CICD Pipeline

Enabled our repo "**ML-Ops_Group35**" with CICD pipeline. Added few steps like below:

Linting: Using flake8 linting is used in repository. It analyses the code for potential error bugs, stylistic errors, and other issues.

- **Error Detection**: Linters can catch syntax errors, undefined variables, and other common mistakes.
- **Code Consistency**: Consistent style guide, code becomes easier to read and maintain, especially when working in a team.
- **Best Practices**: Linters can enforce best practices and help avoid common pitfalls in Python programming.
- **Readability**: Consistent formatting and style make code easier to read and understand
- **Maintainability**: Clean and consistent code is easier to debug, extend, and maintain over time.

Testing : "pytest" Framework is used verify that code works as expected by writing and running tests. Proper testing is crucial for maintaining code quality, catching bugs early, and ensuring that new changes do not break existing functionality.

- **Unit Testing**: Tests individual units or components of code in isolation. Each test verifies a single function or method's behaviour.
- **Integration Testing**: Tests how different pieces of the system work together. It often involves multiple components interacting with each other.
- **Functional Testing**: Tests the functionality of the entire application to ensure it behaves as expected from the user's perspective.
- **End-to-End Testing**: Tests the complete flow of an application, simulating real user scenarios.
- **Acceptance Testing**: Validates the system against the requirements and checks if it meets the acceptance criteria.
- **Regression Testing**: Ensures that new changes do not break existing functionality.

Deploying: A deployment pipeline in GitHub Actions automates the process of building, testing, and deploying application.

- **Checkout Code**: Retrieve the latest code from the repository.
- **Set Up Environment**: Prepare the environment, including installing dependencies and setting up necessary tools.
- **Build** : Compile and package the application.
- **Test**: Run automated tests to ensure the code is working as expected.
- **Build Docker Image**: If using containers, create a Docker image of the application.
- **Push Docker Image**: Push the Docker image to a container registry like DockerHub or AWS ECR.
- **Deploy**: Deploy the application to the desired environment (e.g., a cloud server or Kubernetes cluster).

Actions

New workflow

All workflows

mlops-application

Management

Caches

Attestations

Runners

mlops-application

train.yml

Filter workflow runs

24 workflow runs

Event ▾   Status ▾   Branch ▾   Actor ▾

● **Merge pull request #3 from Rajiv-mar121/docker-deploy**   `main`   📅 now   ···
  mlops-application #27: Commit 0861eed pushed by Rajiv-mar121   ⏱ Queued

✅ **Deploy and run image**   `docker-deploy`   📅 5 minutes ago   ···
  mlops-application #26: Pull request #3 synchronize by Rajiv-mar121   ⏱ 2m 12s

✅ **Deploy and run image**   `docker-deploy`   📅 17 minutes ago   ···
  mlops-application #25: Pull request #3 synchronize by Rajiv-mar121   ⏱ 2m 6s

❌ **Deploy and run image**   `docker-deploy`   📅 41 minutes ago   ···
  mlops-application #24: Pull request #3 opened by Rajiv-mar121   ⏱ 2m 5s

✅ **Merge pull request #2 from Rajiv-mar121/docker_build**   `main`   📅 50 minutes ago   ···
  mlops-application #23: Commit 76997b0 pushed by Rajiv-mar121   ⏱ 2m 16s

---

github.com/Rajiv-mar121/ML-Ops_Group35/actions/runs/10248371194   Relaunc

Rajiv-mar121 / ML-Ops_Group35

Type / to search

<> Code   ⊙ Issues   ⇄ Pull requests   ▶ Actions   ▦ Projects   📖 Wiki   ⦵ Security   ⬗ Insights   ⚙ Settings

← mlops-application

✅ **Deploy and run image** #26

Re-run all job

🏠 Summary

Jobs

✅ lint

✅ test

✅ docker-build-run

✅ deploy

Run details

⏱ Usage

Workflow file

Triggered via pull request 11 minutes ago   **Status**   **Total duration**   **Artifacts**
🧩 Rajiv-mar121 synchronize #3 `docker-deploy`   **Success**   **2m 12s**   –

train.yml
on: pull_request

✅ lint	10s
✅ test	55s
✅ docker-build-run	2m 0s
✅ deploy	40s

⇄ Open **Deploy and run image** #3

Rajiv-mar121 wants to merge 3 commits into `main` from `docker-deploy`

👤 🧩 **Rajiv-mar121** self-assigned this now

❌ **Review required**
At least 1 approving review is required by reviewers with write access. Learn more about pull request reviews.

✅ **All checks have passed**
4 successful checks

Hide all checks

✓ 🐙 mlops-application / lint (pull_request) Successful in 10s   Details

✓ 🐙 mlops-application / test (pull_request) Successful in 55s   Details

✓ 🐙 mlops-application / docker-build-run (pull_request) Successful in 2m   Details

✓ 🐙 mlops-application / deploy (pull_request) Successful in 40s   Details

❌ **Merging is blocked**
Merging can be performed automatically with 1 approving review.

☐ Merge without waiting for requirements to be met (bypass branch protections)

Milestone
No milestone

Development
Successfully merging this pull reque
issues.
None yet

Notifications
🔕 Unsubscribe
You're receiving notifications becau
this repository.

1 participant
🟣

🔒 Lock conversation

🏠 Summary

lint
succeeded yesterday in 10s

🔍 Search logs

Jobs
● lint
● test
● deploy

Run details
⏱ Usage
📄 Workflow file

```
✓ Checkout Repository                                                                                    1s
16  Syncing repository: Rajiv-mar121/ML-Ops_Group35
17  ▶ Getting Git version info
21  Temporarily overriding HOME='/home/runner/work/_temp/0753c8d0-b232-4117-91dd-3e5613ce6236' before making global git config changes
22  Adding repository directory to the temporary git global config as a safe directory
23  /usr/bin/git config --global --add safe.directory /home/runner/work/ML-Ops_Group35/ML-Ops_Group35
24  Deleting the contents of '/home/runner/work/ML-Ops_Group35/ML-Ops_Group35'
25  ▶ Initializing the repository
39  ▶ Disabling automatic garbage collection
41  ▶ Setting up auth
47  ▶ Fetching the repository
51  ▶ Determining the checkout info
52  /usr/bin/git sparse-checkout disable
53  /usr/bin/git config --local --unset-all extensions.worktreeConfig
54  ▶ Checking out the ref
58  /usr/bin/git log -1 --format='%H'
59  '066a23c2937fe162df4337fb3c8829ca3d7353a7'

> ✓ my-step                                                                                              0s

✓ Install Python                                                                                         0s
1  ▶ Run actions/setup-python@v2
5  Successfully setup CPython (3.9.19)

> ✓ Install dependencies                                                                                 6s
```

Summary

Jobs

✓ lint

✓ test

✓ docker-build-run

✓ deploy

Run details

⏱ Usage

⟨⟩ Workflow file

docker-build-run
succeeded 10 minutes ago in 2m 0s

🔍 Search logs   ↻   ⚙

∨ ✓ Build and push Docker image   1m 16s

```
13    ▶ GitHub Actions runtime token ACs
16    ▶ Docker info
106   ▶ Proxy configuration
108   ▶ Buildx version
111   /usr/bin/docker buildx build --file ./Docker/Dockerfile --iidfile /tmp/docker-actions-toolkit-TUVCuv/iidfile --secret
      id=GIT_AUTH_TOKEN,src=/tmp/docker-actions-toolkit-TUVCuv/tmp-1794-4y1TEPf3mREL --tag ***/my-python-app:latest --metadata-file
      /tmp/docker-actions-toolkit-TUVCuv/metadata-file --push https://github.com/Rajiv-mar121/ML-Ops_Group35.git#refs/pull/3/merge
112   #0 building with "default" instance using docker driver
113
114   #1 [internal] load git source https://github.com/Rajiv-mar121/ML-Ops_Group35.git#refs/pull/3/merge
115   #1 0.016 Initialized empty Git repository in /var/lib/docker/overlay2/uxwqzwe31xsadu05ucb9j5gpa/diff/
116   #1 0.221 21ab58b1197914a40706cb88573be311e657ebdd       refs/pull/3/merge
117   #1 0.277 From https://github.com/Rajiv-mar121/ML-Ops_Group35
118   #1 0.277  * [new ref]         refs/pull/3/merge -> refs/pull/3/merge
119   #1 DONE 0.5s
120
121   #2 [auth] library/python:pull token for registry-1.docker.io
122   #2 DONE 0.0s
123
124   #3 [internal] load metadata for docker.io/library/python:3.9-slim
125   #3 DONE 0.5s
126
127   #4 [1/5] FROM docker.io/library/python:3.9-slim@sha256:990eb8f30571e0aaabfa1a7deb9fe2f6c1d4163a389004fbf823db6fee7c3642
128   #4 resolve docker.io/library/python:3.9-slim@sha256:990eb8f30571e0aaabfa1a7deb9fe2f6c1d4163a389004fbf823db6fee7c3642 done
129   #4 sha256:990eb8f30571e0aaabfa1a7deb9fe2f6c1d4163a389004fbf823db6fee7c3642 10.41kB / 10.41kB done
```

✓ Added test #16

Re-run all jobs   ···

⌂ Summary

Jobs

✓ lint

✓ test

✓ deploy

Run details

⏱ Usage

⟨⟩ Workflow file

test
succeeded yesterday in 37s

🔍 Search logs   ↻   ⚙

> ✓ Set up job   0s
> ✓ Checkout Repository   1s
> ✓ Install Python   0s
> ✓ Install dependencies   30s
∨ ✓ Run tests with pytest   4s

```
1   ▶ Run python code/train.py
7   2024/08/04 06:15:10 INFO mlflow.tracking.fluent: Experiment with name 'my_experiment' does not exist. Creating a new experiment.
8   2024/08/04 06:15:13 WARNING mlflow.models.model: Input example should be provided to infer model signature if the model signature
    is not provided when logging the model.
```

> ✓ Post Install Python   0s
> ✓ Post Checkout Repository   0s
∨ ✓ Complete job   0s

GIT Repo Link

https://github.com/Rajiv-mar121/ML-Ops_Group35

Activity which show Pull request and commits:

Activity

All branches ▾	All activity ▾	All users ▾	All time ▾		Showing most recent first ▾

Merge pull request #3 from Rajiv-mar121/docker-deploy (Pull request merge)
Rajiv-mar121 pushed 4 commits to `main` • 76997b0...0861eed • 4 minutes ago •••

build image and run
Rajiv-mar121 pushed 1 commit to `docker-deploy` • 8ade059...272aedb • 8 minutes ago •••

image run
Rajiv-mar121 pushed 1 commit to `docker-deploy` • 021a76b...8ade059 • 21 minutes ago •••

Deploy and run image
Rajiv-mar121 created `docker-deploy` • 021a76b • 46 minutes ago •••

Merge pull request #2 from Rajiv-mar121/docker_build (Pull request merge)
Rajiv-mar121 pushed 7 commits to `main` • 066a23c...76997b0 • 54 minutes ago •••

Image build
Rajiv-mar121 pushed 1 commit to `docker_build` • b9e06df...9418507 • 57 minutes ago •••

Located docker path
Rajiv-mar121 pushed 1 commit to `docker_build` • 2043462...b9e06df • 1 hour ago •••

workspace •••

Checking path
Rajiv-mar121 pushed 1 commit to `docker_build` • 283cf18...d9020d7 • 1 hour ago •••

Added docker build
Rajiv-mar121 created `docker_build` • 283cf18 • 2 hours ago •••

Added test
Rajiv-mar121 pushed 1 commit to `main` • 6214d7a...066a23c • yesterday •••

Added dockerfile
Rajiv-mar121 pushed 1 commit to `main` • a3336a5...6214d7a • yesterday •••

Update readme
Rajiv-mar121 pushed 1 commit to `main` • 49c89cd...a3336a5 • yesterday •••

Added Readme
Rajiv-mar121 pushed 1 commit to `main` • 22f8042...49c89cd • yesterday •••

Deploy model
Rajiv-mar121 pushed 1 commit to `main` • d63d9af...22f8042 • 2 days ago •••

deploy model
Rajiv-mar121 pushed 1 commit to `main` • b9258ca...d63d9af • 2 days ago •••

Added Deploy
Rajiv-mar121 pushed 1 commit to `main` • a6ca3cb...b9258ca • 2 days ago •••

run python •••

Lint test github action
Rajiv-mar121 pushed 1 commit to `main` • a32bd5e...57baeb2 • 2 days ago •••

update
Rajiv-mar121 pushed 1 commit to `main` • a770257...a32bd5e • 3 days ago •••

Update action yml
Rajiv-mar121 pushed 1 commit to `main` • b9922c9...a770257 • 3 days ago •••

Added action file
Rajiv-mar121 pushed 1 commit to `main` • 1aa7805...b9922c9 • 3 days ago •••

Merge pull request #1 from Rajiv-mar121/ignore-file (Pull request merge)
Rajiv-mar121 pushed 2 commits to `main` • 9376d9f...1aa7805 • 3 days ago •••

Added git ignore file
Rajiv-mar121 created `ignore-file` • dc30fe5 • 3 days ago •••

Initial commit
Rajiv-mar121 created `main` • 9376d9f • 3 days ago •••

All Github Repository Branches:

Default

Branch	Updated	Check status	Behind	Ahead	Pull request		
main	9 minutes ago	● 0 / 4			Default	🗑	⋯

Your branches

Branch	Updated	Check status	Behind	Ahead	Pull request		
docker-deploy	14 minutes ago	✓ 4 / 4	1	0	⑂ #3	🗑	⋯
docker_build	1 hour ago	✓ 4 / 4	5	0	⑂ #2	🗑	⋯
ignore-file	3 days ago		28	0	⑂ #1	🗑	⋯

Active branches

Branch	Updated	Check status	Behind	Ahead	Pull request		
docker-deploy	14 minutes ago	✓ 4 / 4	1	0	⑂ #3	🗑	⋯
docker_build	1 hour ago	✓ 4 / 4	5	0	⑂ #2	🗑	⋯