**Lab Exercise 1- Docker-Compose**

**Objective**

To deploy a WordPress site with a MySQL database using Docker Compose.

**Prerequisites**

* **Docker** and **Docker Compose** installed.
* Basic understanding of Docker and Docker Compose.

**Step 1: Project Structure**

Create a new directory for the project:

mkdir wordpress-docker-compose-lab

cd wordpress-docker-compose-lab

Inside this directory, create a file named docker-compose.yml.

**Step 2: Write the docker-compose.yml File**

In docker-compose.yml, define the services for **WordPress** and **MySQL**:

version: '3.8'

services:

wordpress:

image: wordpress:latest

container\_name: wordpress

ports:

- "8080:80"

environment:

WORDPRESS\_DB\_HOST: db:3306

WORDPRESS\_DB\_USER: wpuser

WORDPRESS\_DB\_PASSWORD: wppassword

WORDPRESS\_DB\_NAME: wordpress

depends\_on:

- db

db:

image: mysql:5.7

container\_name: mysql\_db

environment:

MYSQL\_DATABASE: wordpress

MYSQL\_USER: wpuser

MYSQL\_PASSWORD: wppassword

MYSQL\_ROOT\_PASSWORD: rootpassword

volumes:

- db\_data:/var/lib/mysql

volumes:

db\_data:

**Explanation of docker-compose.yml**

* **wordpress**: The WordPress container, using environment variables to connect to the database service (db).
  + WORDPRESS\_DB\_HOST: Points to the MySQL service (db) on port 3306.
  + WORDPRESS\_DB\_USER, WORDPRESS\_DB\_PASSWORD, and WORDPRESS\_DB\_NAME: Set credentials and database name for WordPress.
  + depends\_on: Ensures the db service starts before WordPress.
* **db**: The MySQL container for WordPress’s database, initialized with environment variables.
  + MYSQL\_DATABASE: Specifies the database name for WordPress.
  + MYSQL\_USER, MYSQL\_PASSWORD, and MYSQL\_ROOT\_PASSWORD: Set the credentials for MySQL.
  + volumes: Data is stored in a named volume (db\_data) to persist even if the container restarts.

**Step 3: Launch the Containers with Docker Compose**

Run the following command in the wordpress-docker-compose-lab directory to start the containers:

docker-compose up -d

* The -d flag runs containers in detached mode.
* Docker will download the wordpress and mysql images if they aren’t already on your machine.

**Step 4: Access the WordPress Site**

1. Open your browser and go to http://localhost:8080.
2. You should see the WordPress installation screen.
3. Follow the installation steps by entering your site information to complete the setup.