### **Steps to Install and Configure Airflow without Virtual Environment:**

**Install Airflow**:  
You can install Apache Airflow using pip directly on your system. Run the following command:  
bash  
Copy code  
pip install "apache-airflow==2.7.1" \

--constraint "https://raw.githubusercontent.com/apache/airflow/constraints-2.7.1/constraints-3.8.txt"

1. This will install Airflow globally on your machine. Make sure you have Python 3.8 or higher installed on your system.

**Set Airflow Home (Optional)**:  
Airflow uses a default directory ~/airflow for its metadata and configurations. If you want to change this, you can set the AIRFLOW\_HOME environment variable to your desired location:  
bash  
Copy code  
export AIRFLOW\_HOME=~/airflow # or another directory of your choice

1. Add this to your .bashrc or .zshrc file so it persists across sessions.

**Initialize Airflow Database**:  
After installing Airflow, you need to initialize the metadata database:  
bash  
Copy code  
airflow db init

**Create an Admin User**:  
Create a user with admin privileges for accessing the Airflow web interface:  
bash  
Copy code  
airflow users create \

--username admin \

--password admin \

--firstname Admin \

--lastname User \

--role Admin \

--email admin@example.com

1. **Start Airflow Web Server and Scheduler**:  
   Airflow requires two main services to run:
   * The **web server** for accessing the UI.
   * The **scheduler** for running your DAGs.
2. Start them as follows:

Start the web server (on default port 8080):  
bash  
Copy code  
airflow webserver --port 8080

In a new terminal window, start the scheduler:  
bash  
Copy code  
airflow scheduler

1. Now, you can access the Airflow UI at http://localhost:8080 and log in using the admin credentials you created.

**Install Additional Providers (for Spark, AWS, etc.)**:  
Depending on your workflow, you might need to install extra provider packages for integrations like Spark, AWS, or databases.  
For example, if you're using PySpark with Airflow:  
bash  
Copy code  
pip install apache-airflow-providers-apache-spark

You can also install additional providers like:  
bash  
Copy code  
pip install apache-airflow-providers-amazon # For AWS

pip install apache-airflow-providers-postgres # For PostgreSQL

**Placing Your DAGs**:  
By default, Airflow looks for DAG files in the ~/airflow/dags folder. You can place your DAG Python scripts there, and Airflow will automatically detect and schedule them.  
For example, your customer\_churn\_eda\_dag.py should be placed in:  
bash  
Copy code  
~/airflow/dags/customer\_churn\_eda\_dag.py

### **Accessing the Airflow Web UI:**

* Once you’ve started the **Airflow web server**, you can access the UI in your browser at http://localhost:8080.
* You’ll be able to see the status of your DAGs, trigger them manually, and view logs.