

Practical Work 6

Web and Open Source Databases

1 Objectives

By the end of this practical work, students will be able to:

- Install and configure a local web server environment
- Create and manage a MariaDB database
- Install and configure a CMS (WordPress)
- Build a simple website
- Apply basic security practices

2 Required Tools

- XAMPP / WAMP / LAMP (Apache + PHP + MariaDB)
- Web browser (Chrome, Firefox, etc.)
- WordPress (latest version)

3 Part 1: Environment Setup

3.1 Step 1: Install XAMPP

- Download XAMPP from: <https://www.apachefriends.org>
- Install the software
- Launch XAMPP Control Panel
- Start:
 - Apache
 - MySQL (MariaDB)

3.2 Step 2: Test Server

- Open browser and go to: `http://localhost`
- Confirm that the XAMPP dashboard appears

4 Part 2: Database Configuration (MariaDB)

4.1 Step 1: Access phpMyAdmin

- Go to: `http://localhost/phpmyadmin`

4.2 Step 2: Create Database

- Click on “New”
- Database name: `wordpress_db`
- Choose collation: `utf8mb4_general_ci`
- Click “Create”

5 Part 3: WordPress Installation

5.1 Step 1: Download WordPress

- Download from: `https://wordpress.org`

5.2 Step 2: Setup Files

- Extract WordPress
- Copy folder to: `htdocs` (inside XAMPP folder)
- Rename folder: `mysite`

5.3 Step 3: Installation via Browser

- Go to: `http://localhost/mysite`

5.4 Step 4: Configure Database Connection

Fill in:

- Database Name: `wordpress_db`
- Username: `root`
- Password: (leave empty by default)
- Host: `localhost`

5.5 Step 5: Final Setup

- Site title
- Admin username
- Password
- Email

6 Part 4: Create a Simple Website

Tasks:

- Create at least 2 pages (Home, About)
- Add a post (article)
- Change theme
- Add menu navigation

7 Part 5: Basic Security

Apply the following:

- Change default admin username
- Use a strong password
- Install a security plugin (e.g., Wordfence)
- Update WordPress, themes, plugins