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Laboratory Activity No. 1

Laboratory Activity No. 1:

Topic: **Introduction to Software Design, History, and Overview**

Title: *Setting Up the Development Environment for Django Project*

Introduction: This activity will guide you through the process of setting up your development environment to start building the Library Management System (LMS) in Django. The process involves installing necessary software, setting up Python and Django, and verifying the installation.

Objectives:

- Install Python and Django on your system.

- Create a virtual environment to manage dependencies.

- Verify the installation by running a simple Django project.

Theory and Detailed Discussion: To develop the Library Management System, we will use the Django framework. Django is a high-level Python web framework that allows developers to create robust web applications quickly and efficiently. Before we can start developing, we need to set up the development environment.
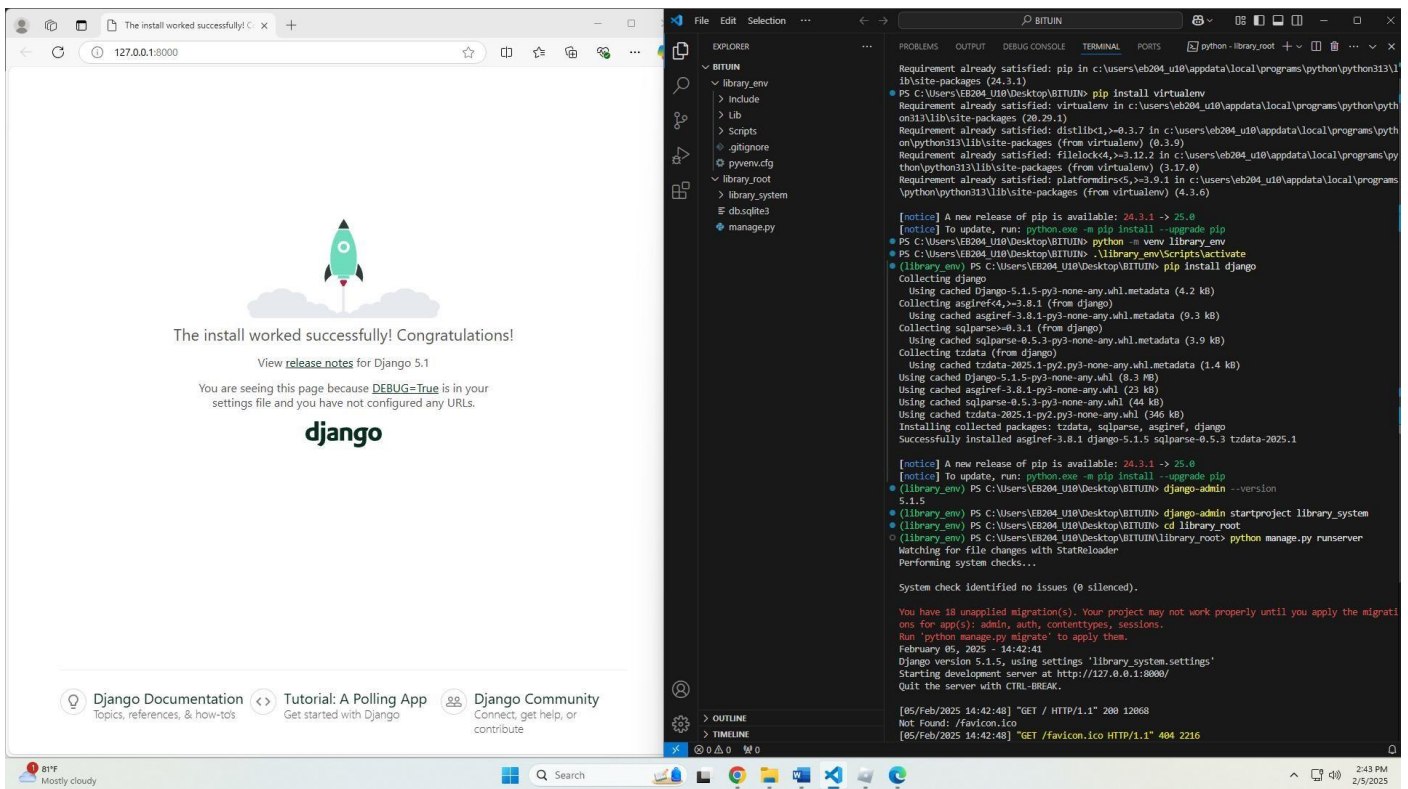

Program/Code: The code here is focused on setting up the environment. The following commands should be run in the terminal:

python -m venv library_env source library_env/bin/activate #

or .\library_env\Scripts\activate on Windows pip install django django-admin

startproject library_system cd library_system python manage.py runserver

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Results: (print screen the result and provide the github link of your work)

Follow-Up Questions:

1. What is the role of a virtual environment in Django development?

Answer:

A virtual environment isolates dependencies for a Django project, preventing conflicts between different projects and ensuring a stable development environment.

2. What are the advantages of using Django for web development over other frameworks?

Answer:

Advantages of Using Django for Web Development:

1. **Batteries-included:** Comes with built-in features like authentication and admin panel.
2. **Security:** Protects against SQL injection, CSRF, and XSS.
3. **Scalability:** Handles high traffic efficiently.
4. **Rapid Development:** Encourages clean, reusable code with the DRY principle.
5. **ORM Support:** Simplifies database interactions.