

# Pemrograman Web

Pertemuan 10 – Database

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# Review Database

Structured Query Language



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# Apa itu database ?

- Kumpulan data terstruktur yang saling berelasi.
- Definisi : Kumpulan data, yang terorganisir secara logika, dikelola menggunakan metode tertentu yang menjamin konsistensi data.



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# Penerapan Database

- Meliputi hampir seluruh aspek kehidupan manusia.
- Contoh Penerapan :
  - Perbankan : semua transaksi
  - Penerbangan : reservasi, jadwal
  - Universitas : registrasi, data perkuliahan
  - Perdagangan : produk, pelanggan, transaksi pembelian
  - Manufaktur : produksi, persediaan, pesanan, *supply chain*
  - HRD : pegawai, gaji, pajak
  - Telekomunikasi : *routing*, pelanggan, penggunaan layanan
  - Akun komputer : member, hak akses, *quota*
  - Dan masih banyak lagi....



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# Jenis-jenis Database

- CSV
  - Fgetscsv, fputcsv
- XML
  - simpleXML
- MySQL
  - mysql, mysqli, PDO
- SQLite
  - PDO

• ...

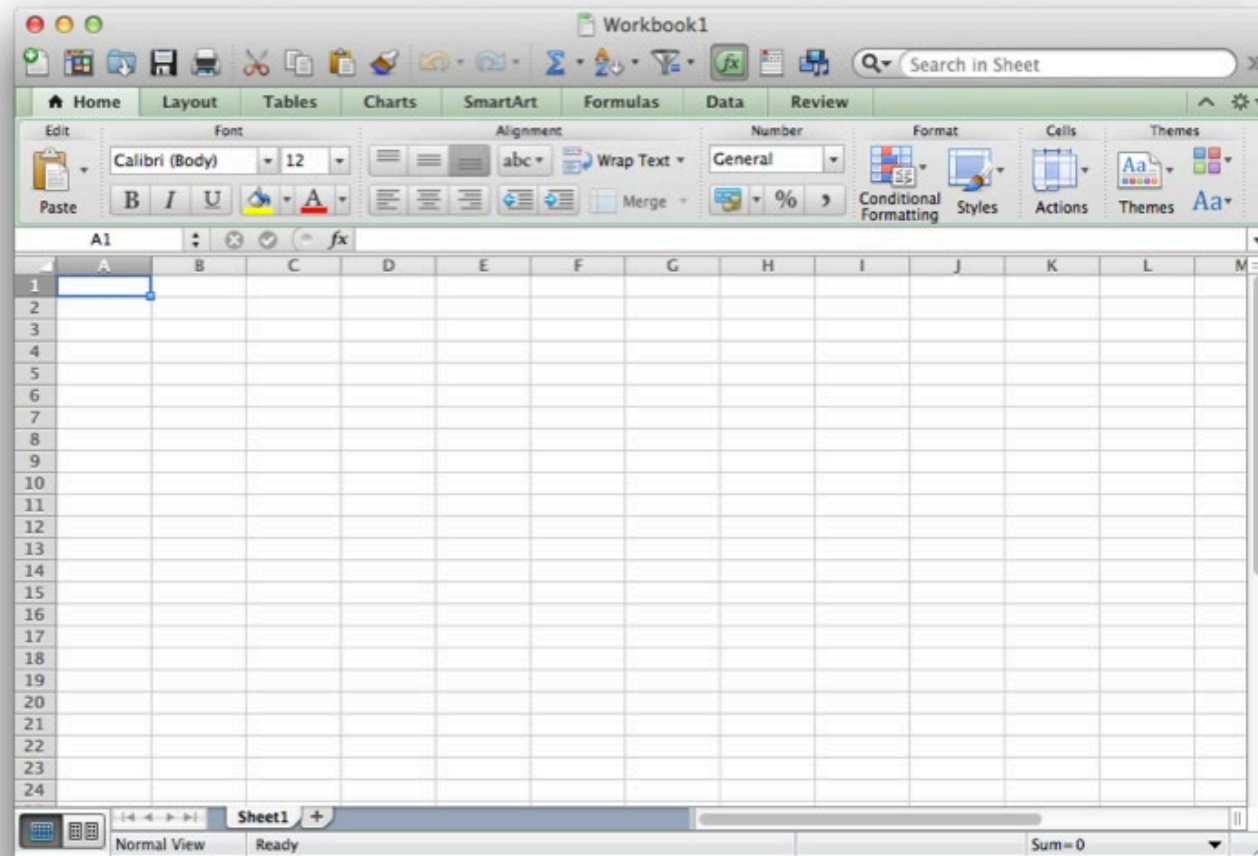


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# Relational Database



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# Konsep Relational Database

- Table
  - Kumpulan dari beberapa record
- Record
  - Kumpulan dari data mengenai suatu *item*.
- Field
  - Item data tunggal
- Key field / Primary key
  - Identitas unik setiap *record*.



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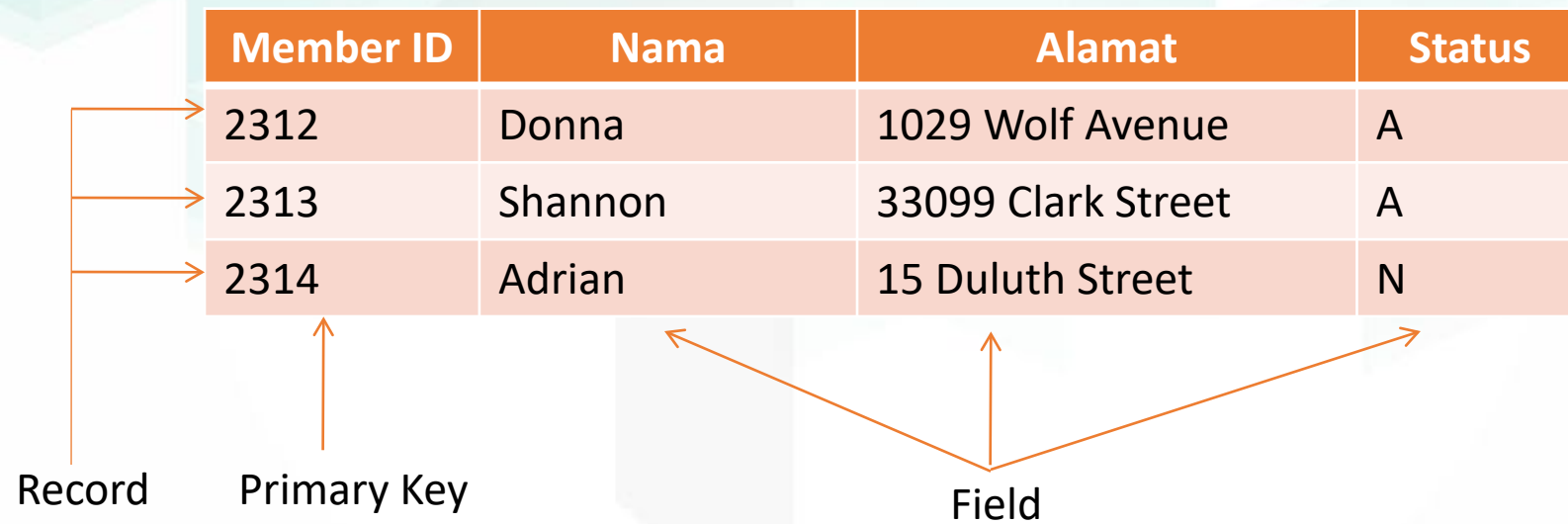
# Table

Member ID	Nama	Alamat	Status
2312	Donna	1029 Wolf Avenue	A
2313	Shannon	33099 Clark Street	A
2314	Adrian	15 Duluth Street	N

Record

Primary Key

Field



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# Aplikasi Database

- Database Management System (DBMS)
  - Aplikasi yang dirancang untuk menyimpan dan mengelola satu atau lebih database.
  - Fungsi :
    - Buat database, tabel, dan struktur pendukung
    - Manipulasi data
    - Menjaga struktur database
    - *Backup dan Recovery*



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# Database

- IBM DB2
- Oracle
- Informix
- Ingres
- Microsoft SQL Server (MS SQL)
- mSQL
- MySQL
- PostgreSQL
- Sybase



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# MySQL

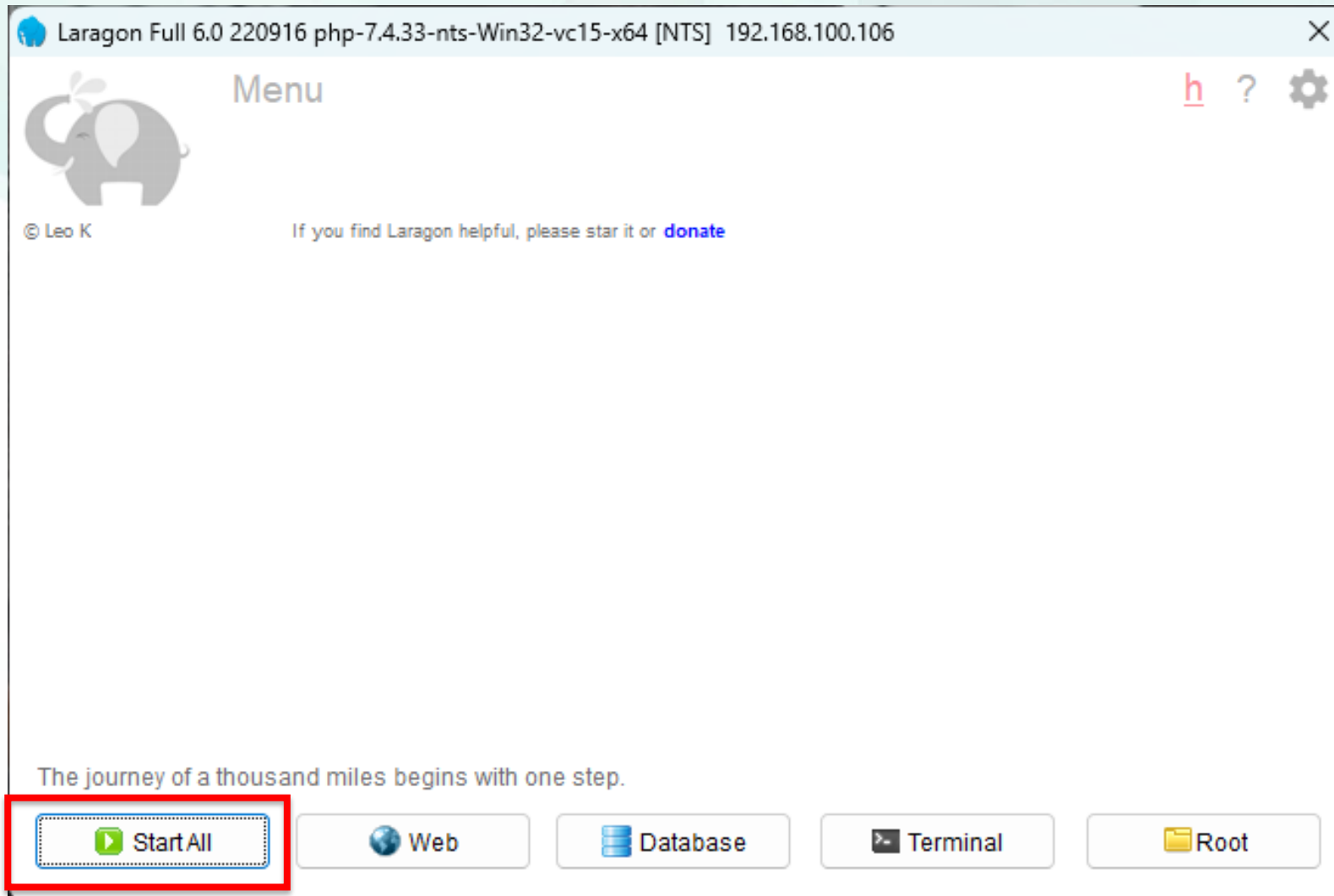
Konfigurasi



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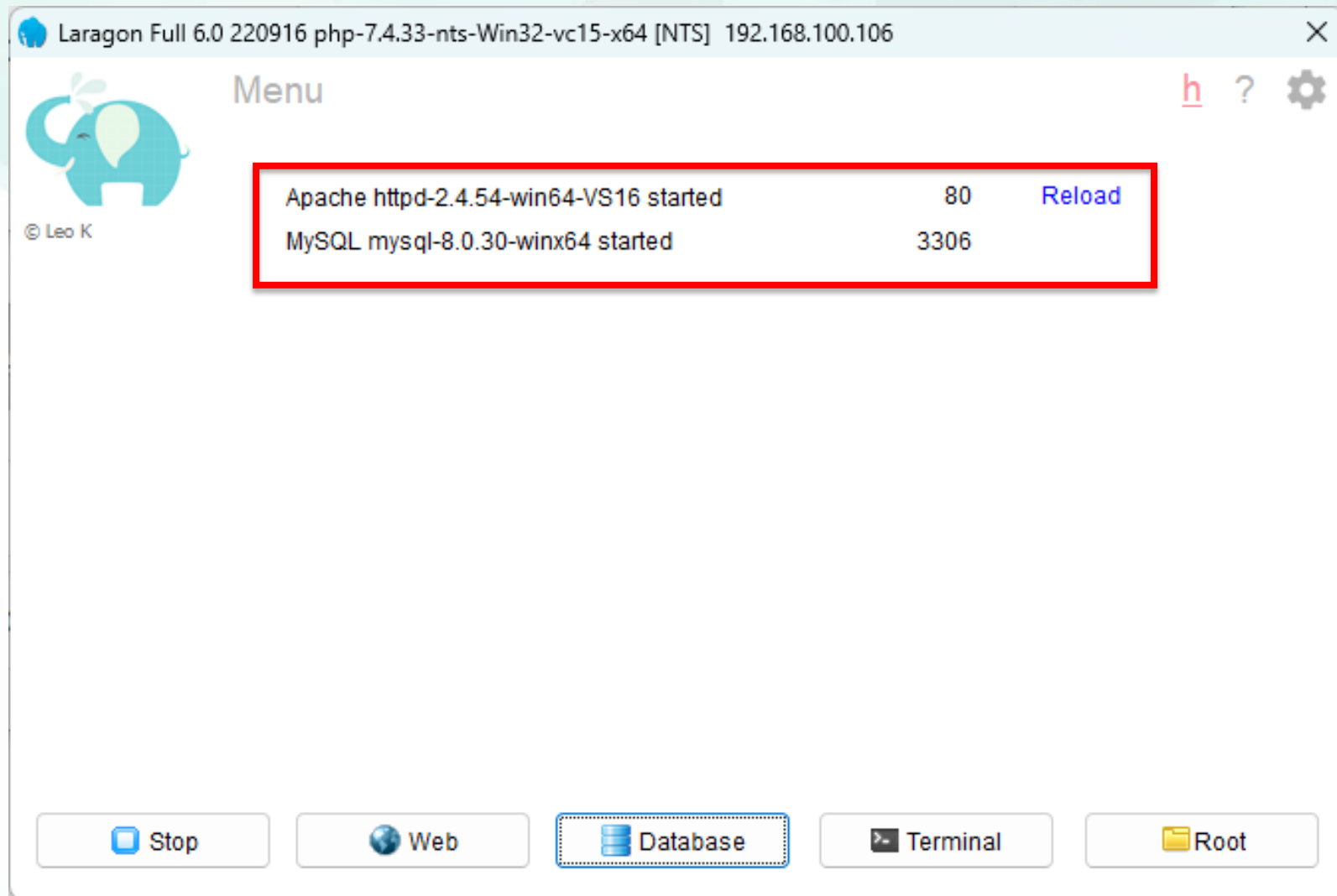


# Menjalankan Server MySQL



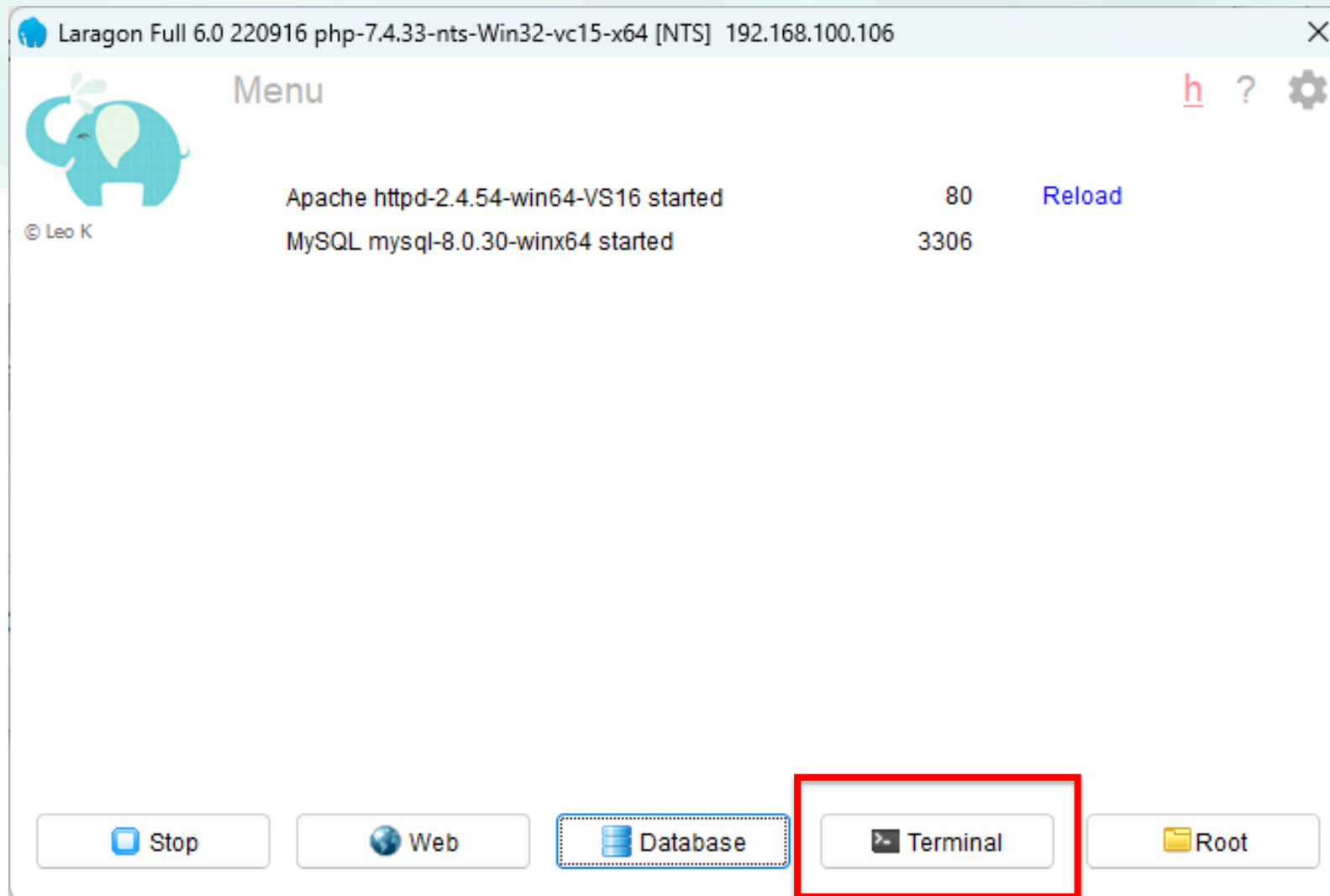
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# Menjalankan Server MySQL



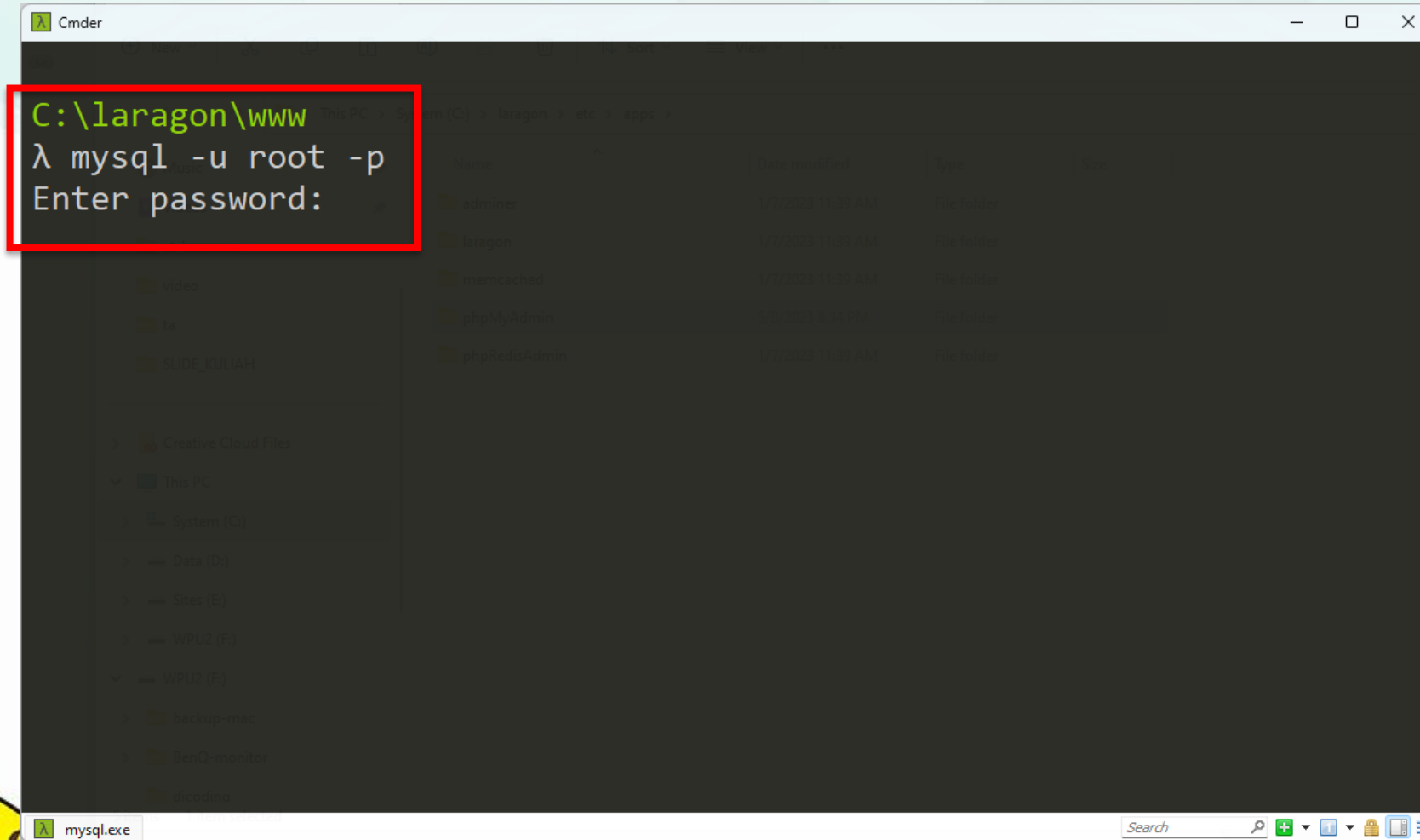
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# Masuk ke MySQL (Command Prompt)



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# Masuk ke MySQL (Command Prompt)



```
C:\laragon\www
λ mysql -u root -p
Enter password:
```



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# MySQL

Manipulasi Data

[http://dev.mysql.com/doc/refman/5.5/  
en/sql-syntax.html](http://dev.mysql.com/doc/refman/5.5/en/sql-syntax.html)



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# DDL (Data Definition Language)

- **SHOW DATABASES**
- **CREATE DATABASE**
- **ALTER DATABASE**
- **DROP DATABASE**
- **USE**
  
- **DESCRIBE**
- **CREATE TABLE**
- **ALTER TABLE**
- **DROP TABLE**
- **RENAME TABLE**



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# DML (Data Manipulation Language)

- **SELECT**
- **INSERT**
- **UPDATE**
- **DELETE**



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# DML – Data Manipulation Language

- **Rekam Data**

- `INSERT INTO nama_tabel (field1, field2, ...) VALUES (value1, value2, ...);`
- Jika field tidak dideklarasikan, data yang dimasukkan jumlahnya harus sama dengan jumlah field dari table tersebut.



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# DML – Data Manipulation Language

- **Cari Data**

- `SELECT * FROM nama_tabel`  
`WHERE syarat1, syarat2`  
`ORDER BY field ASC`

- Jika menggunakan \*, semua field pada tabel tersebut di tampilkan.
  - Where dan order by optional



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# DML – Data Manipulation Language

- **Manipulasi Data**

- **Edit**

- UPDATE `nama_tabel`  
    SET `field1=value1, field2=value2, ...`  
    WHERE `syarat1, syarat2, ...`

- **Hapus**

- DELETE FROM `nama_tabel`  
    WHERE `syarat1, syarat2, ...`



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# MySQL

Latihan



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# Buat database 'unpas'

```
+-----+  
| Database |  
+-----+  
| information_schema |  
| coba |  
| musprop |  
| mysql |  
| performance_schema |  
| simari_adm |  
| pw2023_043040023 |  
+-----+
```



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# Buat buat tabel 'mahasiswa'

Field	Type	Null	Key	Default	Extra
id	int(3)	NO	PRI	NULL	auto_increment
nrp	varchar(10)	NO		NULL	
nama	varchar(50)	NO		NULL	
fakultas	varchar(50)	NO		NULL	
jurusan	varchar(50)	NO		NULL	
ipk	varchar(5)	NO		NULL	
status	varchar(12)	NO		NULL	



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# Isi 5 baris data

id	nrp	nama	fakultas	jurusan	ipk	status
1	043040023	Sandhika Galih	Teknik	Teknik Informatika	3.00	lulus
2	033040100	Hendra Komara	Teknik	Teknik Informatika	3.60	lulus
3	033040028	Anggoro Ari Nurcahyo	Teknik	Teknik Informatika	3.80	Lulus
4	023040010	Erik	Teknik	Teknik Informatika	3.50	Lulus
5	063040099	Acep Hendra	Teknik	Teknik Informatika	3.50	Lulus



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Ubah status baris 1 dan 2 jadi 'tidak lulus'

id	nrp	nama	fakultas	jurusan	ipk	status
1	043040023	Sandhika Galih	Teknik	Teknik Informatika	3.00	Tidak Lulus
2	033040100	Hendra Komara	Teknik	Teknik Informatika	3.60	Tidak Lulus
3	033040028	Anggoro Ari Nurcahyo	Teknik	Teknik Informatika	3.80	Lulus
4	023040010	Erik	Teknik	Teknik Informatika	3.50	Lulus
5	063040099	Acep Hendra	Teknik	Teknik Informatika	3.50	Lulus



# Hapus baris terakhir

id	nrp	nama	fakultas	jurusan	ipk	status
1	043040023	Sandhika Galih	Teknik	Teknik Informatika	3.00	Tidak Lulus
2	033040100	Hendra Komara	Teknik	Teknik Informatika	3.60	Tidak Lulus
3	033040028	Anggoro Ari Nurcahyo	Teknik	Teknik Informatika	3.80	Lulus
4	023040010	Erik	Teknik	Teknik Informatika	3.50	Lulus



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Hapus tabel mahasiswa

```
mysql> show tables;  
Empty set (0.00 sec)
```



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# Hapus database unpas

```
+-----+  
| Database |  
+-----+  
| information_schema |  
| coba |  
| musprop |  
| mysql |  
| performance_schema |  
| simari_adm |  
+-----+
```



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# phpmyadmin

<https://www.phpmyadmin.net/downloads/>



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# Instalasi phpMyAdmin di Laragon

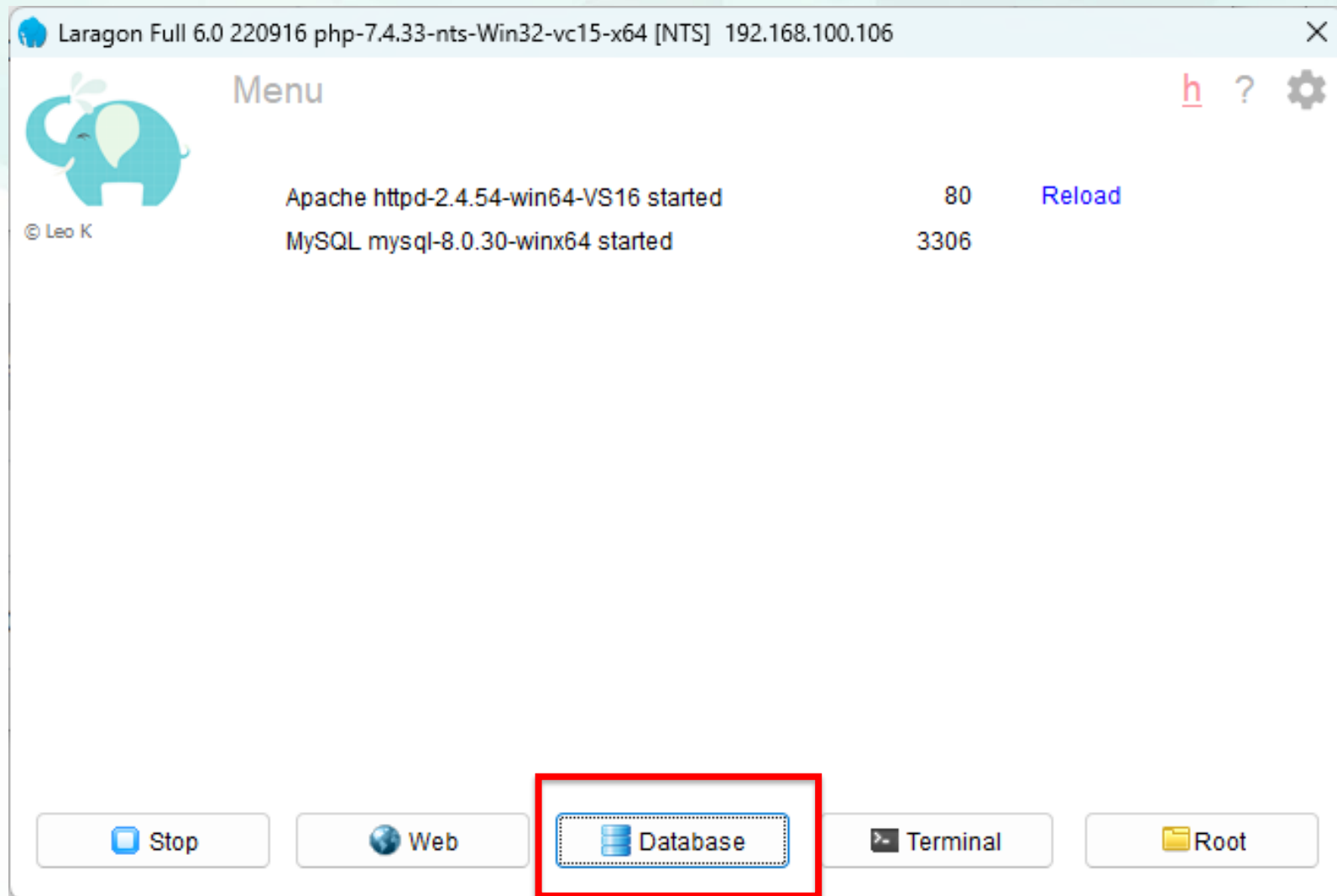
- Download phpMyAdmin
- Extract ke folder \laragon\etc\apps
- *Rename* nama foldernya jadi 'phpMyAdmin'
- Klik tombol database di control panel
- Masukkan username 'root' dan kosongkan passwordnya



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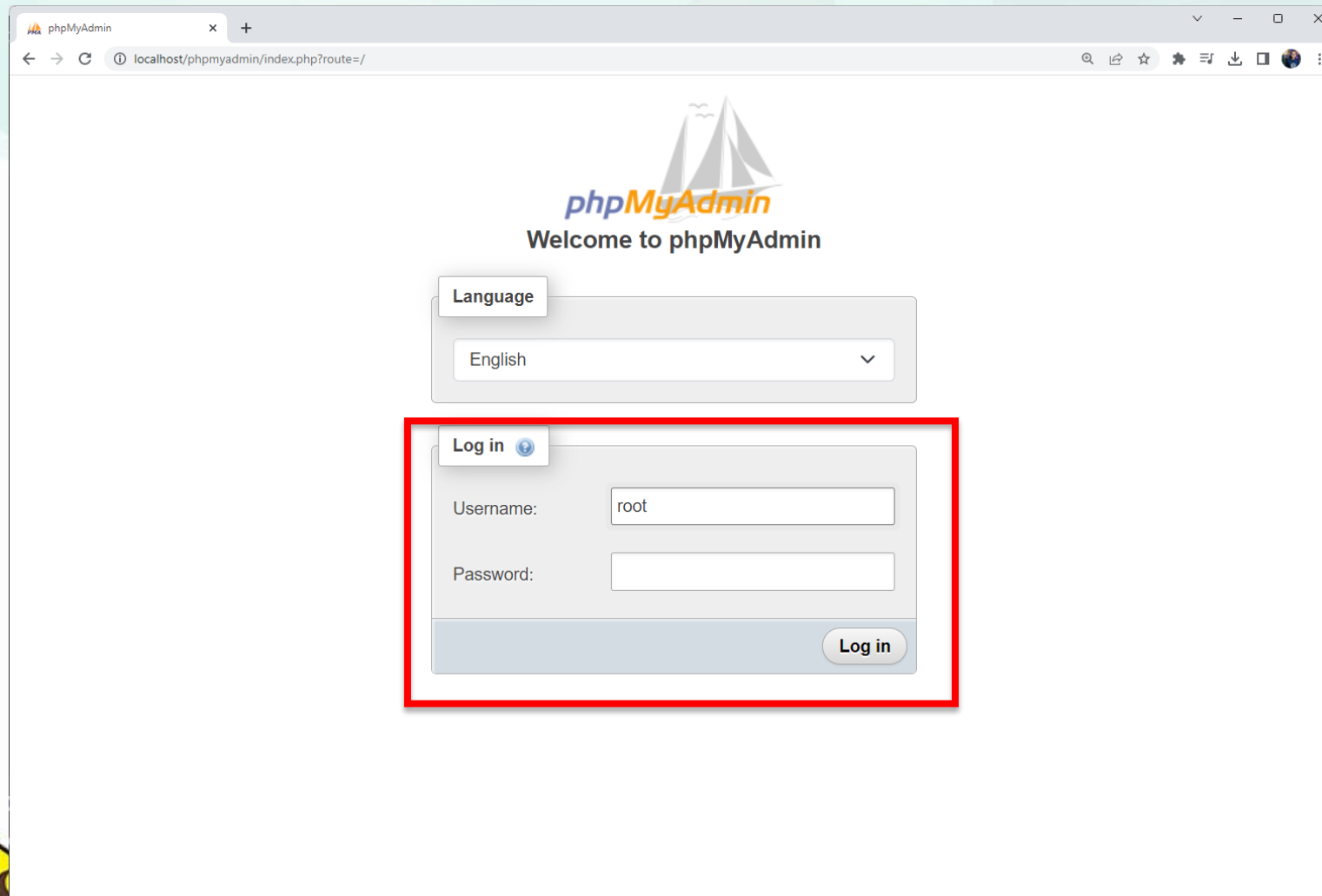
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# Masuk ke phpMyAdmin





# Masuk ke phpMyAdmin

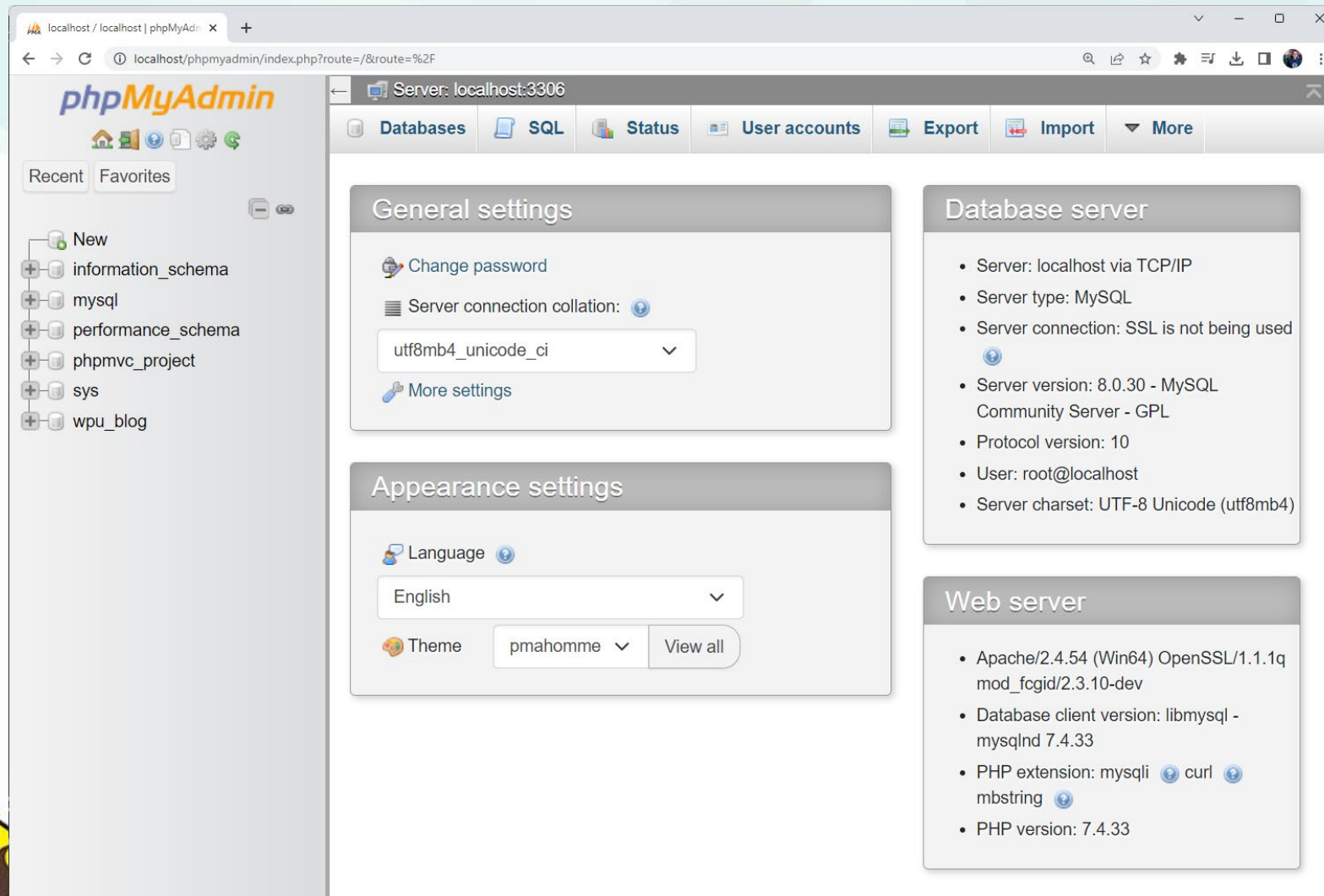


The screenshot shows the phpMyAdmin login interface. At the top, there is a logo with a sailboat and the text "phpMyAdmin" and "Welcome to phpMyAdmin". Below this, there is a "Language" dropdown menu set to "English". The main login area is highlighted with a red rectangle and contains a "Log in" button with a key icon. Below the button, there are two input fields: "Username:" with the value "root" and "Password:" with an empty field. At the bottom right of the login area is a "Log in" button.



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# Masuk ke phpMyAdmin



The screenshot shows the phpMyAdmin interface in a web browser. The browser's address bar displays the URL `localhost/phpmyadmin/index.php?route=/&route=%2F`. The phpMyAdmin logo is at the top left, with a navigation menu below it containing 'Recent' and 'Favorites' tabs, and a list of databases: 'New', 'information\_schema', 'mysql', 'performance\_schema', 'phpmvc\_project', 'sys', and 'wpu\_blog'. The main content area is titled 'Server: localhost:3306' and features a top navigation bar with links for 'Databases', 'SQL', 'Status', 'User accounts', 'Export', 'Import', and 'More'. The interface is divided into three main sections: 'General settings', 'Appearance settings', and 'Database server'. The 'General settings' section includes a 'Change password' link, a 'Server connection collation' dropdown set to 'utf8mb4\_unicode\_ci', and a 'More settings' link. The 'Appearance settings' section includes a 'Language' dropdown set to 'English' and a 'Theme' dropdown set to 'pmahomme' with a 'View all' button. The 'Database server' section lists server details: 'Server: localhost via TCP/IP', 'Server type: MySQL', 'Server connection: SSL is not being used', 'Server version: 8.0.30 - MySQL Community Server - GPL', 'Protocol version: 10', 'User: root@localhost', and 'Server charset: UTF-8 Unicode (utf8mb4)'. The 'Web server' section lists: 'Apache/2.4.54 (Win64) OpenSSL/1.1.1q mod\_fcgid/2.3.10-dev', 'Database client version: libmysql - mysqlnd 7.4.33', 'PHP extension: mysqli, curl, mbstring', and 'PHP version: 7.4.33'.



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Lakukan hal yang sama seperti  
menggunakan command prompt



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selesai.



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# terimakasih.

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