Database
Lecture 2

Contents

- DB vs DBMS
- Introduction to MySQL
- Preparing Environment for MySQL
- Introduction to PhpMyAdmin

Why DBMS

•Development (Frontend, Backend,

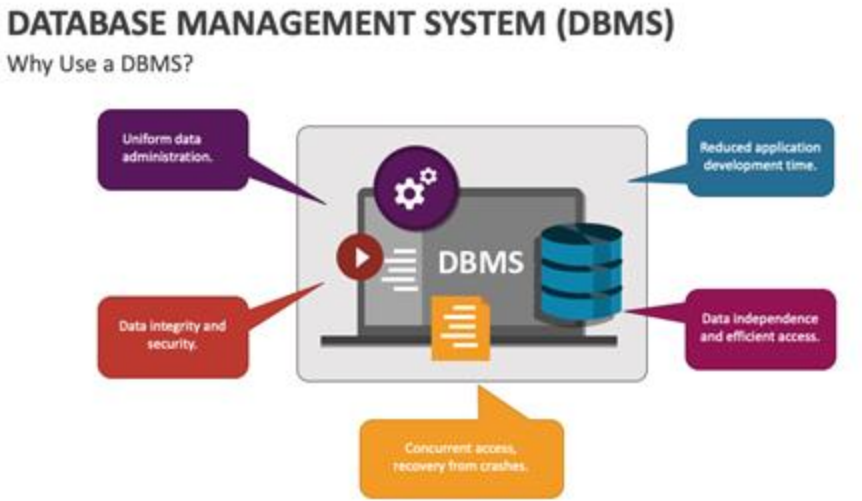
Database)

•Database Administrator

•Data Scientist

•Data Science (Research)

• Freelancing (Data Entry Operator, DB Administrator)



Course Details

- Course Title: Database (**MySQL**/ Oracle/ SQL Server)
- Durations:
  - 80 hours (25+ Lectures)
  - 10 hours Mentorship session (Industrial Resources)

- Assessment
  - Class attendance: 10%
  - Quiz and assignment: 10%
  - Assignment: 10%
  - Mid-term assessment: 20%
  - Final Evaluation: 25%
  - Project: 25%

- Class Routine

Skills to Achieve

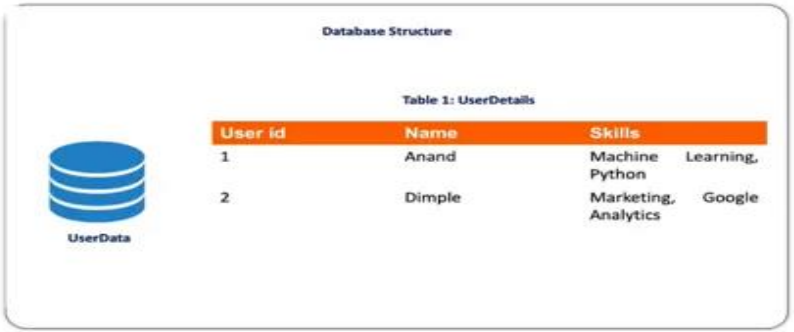
- Understanding of DBMS
- Designing Database
- Implementing Database
- Database Operations
- MySQL
- SQL (Structured Query Language)
- ***Data Science with SQL***

Prerequisite to Develop

Basic Computer Skills

Programming Skills (Not Mandatory)

How data is stored in database



Relational Database

No-SQL Database

DB VS DBMS

•**Data** is a collection of facts and figures that can be processed to produce information.

–**E.g.** recordable facts, text, numbers, images

•**Database** is a collection of related data

–**E.g.** TDB, MDB, GIS

•A **DBMS** is a ***software*** that allows creation, definition and manipulation of database

•It is a ***tool*** used to perform any kind of operation on data in database

•Provides protection and security to database

Example: MySQL, SQL Server, Oracle, MongoDB, PostgreSql

Data is stored in database in table format

Examples of Database

Uses of DBMS

- To develop software applications in less time
- Data independence and efficient use of data
- For uniform data administration
- For data integrity and security
- For concurrent access of data and data recovery from crashes
- To use user friendly declarative query language

Database Application Examples

- Airlines, Telecom , Universities/Education, Banking, Industry, Online Shopping
- **Enterprise Information**
  - –Sales: customers, products, purchases
  - –Accounting: payments, receipts, assets
  - –Human Resources: Information about employees, salaries, payroll taxes.

Database Application Examples

•**Manufacturing**: management of production, inventory, orders, supply chain.

•**Banking and finance**

–customer information, accounts, loans, and banking transactions.

–Credit card transactions

–Finance: sales and purchases of financial instruments (e.g., stocks and bonds; storing real-time market data

Universities: registration, result Processing

MySQL

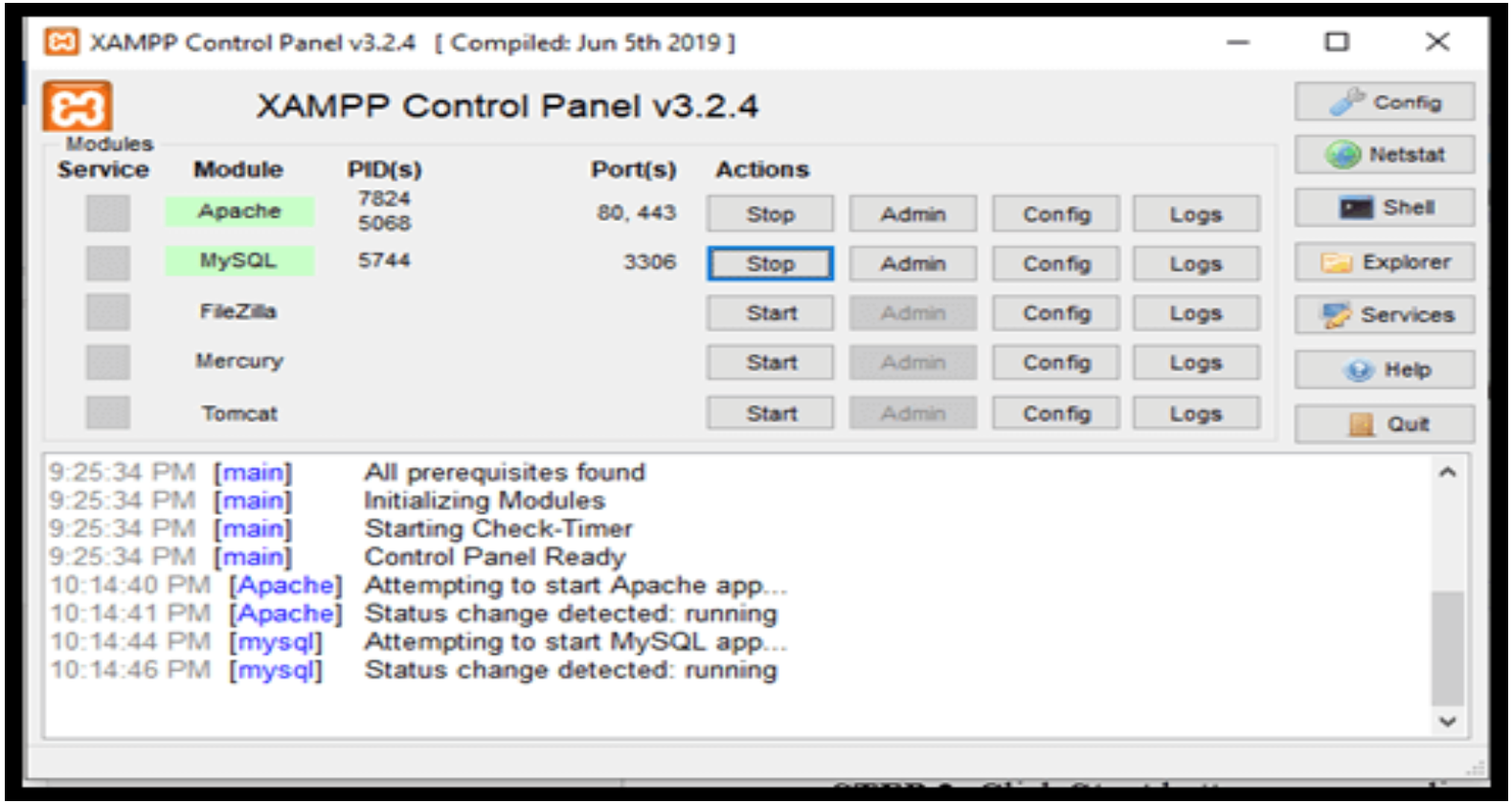
- MySQL is a relational database management system
- MySQL is open-source
- MySQL is free
- MySQL is ideal for both small and large applications
- MySQL is very fast, reliable, scalable, and easy to use
- MySQL is cross-platform
- MySQL is compliant with the ANSI SQL standard
- Users of MySQL: Facebook, Twitter, Youtube, Uber, Github, and CMS like Wordpress, Drupal, Joomla, and large number of web developers around the world.

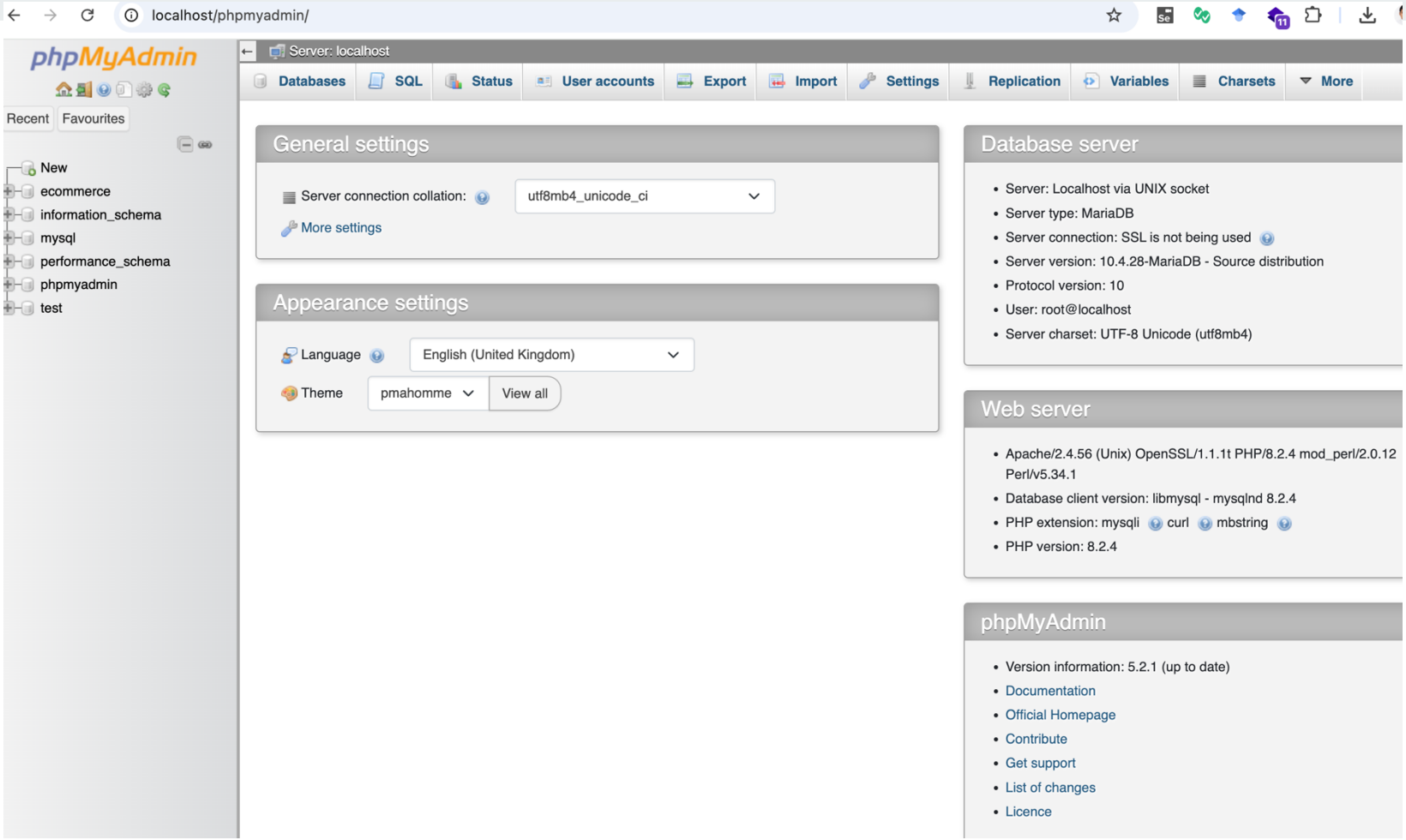
Preparing Environment for MySQL

- Install XAMPP and Notepadd++
- Note:
  - **Mysql** : Database Management System
  - **XAMPP**: Software which provides environment for MySQL
  - **Apache and MySql Server:** Xampp provides these server

How to Launch phpmyadmin

- Launch ***Xampp Control Panel***
- Start ***Apache*** and ***Mysql*** server
- Click ***admin*** for mysql or type ***localhost/phpmyadmin*** in any browser


XAMPP Control Panel v3.2.4 [Compiled: Jun 5th 2019]
XAMPP Control Panel v3.2.4
Modules
Service
Module
PID(s)
Port(s)
Actions
Apache
7824
5068
80, 443
Stop
Admin
Config
Logs
MySQL
5744
3306
Stop
Admin
Config
Logs
FileZilla
Start
Admin
Config
Logs
Mercury
Start
Admin
Config
Logs
Tomcat
Start
Admin
Config
Logs
Config
Netstat
Shell
Explorer
Services
Help
Quit
9:25:34 PM [main] All prerequisites found
9:25:34 PM [main] Initializing Modules
9:25:34 PM [main] Starting Check-Timer
9:25:34 PM [main] Control Panel Ready
10:14:40 PM [Apache] Attempting to start Apache app...
10:14:41 PM [Apache] Status change detected: running
10:14:44 PM [mysql] Attempting to start MySQL app...
10:14:46 PM [mysql] Status change detected: running


localhost/phpmyadmin/
phpMyAdmin
Recent
Favourites
New
ecommerce
information_schema
mysql
performance_schema
phpmyadmin
test
Server: localhost
Databases
SQL
Status
User accounts
Export
Import
Settings
Replication
Variables
Charsets
More
General settings
Server connection collation:
utf8mb4_unicode_ci
More settings
Appearance settings
Language
English (United Kingdom)
Theme
pmahomme
View all
Database server
Server: Localhost via UNIX socket
Server type: MariaDB
Server connection: SSL is not being used
Server version: 10.4.28-MariaDB - Source distribution
Protocol version: 10
User: root@localhost
Server charset: UTF-8 Unicode (utf8mb4)
Web server
Apache/2.4.56 (Unix) OpenSSL/1.1.1t PHP/8.2.4 mod_perl/2.0.12 Perl/v5.34.1
Database client version: libmysql - mysqlnd 8.2.4
PHP extension: mysqli curl mbstring
PHP version: 8.2.4
phpMyAdmin
Version information: 5.2.1 (up to date)
Documentation
Official Homepage
Contribute
Get support
List of changes
Licence

Basic Operations with phpmyadmin

- Create a database
- Create table
- Insert data into table
- Update and delete data from table

Database Name: test
Table Name: student

Structure and Data for table

ID	Name	Email	Date Joined
2001	Meena	meena@gmail.com	02 – January -2024
2002	Raju	raju@gmail.com	05 – December -2023
2003	Rohan	rohan@gmail.com	02 – January -2024
2004	Rita	rita@gmail.com	02 – January -2024
2005	Himu	himu@gmail.com	02 – January -2024

End of Lecture