

CI/CD Pipeline Report

Overview

This report documents the CI/CD pipeline implemented using GitHub Actions. The pipeline includes stages for linting, testing, and deployment, ensuring code quality and seamless integration.

Pipeline Configuration

Workflow Name: CI/CD Pipeline

Triggers

- **Push:** Runs the pipeline on any push to the main branch.
- **Pull Request:** Runs the pipeline on any pull request targeting the main branch.

Stages

1. **Lint**
2. **Test**
3. **Deploy**

Stage Details

1. Lint

- **Objective:** Ensure code adheres to PEP8 standards.
- **Actions:**
 - Check out the code repository.
 - Set up Python 3.9 environment.
 - Install Flake8 for linting.
 - Run Flake8 on the codebase.
- **Outcome:** Identifies and reports coding style issues.

2. Test

- **Objective:** Verify code functionality through unit tests.
- **Actions:**
 - Check out the code repository.
 - Set up Python 3.9 environment.
 - Install dependencies from requirements.txt.
 - Set the PYTHONPATH for custom modules.

- Run test cases using Pytest.
- **Outcome:** Ensures code changes do not break existing functionality.

3. Deploy

- **Objective:** Placeholder step for deployment (currently simulates deployment).
- **Actions:**
 - Echo a success message.
- **Outcome:** Verifies deployment stage readiness.

Conclusion

The CI/CD pipeline efficiently integrates code quality checks, testing, and deployment readiness. Future improvements may include:

- Adding a real deployment step.
- Enhancing test coverage.
- Including performance tests in the pipeline.