# Flask CRUD Application – Complete Setup and Lab Notes

## 1. Environment Setup

Follow these steps to install and configure the Flask environment:

1. Step 1: Install virtualenv

* Command:

pip install virtualenv

1. Step 2: Create and activate virtual environment

* Commands:

python -m venv env

* env\scripts\activate # (for Windows)

1. Step 3: Install Flask and SQLAlchemy

* Command:

pip install Flask Flask-SQLAlchemy

## 2. Creating a Flask Application

Step 1: Create a file named app.py in the project directory.

1. Step 2: Basic Flask app structure:

from flask import Flask  
app = Flask(\_\_name\_\_)  
  
@app.route("/")  
def hello\_world():  
 return "Hello, World!"  
  
if \_\_name\_\_ == "\_\_main\_\_":  
 app.run(debug=True)

1. Step 3: Run the Flask App

* Command:

python app.py

## 3. Templates and Static Folders

1. Create the following folders in your project directory:

* templates
* static

Ensure they are not created inside the env folder.

## 4. Creating HTML Templates

Create index.html inside the templates folder with basic HTML structure:

<!DOCTYPE html>  
<html>  
<head>  
<title>Flask App</title>  
</head>  
<body>  
<h1>Hello from HTML</h1>  
</body>  
</html>

## 5. Beautifying with Bootstrap

Visit https://getbootstrap.com and copy the starter template code into index.html inside <head>.

You can also add forms, navbars, and tables from Bootstrap components.

## 6. Setting Up Database with SQLAlchemy

Install SQLAlchemy (already done in step 3):

pip install Flask-SQLAlchemy

Update app.py with database configuration and model definition.

## 7. Full Working CRUD App Code

Paste the complete code provided in the lab into app.py.

## 8. Creating the Database

Use Python shell to initialize the DB:

python  
>>> from app import app, db  
>>> app.app\_context().push()  
>>> db.create\_all()  
>>> exit()

## 9. Required Template Files

1. index.html – To show data and form

2. update.html – To update records

## 10. Running the Application

Command:

python app.py

Visit http://localhost:5000 in your browser.