
▮ Step 1: Set Up a New Project Folder

```
mkdir airflow-demo
cd airflow-demo
python3 -m venv .venv
source .venv/bin/activate
```

▮ Step 2: Install Apache Airflow (with constraints)

```
export AIRFLOW_VERSION=2.9.1
export PYTHON_VERSION="$(python --version | cut -d " " -f 2 | cut -d "." -f 1,2)"
export
CONSTRAINT_URL="https://raw.githubusercontent.com/apache/airflow/constraints-${AIRFLOW_VERSION}-${PYTHON_VERSION}.txt"

pip install "apache-airflow==${AIRFLOW_VERSION}" --constraint "${CONSTRAINT_URL}"
```

▮ Step 3: Initialize Airflow

```
export AIRFLOW_HOME=$(pwd)/airflow_home
airflow db init
```

Create the required folders:

```
mkdir -p $AIRFLOW_HOME/dags
```

▮ Step 4: Create an Admin User

```
airflow users create \
  --username admin \
  --firstname Admin \
  --lastname User \
  --role Admin \
  --email admin \
  --password admin
```

▮ Step 5: Create a Simple DAG

Create file:

```
nano $AIRFLOW_HOME/dags/hello_dag.py
```

Paste this content:

```
from airflow import DAG
from airflow.operators.python import PythonOperator
```

```
from datetime import datetime

def greet():
    print("\033[32m Hello, Airflow is running!")

with DAG(
    dag_id="hello_dag",
    start_date=datetime(2023, 1, 1),
    schedule_interval="@daily",
    catchup=False
) as dag:
    hello = PythonOperator(
        task_id="greet_task",
        python_callable=greet
    )
```

📌 Step 6: Start the Webserver and Scheduler

In two different terminals:

Terminal 1:

```
source .venv/bin/activate
export AIRFLOW_HOME=$(pwd)/airflow_home
airflow webserver --port 8080
```

Terminal 2:

```
source .venv/bin/activate
export AIRFLOW_HOME=$(pwd)/airflow_home
airflow scheduler
```

📌 Step 7: Access the UI

Go to: <http://localhost:8080> Login with:

- **Username:** admin
- **Password:** admin

You should now see the `hello_dag` in the list. Enable it and run manually.
