

## MLOps Deployment from PROD to DEV

### Objective:

Simulate the process of deploying code from a development environment (DEV) to a production environment (PRD).

#### 1. Developer Role:

##### - Push Code to GitHub:

- This time, Muhammad took on the role of the developer.

He made the necessary changes to the project.

- Muhammad created a (Pull Request) on GitHub with the following link:

[<https://github.com/7azmi1/mlop/pull/2>](<https://github.com/7azmi1/mlop/pull/2>)

- The code was updated and pushed to the repository.

##### - Create Pull Request (PR):

- Muhammad created the (PR) for the code to be reviewed by Albandari.

#### 2. Gatekeeper Role:

##### - Review & Pull Code:

- Albandari reviewed the (PR) created by Muhammad, merged the changes into the `main` branch, and then pulled the latest changes from GitHub.

##### - Setup Environment:

- Albandari created a new virtual environment using (venv) and installed the required dependencies from the `requirements.txt` file:

```
```bash
pip install -r requirements.txt
```
```

##### - Run the Project:

- Albandari ran the project to ensure that everything worked successfully without any errors.

#### 3. Swap Roles:

- Muhammad became the (Gatekeeper) this time, reviewing the code and ensuring everything worked as expected.

- The process was repeated successfully.

### Challenges & Solutions:

##### - Virtual Environment Conflicts:

- Initially, the `venv/` folder was mistakenly added to the (Git) repository. This could cause issues with virtual environment conflicts.

The problem was resolved by updating the `.gitignore` file to exclude the `venv/` folder from being tracked by Git.

-Dependency Mismatch:

- There was a version mismatch between (Python) environments. This issue was solved by ensuring both developers used the same version of Python in their virtual environments.

- Missing Imports:

- Albandari found some missing imports in the code. Muhammad added the required imports, and the issue was resolved.

Deliverables

1. Working Project:

- The code was successfully deployed and tested by Albandari after the (PR) was merged.

2. Brief Report:

- Process: Muhammad developed the code and created the (PR), Albandari reviewed the code and pulled the changes.

Conclusion:

Through this exercise, both Muhammad and Albandari learned the importance of (Git and MLOps) in deployment processes. They also gained hands-on experience in handling challenges like virtual environment management and dependencies.

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