

Assignment Title: GitHub Actions Pipeline Creation

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Assignment Overview: You are tasked with setting up a GitHub Actions pipeline for a sample repository. The pipeline should automate the build and test processes for the repository's codebase whenever changes are pushed to the main branch.

Instructions:

- **Repository Selection:**
 - Choose or create a sample repository (e.g., a simple Node.js, Python, or any other project) that will serve as the basis for this assignment.
- **Workflow File Creation:**
 - Create a GitHub Actions workflow file named `main.yml` within the `.github/workflows/` directory of your repository.
- **Define Workflow Triggers:**
 - Configure the workflow to trigger on push events to the `main` branch. You may also consider including additional trigger events as necessary.
- **Set Up Jobs and Steps:**
 - Define a job within the workflow that includes necessary steps to build and test the project. For instance, installing dependencies, running unit tests, linting code, etc.
 - Ensure that the necessary environment (such as Node.js, Python, etc.) is available or configured within the job.
- **Include Proper Notifications:**
 - Implement notifications or status checks to alert developers about the success or failure of the workflow execution.
- **Handle Caching (Optional):**
 - Consider incorporating caching mechanisms to speed up subsequent workflow runs by caching dependencies or build artifacts.
- **Documentation and Readme Update:**
 - Update the repository's README file to include information about the implemented GitHub Actions pipeline. Provide instructions for developers on how to understand and contribute to the workflow.
- **Testing:**
 - Push changes to the repository and verify that the GitHub Actions workflow is triggered accordingly. Ensure that the defined steps execute as expected.

Submission:

- Provide a link to your GitHub repository containing the implemented GitHub Actions pipeline (`main.yml`) and the updated README file.
- Include any additional notes, challenges faced, or improvements made during the setup.

Evaluation Criteria:

- Correct implementation of the GitHub Actions workflow file.
- Workflow triggers appropriately on repository push events.
- Jobs and steps defined to build and test the project.
- Proper use of notifications or status checks to report workflow execution status.
- Clarity and completeness of documentation within the repository's README file.
- Adherence to best practices (e.g., using caching where applicable).

Note: If you face challenges during the setup or require guidance, feel free to document them in your submission.