**ML Flow Set Up - Mac**

**Setting up a python virtual environment and MLflow on macOS**

1. **Create a Virtual Environment**:
   * **Open Terminal**.
   * **Navigate to your desired directory** where you want to create the virtual environment. For example, to navigate to your home directory (equivalent to C:\Users\YourName\ on Windows), use:

cd ~

This command takes you to /Users/your\_username/.

* + **Create the virtual environment** by running:

python3 -m venv <Environment\_Name>

Replace <Environment\_Name> with your preferred name, e.g., FinalProjectEnv.

1. **Activate the Virtual Environment**:  
   Run the following command to activate the environment:

source <Environment\_Name>/bin/activate

For example:

source FinalProjectEnv/bin/activate

After activation, your terminal prompt should change to indicate the environment is active.

1. **Install MLflow**:  
   With the virtual environment activated, install MLflow using pip:

pip install mlflow

1. **Install Jupyter and ipykernel**:  
   Still within the activated environment, install Jupyter and ipykernel:

pip install jupyter ipykernel

1. **Add the Virtual Environment to Jupyter (for use in VS Code)**:  
   Add your environment to Jupyter with:

python -m ipykernel install --user --name=<Environment\_Name> --display-name "Python (<Environment\_Name>)"

Replace <Environment\_Name> with your environment's name.

* + **In VS Code**:
    - Open your project folder.
    - Press Cmd + Shift + P to open the Command Palette.
    - Select **"Python: Select Interpreter"**.
    - Choose **"Enter interpreter path..."**, then **"Find..."**.
    - Navigate to and select:

./<Environment\_Name>/bin/python

Replace <Environment\_Name> with your environment's name.

1. **Select the Kernel in VS Code**:
   * **For Jupyter Notebooks**:
     + Open your .ipynb file.
     + Click on **"Select Kernel"** in the top-right corner.
     + Choose **"Python (<Environment\_Name>)"**.
   * **For Python Scripts (**.py **files)**:
     + Press Cmd + Shift + P to open the Command Palette.
     + Select **"Python: Select Interpreter"**.
     + Choose **"Python (<Environment\_Name>)"**.

**Start ML Flow**

1. Open Terminal:

Press Cmd + Space, type Terminal, and hit Enter to open the Terminal app.

2. Navigate to your project directory:  
Use the cd command to change to the folder where your project files are located. For example:

cd /path/to/your/project/folder

Replace /path/to/your/project/folder with the actual path to your project.

3. Create a Virtual Environment:  
If you haven’t already created a virtual environment, run:

python3 -m venv venv\_name

Replace venv\_name with the desired name of your virtual environment.

4. Activate the Virtual Environment:  
On macOS, activate the virtual environment with:

source venv\_name/bin/activate

After activation, your terminal prompt should change to indicate the virtual environment is active, e.g., (venv\_name).

5. Install MLflow:  
Ensure your virtual environment is active, and then install MLflow with:

pip install mlflow

6. Start MLflow UI:  
Run the following command to start the MLflow UI:

mlflow ui

This will start the MLflow tracking server, and you’ll be able to access the web interface at http://127.0.0.1:5000 from your browser.

7. Set Tracking URI (Optional):  
If you want to use a specific database (e.g., SQLite or a remote server), set the tracking URI. For example, to use an SQLite database:

import mlflow

mlflow.set\_tracking\_uri("sqlite:///path/to/your/mlflow.db")

Replace path/to/your/mlflow.db with the actual path where you want the database to be stored.

8. Access the MLflow UI:  
Open a web browser and navigate to:

http://127.0.0.1:5000

This will open the MLflow UI, where you can track and monitor experiments, models, and more.