Lab 9.3 CI/CD

Instructions

1. Answer the below question in the blank space if needed.
2. Please submit the assignment after you finish.

Part 1 Assignment

**Q1 Which of the following descriptions about Continuous Integration (CI) is correct?**

A. CI is an integration process that occurs only after the project is completed.

B. The goal of CI is to improve the efficiency and quality of software development.

C. CI only involves automated testing of code and does not include the build process.

D. CI typically does not involve the use of automated tools.

Answer:

**Q2 Which of the following descriptions about Continuous Delivery (CD) is correct?**

A. CD only involves releasing software to the production environment.

B. CD is a continuation of CI, aiming to ensure software can be quickly and reliably delivered to customers.

C. CD does not include automated testing and building processes.

D. CD only focuses on the software deployment phase.

Answer:

**Q3 In the CI/CD process, which stage typically involves automated testing and building of code?**

A. Requirements analysis phase

B. Coding phase

C. Integration phase

D. Deployment phase

Answer:

**Q4 Which of the following descriptions about Continuous Integration (CI) is correct?**

A. CI does not typically involve version control systems.

B. In CI, developers need to submit code at least once a day.

C. The goal of CI is to reduce the complexity and risk of code integration.

D. CI does not include automated testing.

Answer:

**Q5 In the CI/CD process, which stage triggers automated builds and tests?**

A. Code review

B. Deployment to production

C. Code commit

D. User acceptance testing

Answer:

**Q6 Which tool is commonly used to support the Continuous Integration (CI) process?**

A. Jenkins

B. MySQL

C. Docker

D. Slack

Answer:

**Q7 What is the main difference between Continuous Delivery (CD) and Continuous Deployment (also often abbreviated as CD)?**

A. CD only involves automated testing, while Continuous Deployment involves automatic deployment to production.

B. Both CD and Continuous Deployment are automated, but CD allows manual selection of whether to deploy to production.

C. CD focuses on the software development process, while Continuous Deployment focuses on the software operations process.

D. There is no difference between CD and Continuous Deployment.

Answer:

**Q8 In CI/CD practices, which of the following is not a benefit of automated processes?**

A. Reduces errors from manual operations.

B. Increases collaboration efficiency among teams.

C. Lowers the cost of software development.

D. Increases the complexity of software development.

Answer:

**Q9 Regarding GitHub Actions, which of the following statements is correct?**

A. GitHub Actions only supports Linux virtual machines to run workflows.

B. The workflow file must be named workflow.yml.

C. Each workflow can contain multiple jobs, and each job can contain multiple steps.

D. GitHub Actions only supports triggering workflows when specific events occur in a repository, such as a push.

Answer:

**Q10 Which of the following is NOT a built-in event that can trigger a GitHub Actions workflow?**

A. Push to a repository's branch

B. Creation of a pull request

C. Deletion of a commit

D. Scheduled intervals

Answer:

Part 2 Assignment

**Q1. Exercise Instructions for GitHub Actions**

**Exercise Objective**

* Create a simple GitHub Actions workflow that automatically runs a test script whenever code is pushed to the repository.
* Use the actions/checkout and actions/setup-node actions to prepare the testing environment.
* you could refer to this starter template files for building a Github Action workflow file:  
  <https://github.com/actions/starter-workflows/blob/main/ci/node.js.yml>
* Run a custom test script.

**Verify the Workflow Run**

* In the "Actions" tab of your GitHub repository, you should see the newly created workflow.
* Whenever you push new code changes to the main branch, the workflow should automatically trigger and start running.
* You can view the workflow's run logs and results to ensure that the test script is executing as expected.

We have provided the test code file, please complete the configuration development related to GitHub Action and attach verification screenshots.