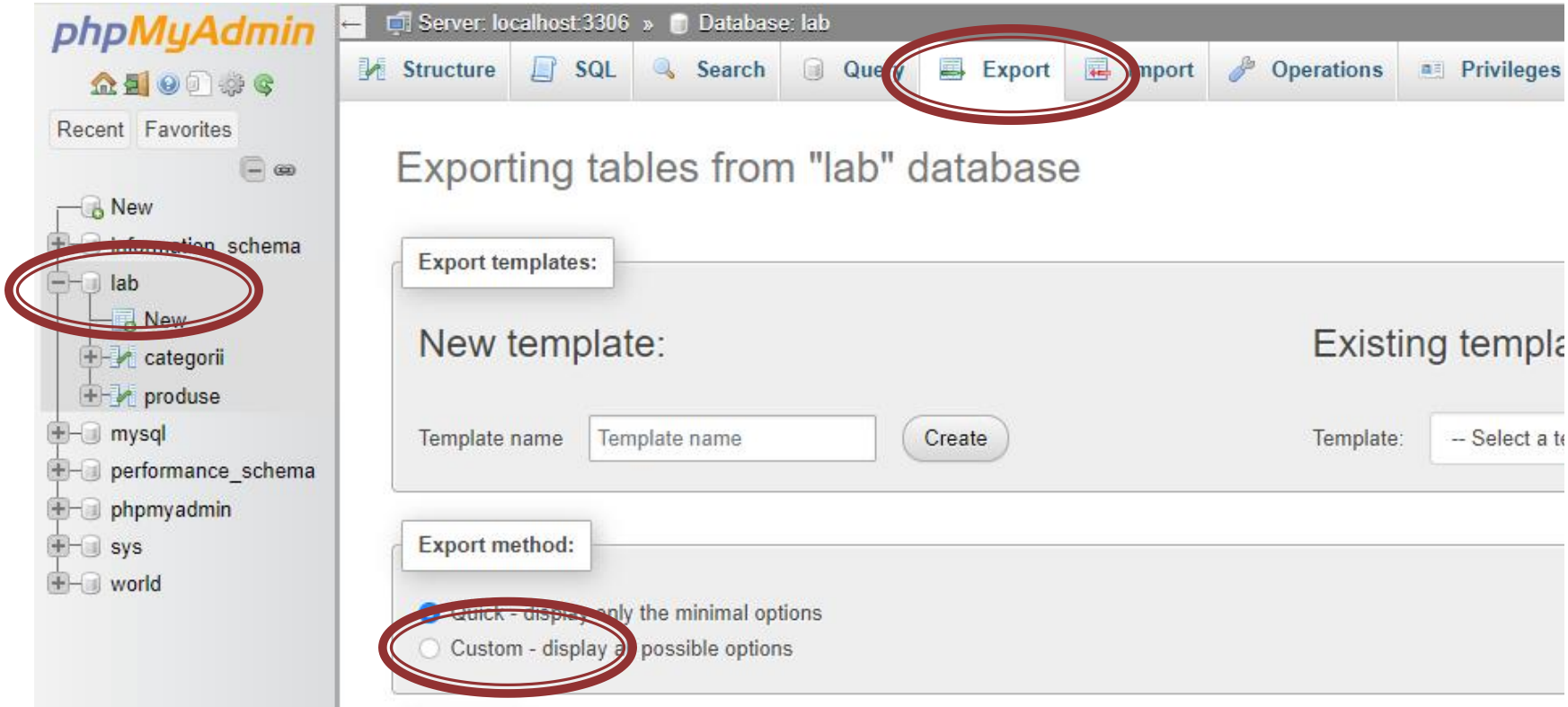
Action			Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit	Rename	Drop	PRIMARY	BTREE	Yes	No	id_produs	9	A	No	
Edit	Rename	Drop	id_categ	BTREE	No	No	id_categ	9	A	No	

Backup, Restore

- Ca si in cazul Windows 2000 facilitatea de Backup realizeaza un script SQL care contine structura si datele exprimate sub forma de interogari SQL
- O deosebire intre PhpMyAdmin si aplicatiile specifice MySql (aceleasi de pe Windows 2000 sau MySql Workbench) este absenta liniilor de creare a bazei de date
  - CREATE DATABASE IF NOT EXISTS lab;
  - USE lab;
- La utilizarea PhpMyAdmin trebuie sa se creeze manual baza de date inaintea restaurarii

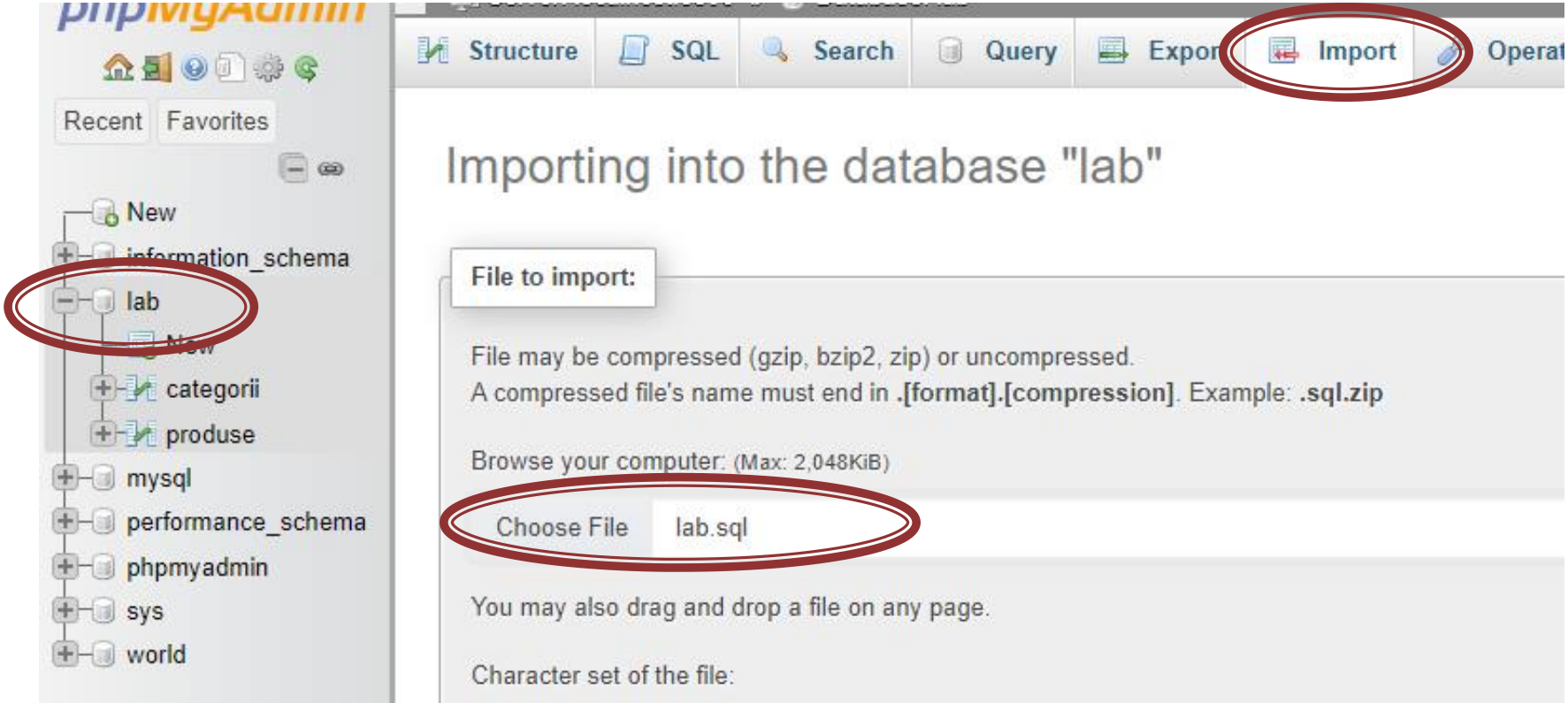
Backup

- Nume (tabel sau baza de date) → Export
  - Custom: exista optiunea Add CREATE DATABASE / USE statement



Restore

- Se creaza in avans baza de date
- Nume → Import → Browse (alegere fisier backup)
- fisierele SQL pot fi compresate gzip, bzip2, zip



MySql – Server Windows 2000/MySQL Workbench

Mini – Indrumar practic Lucru cu bazele de date

Realizarea bazei de date

- Se recomanda utilizarea utilitarului **MySql Query Browser** sau un altul echivalent pentru crearea scheletului de baza de date (detalii – laborator 1)
- Se initializeaza aplicatia cu drepturi depline ("root" si parola)
  - se creaza o noua baza de date:
    - in lista "Schemata" – Right click – Create New Schema
  - se activeaza ca baza de date curenta noua "schema" – Dublu click pe numele ales

Introducere tabele

- Introducere tabel – Click dreapta pe numele bazei de date aleasa – Create New Table
- se defineste structura tabelului
  - nume coloane
  - tip de date
  - NOT NULL – daca se accepta ca acea coloana sa ramana fara date (NULL) sau nu
  - AUTOINC – daca acea coloana va fi de tip intreg si va fi incrementata automat de server (util pentru crearea cheilor primare)
  - Default value – valoarea implicita care va fi inserata daca la introducerea unei linii noi nu se mentioneaza valoare pentru acea coloana (legat de optiunea NOT NULL)

Tabel Categorii

MySQL Query Browser - Connection: root@server / tmpaw

File Edit View Tools Window Help

Transaction Explain Compare

Resultset 1

SQL Query Area

```
1 SELECT * FR
```

id_produs	id_c
1	
2	
3	
4	
5	
6	
7	
8	
9	

MySQL Table Editor

Table Name: categorii Database: tmpaw Comment: InnoDB free: 11264 kB

Columns and Indices | Table Options | Advanced Options

Column Name	Datatype	NOT NULL	AUTO INC	Flags		Default Value	Comment
id_categ	INT(10)	✓	✓	☑ UNSIGNED	☐ ZEROFILL	NULL	
nume	VARCHAR(45)	✓		☐ BINARY			
detalii	VARCHAR(150)			☐ BINARY		NULL	

Indices | Foreign Keys | Column Details

PRIMARY

Index Settings

Index Name: PRIMARY

Index Kind: PRIMARY

Index Type: BTREE

Index Columns (Use Drag'n'Drop)

id_categ

Apply Changes | Discard Changes | Close

Edit | Apply Changes | Discard Changes | First | Last | Search

Tabel Produse

MySQL Query Browser - Connection: root@server / tmpaw

File Edit View Tools Window Help

Transaction Explain Compare

Resultset 1

SQL Query Area

```
1 SELECT * FR
```

id_produs	id_c
1	
2	
3	
4	
5	
6	
7	
8	
9	

MySQL Table Editor

Table Name: produse Database: tmpaw Comment: InnoDB free: 11264 kB

Columns and Indices | Table Options | Advanced Options

Column Name	Datatype	NOT NULL	AUTO INC	Flags		Default Value	Comment
id_produs	INT(10)	✓	✓	☑ UNSIGNED	☐ ZEROFILL	NULL	
id_categ	INT(10)	✓		☑ UNSIGNED	☐ ZEROFILL		
nume	VARCHAR(45)	✓		☐ BINARY			
detalii	VARCHAR(150)			☐ BINARY		NULL	
cant	INT(10)			☑ UNSIGNED	☐ ZEROFILL	NULL	
pret	FLOAT			☐ UNSIGNED	☐ ZEROFILL	NULL	

Indices | Foreign Keys | Column Details

PRIMARY

Index Settings

Index Name: PRIMARY

Index Kind: PRIMARY

Index Type: BTREE

Index Columns (Use Drag'n'Drop)

id_produs

Apply Changes | Discard Changes | Close

Edit | Apply Changes | Discard Changes | First | Last | Search

Introducere date initiale

- Dublu click pe tabel → In zona "SQL Query Area" se completeaza interogarea de selectie totala
  - SELECT * FROM produse p;
- Executia interogarii SQL
  - Meniu → Query → Execute
  - Bara de butoane 
- Lista rezultata
  - initial vida
  - poate fi editata – butoanele "Edit", "Apply Changes", "Discard Changes" din partea de jos a listei

Introducere date initiale

MySQL Query Browser - Connection: root@server / tmpaw

File Edit View Query Script Tools Window Help

Resultset 1

SQL Query Area

```
1 SELECT * FROM produse p;
```

id_produs	id_categ	nume	detalii	cant	pret
1	1	carte	mai multe pagini scrise legate	0	100
2	1	caiet	mai multe pagini goale legate	0	75
3	1	hartie scris	mai multe pagini goale NElegate	0	50
4	2	penar	loc de depozitat instrumente de scris	0	150
5	2	stilou	instrument de scris albastru	0	125
6	2	creion	instrument de scris gri	0	25
NULL	3	cd	canta	0	50
NULL	3	dvd	vizual	0	100
NULL	3	blue ray	vizual extrem	0	500

Edit | Apply Changes | Discard Changes | First | Last | Search

Schemata | Bookmarks | History

tmpaw
- categorii
- produse

world

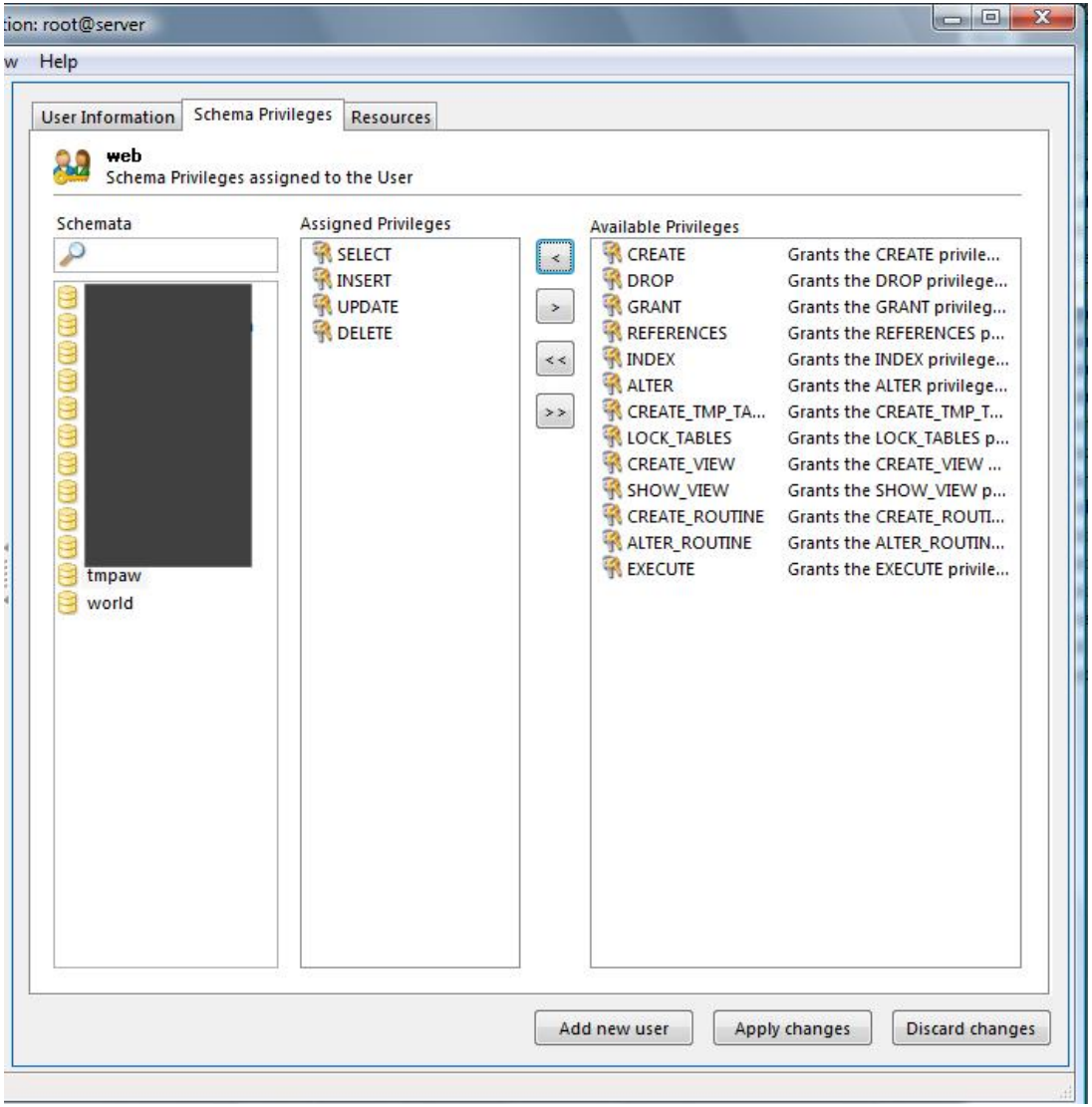
Syntax | Functions | Params | Trx

- Data Definition Statements
- Data Manipulation Statements
- MySQL Utility Statements
- MySQL Transactional and Locking ...
- Database Administration Statements
- Replication Statements
- SQL Syntax for Prepared Statements

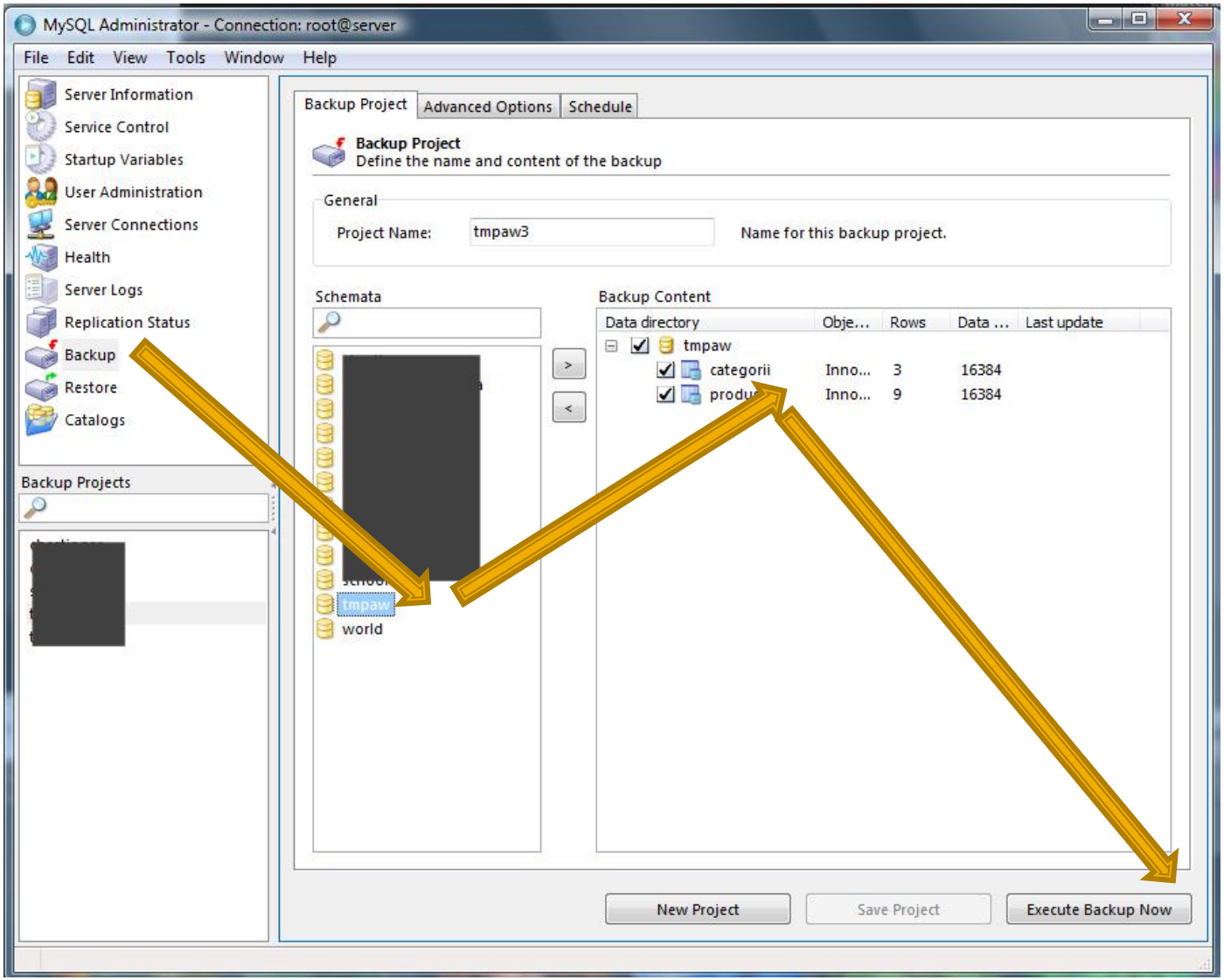
Backup, Restore, drepturi de acces

- Se recomanda utilizarea utilitarului **MySql Administrator** sau un altul echivalent (detalii – laborator 1)
- Se initializeaza aplicatia cu drepturi depline (“root” si parola)
- Se creaza un utilizator limitat (detalii – laborator 1)
- Se aloca drepturile “SELECT” + “INSERT” + “UPDATE” asupra bazei de date create (sau mai multe daca aplicatia o cere)

Drepturi de acces



Backup


MySQL Administrator - Connection: root@server
File Edit View Tools Window Help
Server Information
Service Control
Startup Variables
User Administration
Server Connections
Health
Server Logs
Replication Status
Backup
Restore
Catalogs
Backup Projects
Backup Project
Advanced Options
Schedule
Backup Project
Define the name and content of the backup
General
Project Name:
tmpaw3
Name for this backup project.
Schemata
tmpaw
world
Backup Content
Data directory
Obje...
Rows
Data ...
Last update
tmpaw
categorii
Inno...
3
16384
Inno...
9
16384
New Project
Save Project
Execute Backup Now

Restaurarea bazei de date

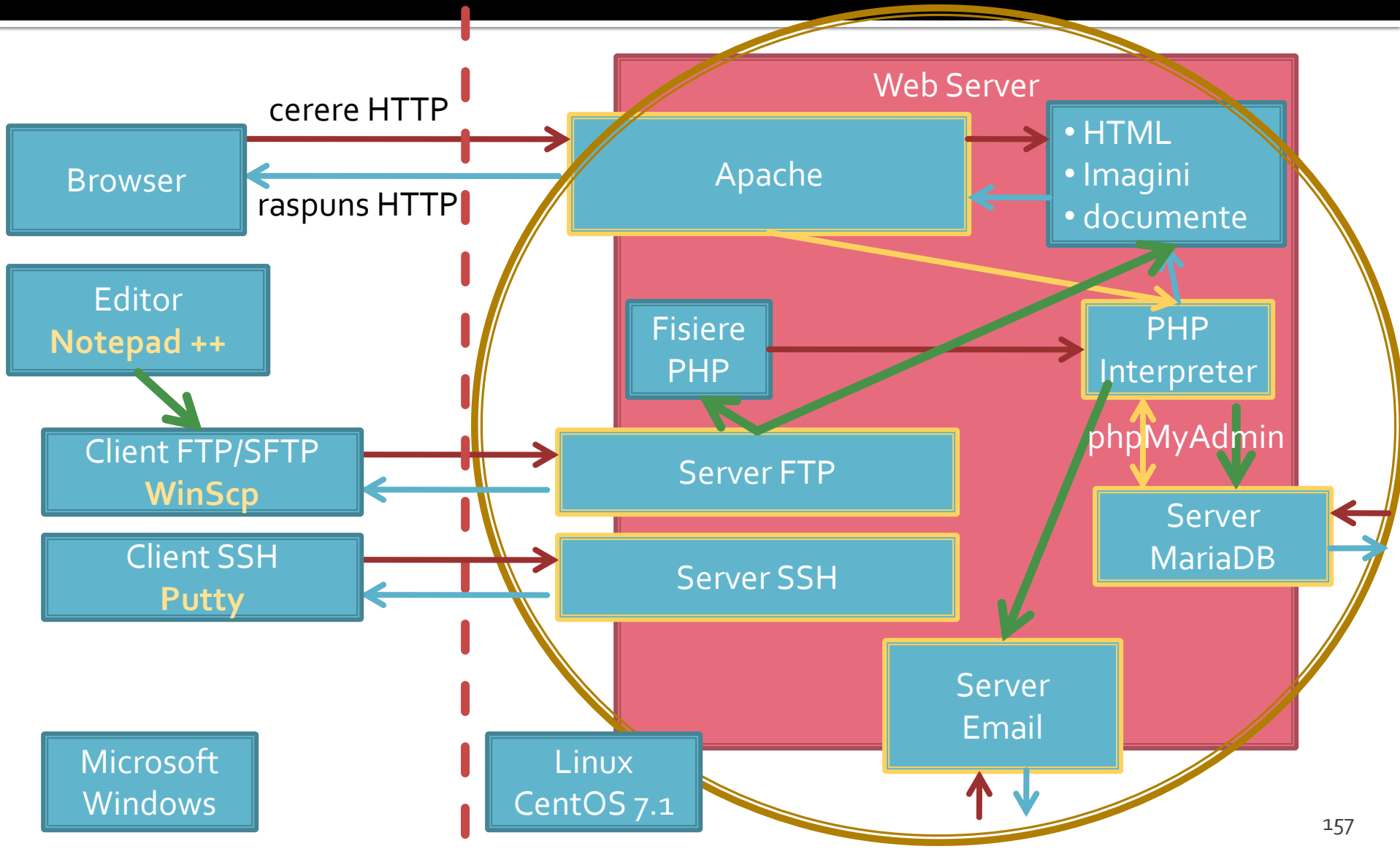
- Din **MySql Administrator**
  - Sectiunea Restore → "Open Backup File"
- Din **MySql Query Browser**
  - Meniu → File → Open Script
  - Executie script SQL
    - Meniu → Script → Execute
    - Bara de butoane 
- Scriptul SQL rezultat contine comenzile/interogarile SQL necesare pentru crearea bazei de date si popularea ei cu date

Script SQL Backup - utilitate

- Poate fi folosit ca un model extrem de bun pentru comenzile necesare pentru crearea programatica (din PHP de exemplu) a bazei de date

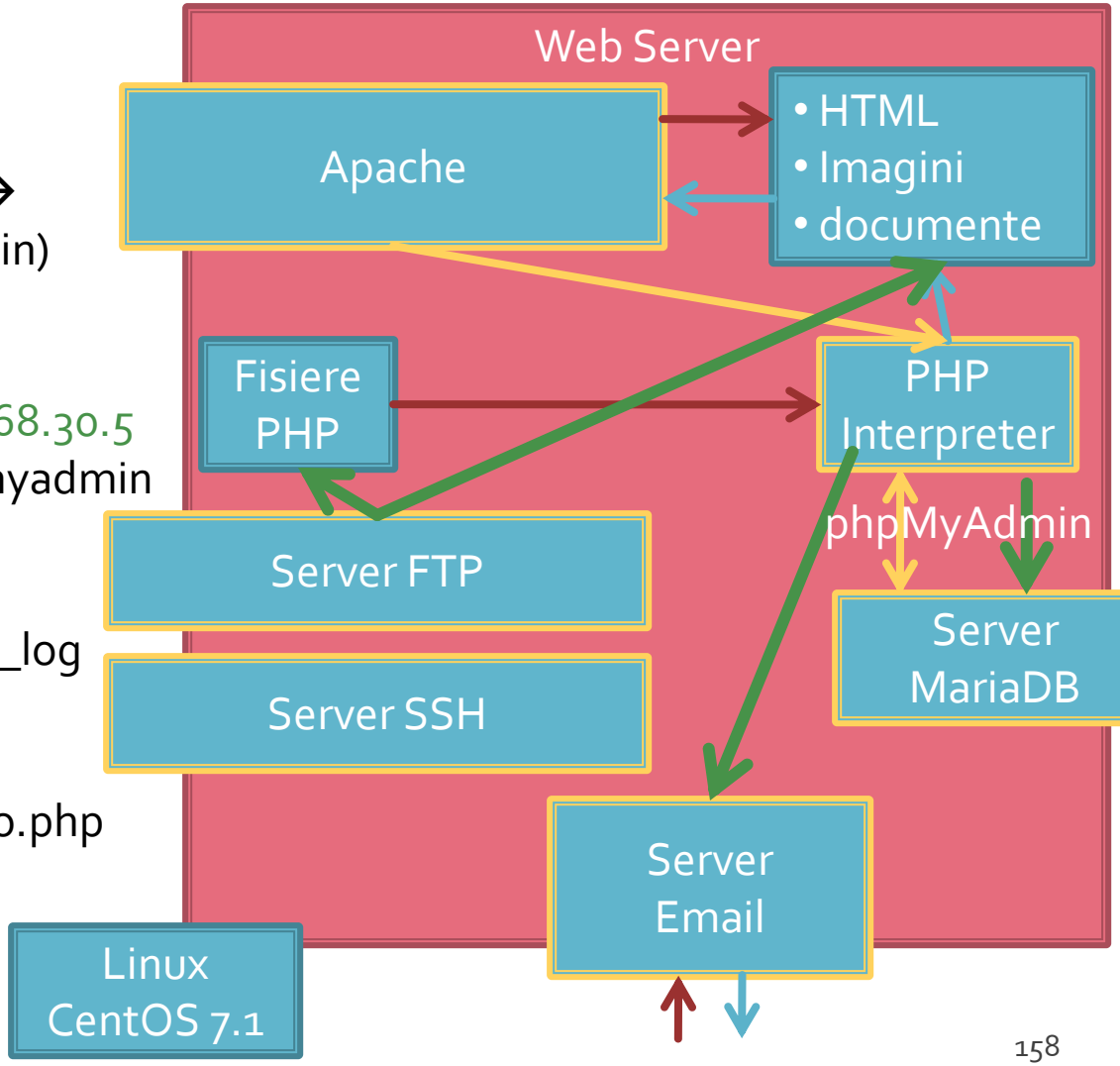
```
CREATE DATABASE IF NOT EXISTS tmpaw;
USE tmpaw;

 DROP TABLE IF EXISTS `categorii`;
CREATE TABLE `categorii` (
  `id_categ` int(10) unsigned NOT NULL auto_increment,
  `nume` varchar(45) NOT NULL,
  `detalii` varchar(150) default NULL,
  PRIMARY KEY  (`id_categ`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `categorii` (`id_categ`,`nume`,`detalii`) VALUES
 (1,'papetarie',NULL),
 (2,'instrumente',NULL),
 (3,'audio-video',NULL);
```

Utilizare LAMP



Utilizare LAMP

1. login → root:masterrc/masteretti
2. ifconfig → 192.168.30.5
3. putty.exe → 192.168.30.5 → SSH → root:masterrc/masteretti (remote login)
4. [alte comenzi linux dorite]
5. FTP → Winscp → SFTP → student:masterrc/masteretti @192.168.30.5
6. MySql → http://192.168.30.5/phpmyadmin → root:masterrc/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



Server referinta LAMP 2024

- 3 variante acceptate
  - CentOS 7.1
  - Ubuntu 20.04
  - Debian 12.5

Server referinta LAMP

- 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**)

Server referinta LAMP

- 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**)

Server referinta LAMP

- 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**)

Server referinta

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

Project/Design

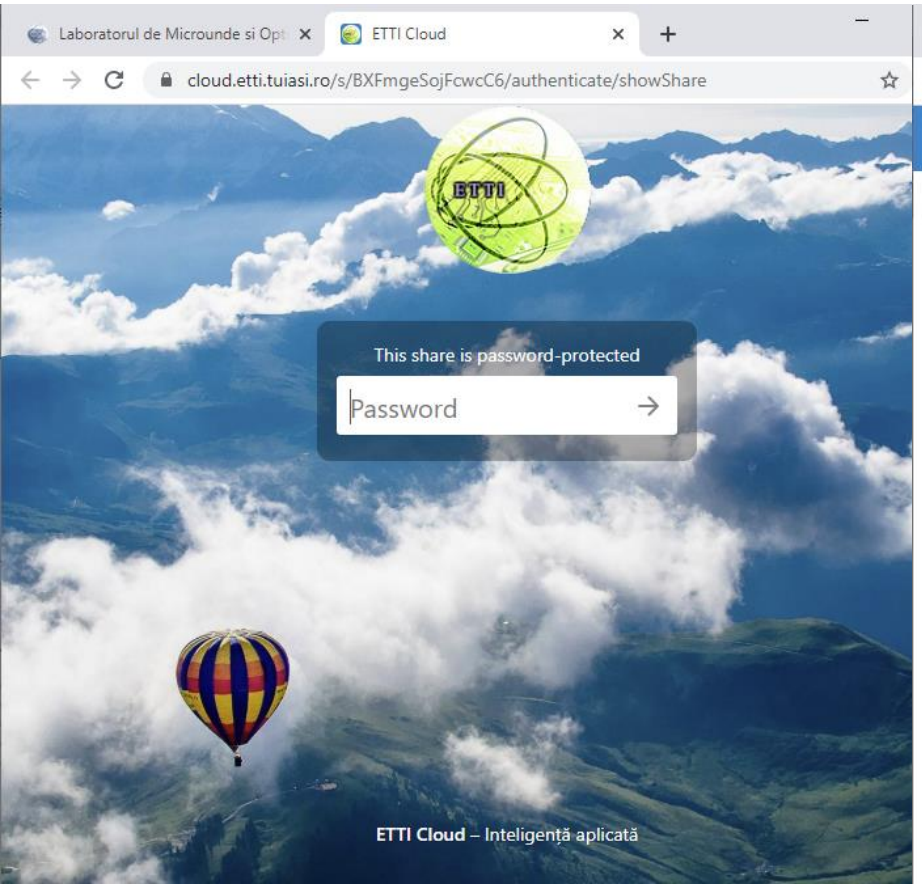
Teme project 2020 (pdf, 874.95 KB, ro,)
Sevrer CentOS pentru VMWare Player (cloud) (link, 0 Bytes, ro,)
Realizare Server CentOS (pdf, 1.4 MB, en,)

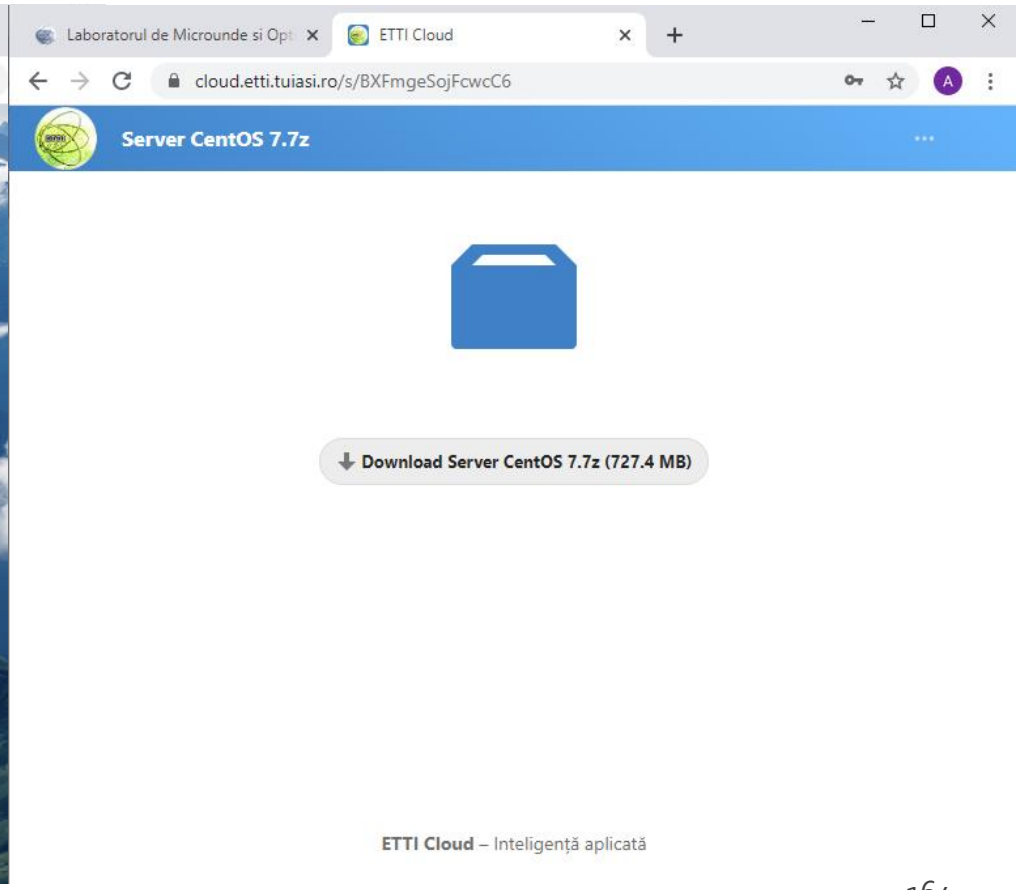
Examen

Simulare Examen (video) (mp4, 65.12 MB, ro,)
Manual examen on-line (pdf, 2.65 MB, ro,)

Server referinta

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

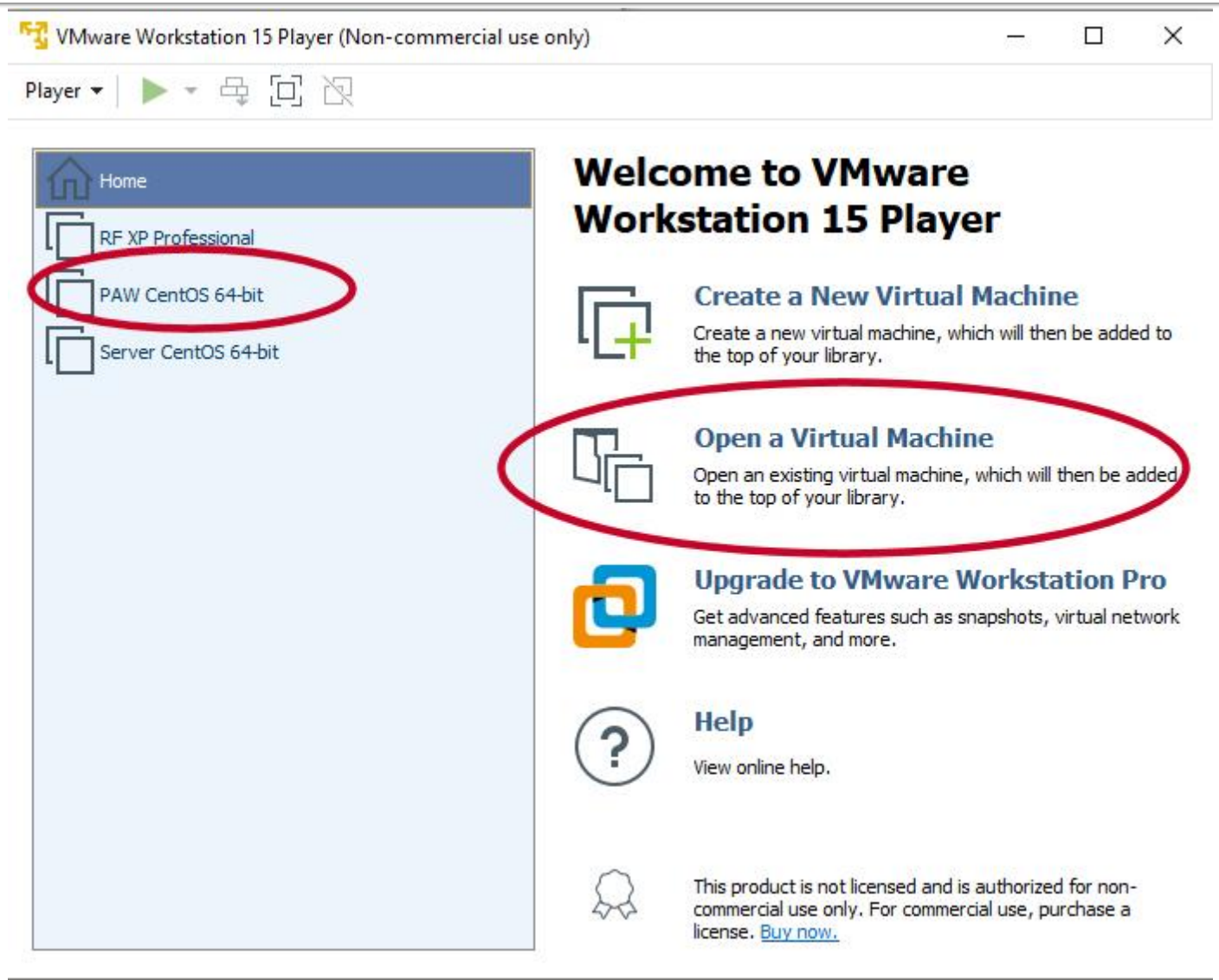




Server referinta

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

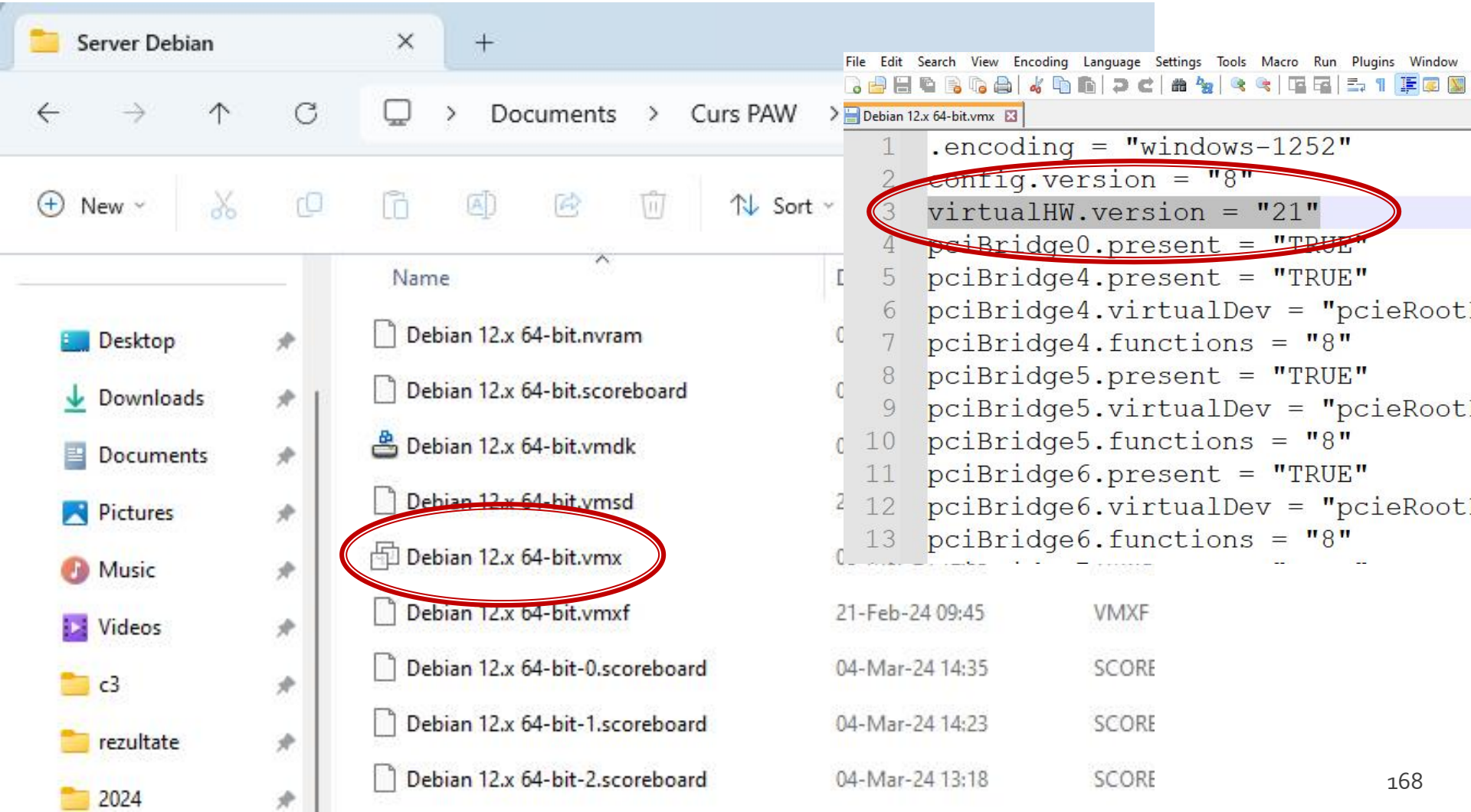
Server referinta



Server referinta

- Pentru rularea unui server pe o versiune VMware Player anterioara:
  - se localizeaza fisierul "*.vmx" a server-ului
  - se modifica virtualHW.version = "**21**" la o valoare mai mica (anterioara)
    - in 2.13 -> **18**

Server referinta



Aplicatii suport

- 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

Adresa IP

- 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
```

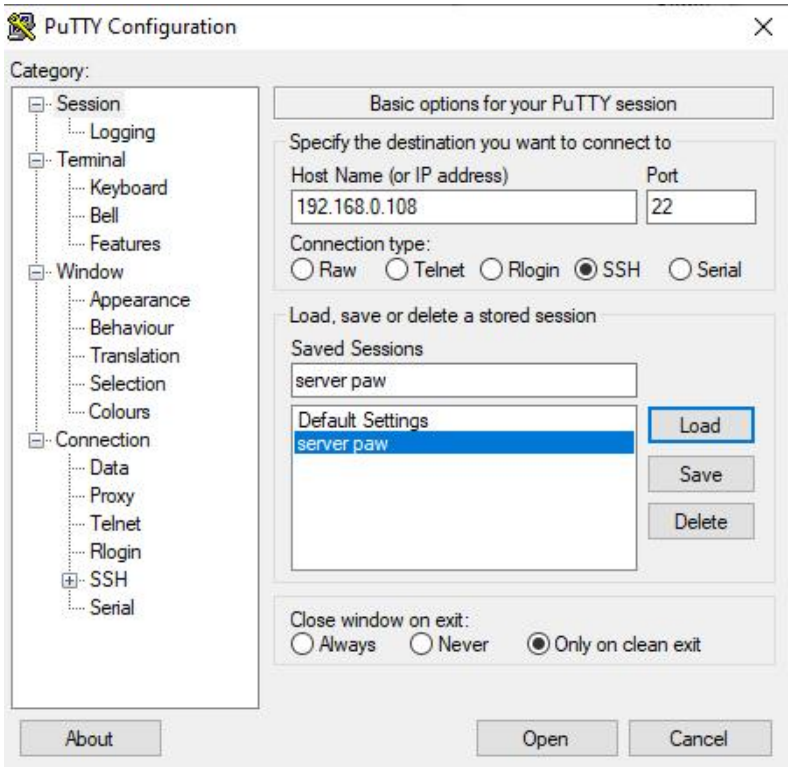
PAW CentOS 64-bit - VMware Workstation 15 Player (Non-commercial use only)

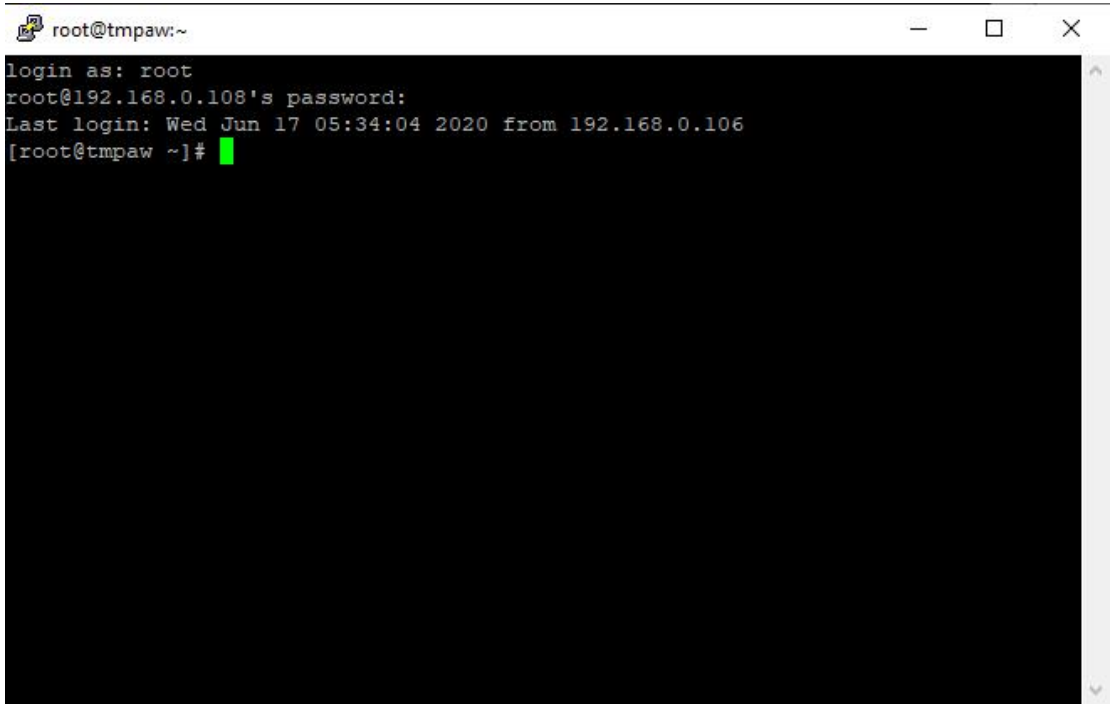
Player

```
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
eno16777736: 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 00:50:56:3e: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

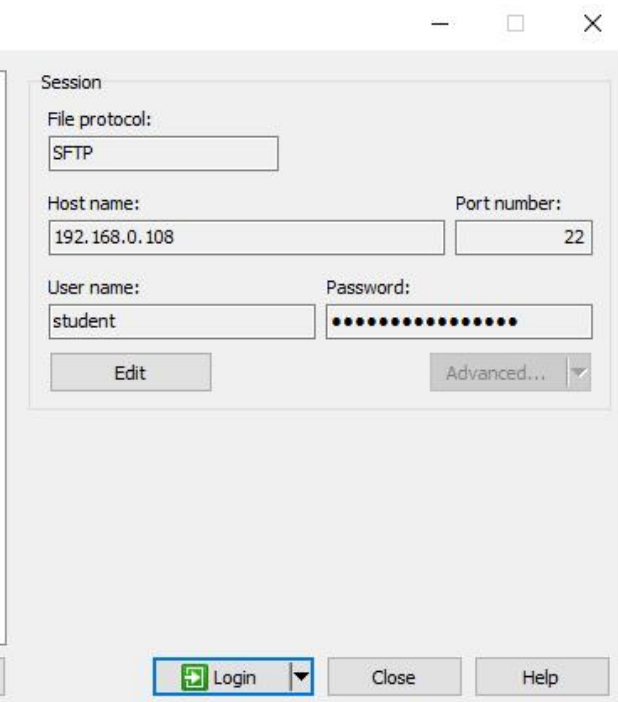
- putty.exe
- evitare captura mouse, copy/paste etc.

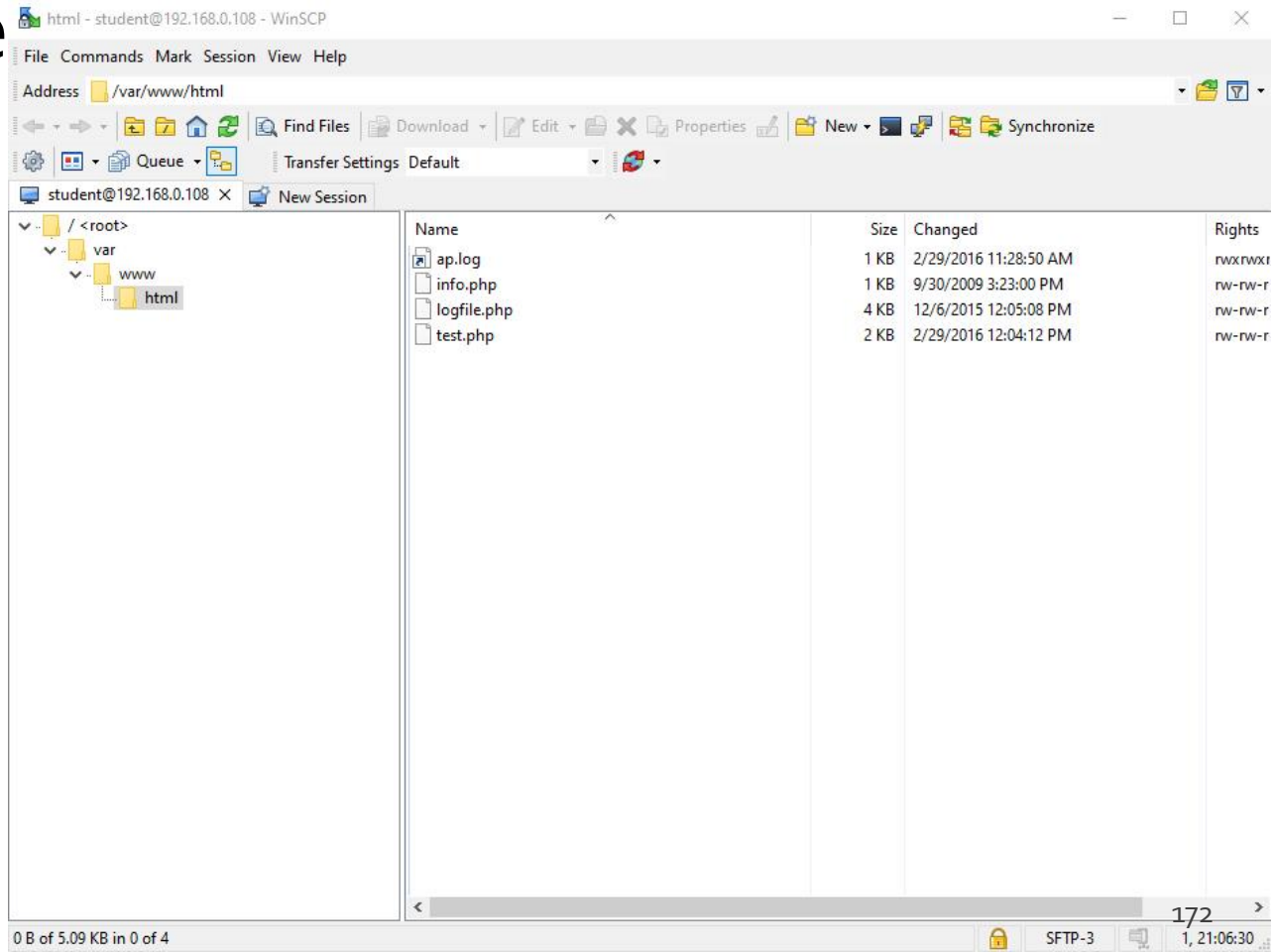




WinSCP

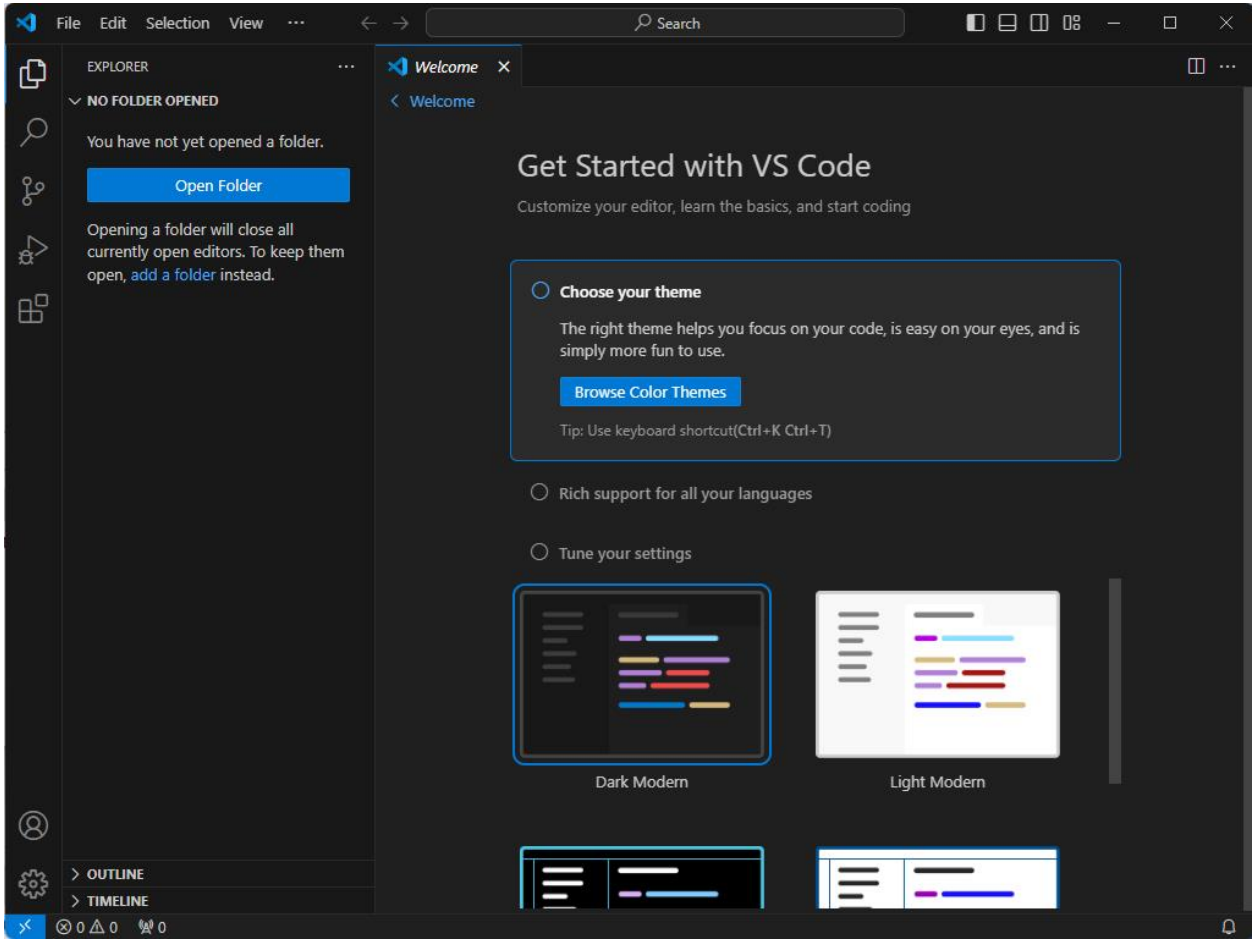
- client FTP
- upload fisiere





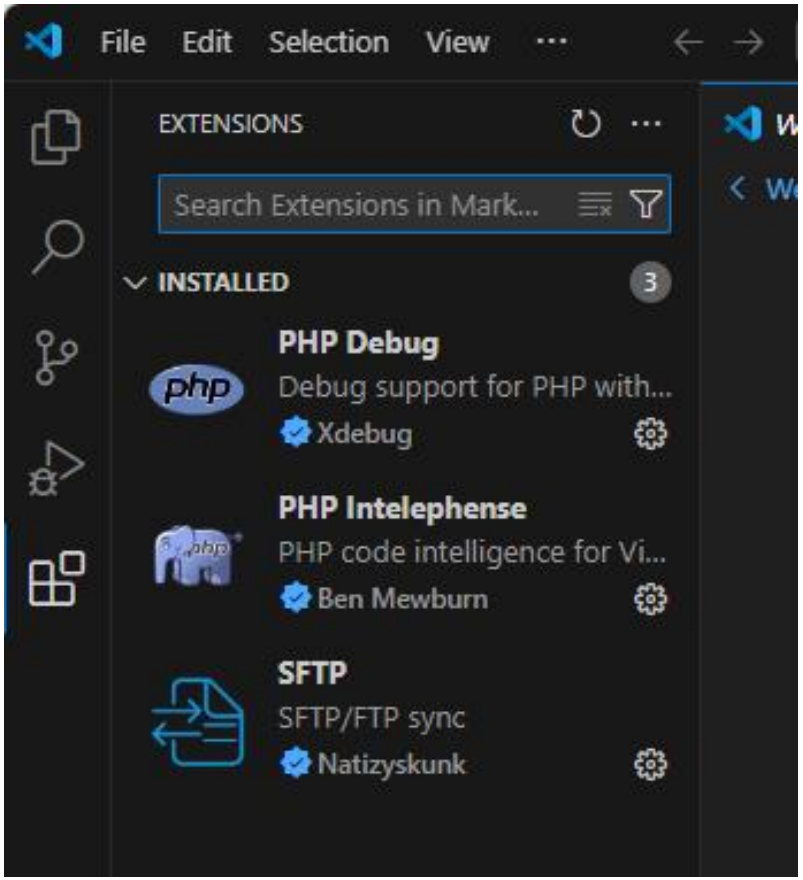
Visual Studio Code

- 1.87 Portabil



Visual Studio Code

- Extensii instalate
  - PHP Intelephense
    - PHP 8 -> Debian
  - PHP Debug (inactiv momentan)
  - SFTP – salvare automata pe un server



Visual Studio Code

View

Search files by name (append : to go to line or @ to go to symbol)

Go to File Ctrl + P

Show and Run Commands > Ctrl + Shift + P

Go to Symbol in Editor @ Ctrl + Shift + O

Start Debugging debug

Run Task task

Search for Text (Experimental) %

More ?

Welcome

ion View

>

SFTP: Config

Add Function Breakpoint

Add XHR/fetch Breakpoint

Calls: Show Call Hierarchy

Calls: Show Incoming Calls

Calls: Show Outgoing Calls

Change End of Line Sequence

Change File Encoding

Change Language Mode

Clear Command History

Visual Studio Code

sftp.json

.vscode > sftp.json > ...

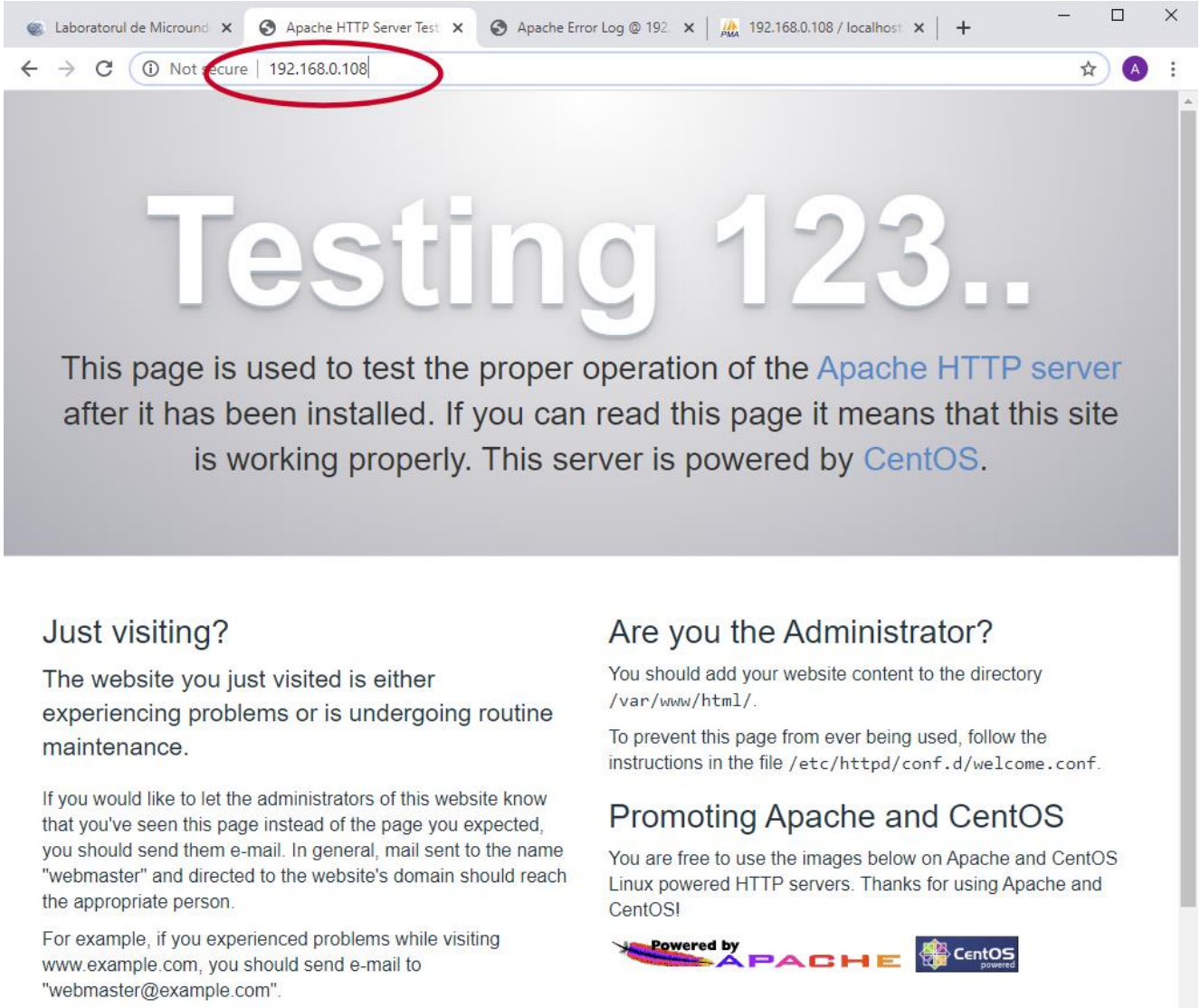
```
1  {
2      "name": "My Server",
3      "host": "localhost",
4      "protocol": "sftp",
5      "port": 22,
6      "username": "username",
7      "remotePath": "/",
8      "uploadOnSave": false,
9      "useTempFile": false,
10     "openSsh": false
11 }
12
```

sftp.json

.vscode > sftp.json > ...

```
1  {
2      "name": "Debian Server",
3      "host": "192.168.30.5",
4      "protocol": "sftp",
5      "port": 22,
6      "username": "student",
7      "remotePath": "/var/www/html/",
8      "uploadOnSave": true,
9      "useTempFile": false,
10     "openSsh": false
11 }
12
```

Browser


Laboratorul de Micround
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

Laboratorul de Micround | Apache HTTP Server Test | Apache Error Log @ 192 | 192.168.0.108 / localhost

Not secur | 192.168.0.108/phpmyadmin/#PMAURL-5:index.php?db=&table=&server=1&target=&token=f7dda12d42a1...

phpMyAdmin

Recent Favorites

- New
- information_schema
- mysql
- performance_schema
- tmpaw
- world

Server: localhost

Databases | SQL | Status | Users | Export | Import | Settings | More

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

Contact

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