Curs 9

2023/2024

Programarea aplicațiilor web

PAW

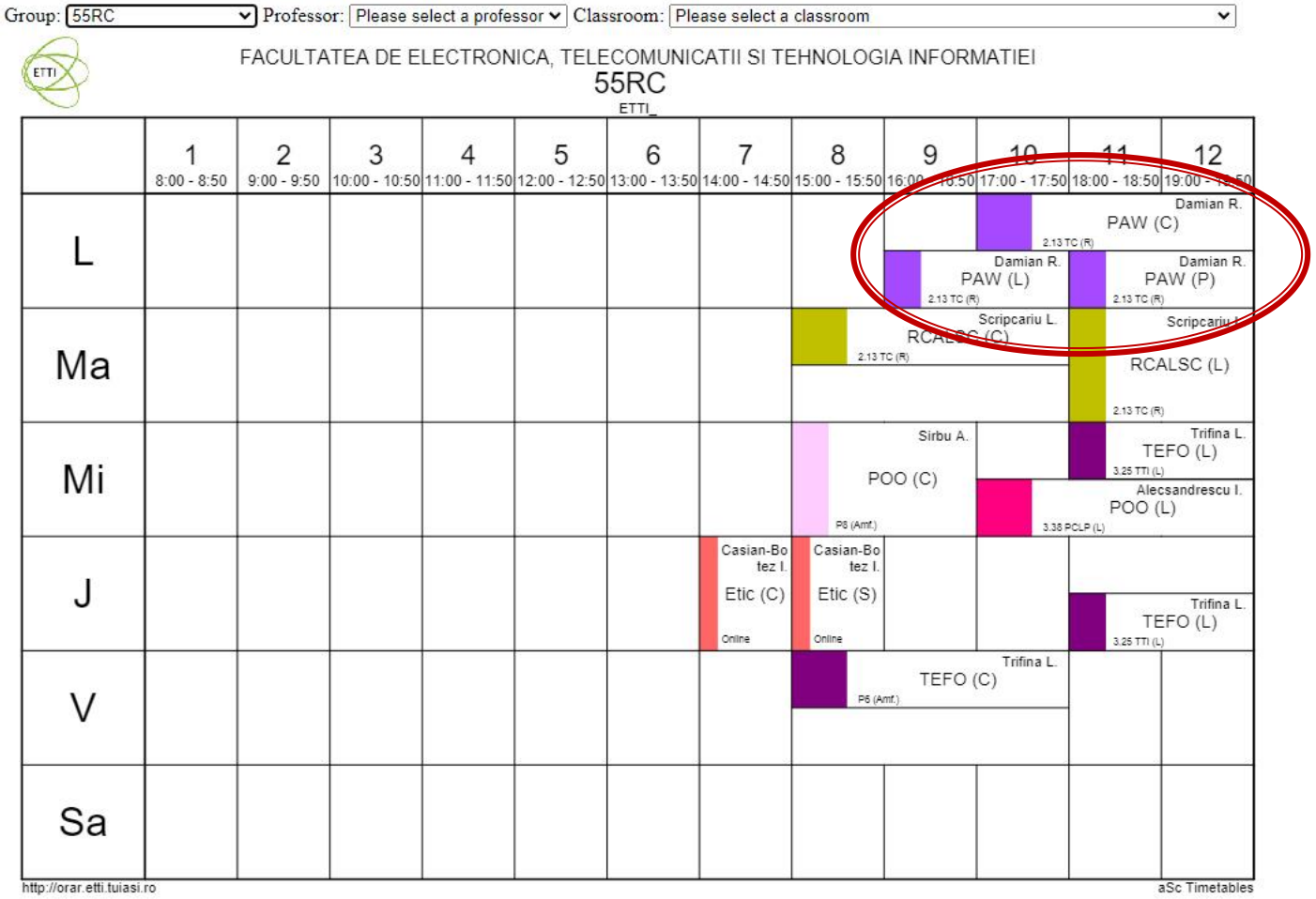
- Programarea aplicațiilor web
  - An V RC
    - 1.5C/1L/1P

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

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

RF-OPTO

English | Romana |

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

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

Proiect

Proiect

- Teme in **echipa**: 2/3 membri
- Evaluare **individuala**
- Variabile ca dificultate (cu note diferite)

"Examen" Alocare teme proiect

- **Alocare teme**
  - tema aleasa (optiune principala) - **necesar**
  - nume coechipier - **necesar**
  - tema alternativa (rezerva 1)
  - tema alternativa (rezerva 2)
  - punctul ales (a/b) - **necesar**
- Primul venit, primul servit
  - **ambii** parteneri finalizeaza examenul

"Examen" Predare proiect

- Predare proiect
- Chiar daca unele fisiere sunt comune, **ambii** coechipieri trebuie sa finalizeze depunerea
- Predare 3 fisiere
  - un fişier ***.pdf/*.jpg** cu **planul aplicației**
  - un fişier ***.sql** cu backup-ul bazei de date de care are nevoie aplicația pentru a funcționa (**nr. linii!!**)
  - un fişier cu arhiva directorului conținând aplicația (fişiere *.php, *.jpg, structură de directoare etc., arhivate: ***.zip, *.7z** etc.) (**nr. pagini!!**)

Predare + Sustinere proiect

- Sustinere – sala II.13
  - 27.05.2024 ora 18
  - 10.06.2024 ora 18
  - 11.06.2024 ora 16
- Predare – examen online
  - limita pentru fisiere 10MB. Pentru date mai multe este prevazuta posibilitatea introducerii unui link spre un fisier in cloud
    - neprotejat
    - valid cel putin 5 zile

PROIECT (final)

- Tema de nota 8
  - Tema unica pentru fiecare student
  - Baza de date cu care se lucreaza contine minim 20 de inregistrari in tabelul cel mai "voluminos«
- Tema de nota 9
  - Conditiile de la tema de nota 8 **si in plus**
  - Necesitatea conlucrarii intre 2 studenti cu doua teme "pereche"
  - Se accepta ca un student sa realizeze ambele puncte
  - Numar **minim** de pagini dinamice (php+mysql) in aplicatie 4 = 2 X 2
  - Baza de date cu care se lucreaza contine minim 50 de inregistrari in tabelul cel mai "voluminos"

PROIECT (final)

- Tema de nota **10**
  - Conditiile de la tema de nota 9 **si in plus**
  - Necesitatea conlucrarii intre 2 **studenti** cu teme "pereche"
  - Tema se preda/trimite cu macar **1 zi** inaintea **sustinerii** ei
  - Numar **minim** de pagini dinamice (php+mysql) in aplicatie **6 = 3 X 2**
  - Baza de date cu care se lucreaza sa contina minim **100** de inregistrari in tabelul cel mai "voluminos".

PROIECT (final)

- Tema de nota **10+**
  - Conditiile de la tema de nota 10 **si in plus**
  - Numar **minim** de pagini dinamice (php+mysql) in aplicatie **8 = 4 X 2**
  - Baza de date cu care se lucreaza contine minim **300** de inregistrari in tabelul cel mai "voluminos"
  - Necesitatea investigarii posibilitatilor de **imbunatatire** a aplicatiei si adaugarii de functionalitate **(obligatoriu)**
  - nota individuala la proiect va depinde intr-o mica masura (in limita a 1p) de nota minima a colegilor din echipa
  - **+1p la nota de examen**

PROIECT (final)

- In caz de necesitate, pentru completarea echipei **cadrul didactic** poate fi membru al echipelor (9/10/10+). Conditii:
  - metoda de comunicare in echipa sa fie prin email sau direct
  - latenta de raspuns: ~ 1 zi
  - reactiv
  - nota implicita 10 (☺)
  - nu lucreaza noaptea, si in special nu in noaptea dinaintea predarii (☺)
- dezavantaj asumat: "spion" in echipa

PROIECT (final)

- Tema bonus (>5, in general **offline**)
  - Conditiile de la tema de nota 10+ **si in plus:**
  - **3 studenti/CD**
  - Baza de date cu care se lucreaza contine minim **500** de inregistrari in tabelul cel mai "voluminos"
  - Numar **minim** de pagini dinamice (php+mysql) in aplicatie **15 = 5 X 3**
  - Tema care face apel la controlul **sesiunii** client/server
  - Necesitatea utilizarii **Javascript** in **aplicatie** (aplicatie libera dar cu efect tehnic nu estetic)
  - Forma paginii controlata dual prin CSS, desktop/phone
  - Facilitati in ceea ce priveste nota (**DACA** toate celelalte conditii sunt indeplinite), la alegere:
    - prezenta la laborator: N –> P = **66%**, L = **0%**, E = 33%
    - **+2p la nota de examen**

PROIECT (final)

- proiectul se **sustine individual** (oral si practic)
- fiecare membru al unei echipe (la temele de nota 9 si 10) trebuie sa sustina in aceeasi zi proiectul
- nota individuala la proiect va depinde intr-o mica masura (in limita a 1p) de nota medie a colegilor din echipa (numai la temele de 10+)
  - N-min(E)=1 -> **-0 p**
  - N-min(E)=2 -> **-0.5 p**
  - N-min(E)=3 -> **-1 p**

Notare proiect 2020/2021

- 1p – functionalitate √
- 1p –aplicatia ruleaza pe server-ul CentOS/Ubuntu√
- numar de pagini dinamice √
- numar de inregistrari in baza de date √
- 1p – planul aplicatiei √
- 2p – prezentare in Teams a proiectului √

Notare 2024 (final)

- 1p – **functionalitate**
- 1p – mutarea **personala** a site-ului (restaurare backup + setare server) pe un server de referinta CentOS/Ubuntu**/Debian**
- 1p – cunoasterea **cod**ului
  - raspunsul la intrebari de genul: “unde ai facut aceasta”, "ce face acest cod"
- 1p – **planul aplicatiei**
- Teme “de nota 10,10+”
  - Initiativa. Investigarea posibilitatilor de imbunatatire
  - Explicatii relativ la functionarea unei anumite secvente de cod
  - Utilizare sesiune, Javascript, **CSS media**

Notare 2024

- numar de pagini dinamice √
- numar de inregistrari in baza de date √
  - se verifica indeplinirea conditiilor corespunzatoare si se realizeaza **de-clasificarea** temei pana cand **ambele** conditii sunt indeplinite

Tema de nota …	Pagini	Inregistrari
bonus	15 = 5 X 3	500
10+	8 = 4 X 2	300
10	6 = 3 X 2	100
9	4 = 2 X 2	50
8	1 = 1 X 1	20

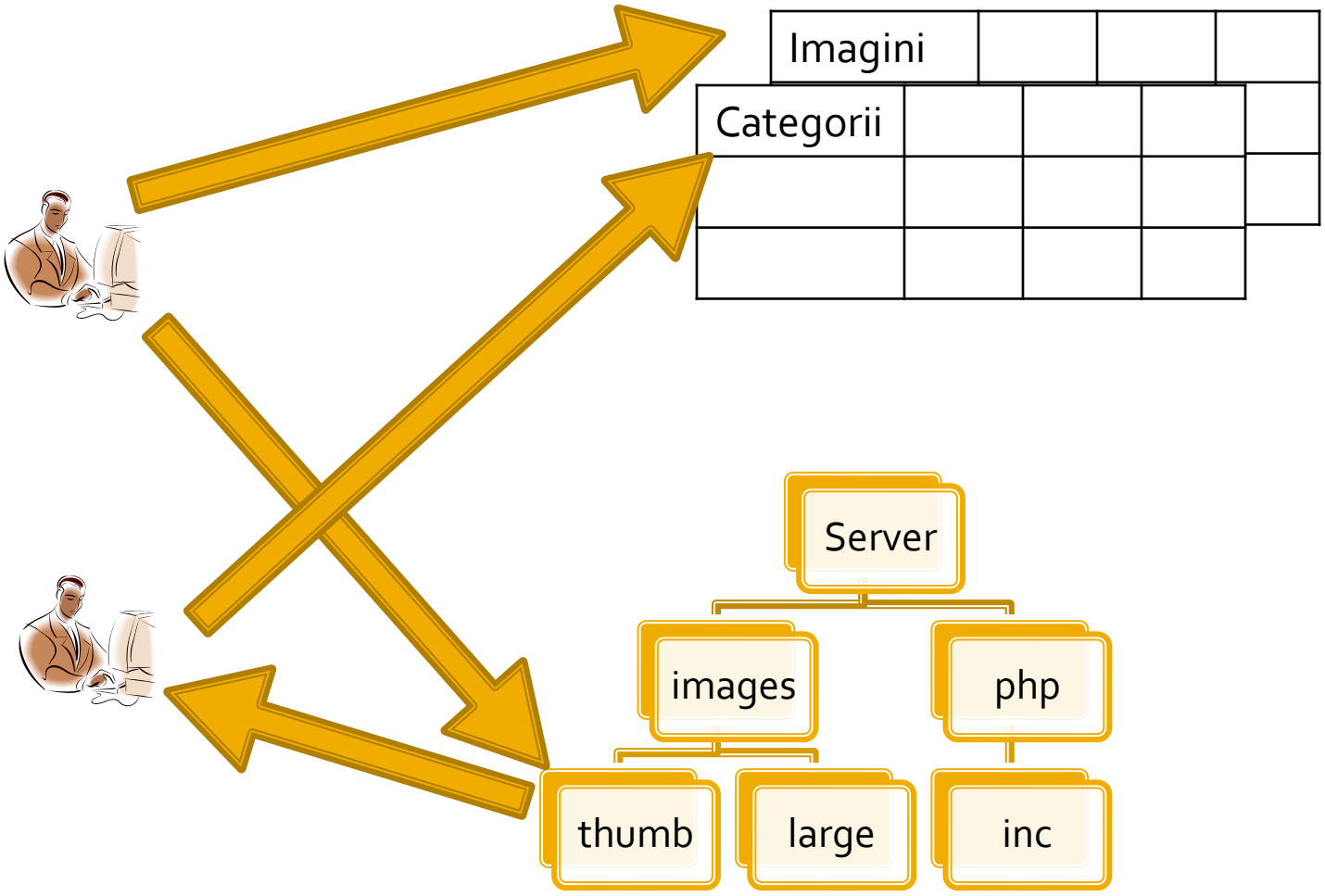
Exemplu

- 1. Galerie de imagini in care imaginile sunt ordonate dupa categorii.

a. aplicatia pentru adaugarea de categorii si afisare a imaginilor (cu alegerea prealabila a categoriei si afisarea listei de imagini format mic)

b. aplicatia pentru adaugare de imaginilor (cu alegerea prealabila a categoriei si generarea prealabila a imaginii format mic)

Exemplu



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**)

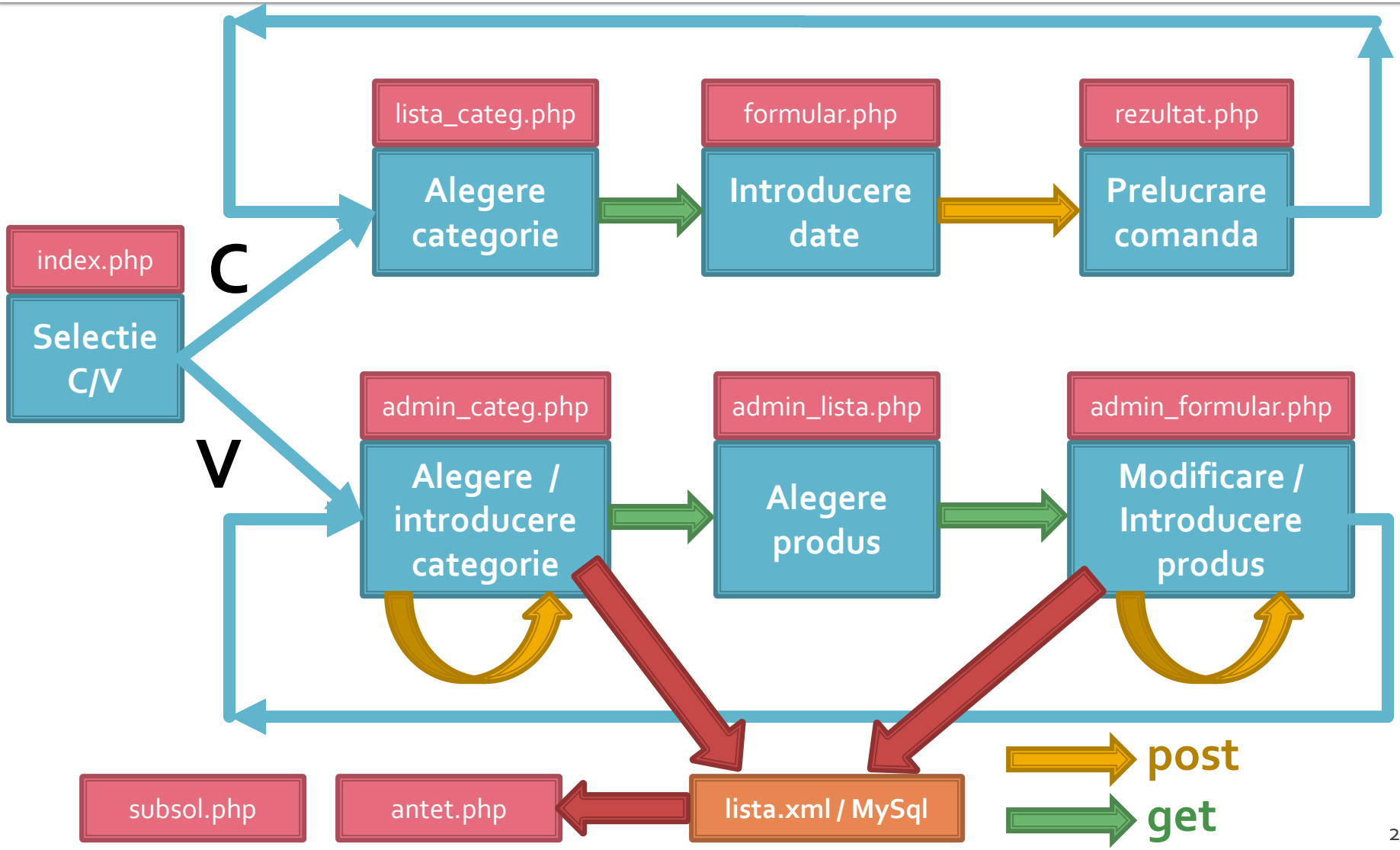
Server referinta LAMP

- 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**)

Plan aplicatie



Examen

- **fizic**
- probleme
- fiecare student are subiect propriu
- toate materialele permise
- tehnica de calcul **nu** este necesara dar este permisa

Examen

- Oricare din temele de proiect (sau asemanatoare) poate constitui una din problemele de examen
  - se va cere realizarea planului / structurii logice a aplicatiei
- Se poate cere scrierea unui cod pentru realizarea anumitor operatii, fara necesitatea corectitudinii tehnice absolute (“;”, nume corect al functiilor, parametri functie etc.)
- Se poate cere interpretarea unui cod php/MySql cu identificarea efectului

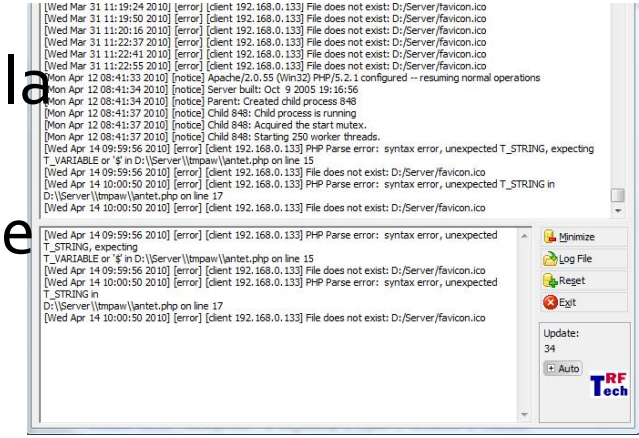
Aspecte practice recomandate in realizarea aplicatiilor web

Metode de lucru recomandate 1

- Daca nu aveti acces simplu la “log-urile” server-ului **MySql** puteti vedea cum ajung efectiv interogarile la el afisand temporar textul interogarii
  - $query = "SELECT * FROM `produse` AS p WHERE `id_categ` = ".$row_result_c['id_categ'];
    echo $query; //util in perioada de testare
    - Textul prelucrat de PHP al interogarii va fi afisat in clar pe pagina facand mai usoara depanarea programului
    - Aceste linii **trebuie** eliminate in forma finala a programului ca masura de securitate

Metode de lucru recomandate 2

- Verificarea "log-ului" de erori al server-ului Apache ramane principala metoda de depanare a codului PHP.
  - W2000: Utilizarea aplicatiei prezentata la laborator este mai comoda datorita automatizarii dar orice alta varianta este utila
  - Centos/Ubuntu/Debian
    - putty → nano /var/log/httpd/error_log
    - http://192.168.30.5/logfile.php (nonstandard)
    - tema suplimentara (php.ini + log PHP **recomandat**)



Metode de lucru recomandate 3

- In perioada de definitivare a formei interogarilor MySql este de multe ori benefic sa se utilizeze mai intai **MySql Workbench/PhpMyAdmin** pentru incercarea interogarilor, urmand ca apoi, cand sunteti multumiti de rezultat, sa transferati interogarea SQL in codul PHP

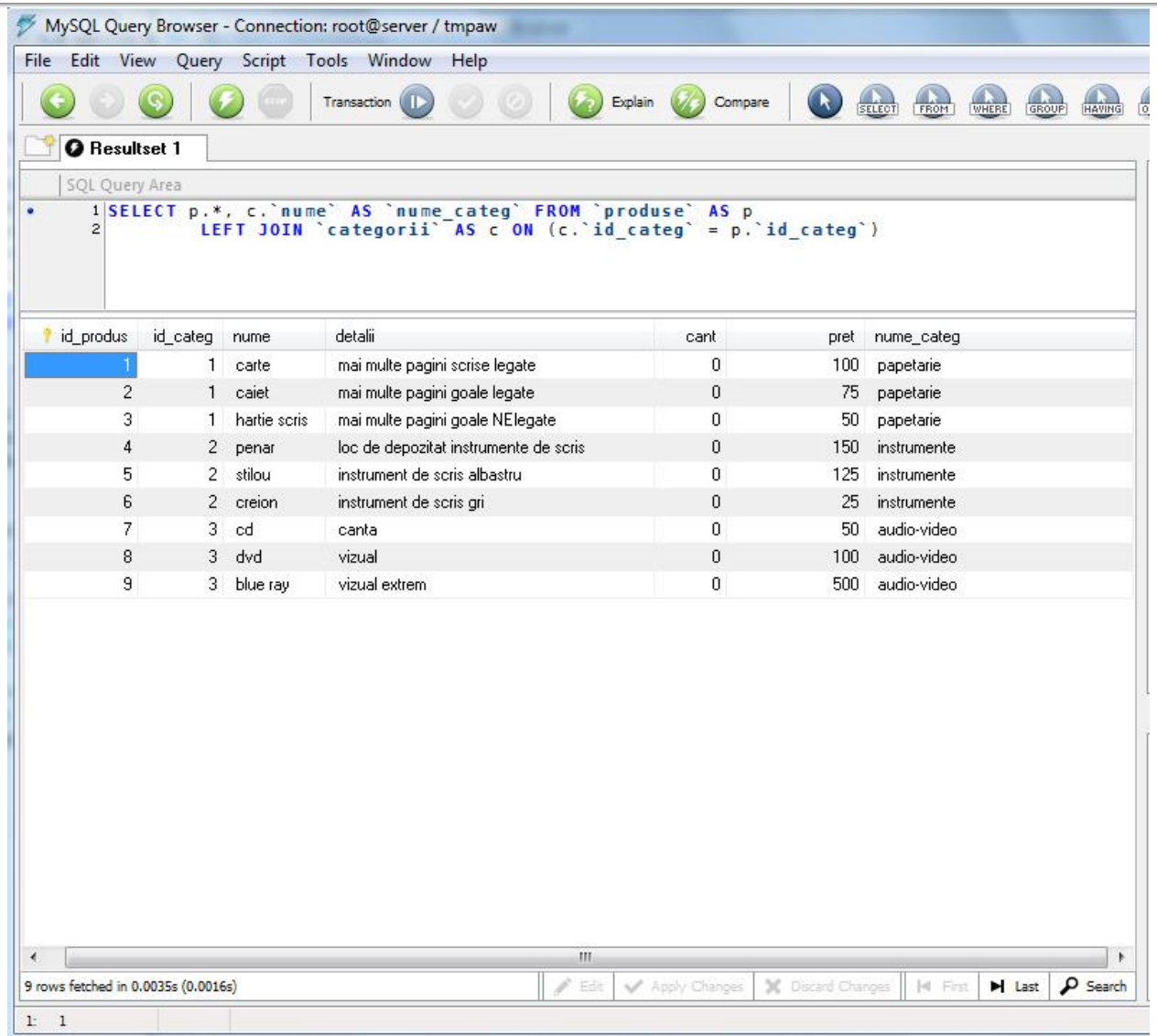
Resultset 1

SQL Query Area

```
1 SELECT p.*, c.`nume` AS `nume_categ` FROM `produse` AS p
2         LEFT JOIN `categorii` AS c ON (c.`id_categ` = p.`id_categ`)
```

id_produs	id_categ	nume	detalii	cant	pret	nume_categ
1	1	carte	mai multe pagini scrise legate	0	100	papetarie
2	1	caiet	mai multe pagini goale legate	0	75	papetarie
3	1	hartie scris	mai multe pagini goale NElegate	0	50	papetarie
4	2	penar	loc de depozitat instrumente de scris	0	150	instrumente
5	2	stilou	instrument de scris albastru	0	125	instrumente

Metode de lucru recomandate 3



Metode de lucru recomandate 4

- 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**

Metode de lucru recomandate 5a

- La implementarea unei aplicatii noi (proiect)
  1. Imaginarea planului aplicatiei (ex: S56)
     - "cum as vrea eu sa lucrez cu o astfel de aplicatie"
     - hartie/creion/timp – esentiale
  2. Identificarea datelor/transmisia de date intre pagini
     - get/post/fisier unic colectare-prelucrare
     - baza de date read/write
  3. Identificarea structurii logice a datelor utilizate
     - "clase" de obiecte/fenomene tratate identic
     - se are in vedere scalabilitatea (posibilitatea de crestere a numarului de elemente dintr-o clasa)

Metode de lucru recomandate 5b

- La implementarea unei aplicatii noi (proiect)
  4. Realizarea structurii bazei de date
     - In general un tabel pentru fiecare clasa logica distincta **DAR...**
     - se are in vedere scalabilitatea (daca aplicatia creste sa **NU** apara cresterea numarului de clase/tabele) **SI...**
     - normalizare
  5. Identificarea tipului de date necesar pentru coloane
     - de preferat numerele intregi in orice situatie care presupune ordonare
     - dimensiunea campurilor nu mai mare decat e necesar (poate fi fortata prin atributul "size" in eticheta HTML "input")
  6. Imaginarea formei fizice a paginilor
     - "am mai vazut asa si mi-a placut" (Don't make me think!)
     - investigarea posibilitatii de a introduce functionalitate template

Metode de lucru recomandate 5c

- La implementarea unei aplicatii noi (proiect)
  7. Populareа manuala a bazei de date cu date initiale
     - MySql Query Browser (sau PhpMyAdmin) / automat / imprumut
     - programarea individuala a paginilor are nevoie de prezenta unor date
  8. Programare individuala a paginilor
     - In general in ordinea din planul aplicatiei (de multe ori o pagina asigura datele necesare pentru urmatoarea din plan)
     - modul "verbose" activ pentru PHP (adica: echo $a; print_r($matr))
  9. Pregatirea pentru distributie/mutare
     - testare detaliata (eventual un "cobai")
     - eliminarea adaosurilor "verbose"
     - backup
     - generarea unui eventual install/setup

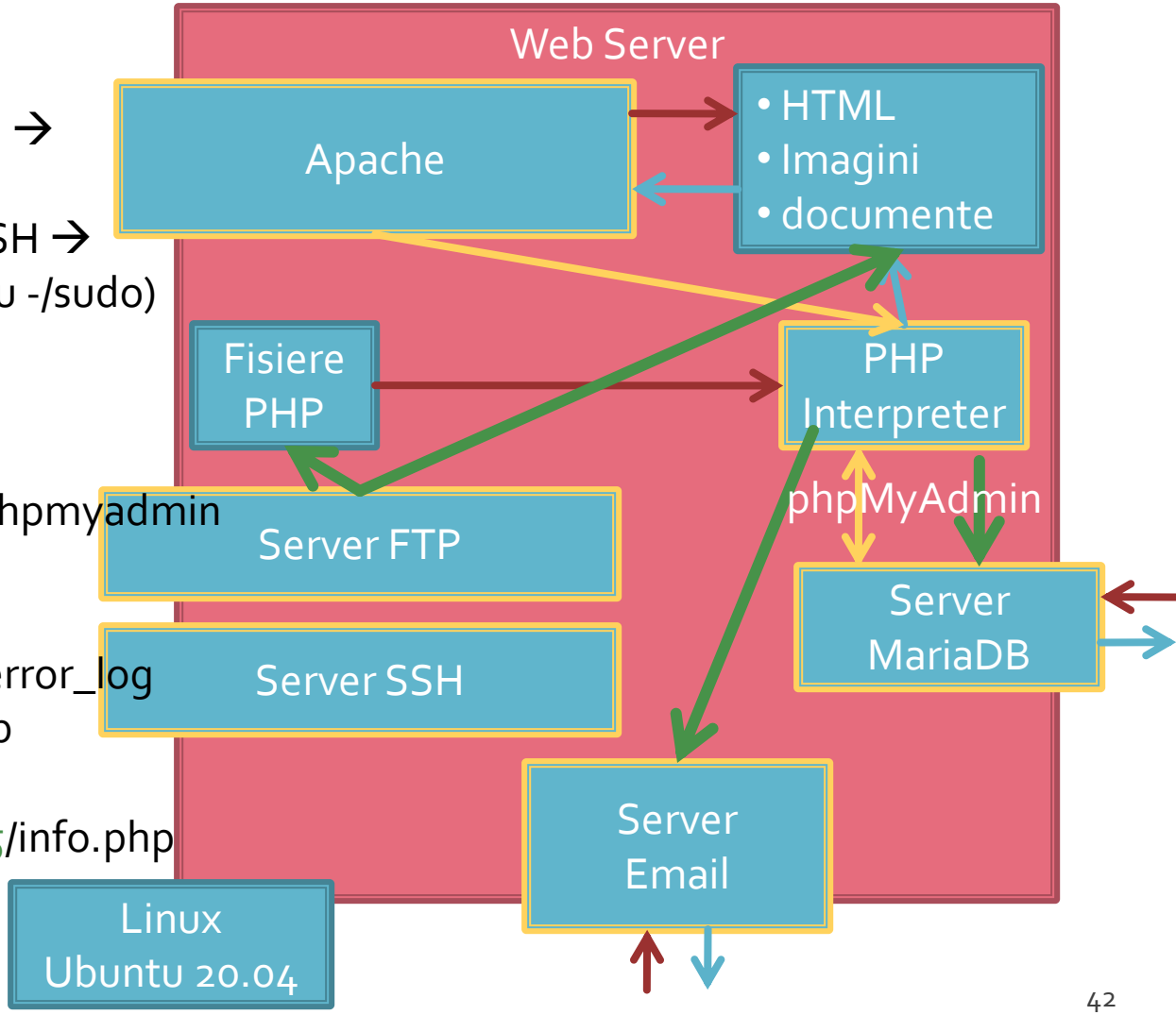
Faza de verificare/depanare

- 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 Ubuntu/Debian

1. login → **paw**:masteretti
2. (su - + **root**:masteretti) ifconfig → 192.168.30.5
3. putty.exe → 192.168.30.5 → SSH → **paw**:masteretti (remote login + su -/sudo)
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 CentOS

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 →
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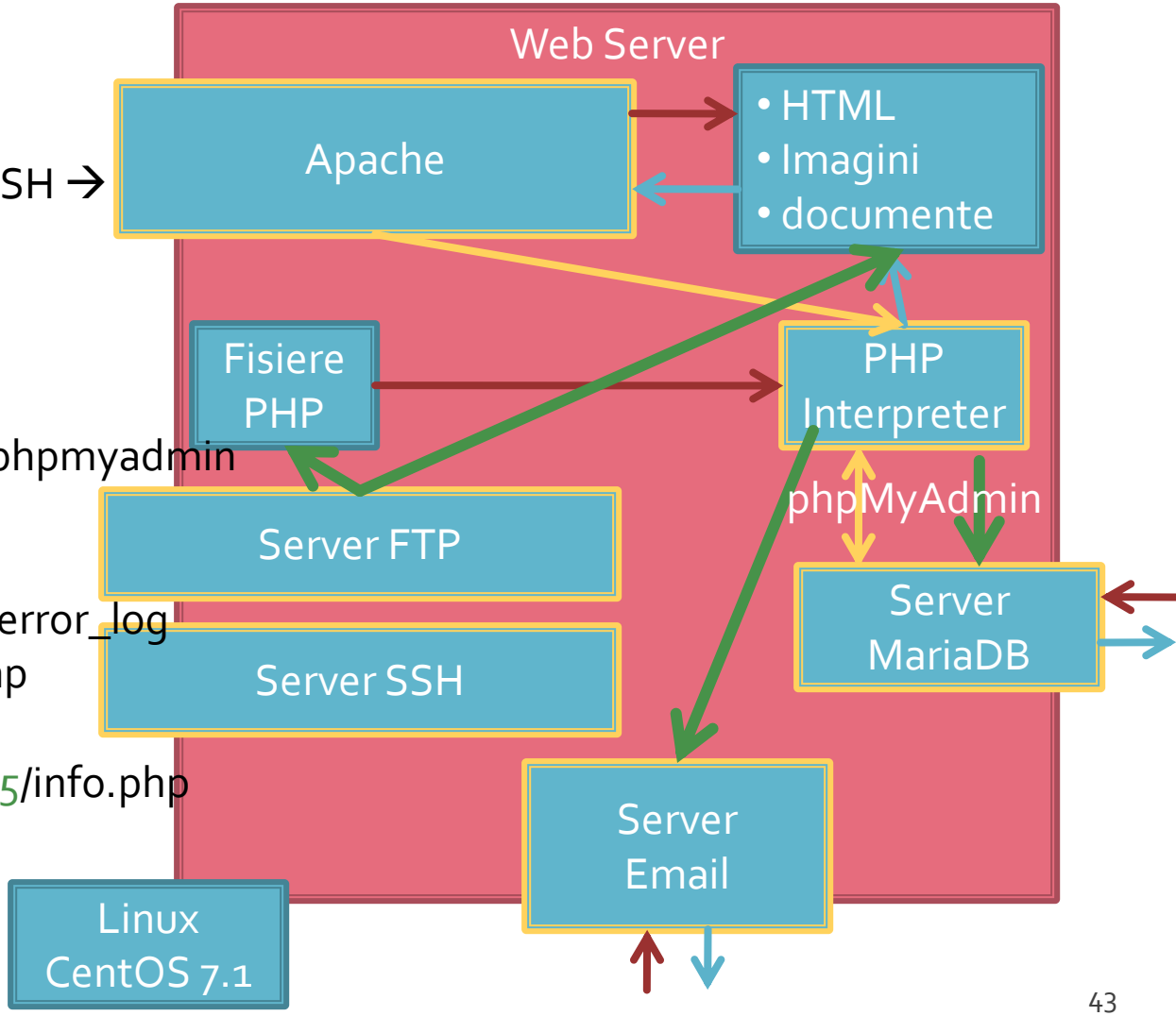
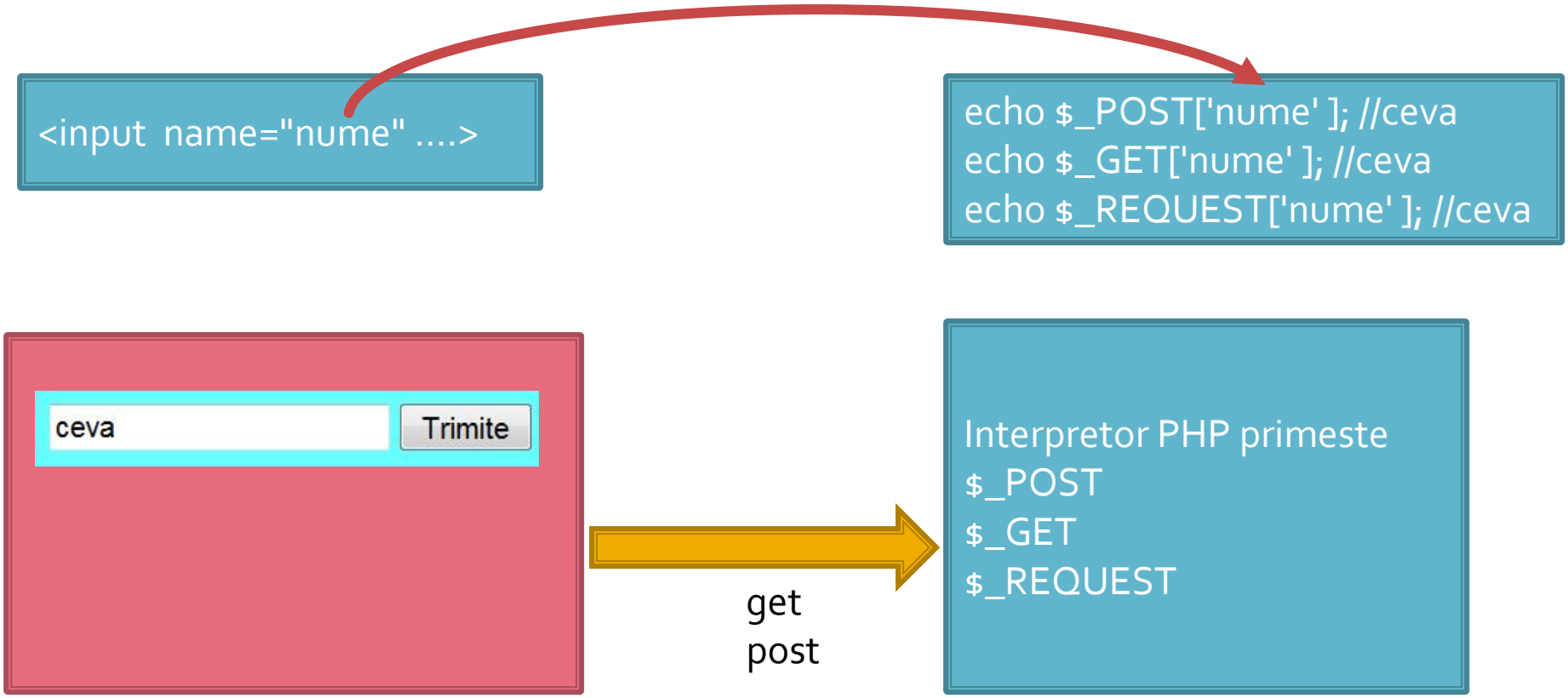


Client / Server



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 Ubuntu/Debian

1. login → **paw**:masteretti
2. (su - + **root**:masteretti) ifconfig → 192.168.30.5
3. putty.exe → 192.168.30.5 → SSH → **paw**:masteretti (remote login + su -/sudo)
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
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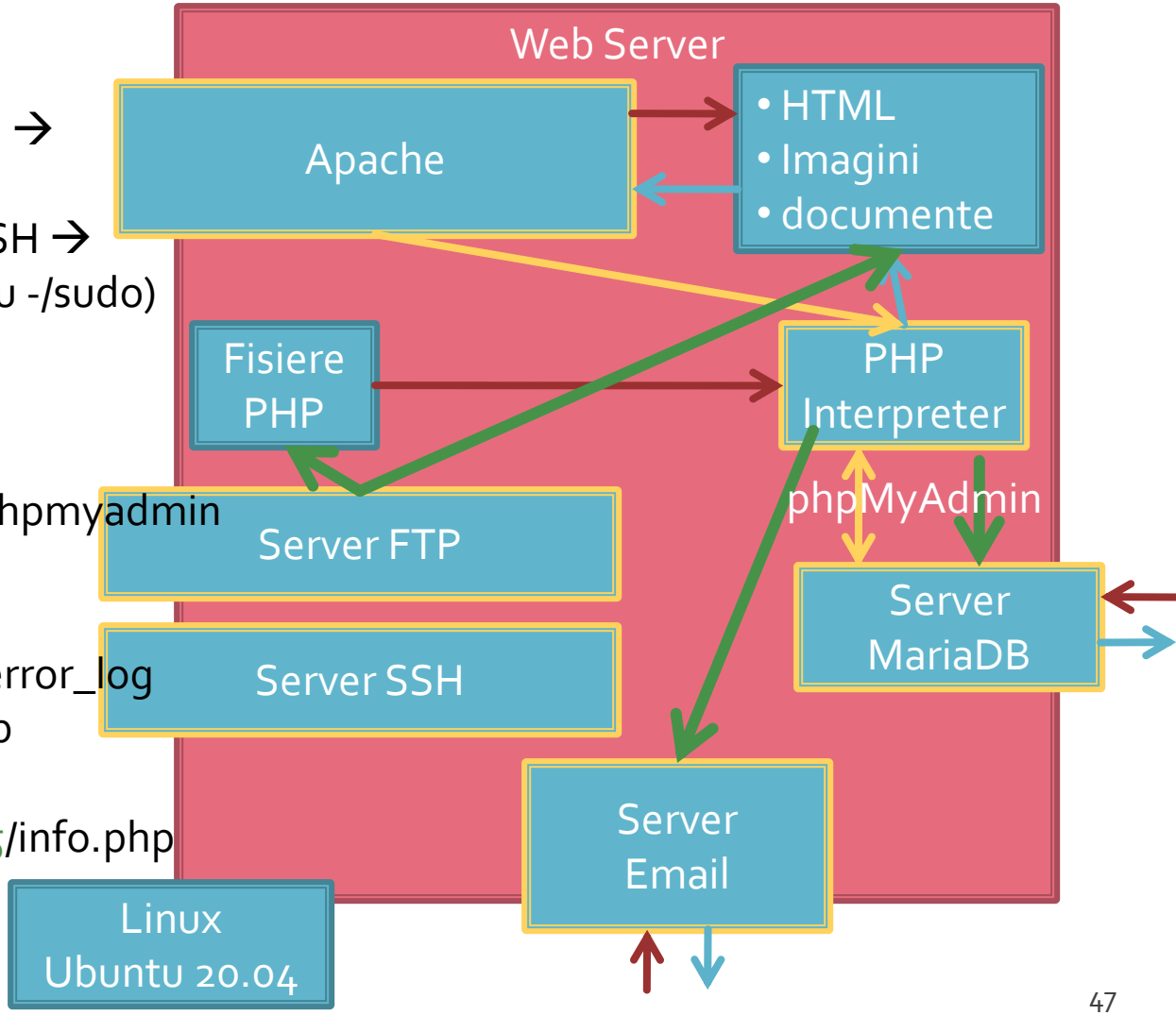
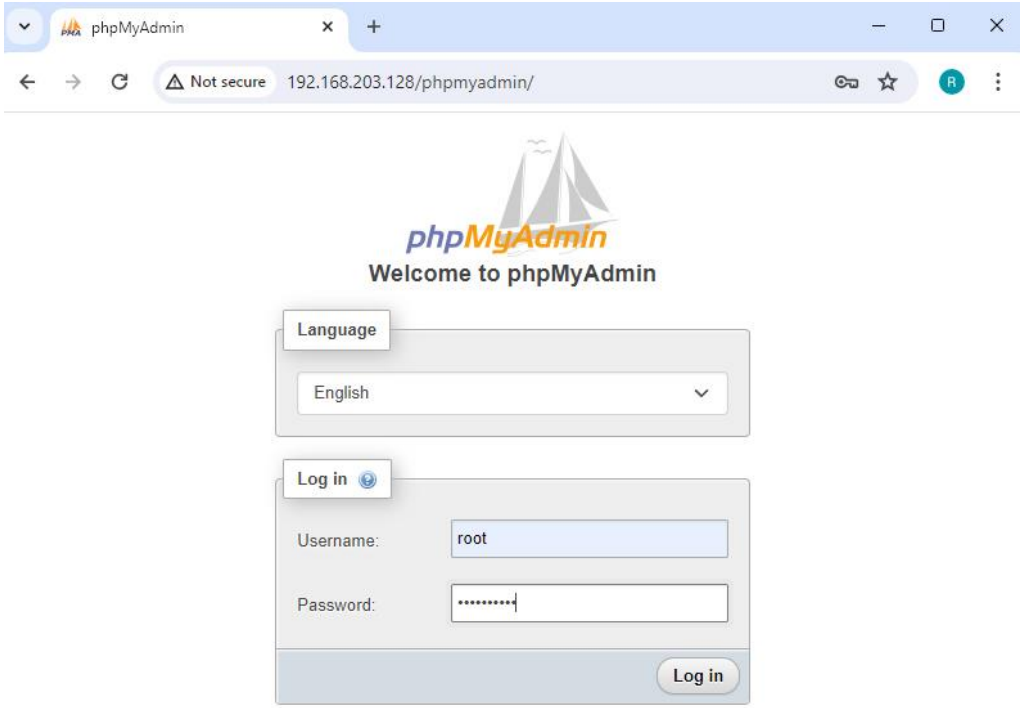
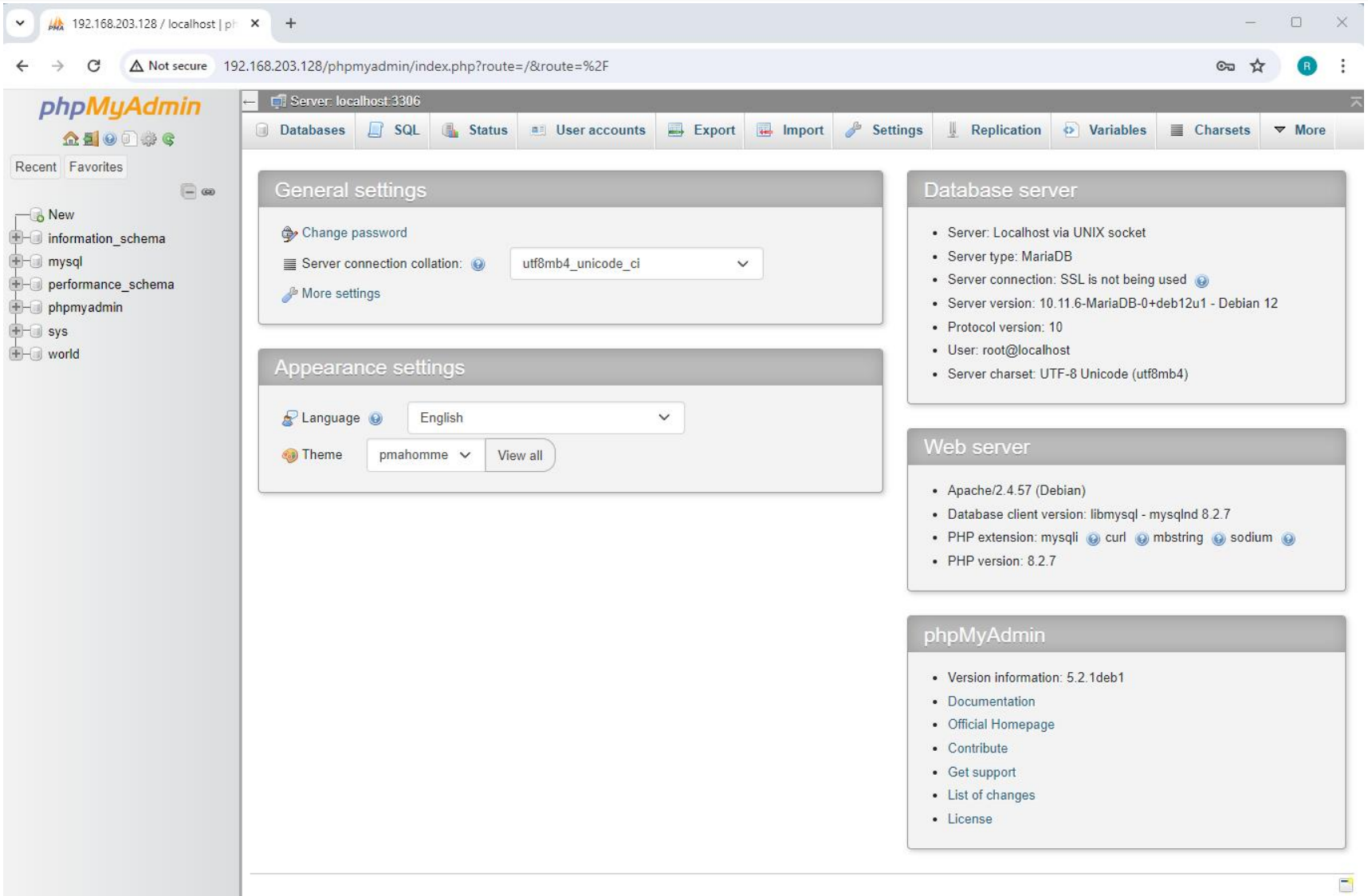


PhpMyAdmin

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

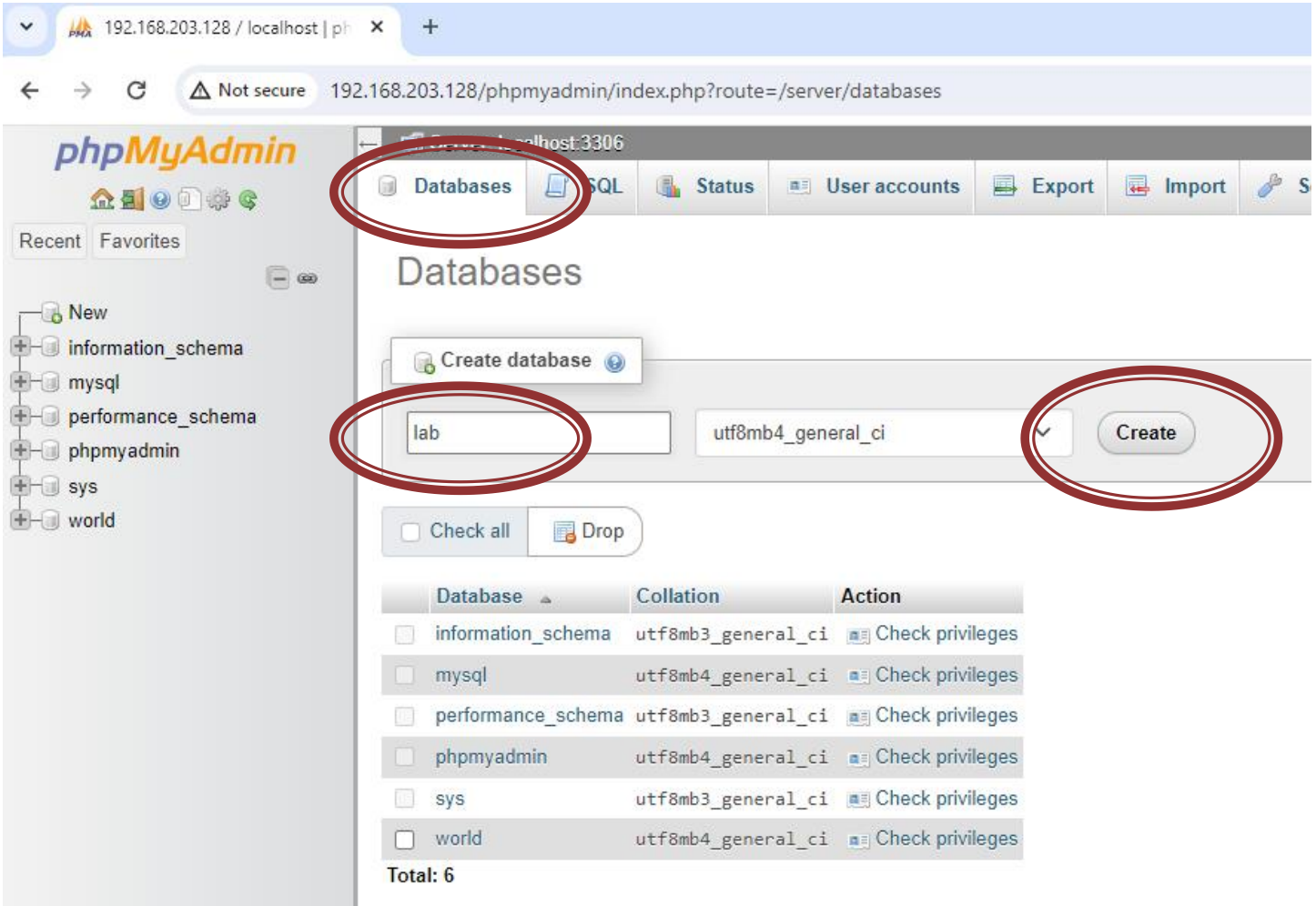


PhpMyAdmin


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

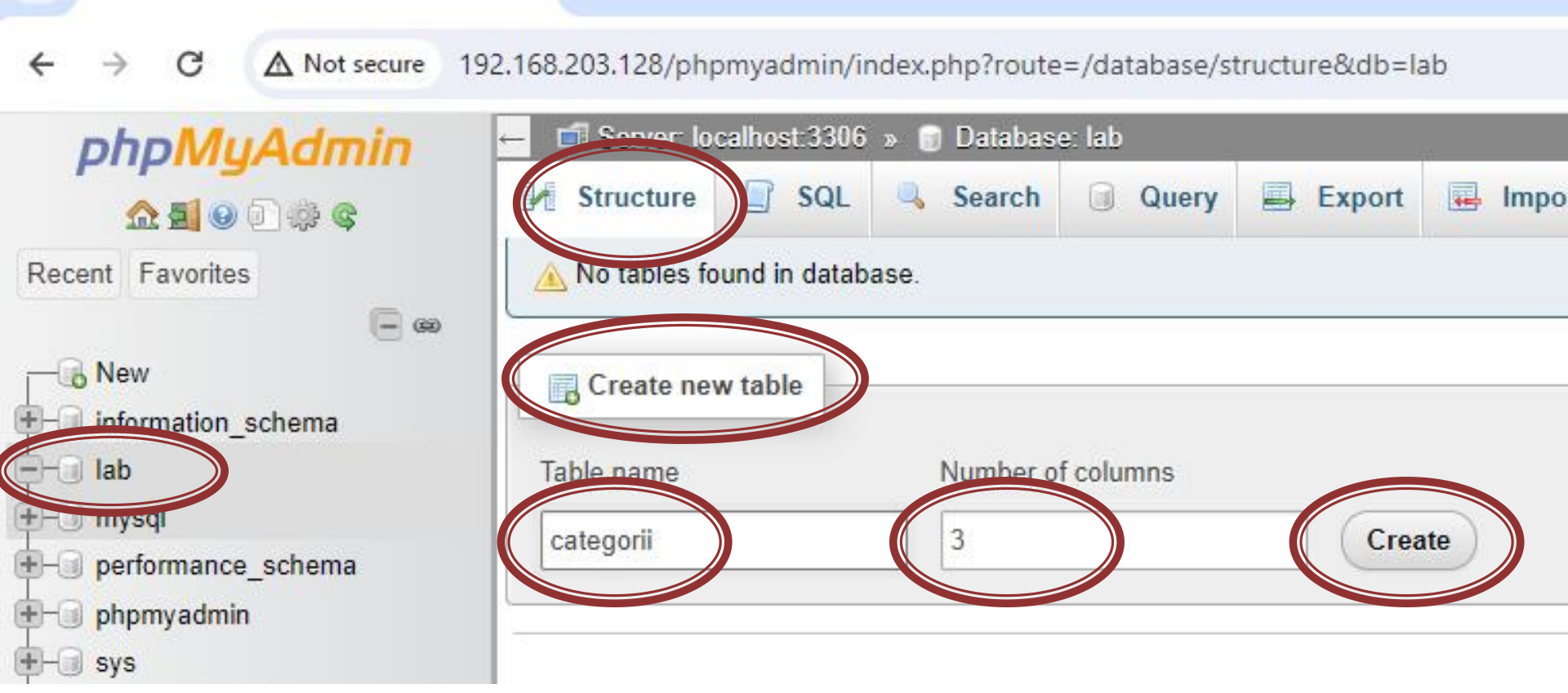
Creare Baza de Date

- Databases →"nume" →Create



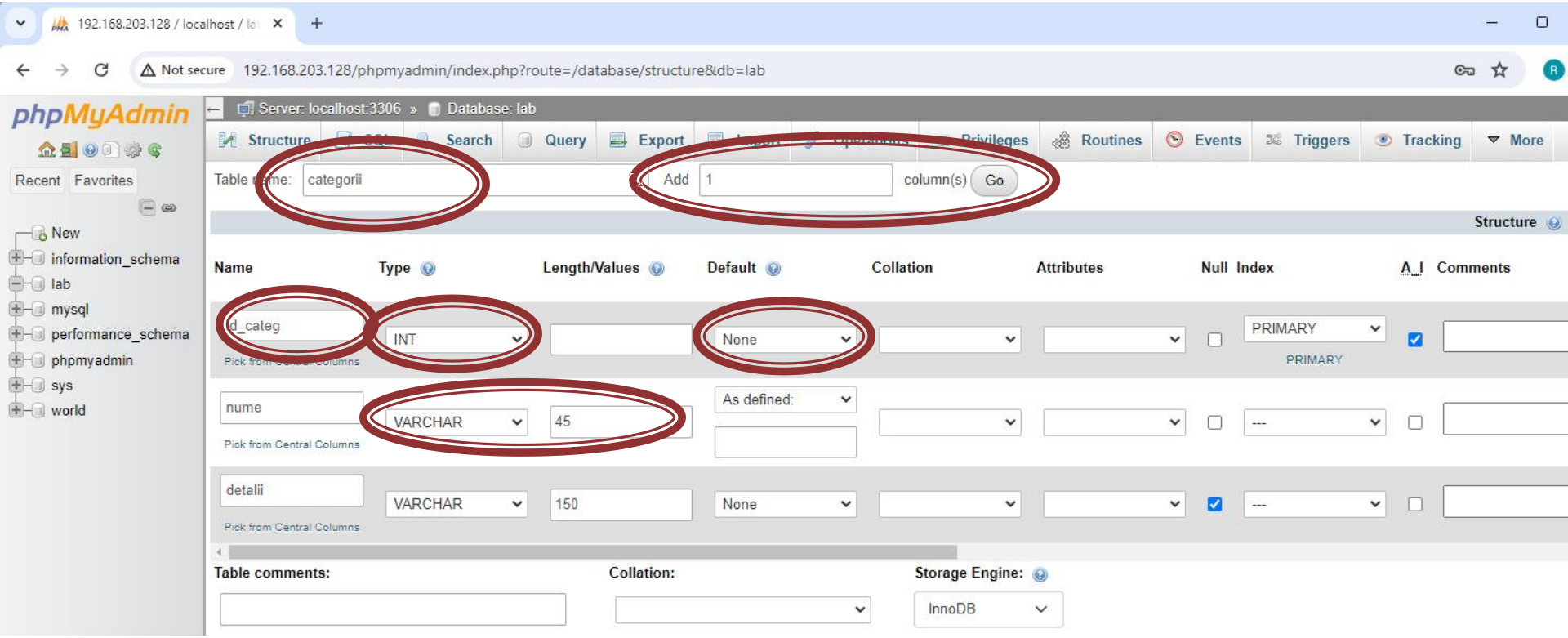
Creare tabele in baza de date

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



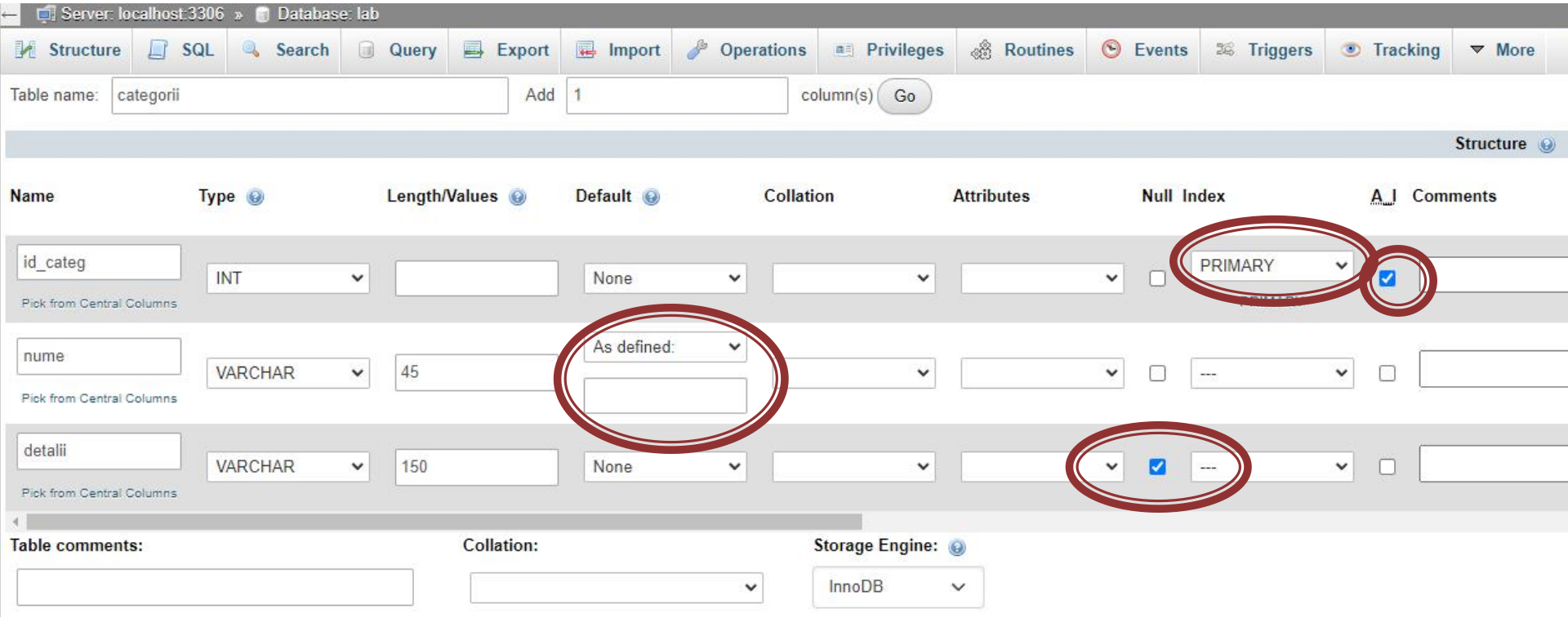
Introducere coloane, tabel categorii

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



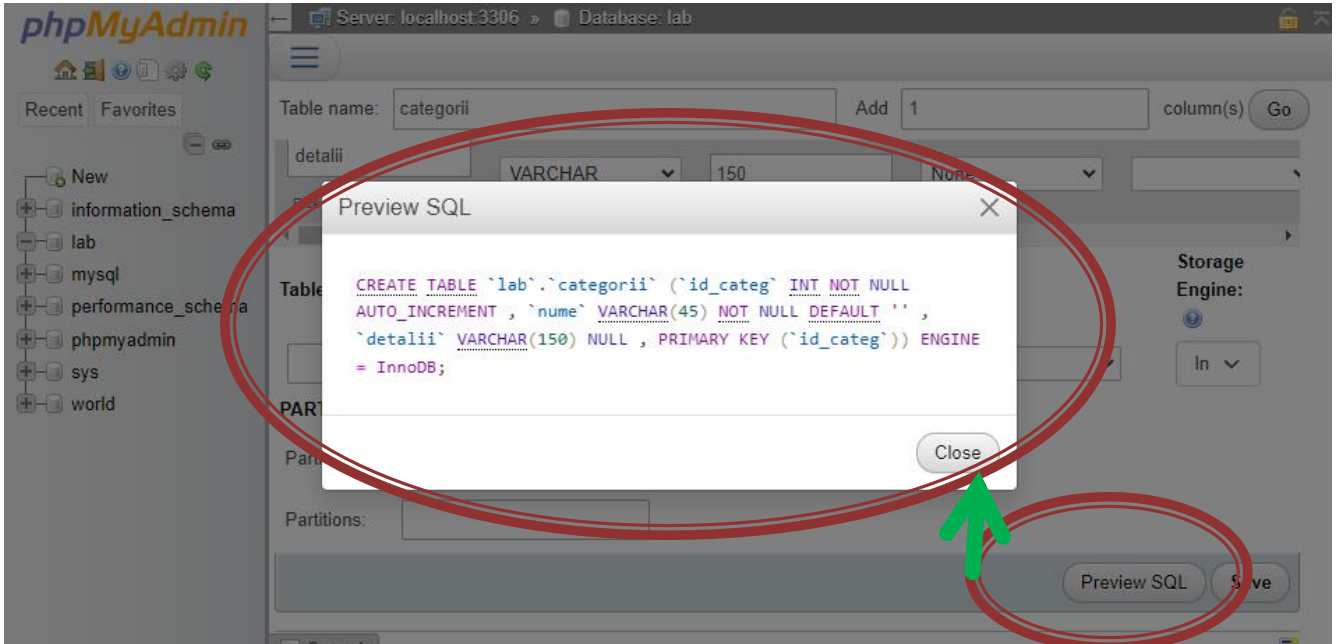
Introducere coloane

- (eventual) NOT NULL / Index / Auto Increment



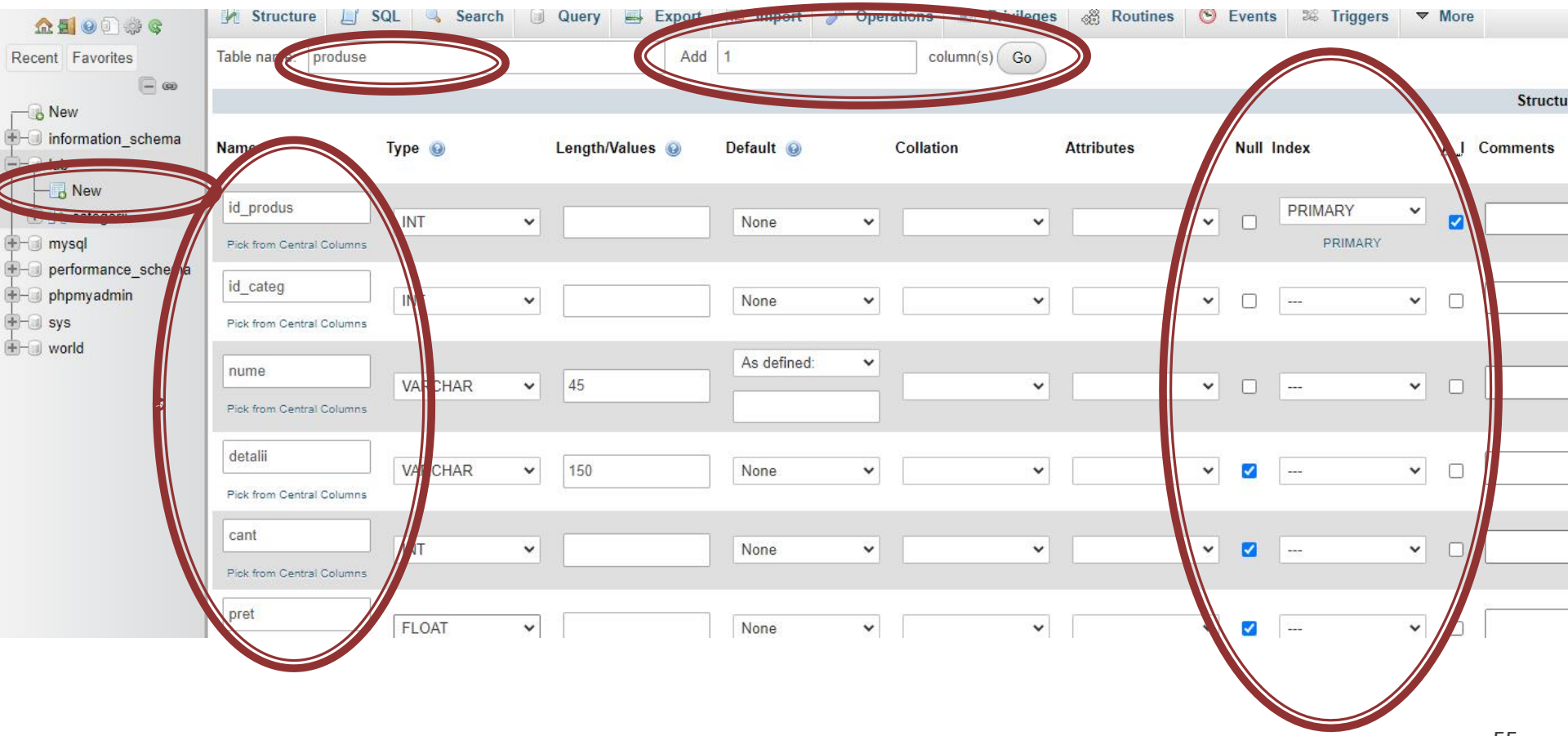
Preview SQL

- 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



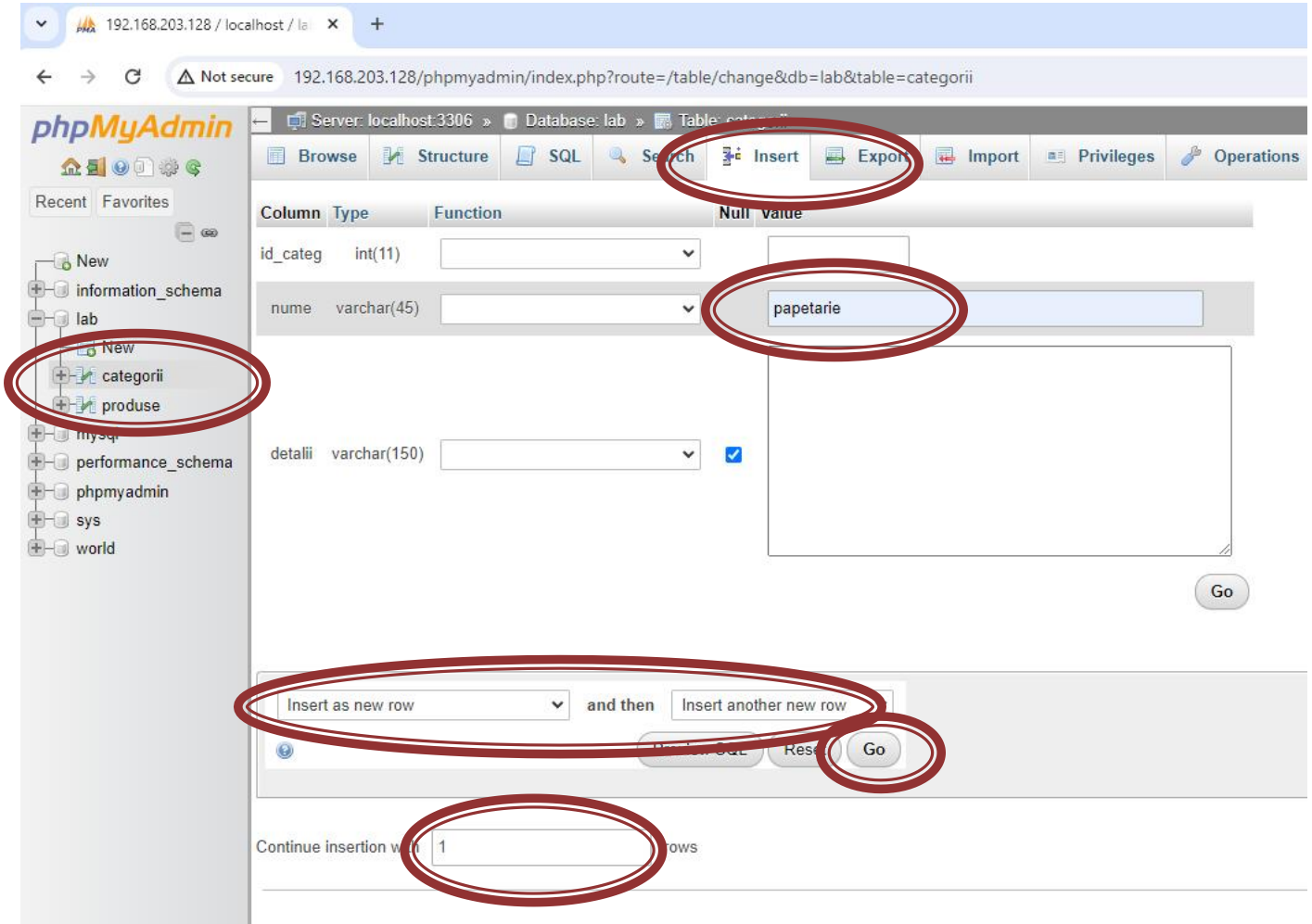
Introducere coloane, tabel produse

- New → Nume → Add Columns → …



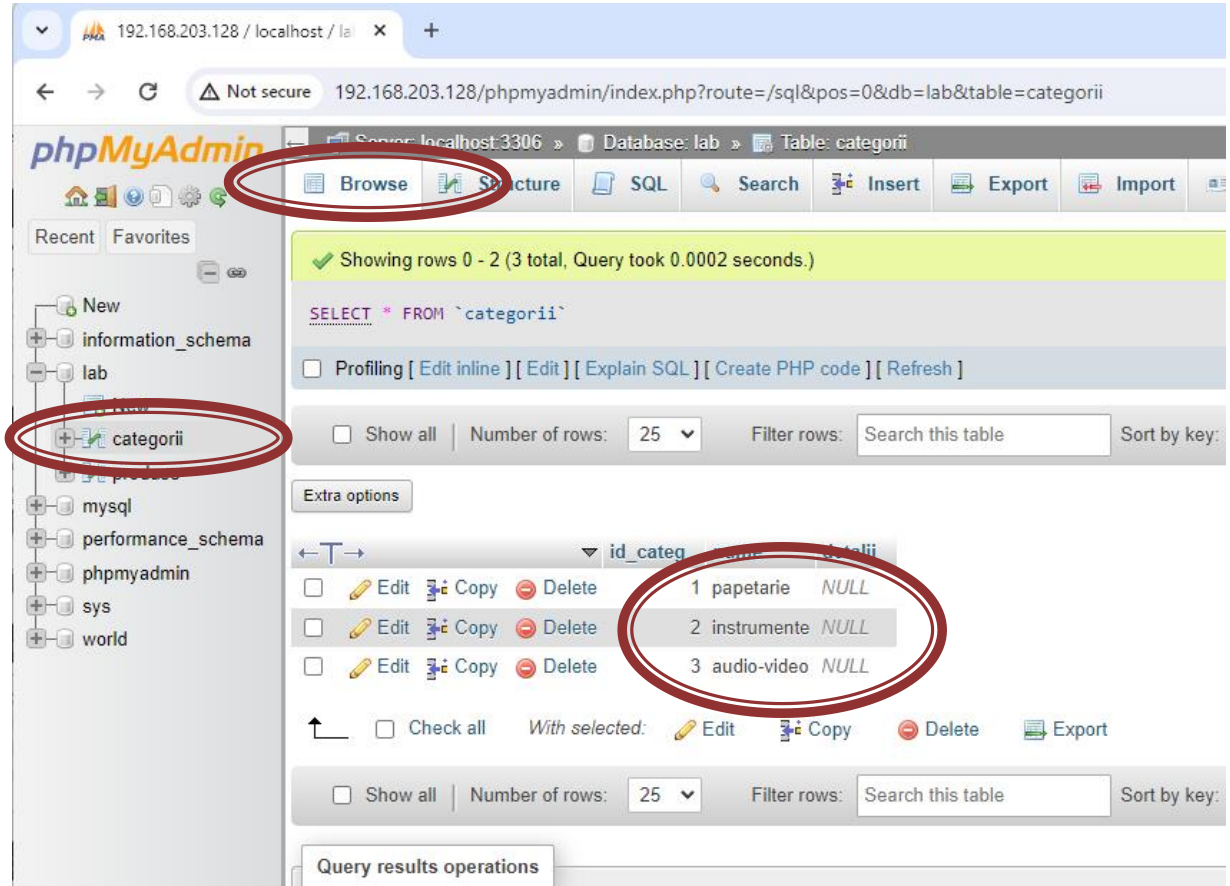
Introducere date initiale (interfata)

- Tabel → Insert → Completare → Go



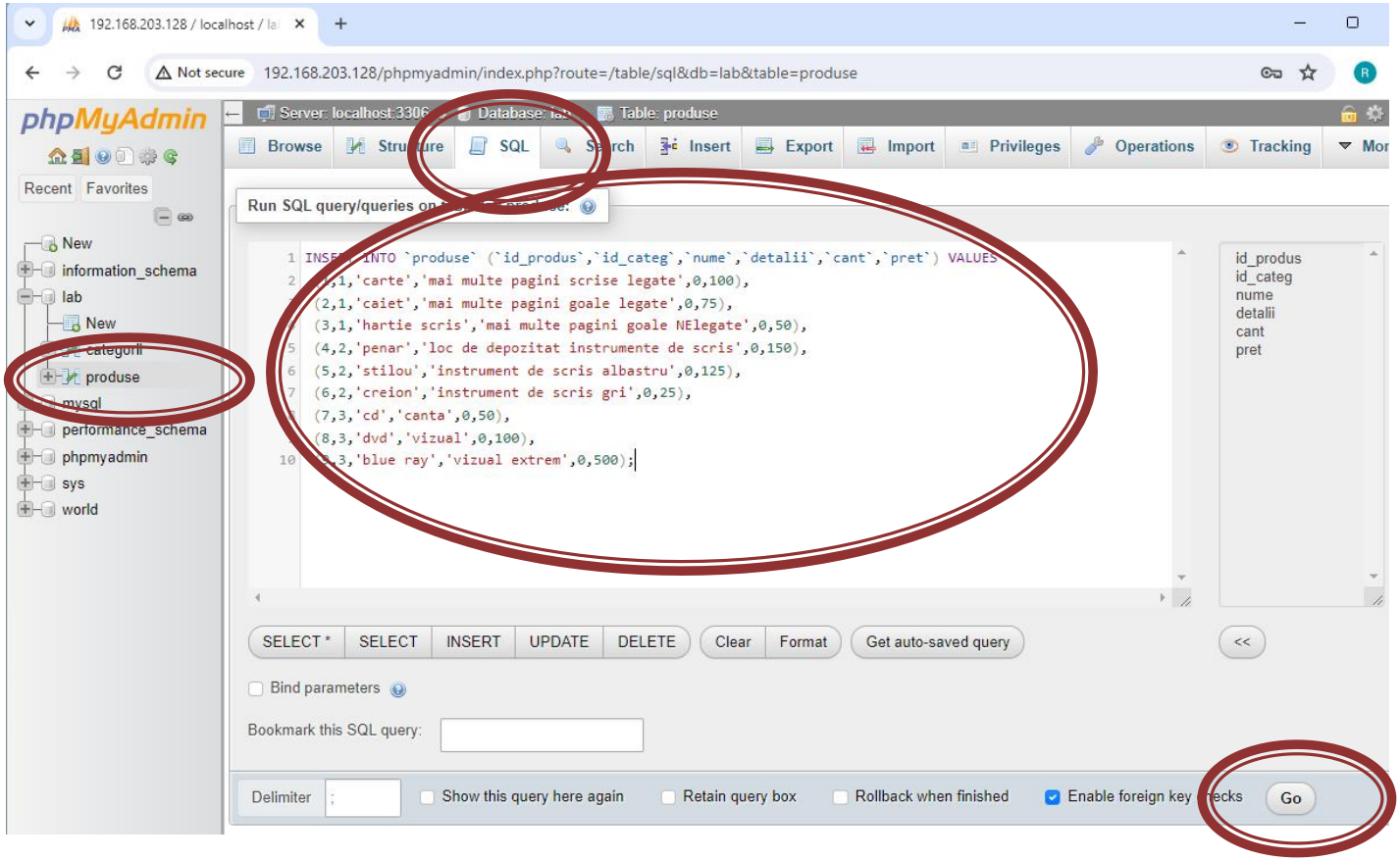
Vizualizare date existente

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

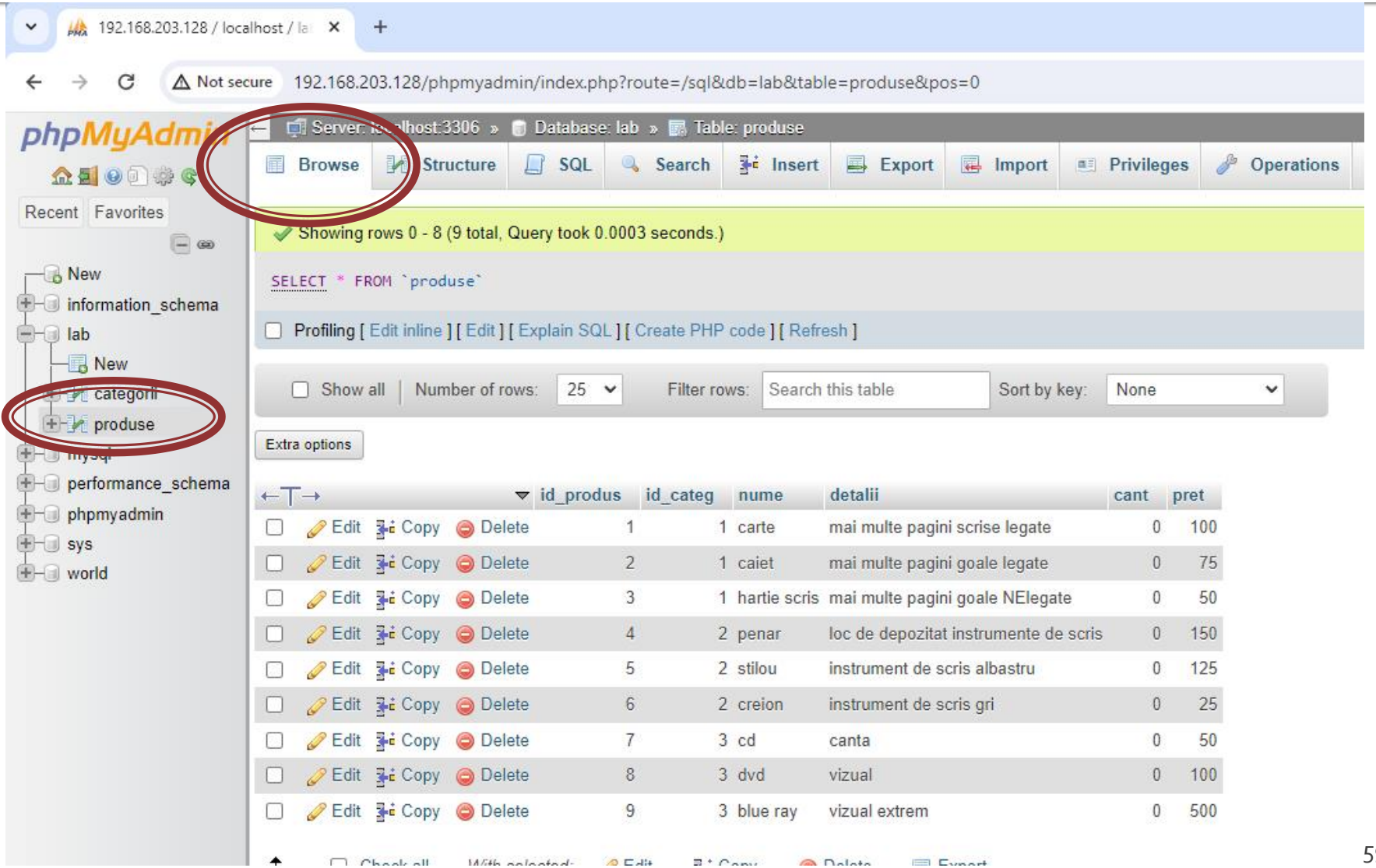


Introducere date initiale (SQL)

- Tabel → SQL → completare → Go



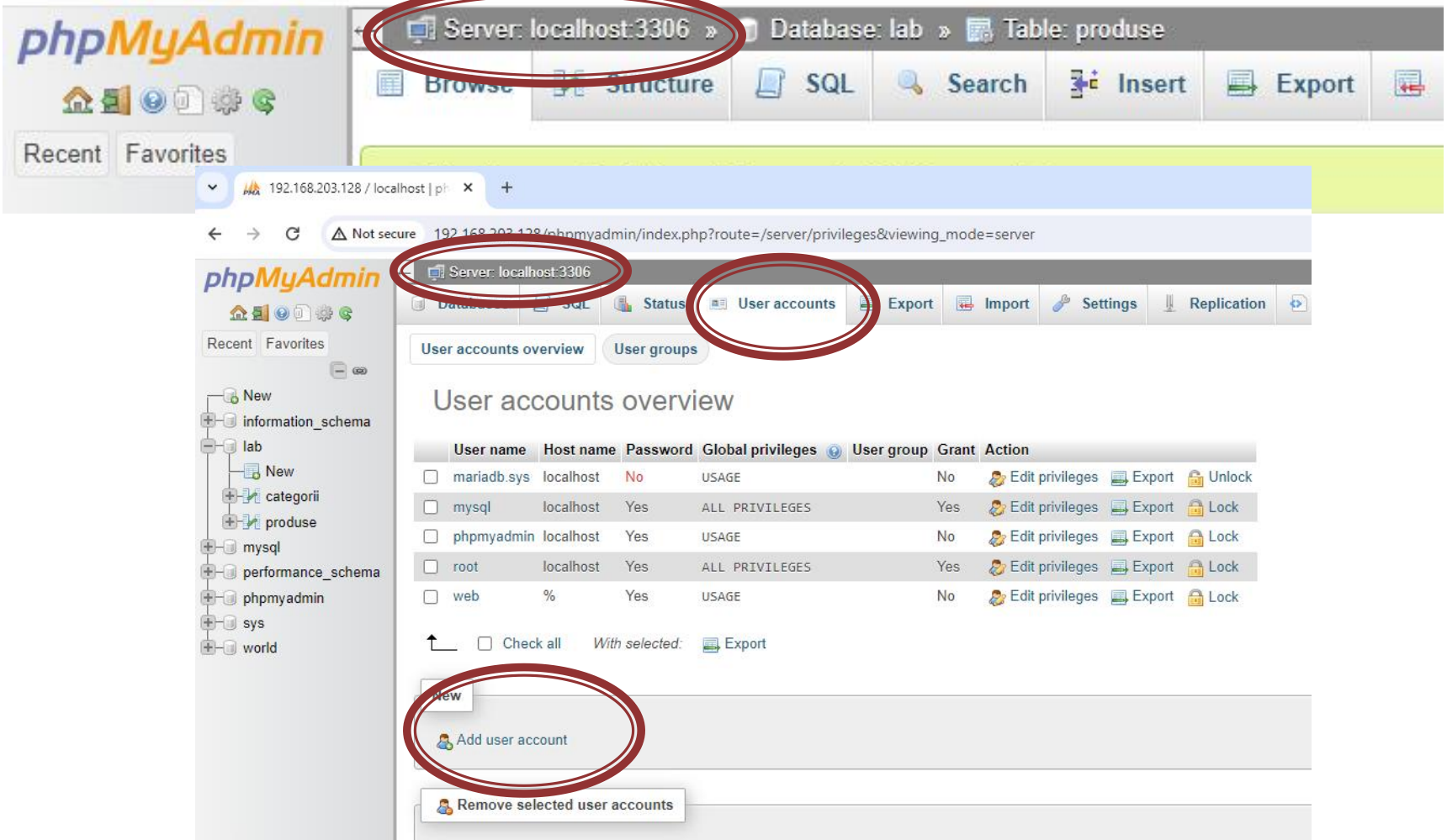
Tabel produse



	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

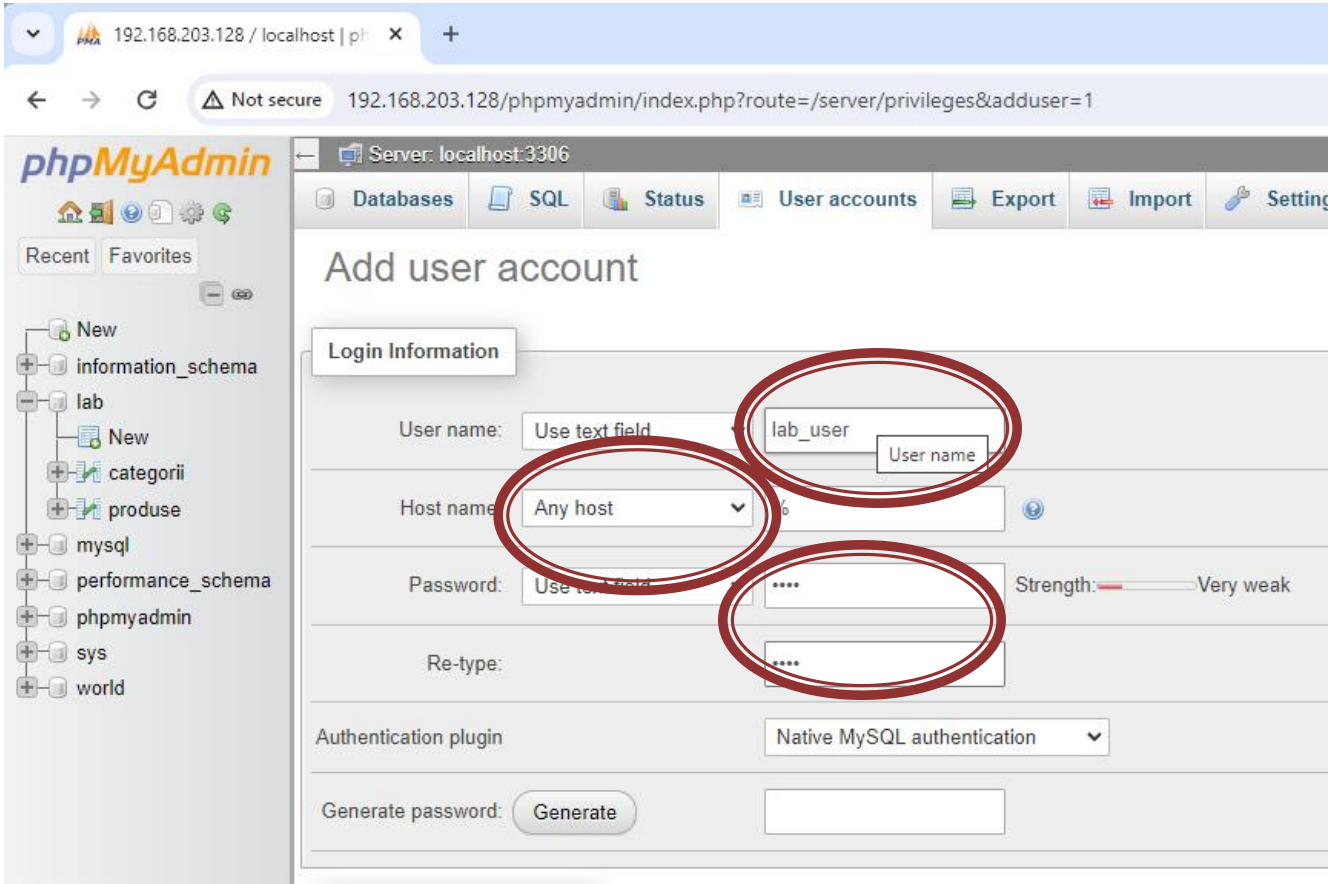
Adaugare utilizator

- Server → User accounts → Add user account



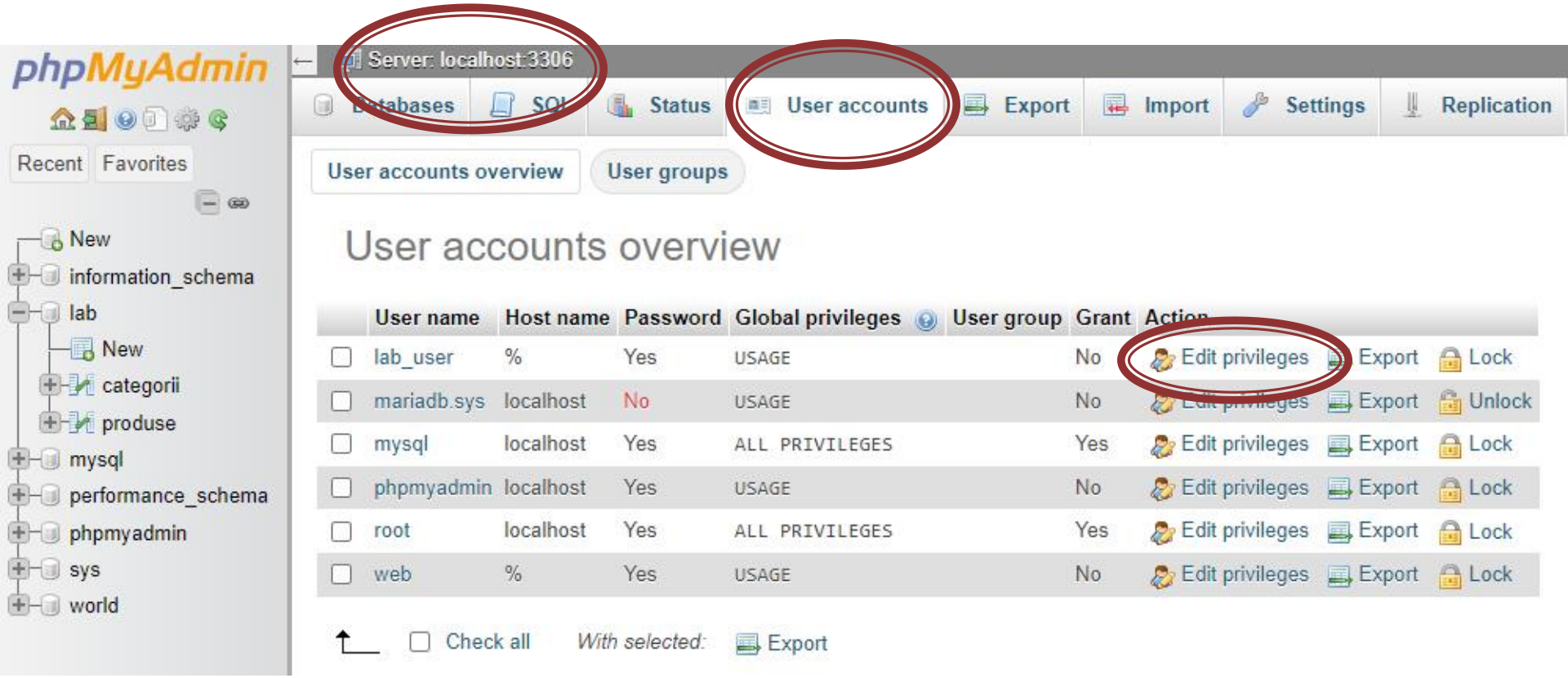
Adaugare utilizator

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



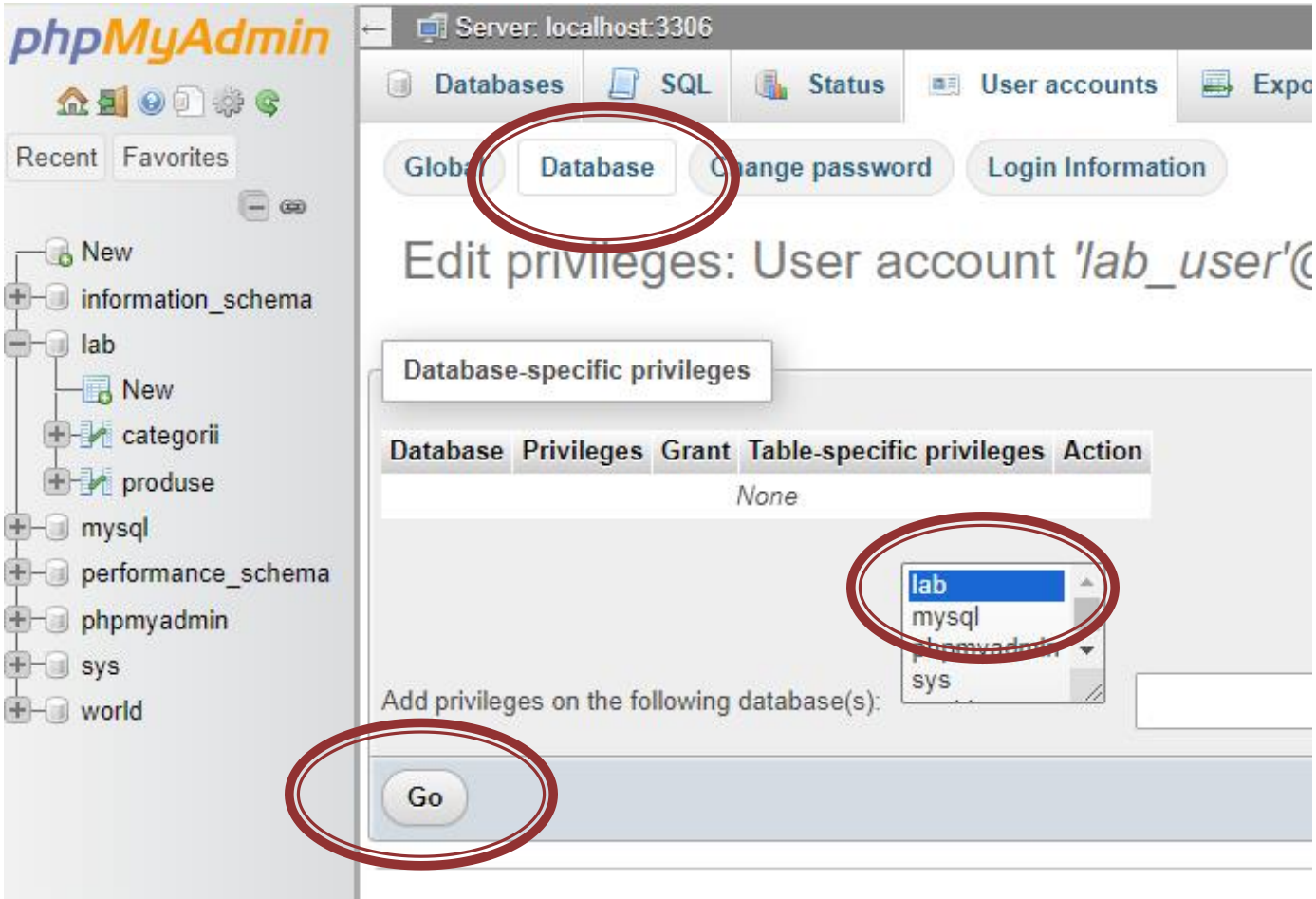
Drepturi de acces

- Server → User accounts → Edit Privileges



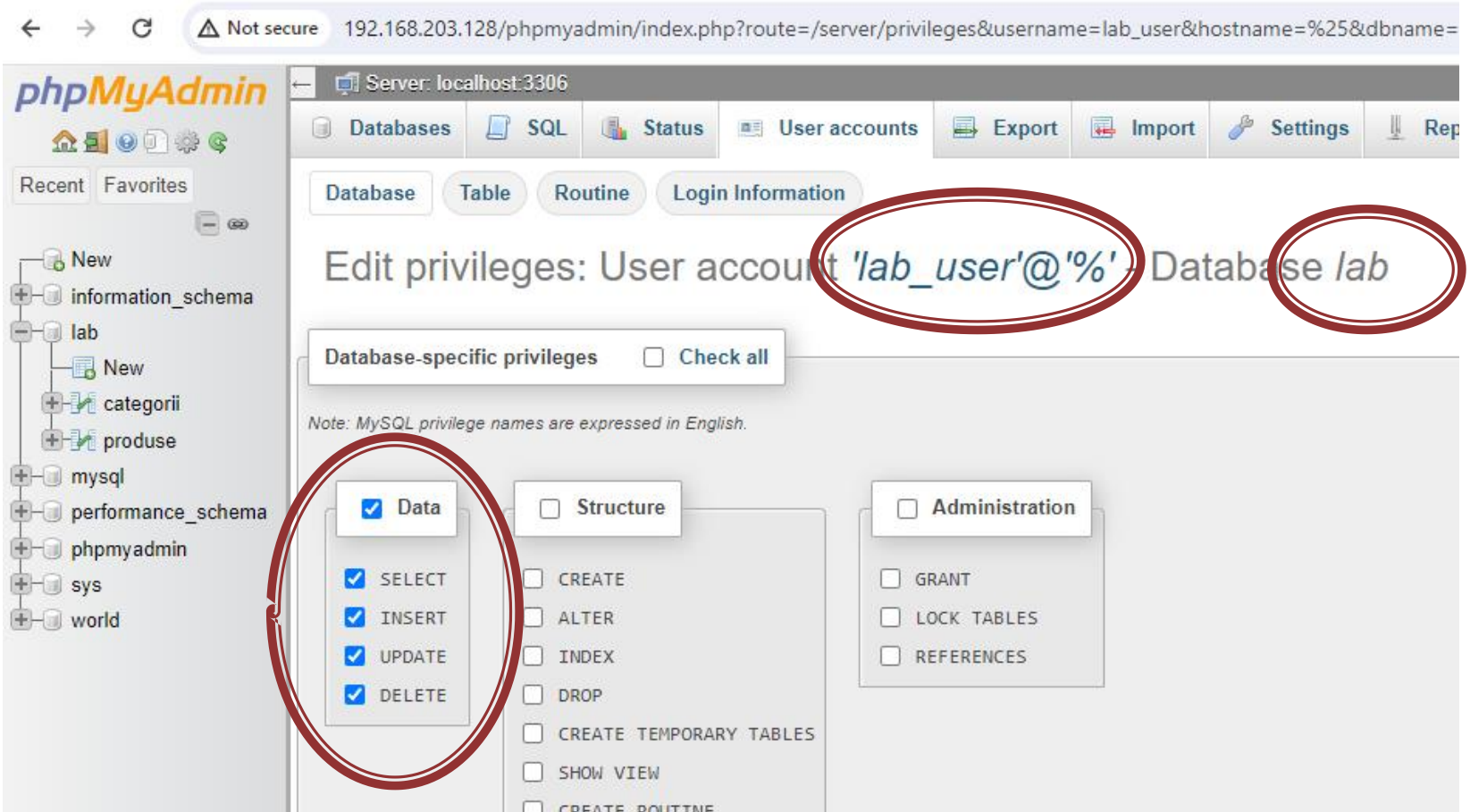
Drepturi de acces

- Database → nume → Go



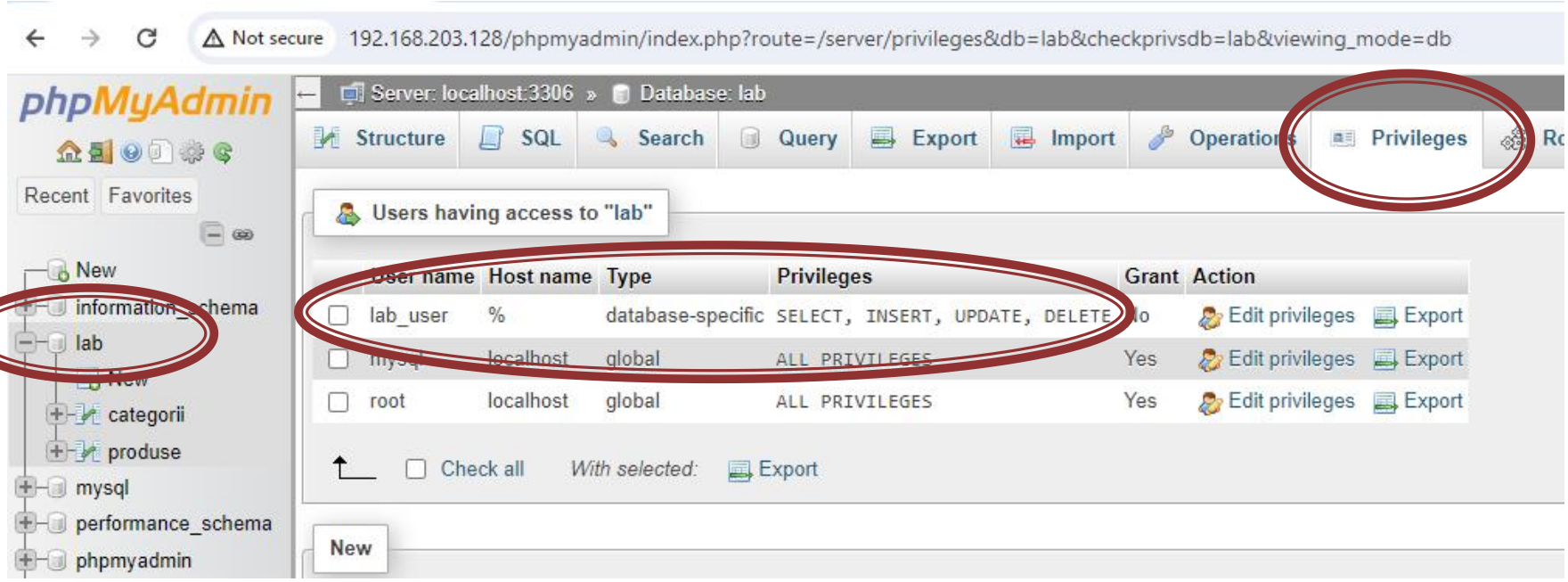
Drepturi de acces

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



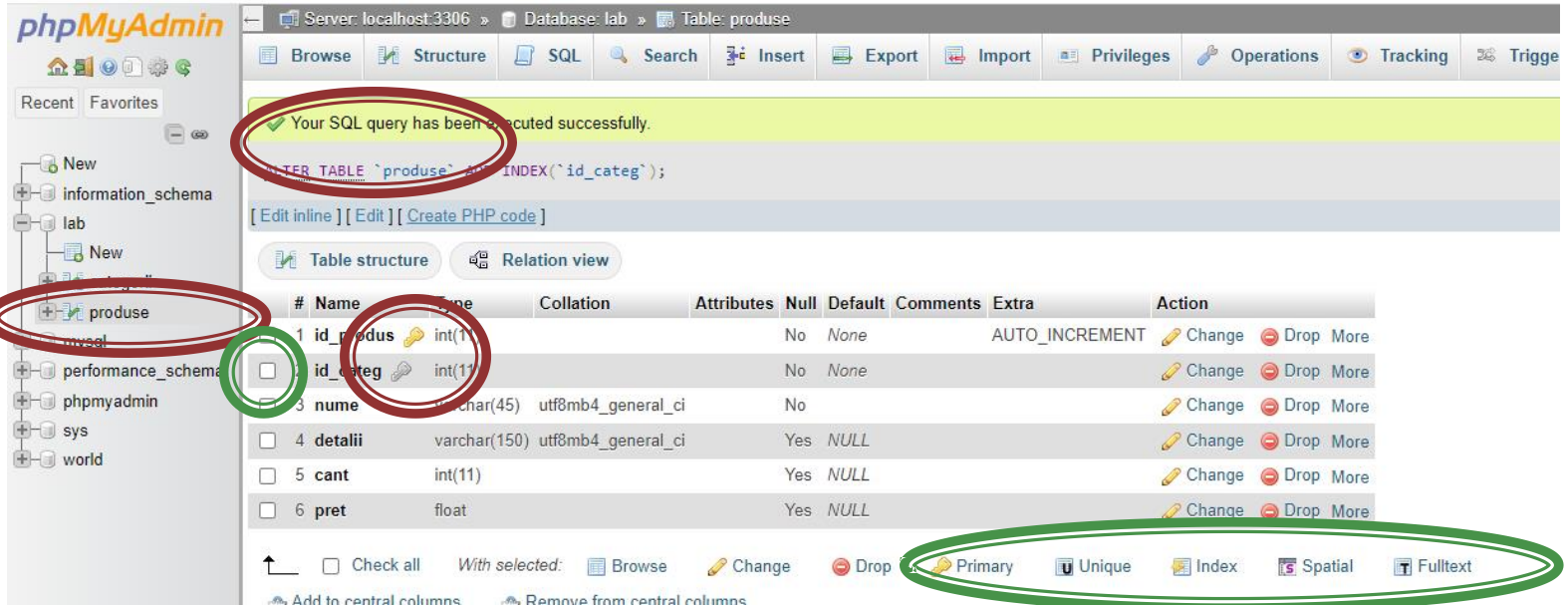
Drepturi de acces, verificare

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



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

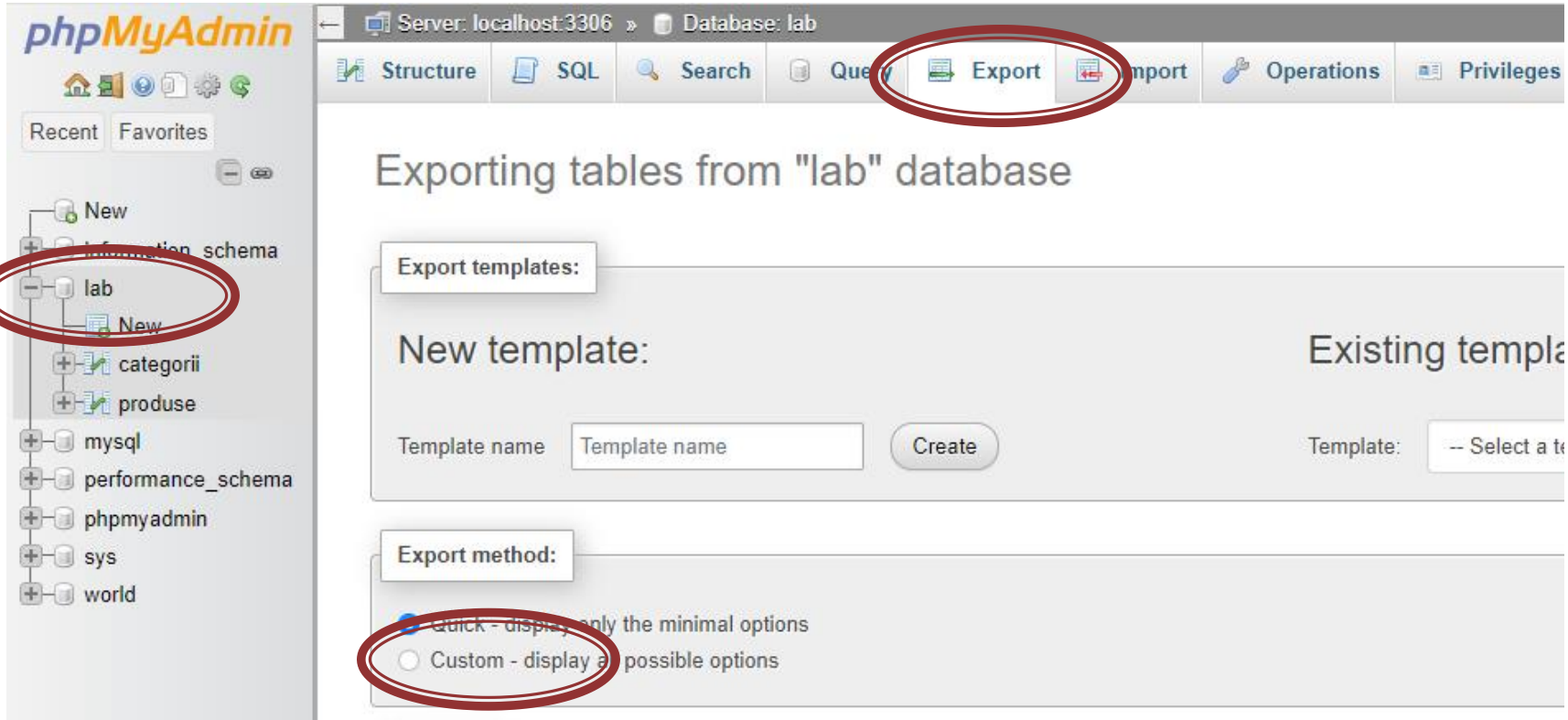
- Zona Indexes, vizualizare/control lista de indecsi

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

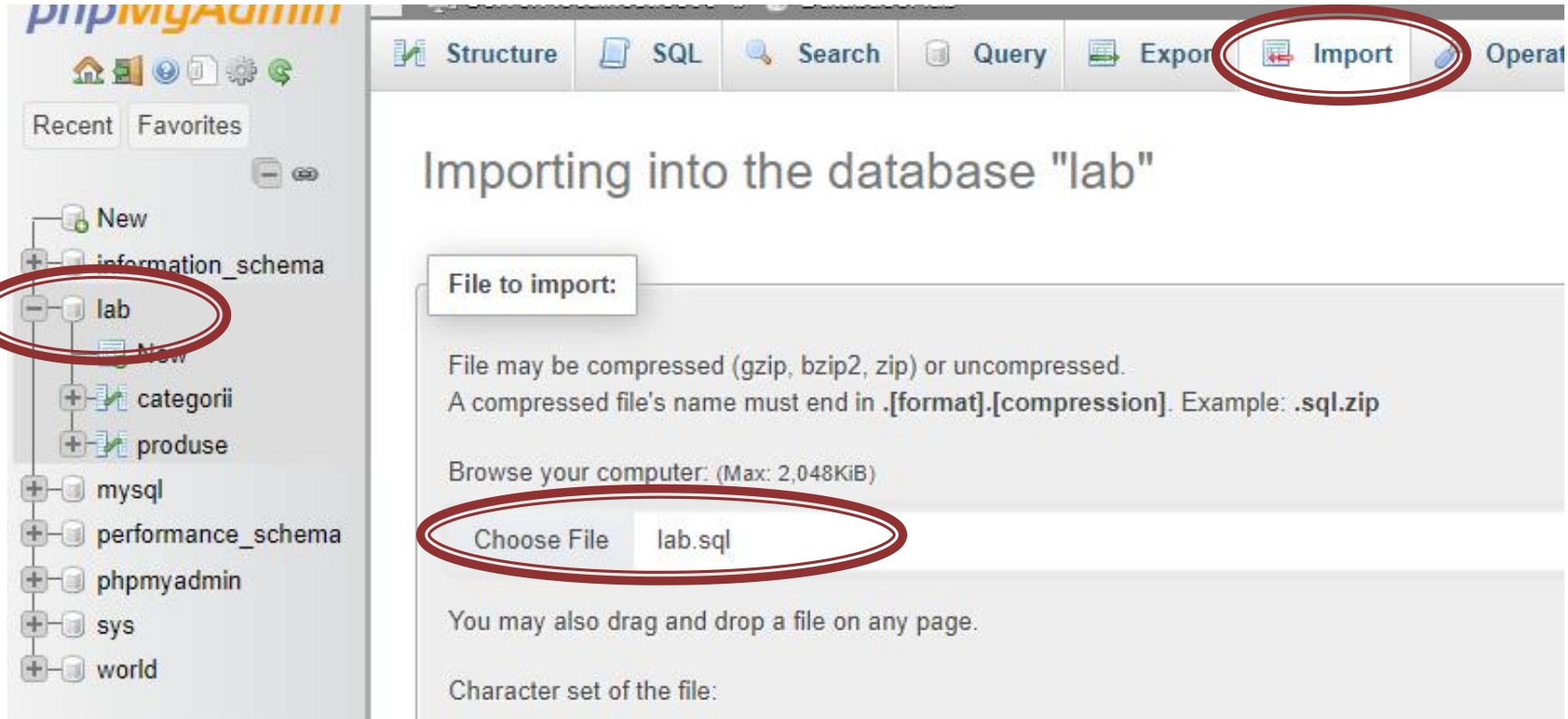
Backup

- 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

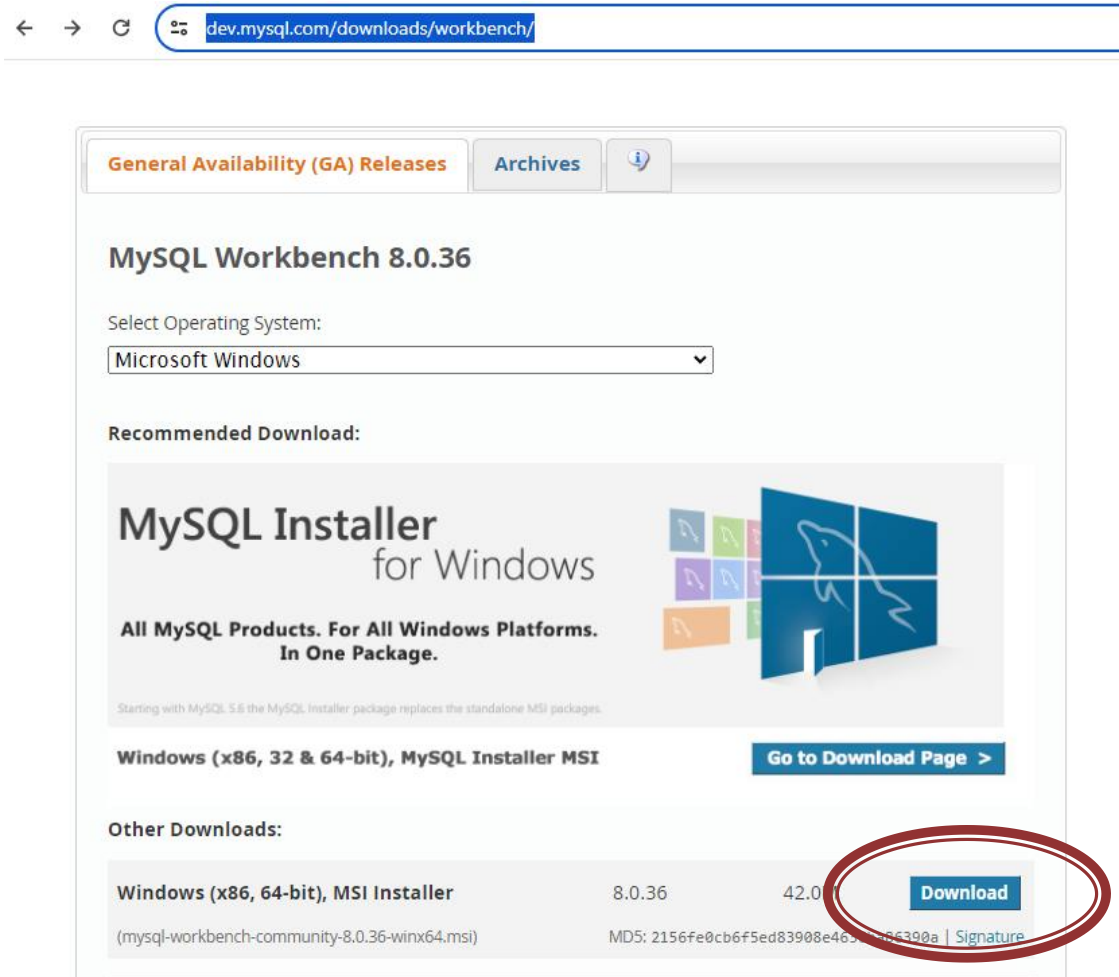


MySQL Workbench

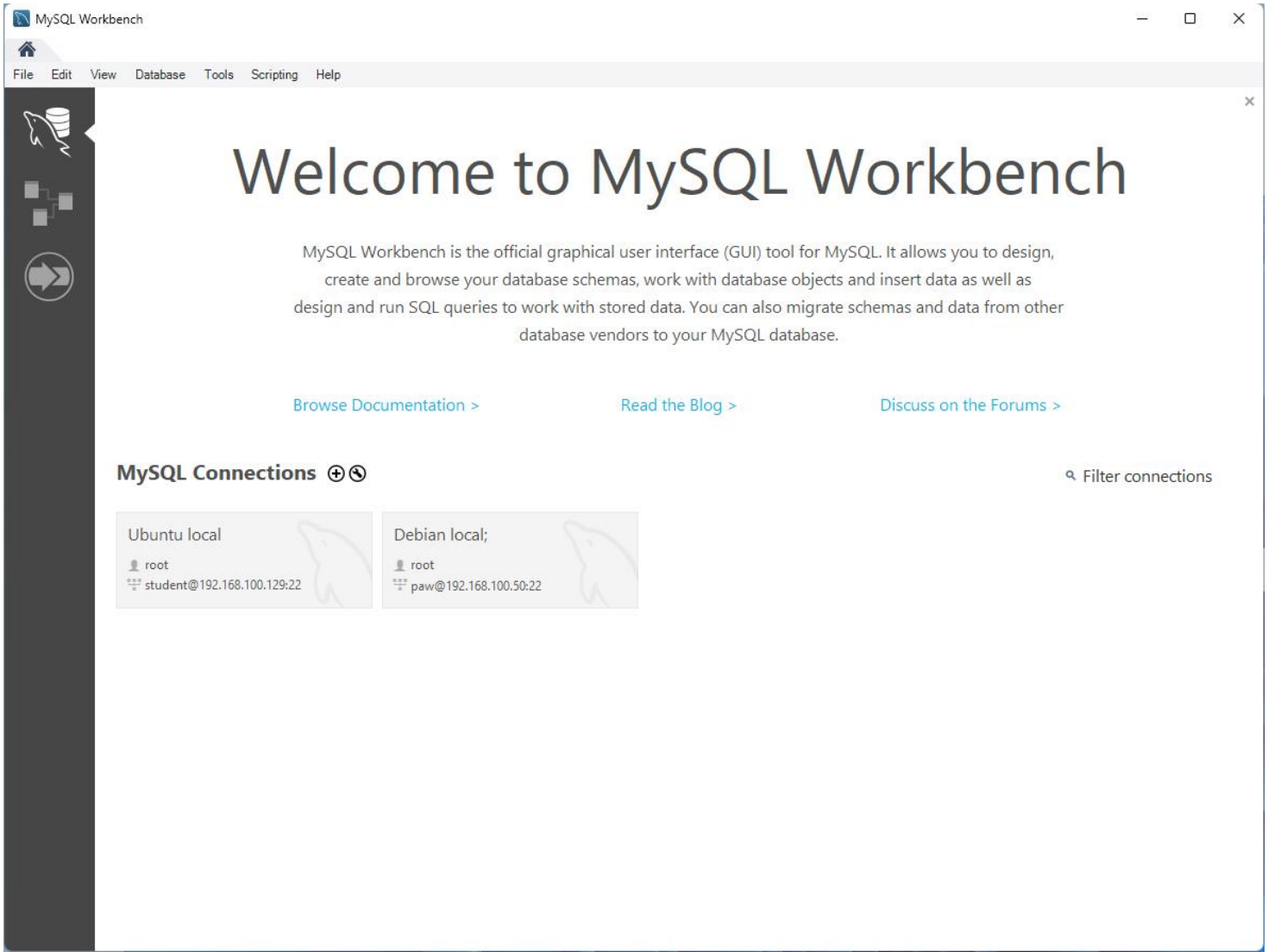
Mini – Indrumar practic
Lucru cu bazele de date

MySQL Workbench CE

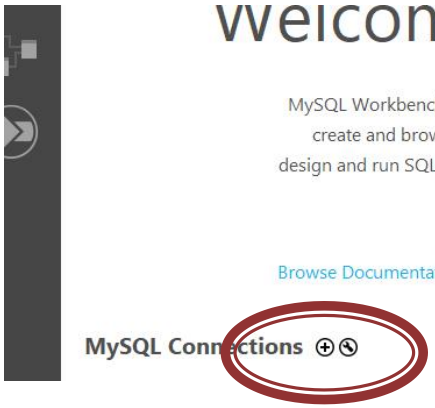
- https://dev.mysql.com/downloads/workbench/

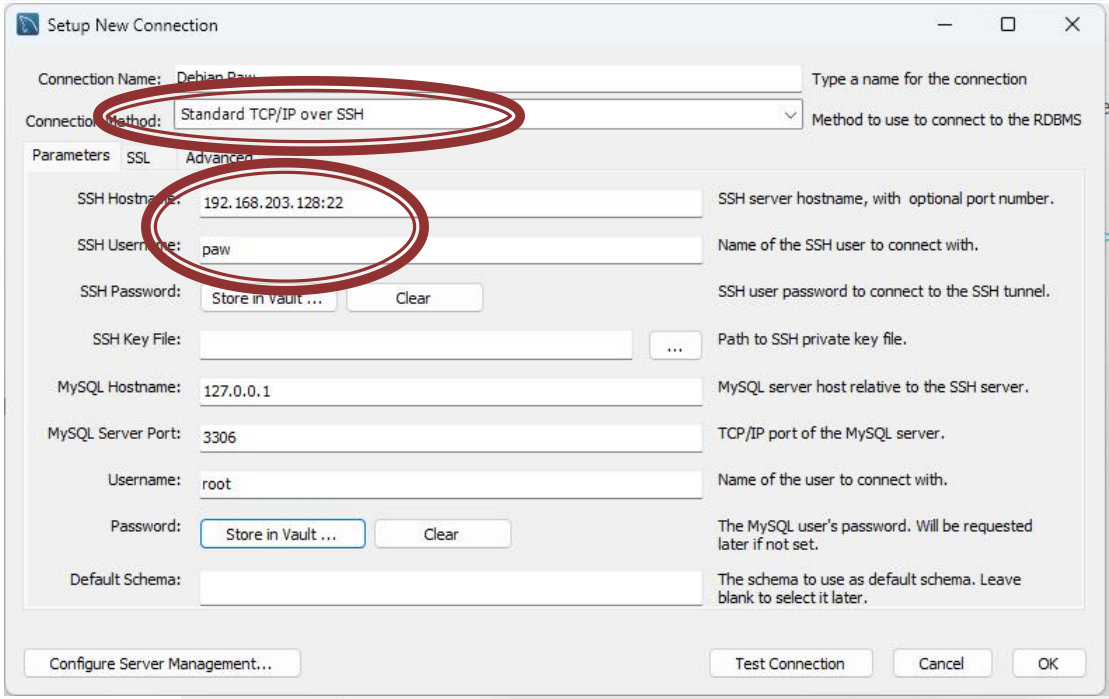


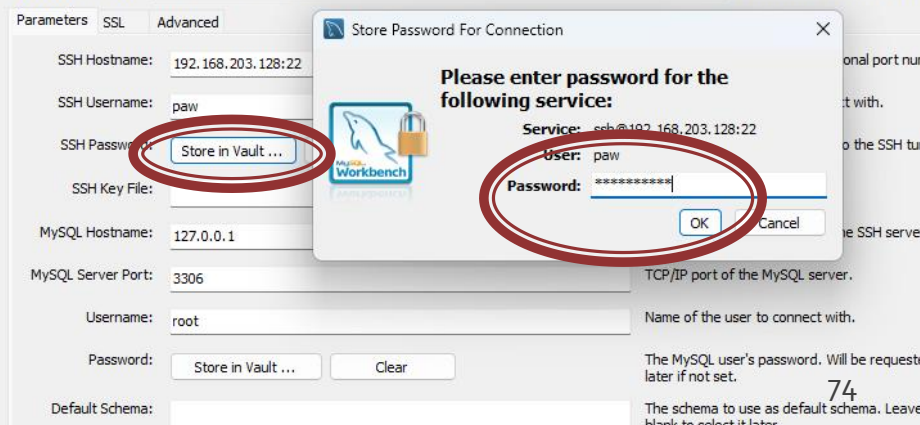
MySQL Workbench CE



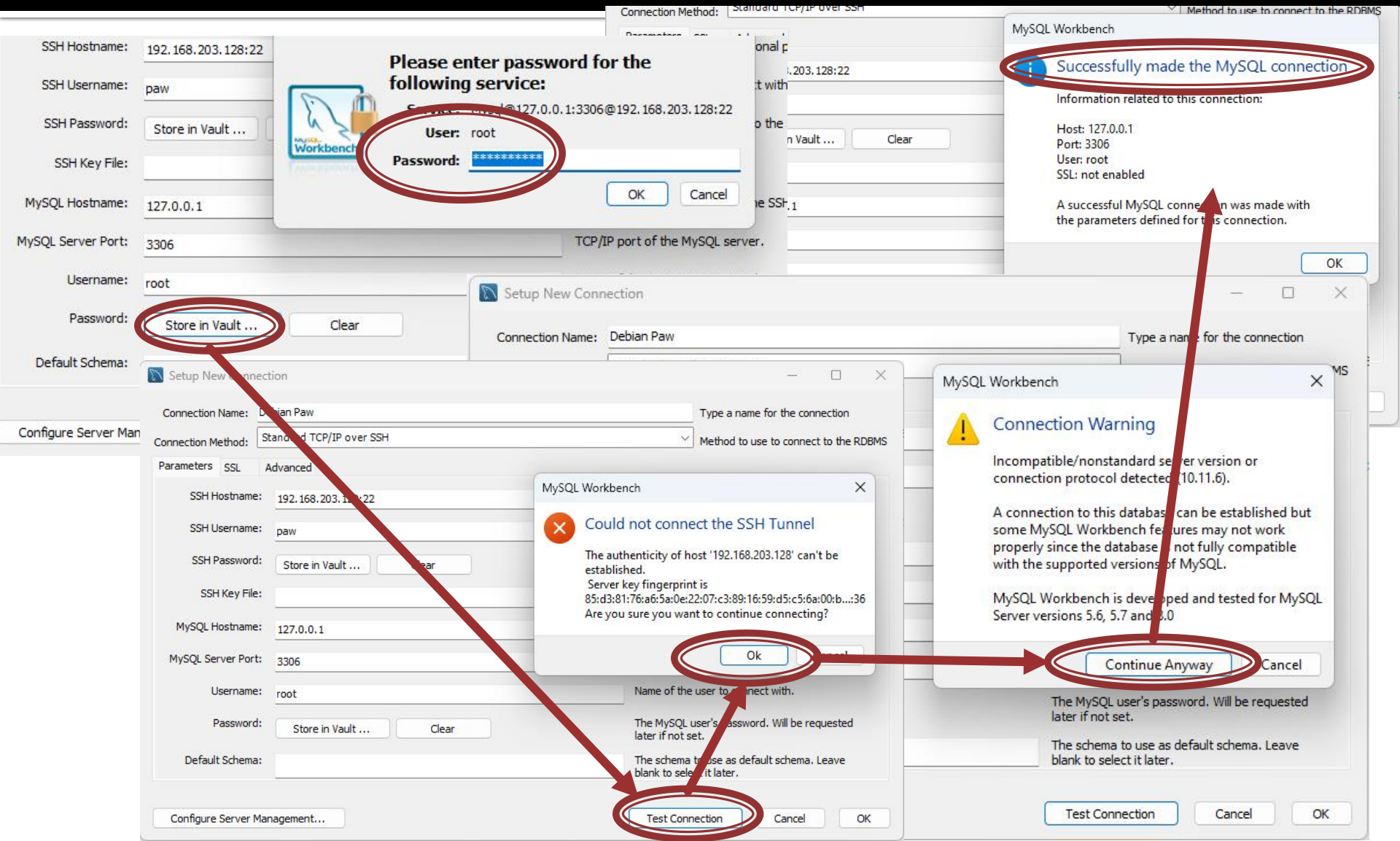
Conexiune


MySQL Workbench i
create and brows
design and run SQL q
Browse Documentatic
MySQL Connections

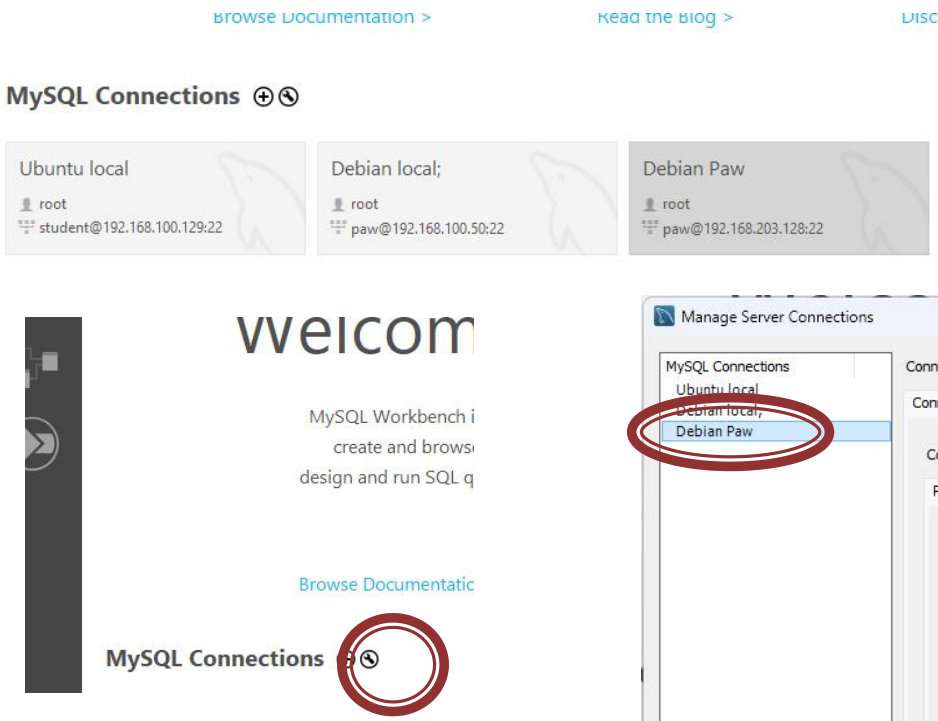

Setup New Connection
Connection Name:
Type a name for the connection
Connection Method:
Standard TCP/IP over SSH
Method to use to connect to the RDBMS
Parameters
SSL
Advanced
SSH Hostname:
192.168.203.128:22
SSH server hostname, with optional port number.
SSH Username:
paw
Name of the SSH user to connect with.
SSH Password:
Store in Vault ...
Clear
SSH user password to connect to the SSH tunnel.
SSH Key File:
Path to SSH private key file.
MySQL Hostname:
127.0.0.1
MySQL server host relative to the SSH server.
MySQL Server Port:
3306
TCP/IP port of the MySQL server.
Username:
root
Name of the user to connect with.
Password:
Store in Vault ...
Clear
The MySQL user's password. Will be requested later if not set.
Default Schema:
The schema to use as default schema. Leave blank to select it later.
Configure Server Management...
Test Connection
Cancel
OK

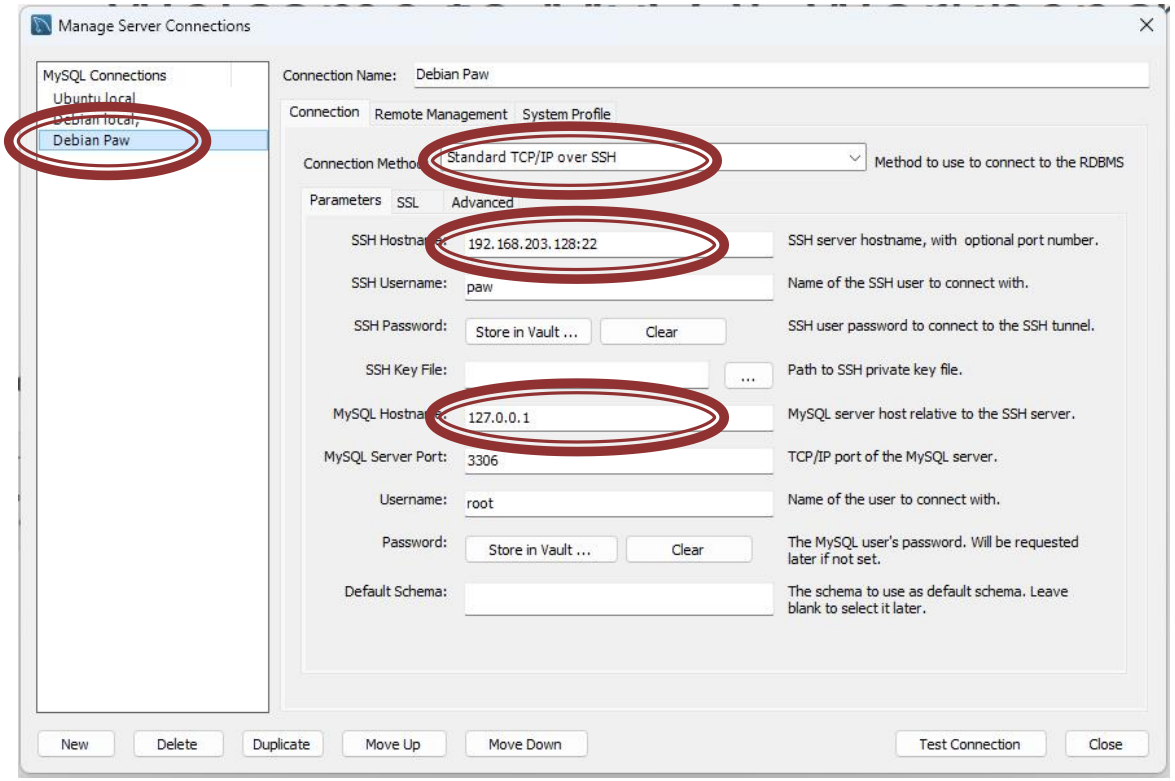

Parameters
SSL
Advanced
SSH Hostname:
192.168.203.128:22
SSH Username:
paw
SSH Password:
Store in Vault ...
SSH Key File:
MySQL Hostname:
127.0.0.1
MySQL Server Port:
3306
Username:
root
Password:
Store in Vault ...
Clear
Default Schema:
Store Password For Connection
Please enter password for the following service:
Service:
User:
paw
Password:
OK
Cancel

Conexiune

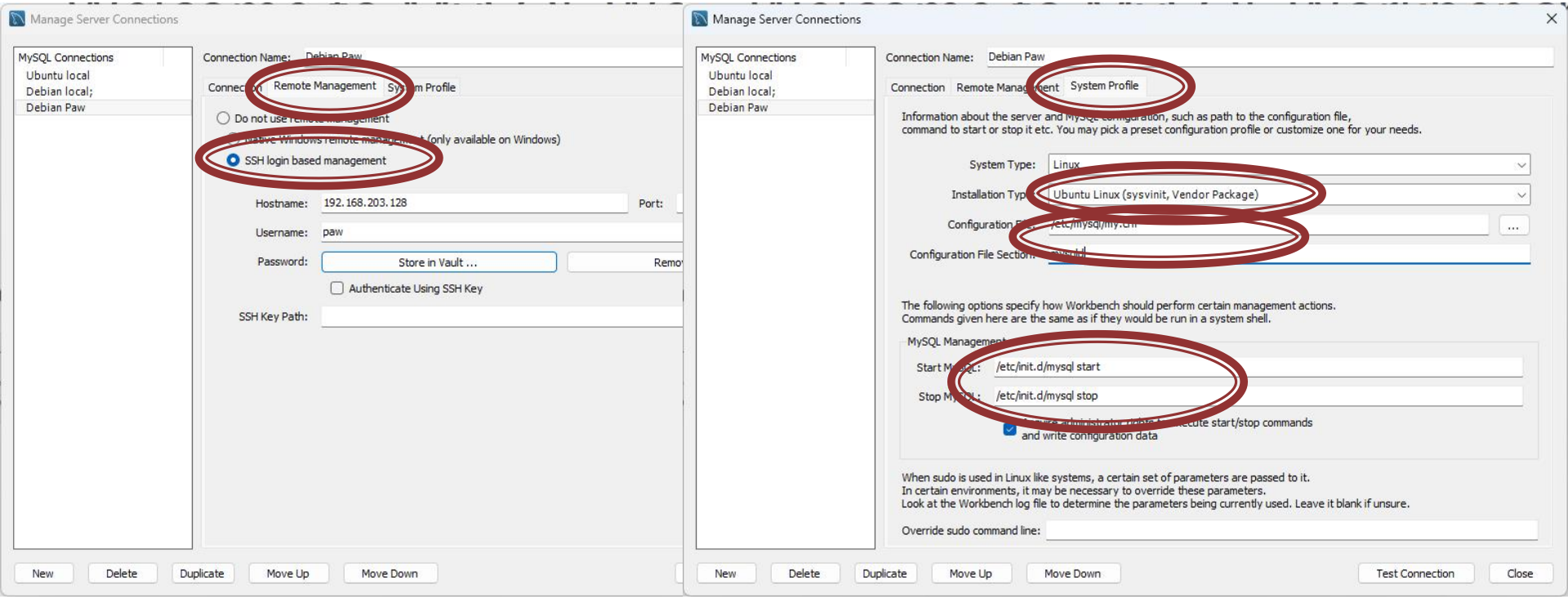

SSH Hostname:
192.168.203.128:22
SSH Username:
paw
SSH Password:
Store in Vault ...
SSH Key File:
MySQL Hostname:
127.0.0.1
MySQL Server Port:
3306
Username:
root
Password:
Store in Vault ...
Clear
Default Schema:
Configure Server Man
Please enter password for the following service:
User: root
Password:
OK
Cancel
TCP/IP port of the MySQL server.
MySQL Workbench
Successfully made the MySQL connection
Information related to this connection:
Host: 127.0.0.1
Port: 3306
User: root
SSL: not enabled
A successful MySQL connection was made with the parameters defined for this connection.
OK
Setup New Connection
Connection Name:
Debian Paw
Type a name for the connection
Connection Method:
Standard TCP/IP over SSH
Method to use to connect to the RDBMS
Parameters
SSL
Advanced
SSH Hostname:
SSH Username:
paw
SSH Password:
SSH Key File:
MySQL Hostname:
MySQL Server Port:
Username:
root
Password:
Default Schema:
Configure Server Management...
Test Connection
Cancel
OK
MySQL Workbench
Could not connect the SSH Tunnel
The authenticity of host '192.168.203.128' can't be established.
Server key fingerprint is
85:d3:81:76:a6:5a:0e:22:07:c3:89:16:59:d5:c5:6a:00:b...:36
Are you sure you want to continue connecting?
Ok
MySQL Workbench
Connection Warning
Incompatible/nonstandard server version or connection protocol detected (10.11.6).
A connection to this database can be established but some MySQL Workbench features may not work properly since the database is not fully compatible with the supported versions of MySQL.
MySQL Workbench is developed and tested for MySQL Server versions 5.6, 5.7 and 8.0
Continue Anyway
Cancel
The MySQL user's password. Will be requested later if not set.
The schema to use as default schema. Leave blank to select it later.
Test Connection
Cancel
OK

Configurare

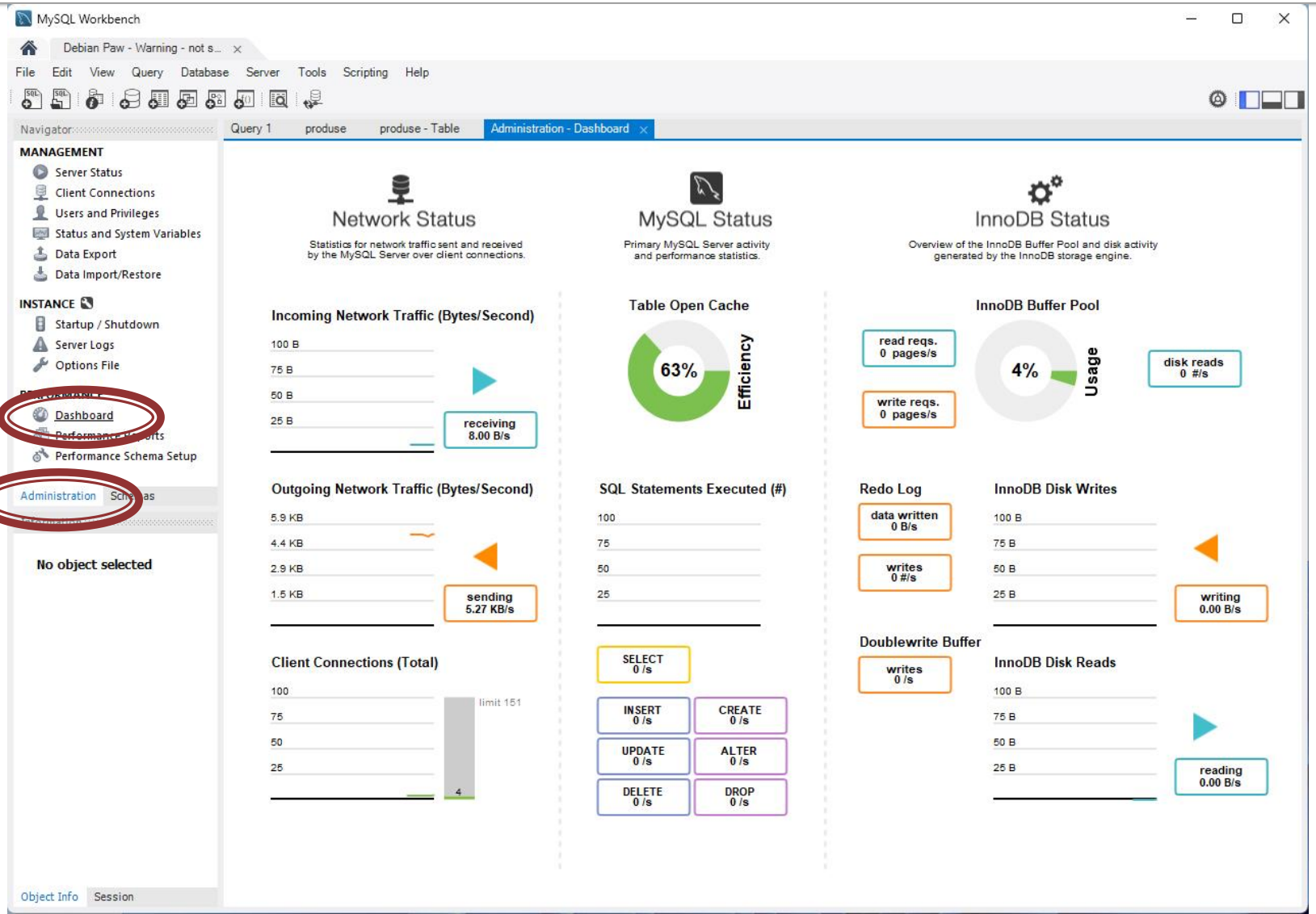




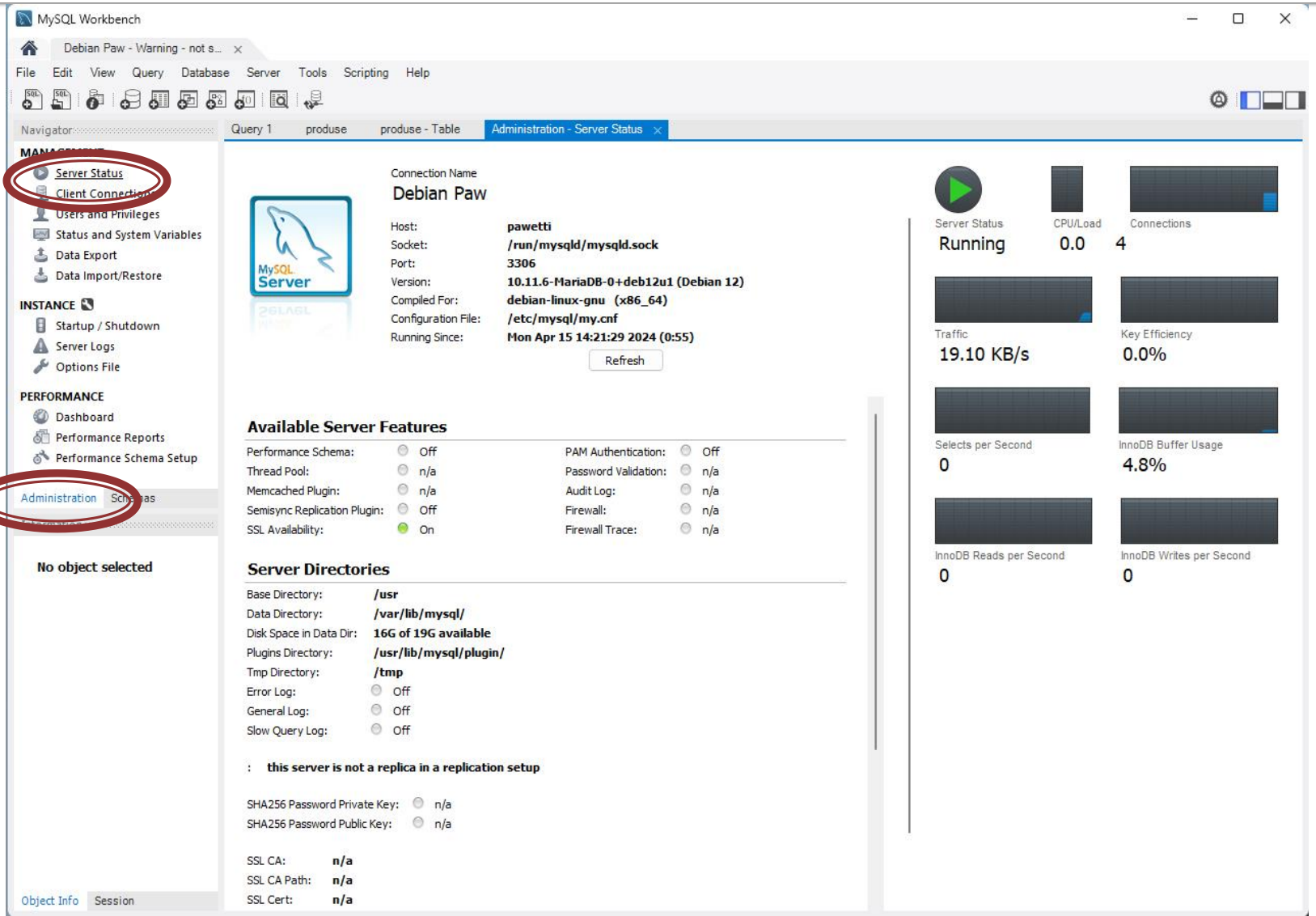
Configurare



Administrare/Control

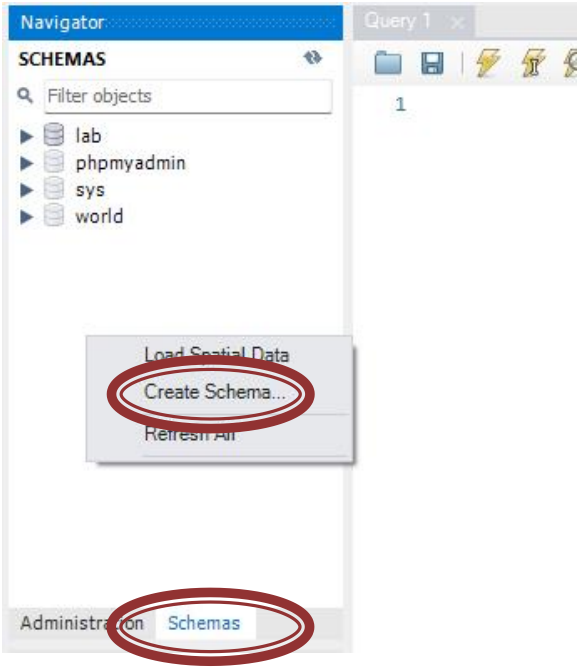


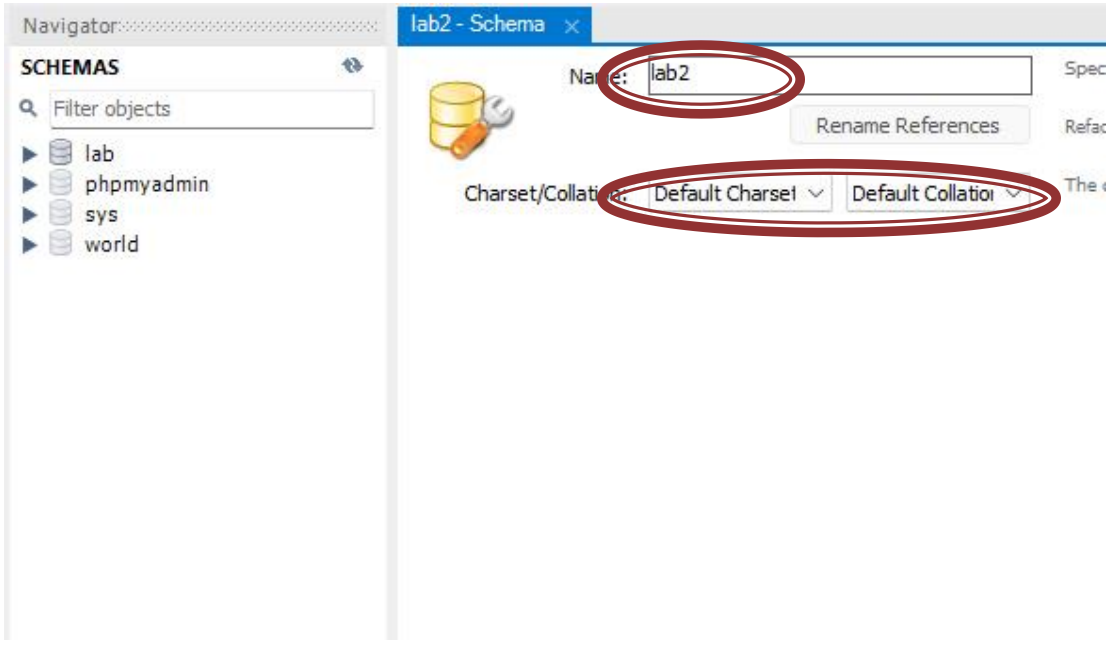
Administrare/Control



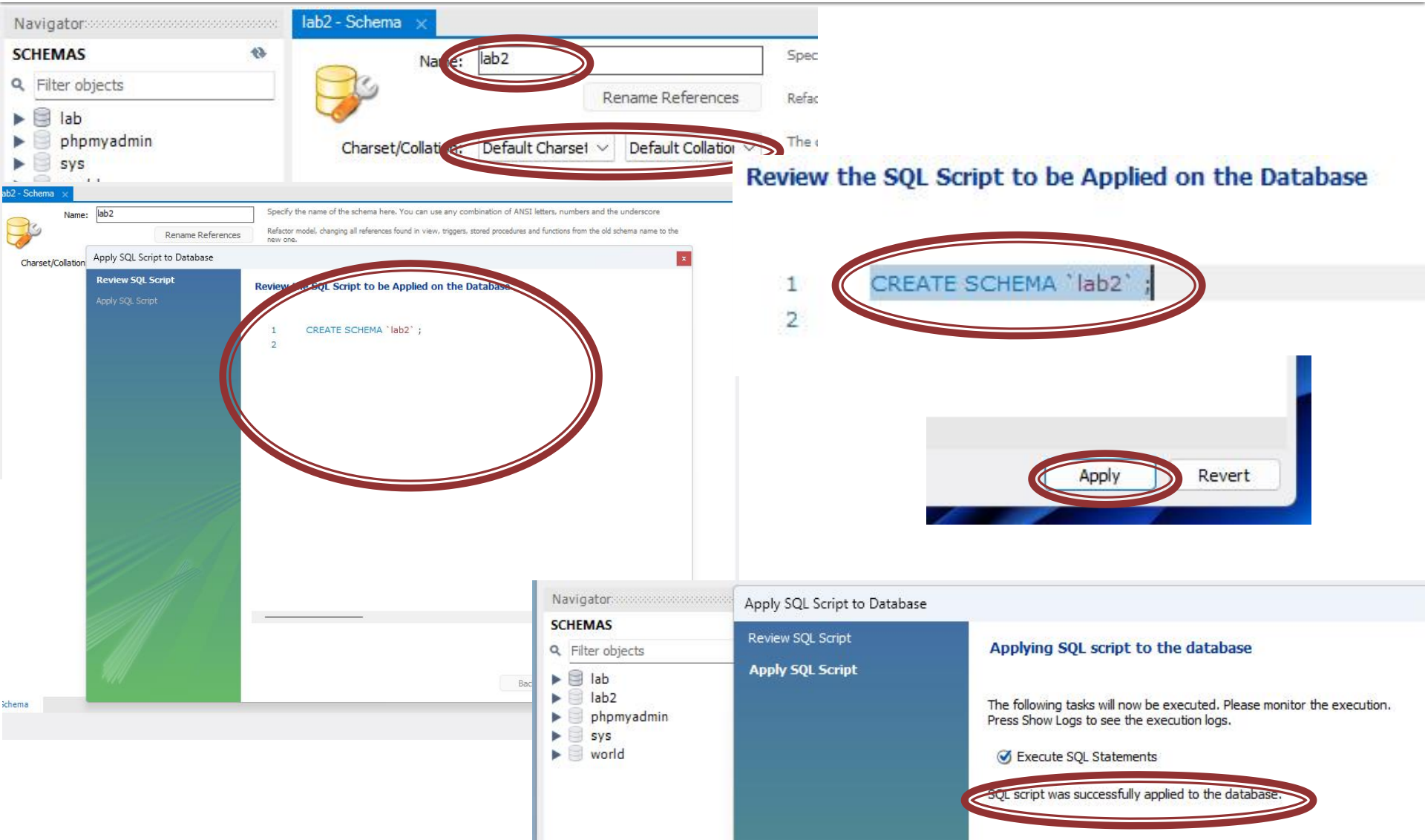
Realizarea bazei de date

- se creaza o noua baza de date:
  - in lista “Schemas” – Right click – Create New Schema
- se activeaza ca baza de date curenta noua “schema” – Dublu click pe numele ales



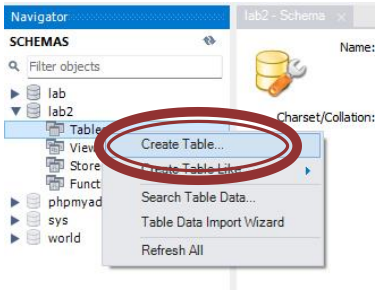


Realizarea bazei de date

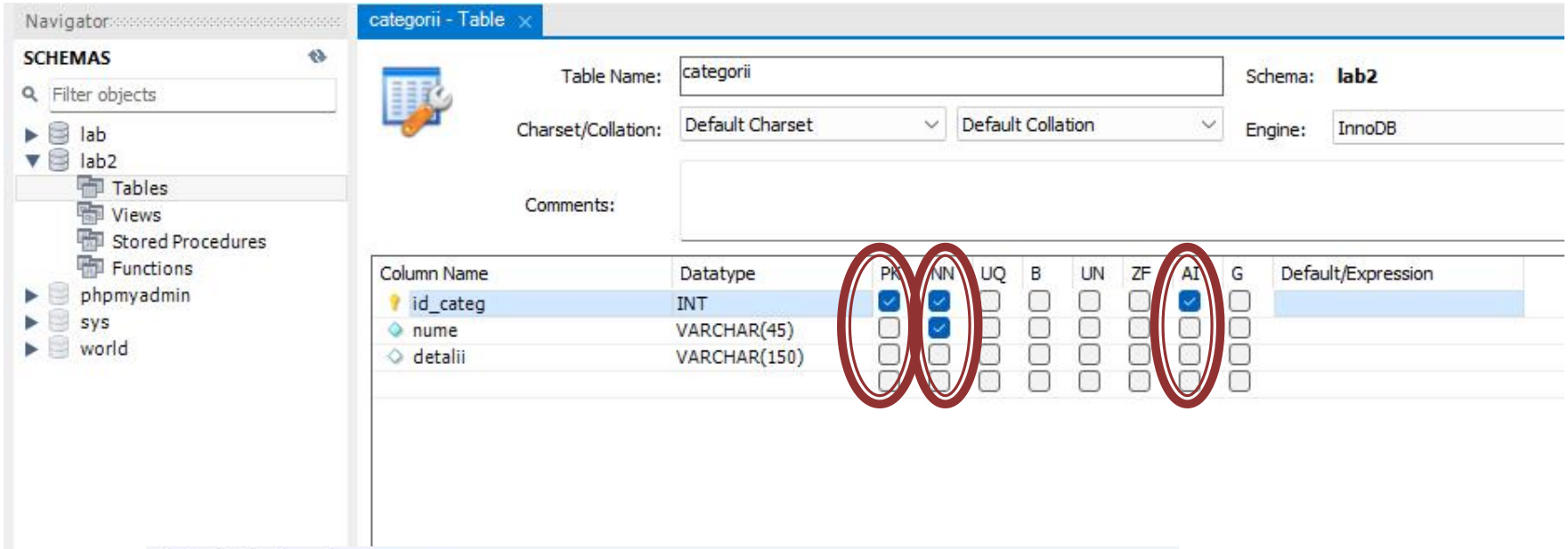


Introducere tabele

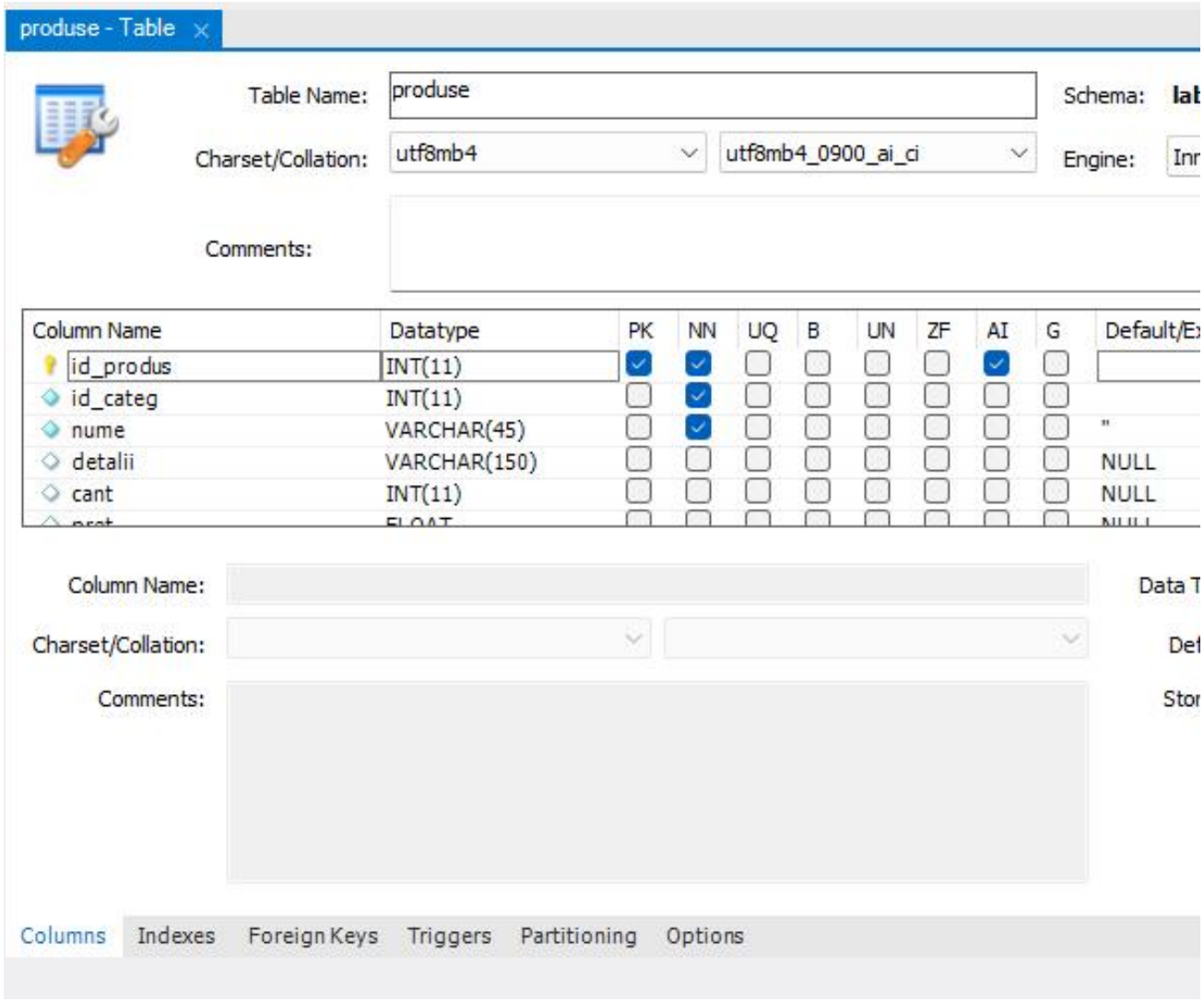
- Introducere tabel – Click sageata langa numele bazei de date – Tables – Right Click – Create Table
- se defineste structura tabelului
  - nume coloane
  - tip de date
  - NOT NULL – daca se accepta ca acea coloana sa ramana fara date (NULL) sau nu
  - AUTOINC – daca acea coloana va fi de tip intreg 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)



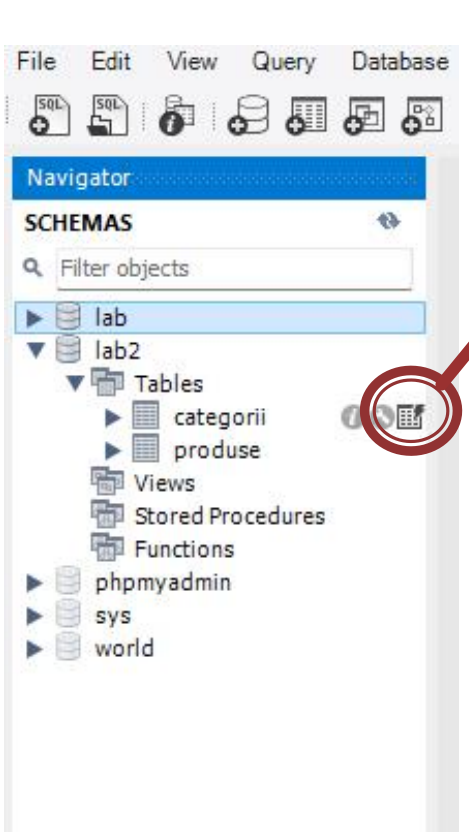
Tabel Categorii

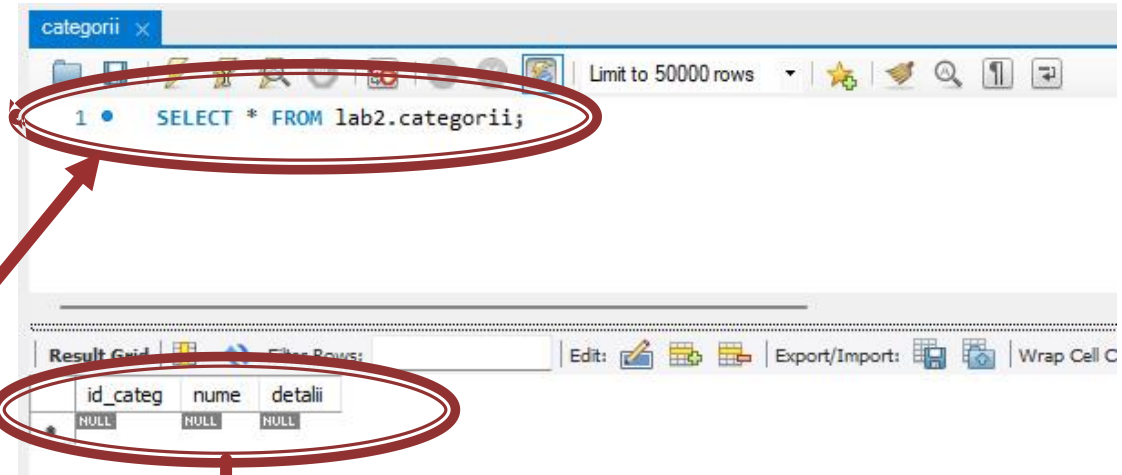


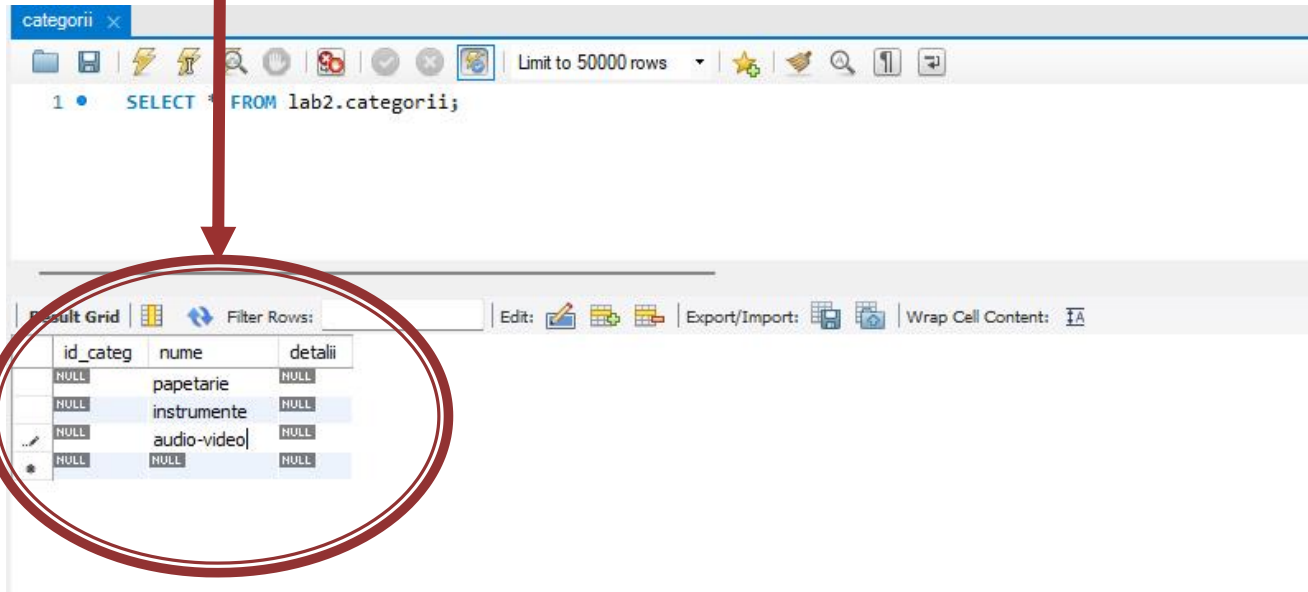
Tabel Produse



Introducere date initiale

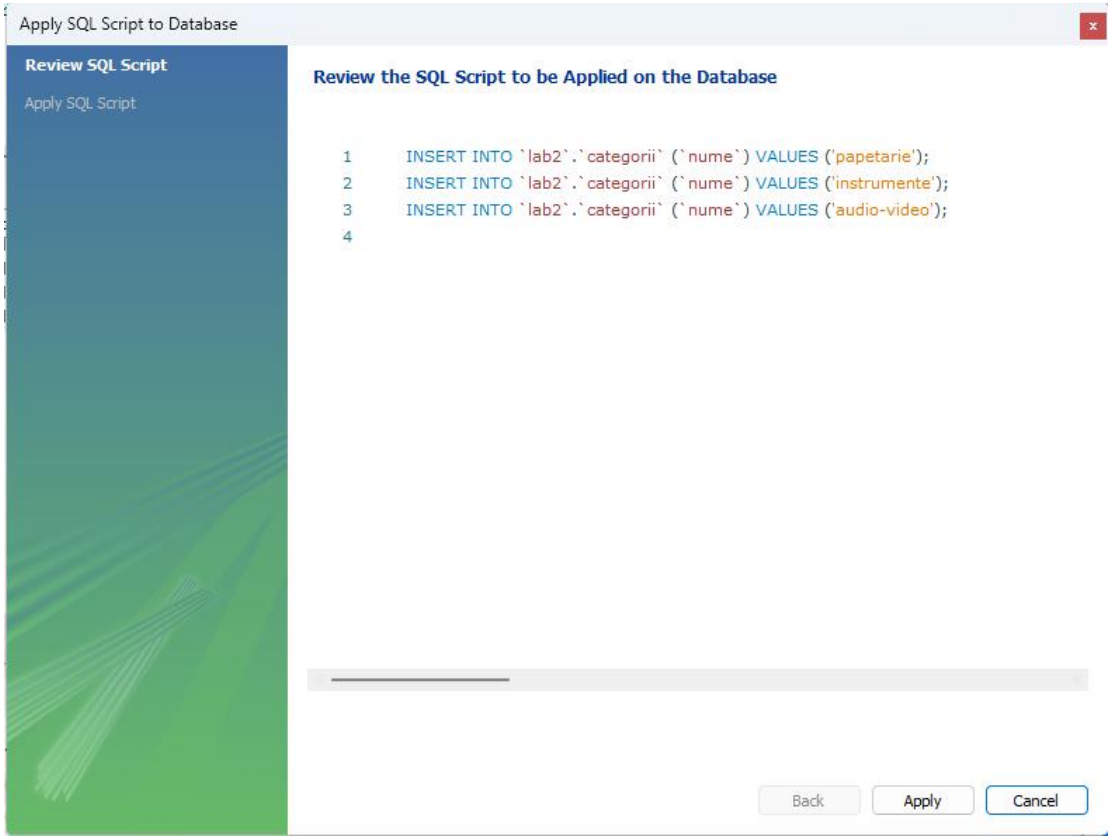




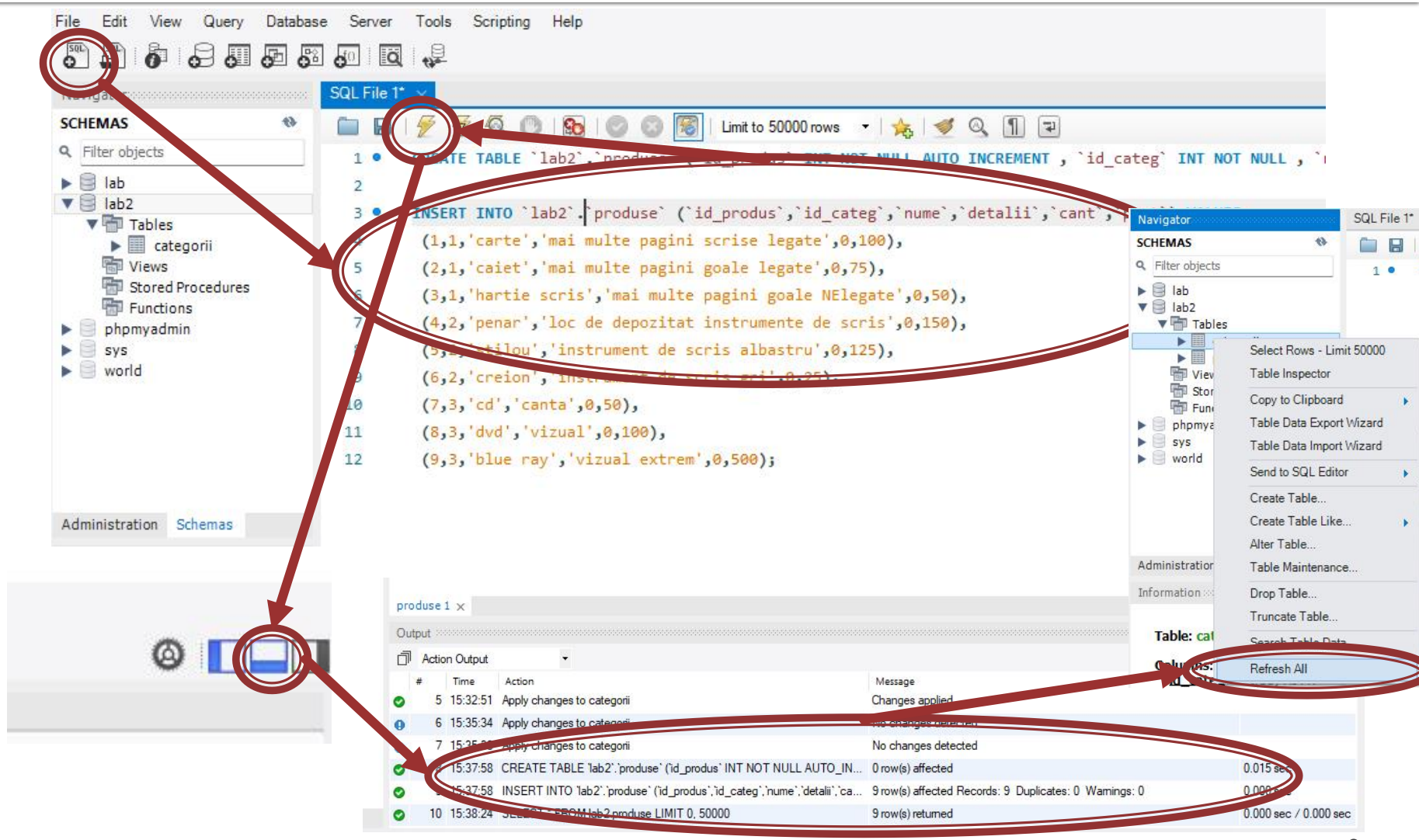


Introducere date initiale

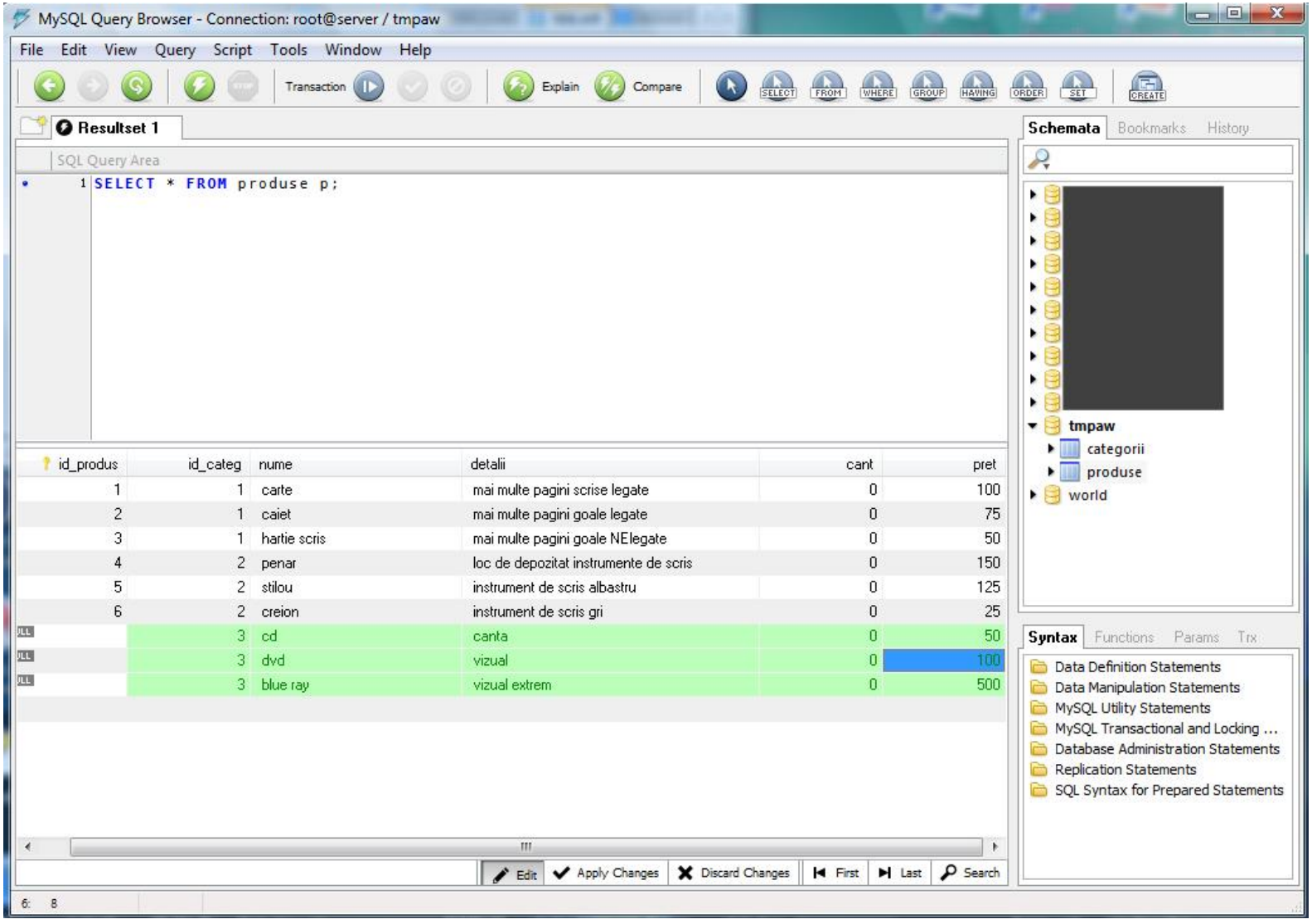
- Completare in rezultat + Buton Apply



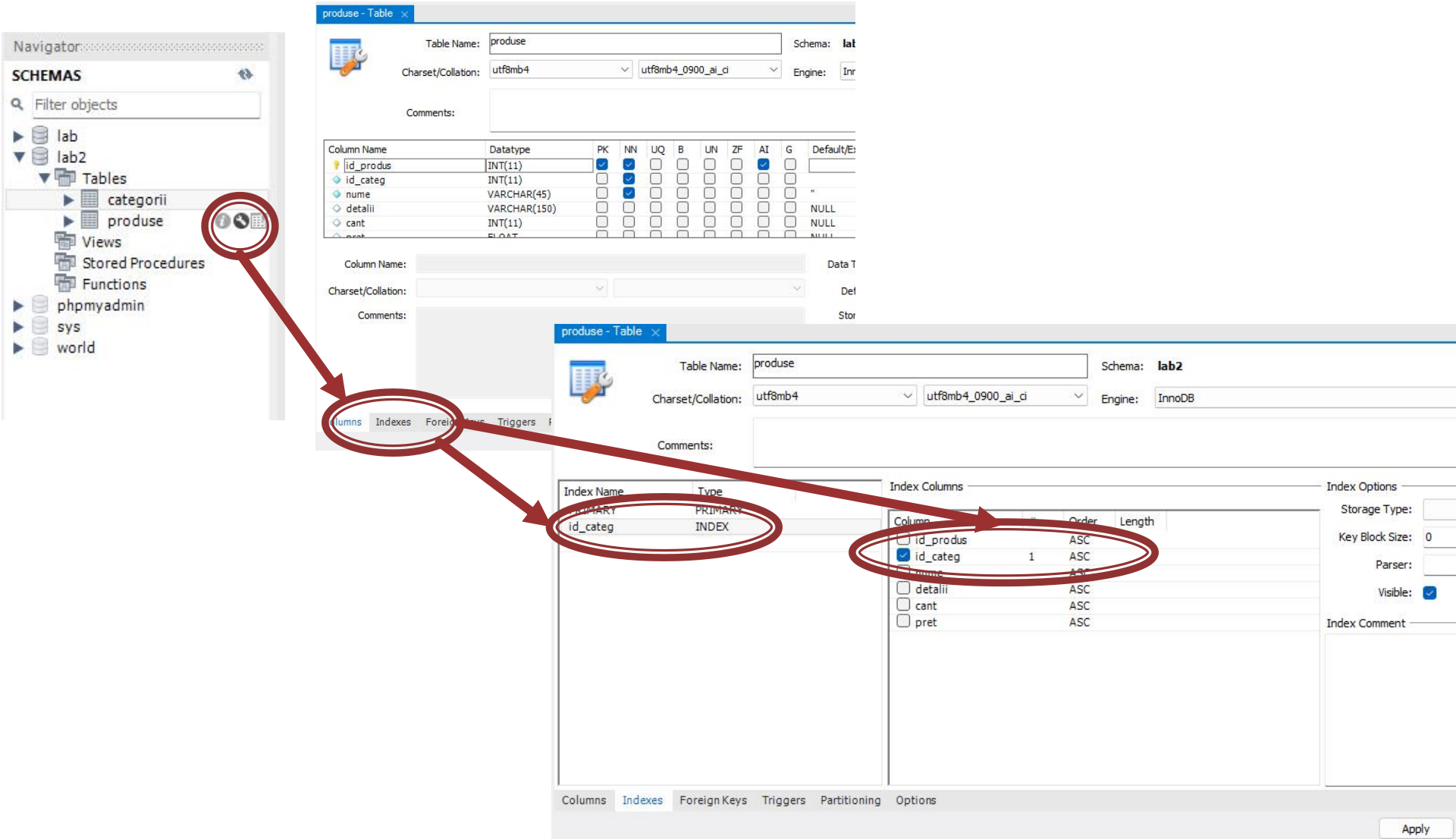
Introducere date prin script



Introducere date initiale

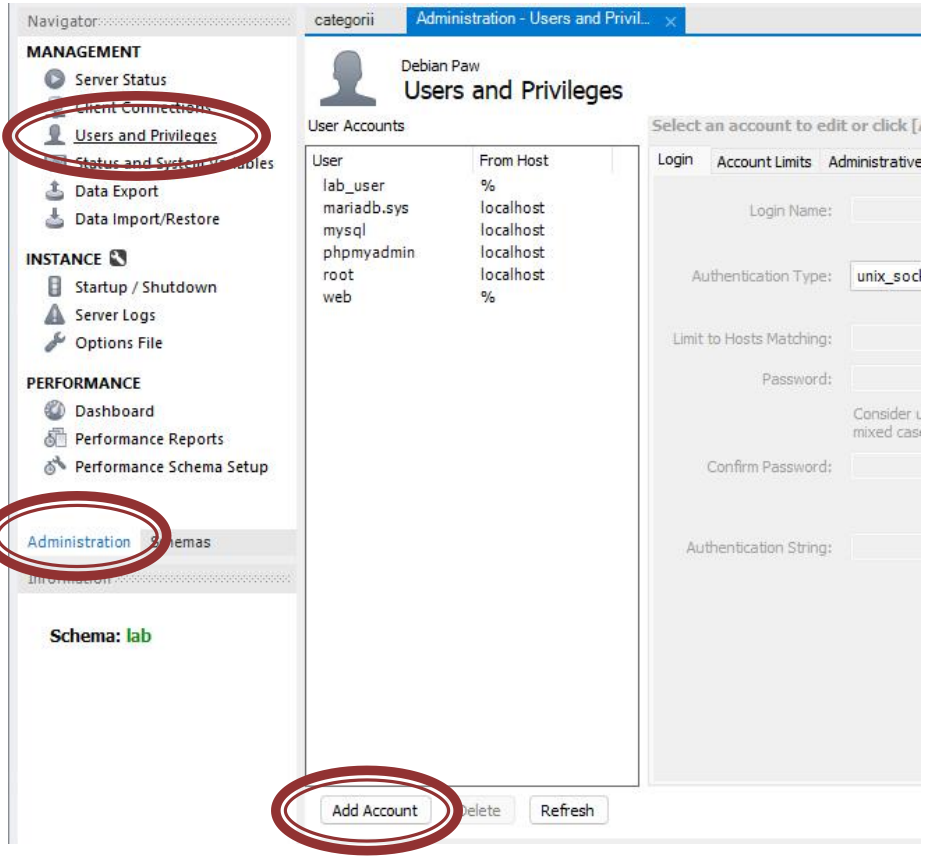


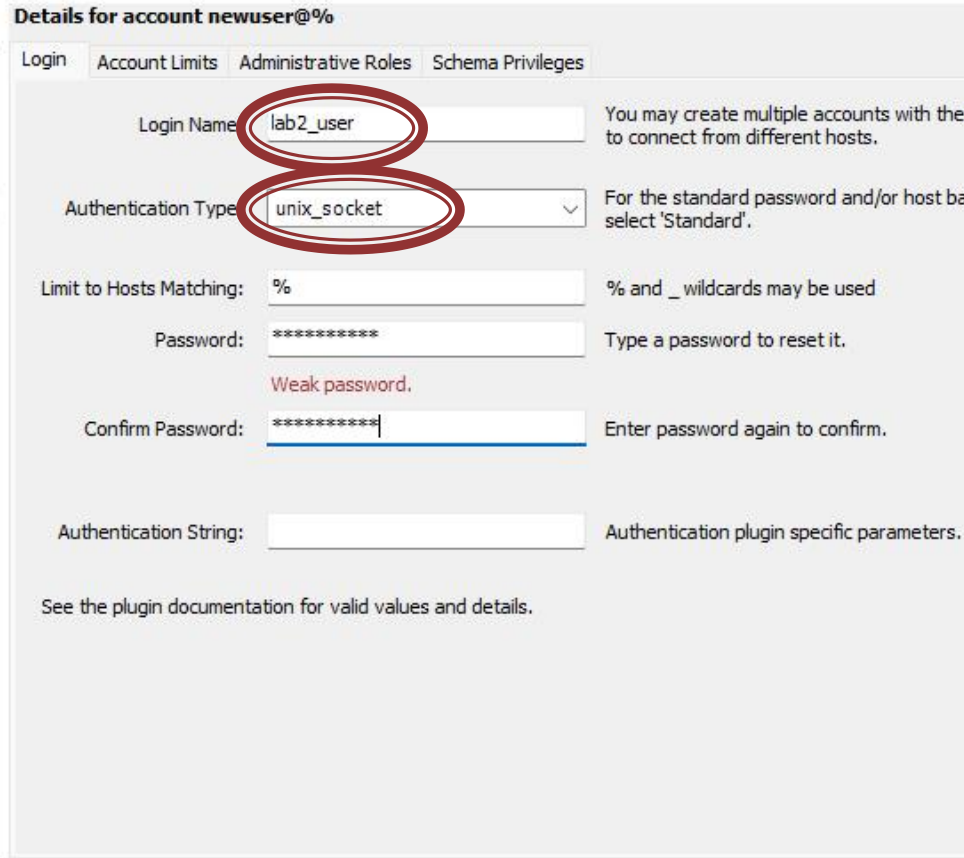
Index in tabelul produse



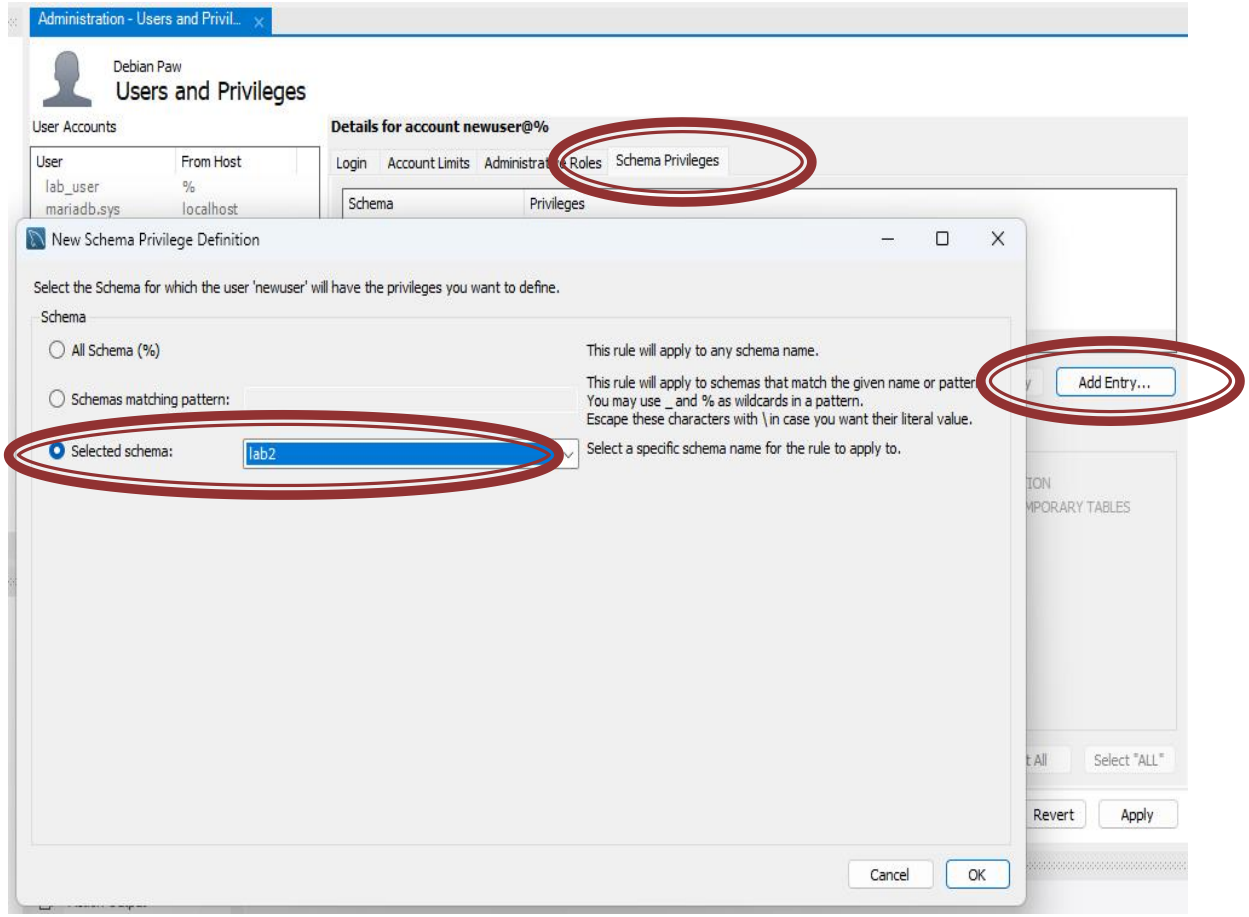
User si drepturi de acces

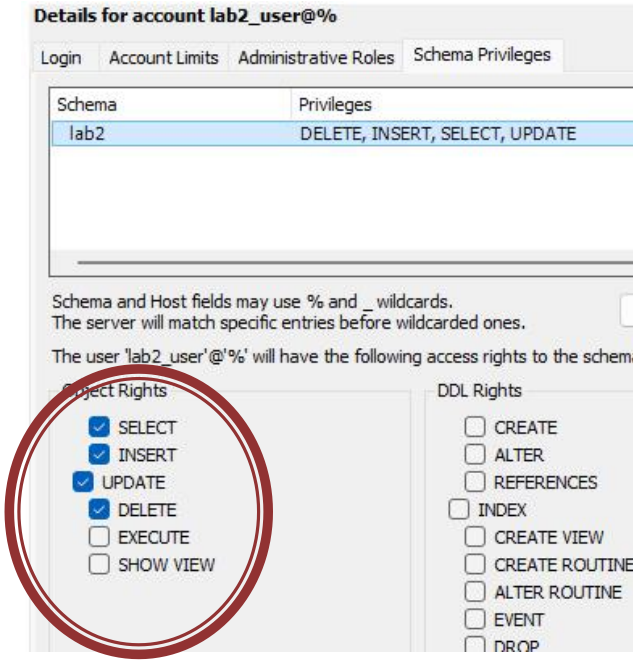
- Probleme de compatibilitate



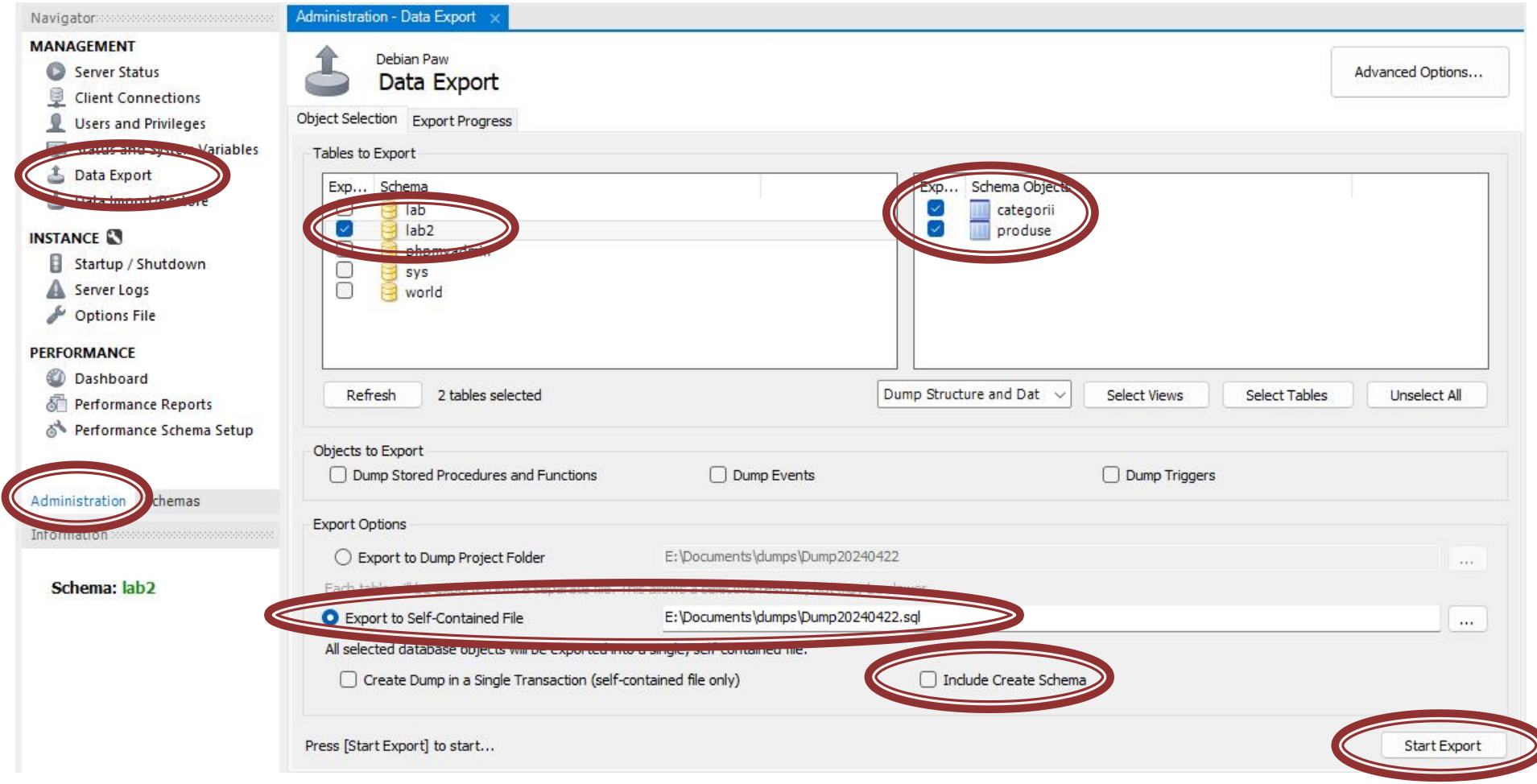


Privilegii

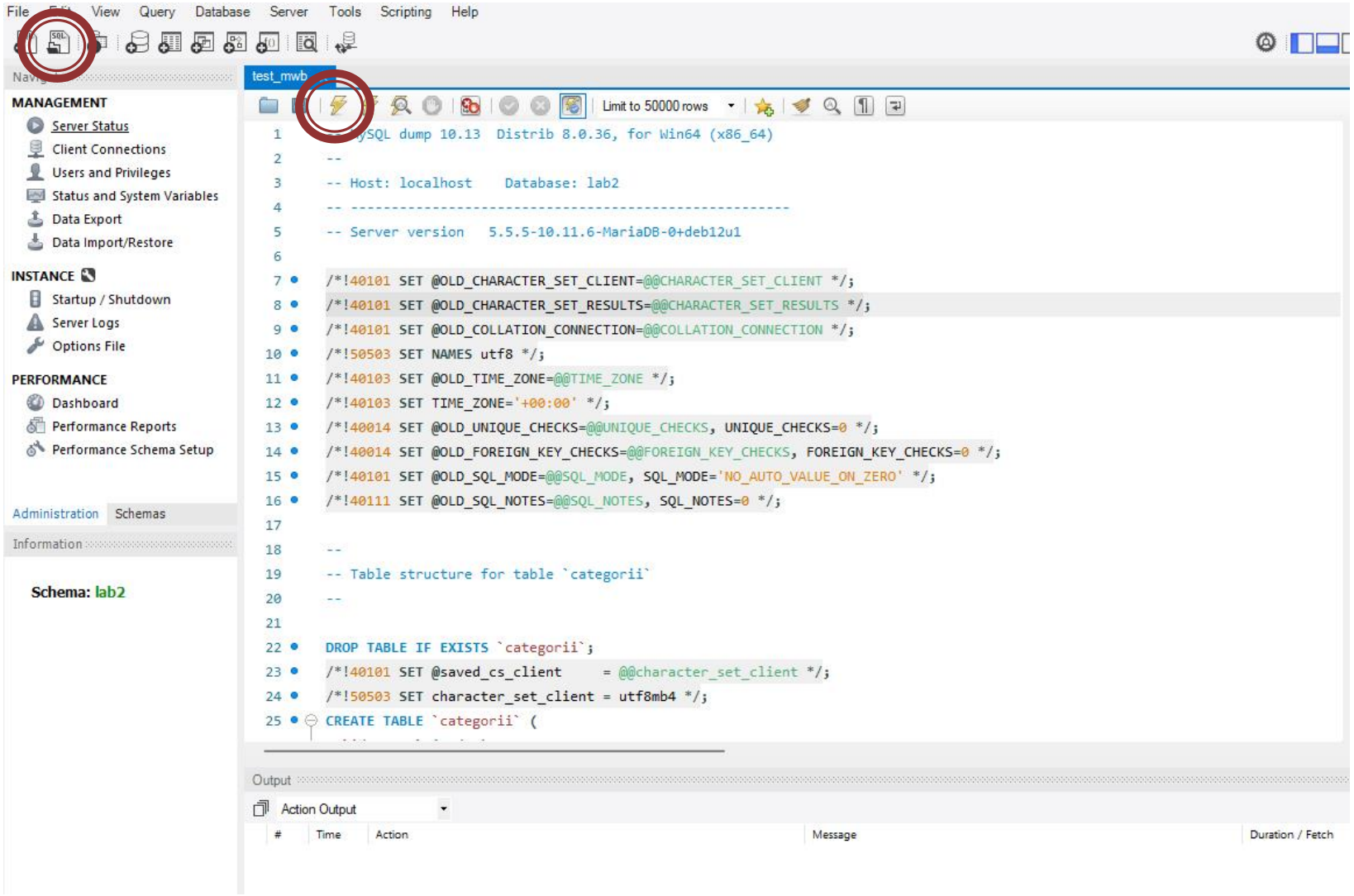

Administration - Users and Privil...
Debian Paw
Users and Privileges
User Accounts
User
From Host
lab_user
%
mariadb.sys
localhost
Details for account newuser@%
Login
Account Limits
Administrative Roles
Schema Privileges
Schema
Privileges
New Schema Privilege Definition
Select the Schema for which the user 'newuser' will have the privileges you want to define.
Schema
All Schema (%)
This rule will apply to any schema name.
Schemas matching pattern:
This rule will apply to schemas that match the given name or patter
You may use _ and % as wildcards in a pattern.
Escape these characters with \ in case you want their literal value.
Add Entry...
Selected schema:
lab2
Select a specific schema name for the rule to apply to.
Select "ALL"
Revert
Apply
Cancel
OK


Details for account lab2_user@%
Login
Account Limits
Administrative Roles
Schema Privileges
Schema
Privileges
lab2
DELETE, INSERT, SELECT, UPDATE
Schema and Host fields may use % and _ wildcards.
The server will match specific entries before wildcarded ones.
The user 'lab2_user'@'%' will have the following access rights to the schem
Object Rights
SELECT
INSERT
UPDATE
DELETE
EXECUTE
SHOW VIEW
DDL Rights
CREATE
ALTER
REFERENCES
INDEX
CREATE VIEW
CREATE ROUTINE
ALTER ROUTINE
EVENT
DROP

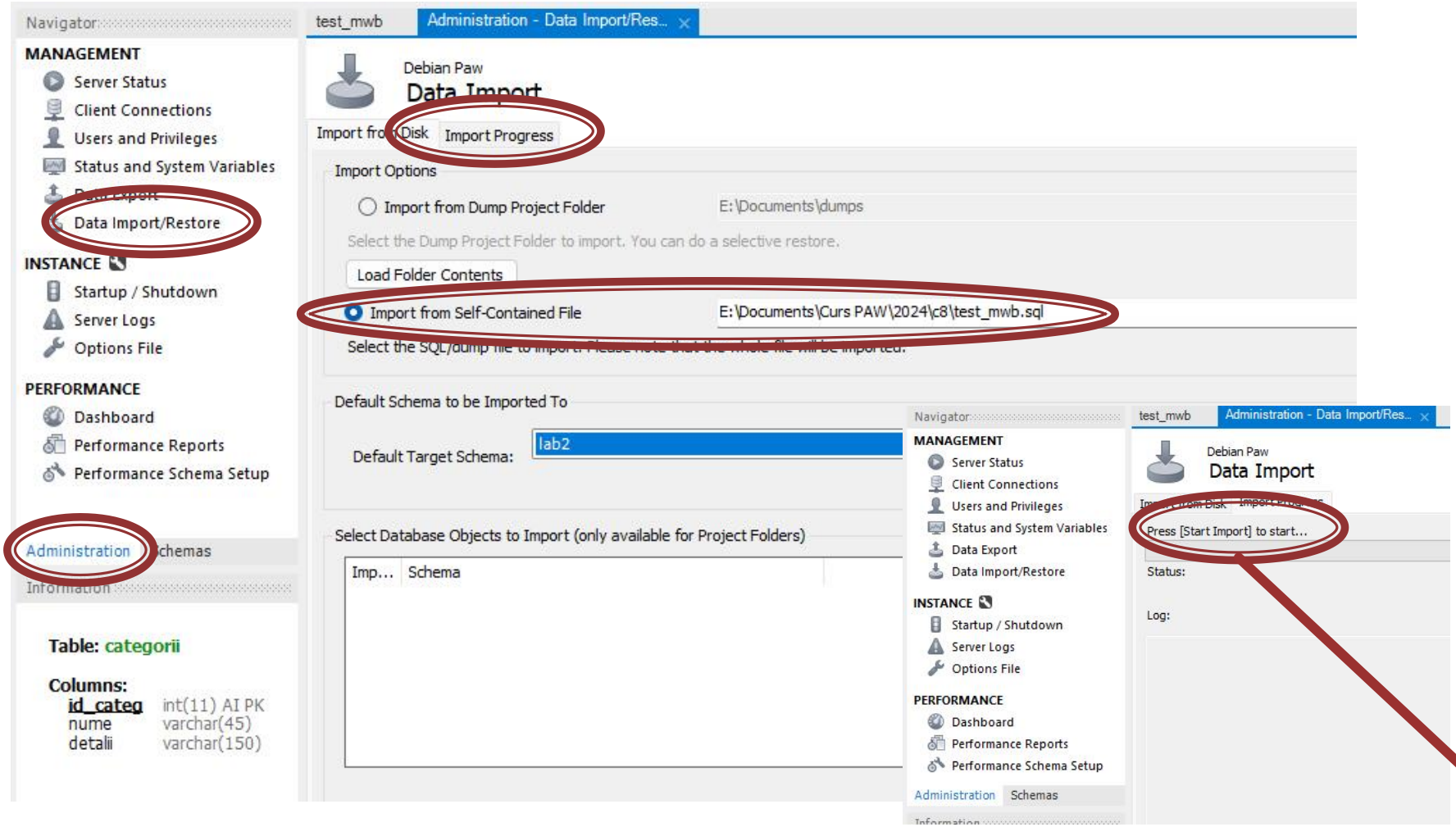
Backup


Navigator
MANAGEMENT
Server Status
Client Connections
Users and Privileges
Data Export
INSTANCE
Startup / Shutdown
Server Logs
Options File
PERFORMANCE
Dashboard
Performance Reports
Performance Schema Setup
Administration
Schemas
Information
Schema: lab2
Administration - Data Export
Debian Paw
Data Export
Advanced Options...
Object Selection
Export Progress
Tables to Export
Exp...
Schema
lab
lab2
sys
world
Exp...
Schema Objects
categorii
produse
Refresh
2 tables selected
Dump Structure and Dat
Select Views
Select Tables
Unselect All
Objects to Export
Dump Stored Procedures and Functions
Dump Events
Dump Triggers
Export Options
Export to Dump Project Folder
E:\Documents\dumps\Dump20240422
Export to Self-Contained File
E:\Documents\dumps\Dump20240422.sql
Create Dump in a Single Transaction (self-contained file only)
Include Create Schema
Press [Start Export] to start...
Start Export

Restore – rulare script



Restore - interfata



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);
```

Tehnici PHP avansate

HTTP headers

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

```
Request URI: http://www.example.com

HTTP/1.1 200 OK
Content-Encoding: gzip
Age: 521648
Cache-Control: max-age=604800
Content-Type: text/html; charset=UTF-8
Date: Fri, 06 Mar 2020 17:36:11 GMT
Etag: "3147526947+gzip"
Expires: Fri, 13 Mar 2020 17:36:11 GMT
Last-Modified: Thu, 17 Oct 2019 07:18:26 GMT
Server: ECS (dcb/7EC9)
Vary: Accept-Encoding
X-Cache: HIT
Content-Length: 648
```

HTTP headers

- header(string, code)

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

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

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

HTTP headers

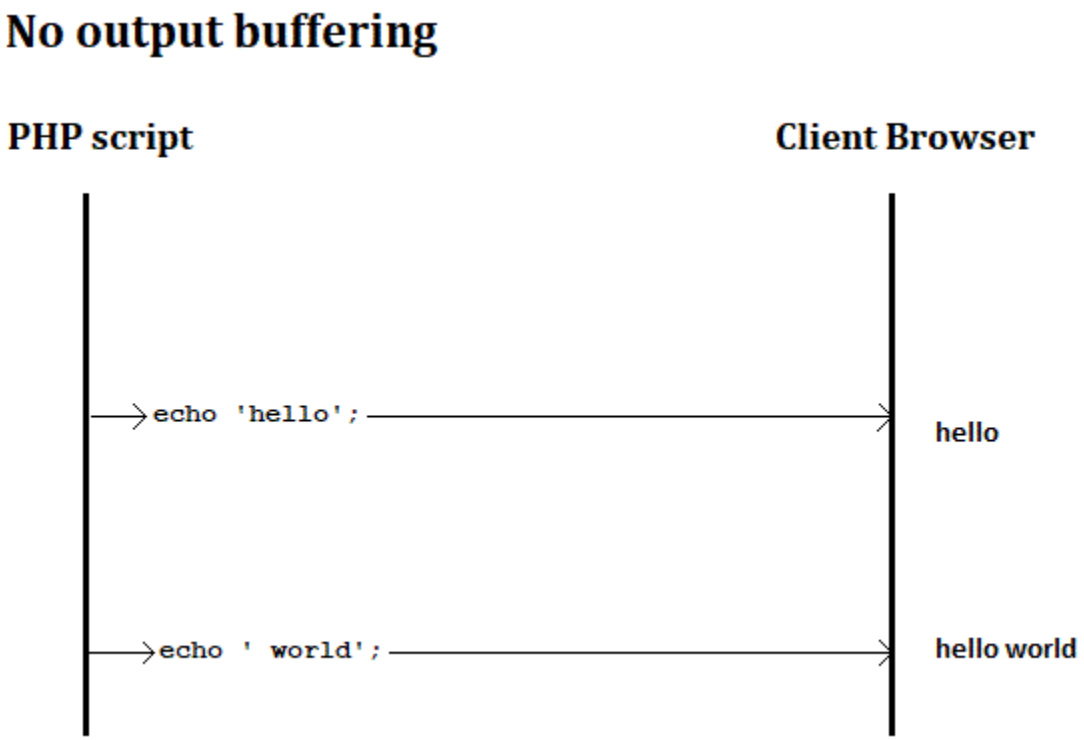
- Header-ele HTTP se trimit inaintea oricaror alte date (HTML)
  - Inceput fisier: <?php header("..."); ?><!DOCTYPE HTML PUBLIC ... <html>...<body>...</body></html>
  - Nici macar **un spatiu** nu trebuie sa apara inainte de primul <?php
  - Daca necesitatea de a trimite header-e poate aparea mai tarziu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

Buffer iesire

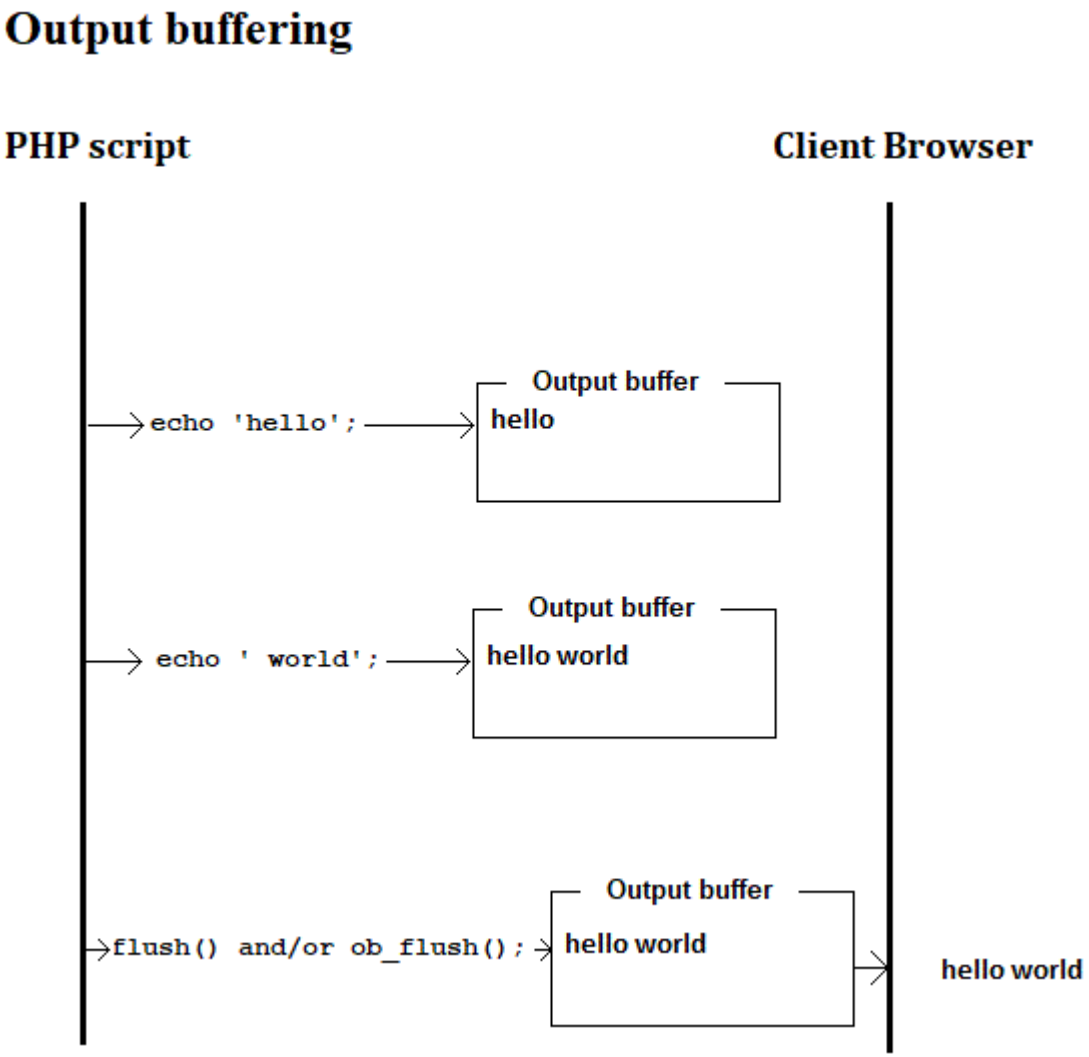
- Copie orice iesire a scriptului PHP intr-un buffer de memorie fara sa transmita nimic clientului
- Utilizat in general pentru conlucrarea cu header-e HTTP, evitarea generarii de HTML inainte de terminarea lucrului cu header-e
- ob_start();
- ob_end_flush ( );
- ob_end_clean ( );

- ob_get_contents ( )

Buffer iesire



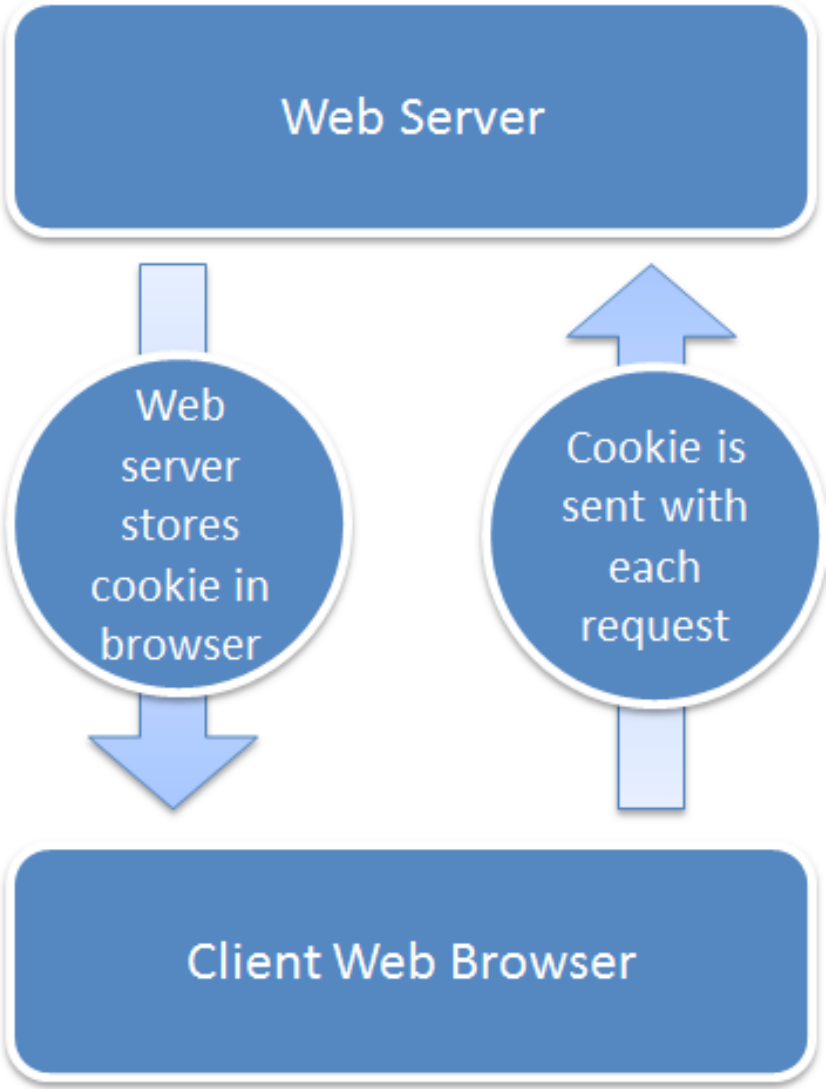
Buffer iesire



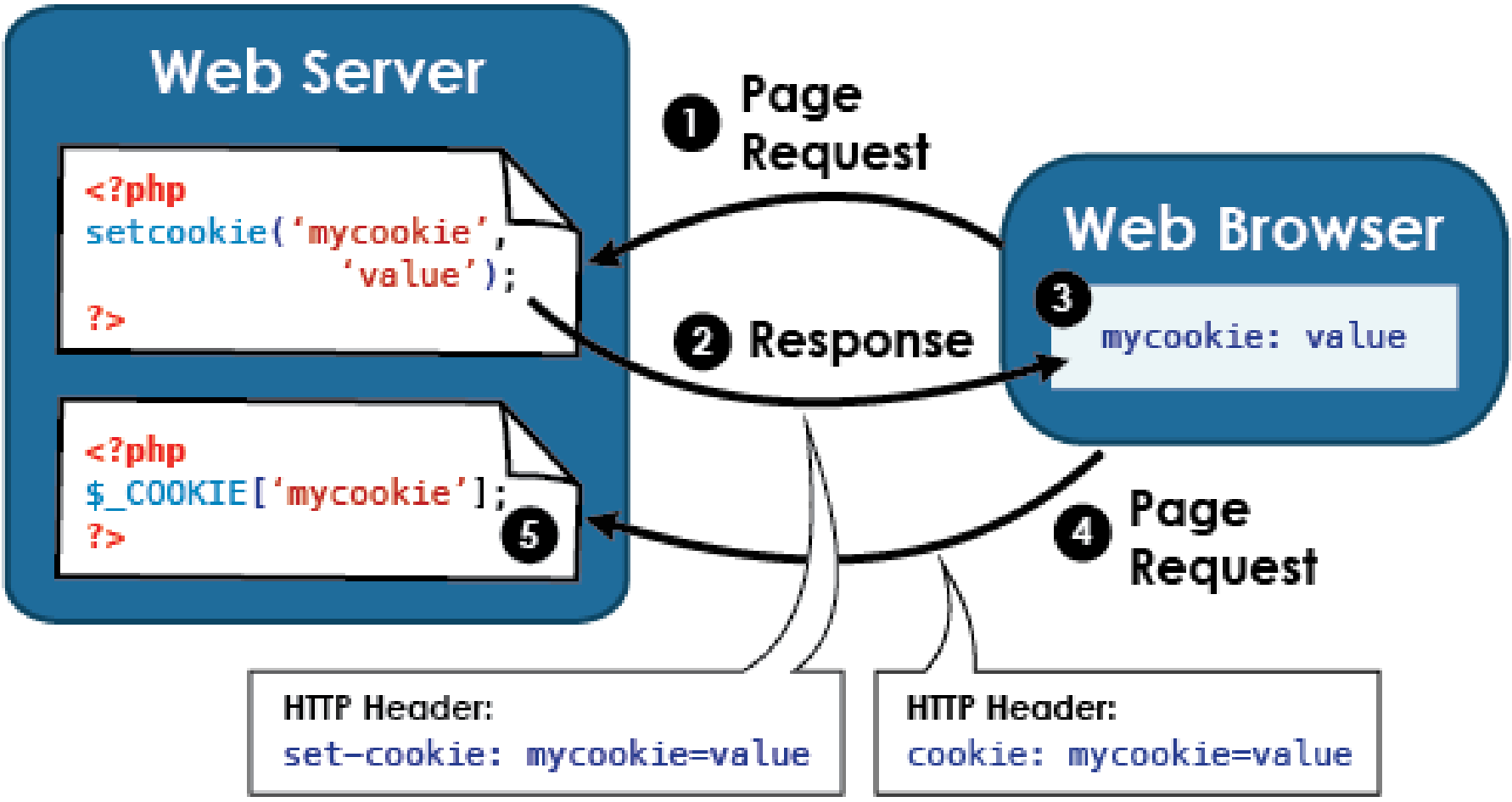
Cookies

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

Cookies


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

Cookies


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

Cookies

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

Cookies

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

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

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

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

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

Cookies

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

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

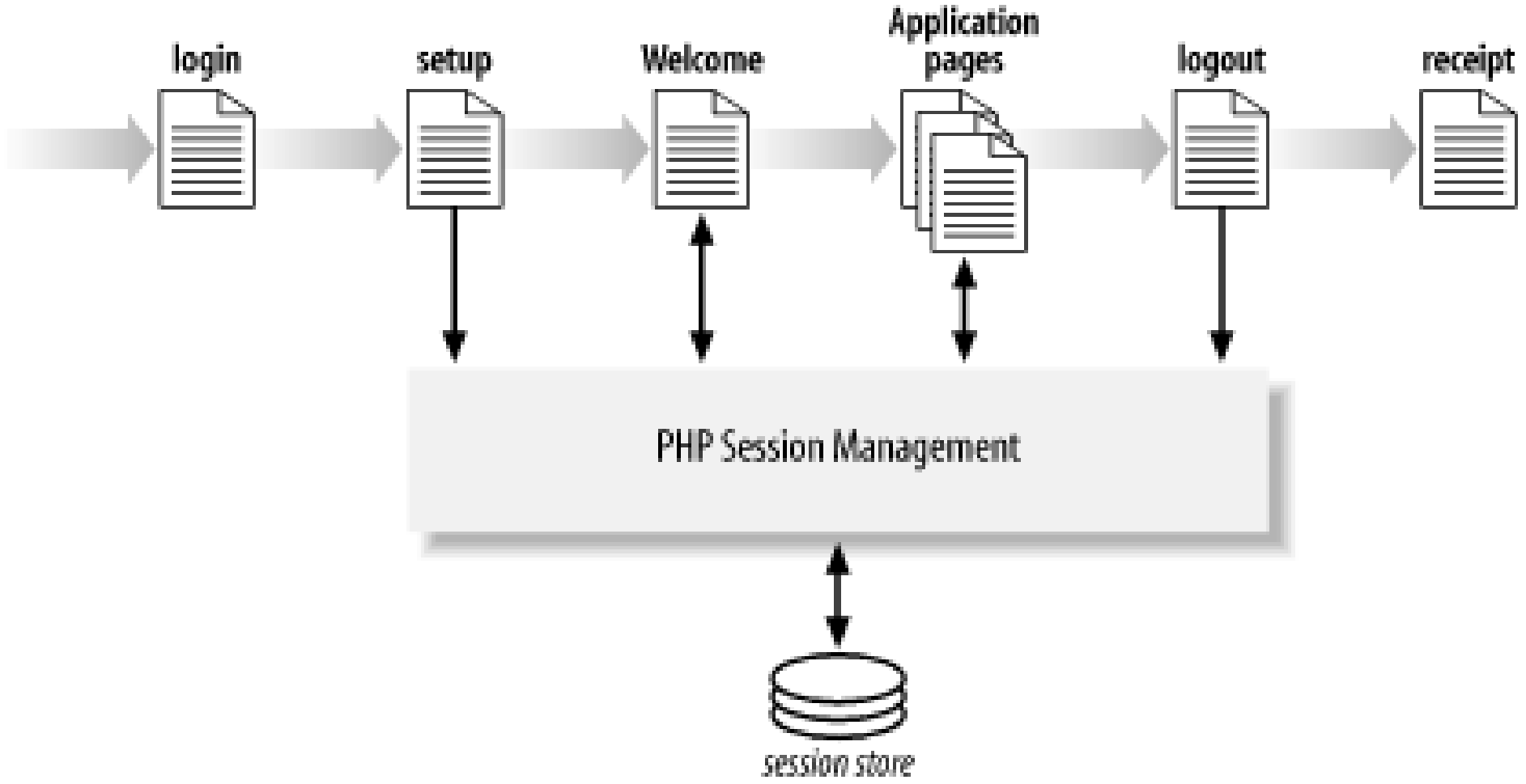
Sesiune

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

Sesiune

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

Sesiune


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

Sesiune


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

Sesiune

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

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

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

Sesiune

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

session_start();

echo 'Welcome to page #1';

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

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

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

Sesiune

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

session_start();

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

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

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

Contact

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