Introduction to MySQL Workbench (LAB Lecture)

Department of Information Technology
Database Systems II (IT226)
Spring 2024-2025
Week 1 – February 9, 2025
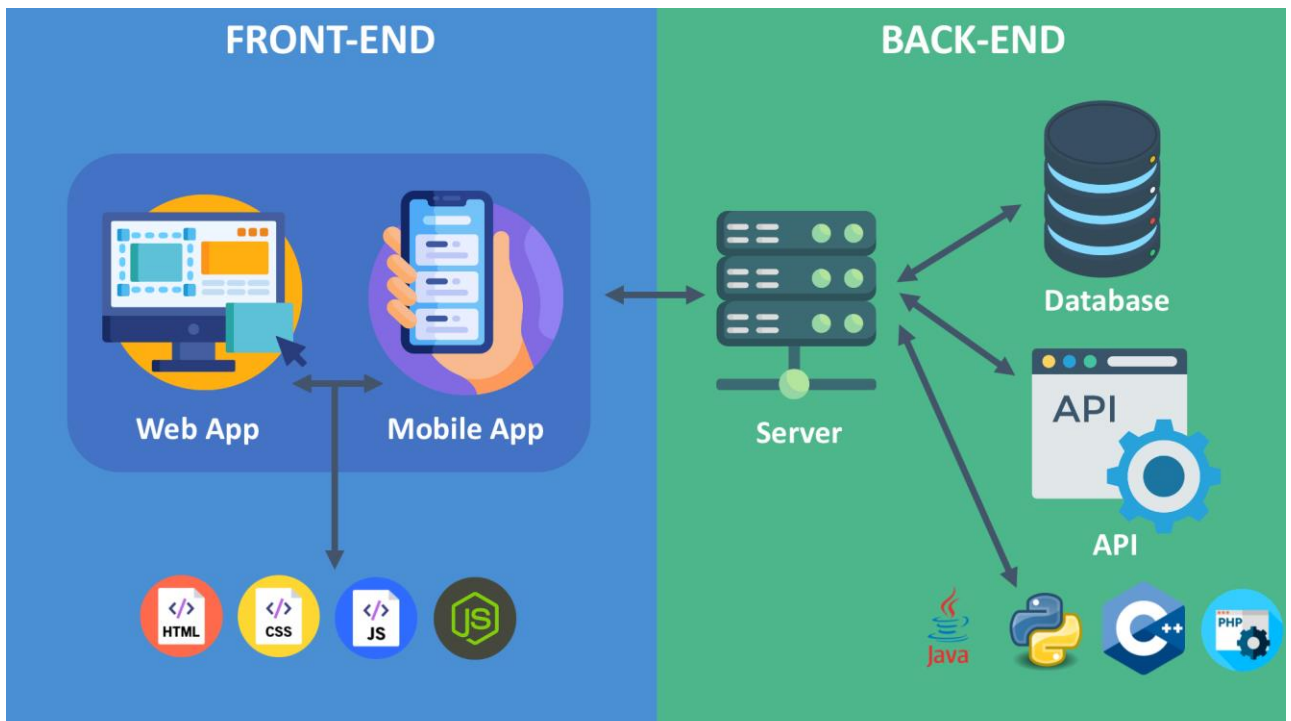**Lecturer: Soma Soleimanzadeh**

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RDBMS Software

MySQL

- **MySQL** is the <u>world's most popular open-source database management system</u>.

- **MySQL** is an <u>SQL-based relational database</u> designed to store and manage structured data.

- **MySQL** is a popular database management system used in web development <u>as a web application backend</u>.

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SQL Language

- **SQL** (**<u>Structured Query Language</u>**) is used for
  - o managing and manipulating relational databases.

- **SQL** is designed to <u>interact with databases</u>
  - o by defining, querying, updating, and managing the data within them.

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Microsoft Access vs. MySQL

MS Access	MySQL
Slower, small number of users	Quicker, better performance for many users
Single login and password	Multiple security options
Can handle lower numbers of queries & payment transactions	Better for eCommerce - can support multiple queries and payment transactions
Cost per user licence can become expensive	No licences, more cost effective
Has a maximum storage and user number	Easily scalable for a growing business

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MySQL Workbench

- **MySQL Workbench** is a graphical tool for working with **MySQL** servers and databases.
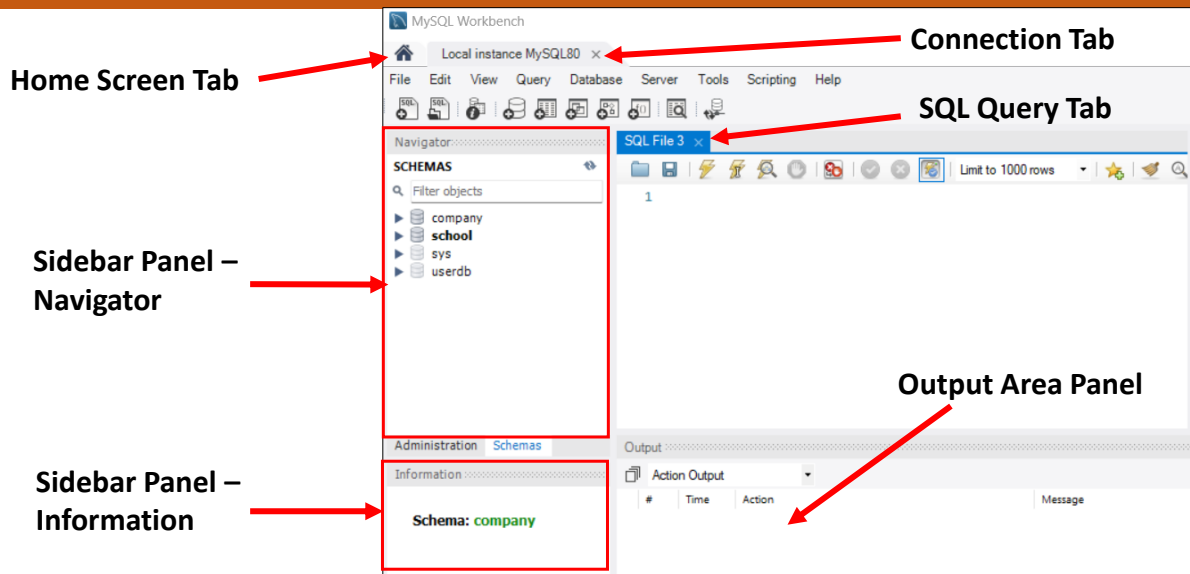
- **MySQL Workbench** is available in two editions:

    o **Community** Edition → free of charge

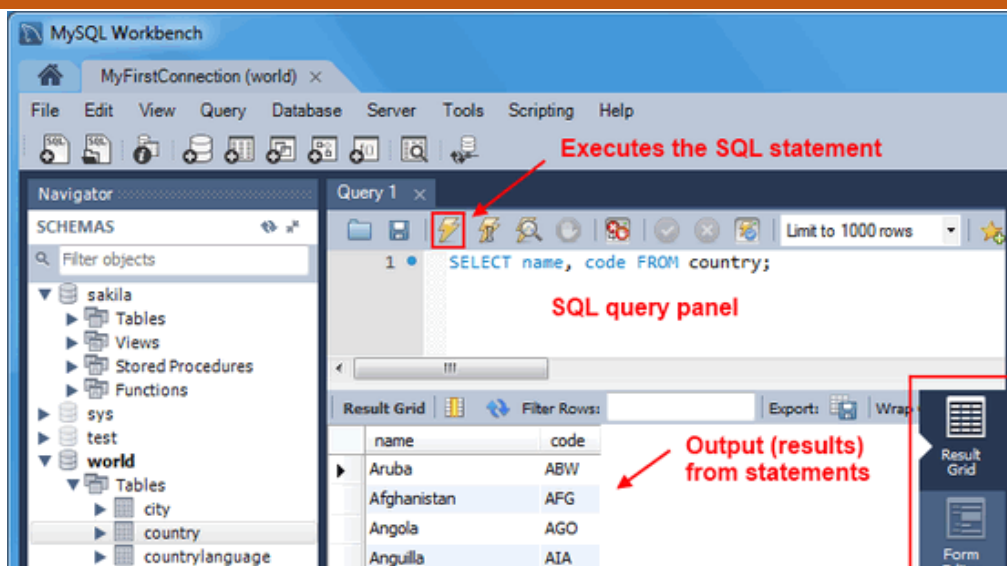   o **Commercial** Edition → provides advanced features, not free.

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MySQL Workbench Environment

Home Screen Tab

Connection Tab

SQL Query Tab

Sidebar Panel – Navigator

Output Area Panel

Sidebar Panel – Information

SQL Editor –SQL Query Tab

Executes the SQL statement

SQL query panel

Output (results) from statements

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SQL Syntax for Create and Activate a Database

- **Creating a new database in MySQL:**

  create database <database_name> ;

- **Activating the Database to be Used:**

  use <database_name> ;

- **Show list of all databases:**

  show databases;

SQL Syntax for Create a Table

- **Creating a new table in MySQL:**

  CREATE TABLE table_name
  $(Column\_name_1 \quad datatype_1,$
  $Column\_name_2 \quad datatype_2,$
  $...,$
  $Column\_name_n \quad datatype_n,$
  $(Integrity\_Constraint_1),$
  $...,$
  $(Integrity\_Constraint_n));$

Let's Try it!

- Create a database named **Company**.
- Activate the database.
- Create the following two tables in the **Company** database.
- Remember that there is a relationship between these two database through specifying a foreign key.

Department

deptName	Budget	Floor
HR	11000	3
Accounting	7000	1
Customer Services	5000	4

Employee

ID	name	salary	deptName
1	Mike	4000.5	Accounting
2	Kate	2500.75	Customer Services
3	Sandy	7000	HR

Let's Try it!

```sql
create database company;

use company;

create table department
(deptName varchar(50),
budget int,
floor int,
primary key(deptName));

create table employee
(ID int,
name varchar(30),
salary decimal(7,2),
deptName varchar(50),
primary key (ID),
foreign key (deptName) references department(deptName));
```