

哈尔滨工业大学 计算学部

2024 年秋季学期 《开源软件开发实践》

Lab4：开源软件开发中的 DevOps

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1 实验要求

本次实验训练开源软件开发中的基本 DevOps 操作，具体来说：

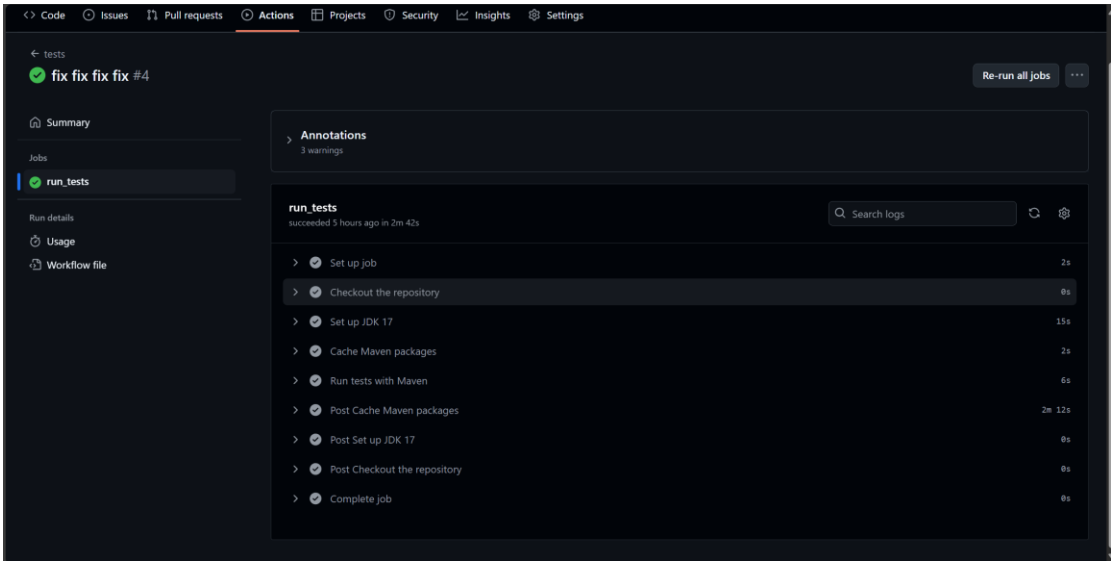
1. 掌握开源软件开发中的基本 DevOps 流程和工具的使用
2. 熟悉利用 Github Actions 进行 DevOps
3. 熟悉利用 Jenkins 进行 DevOps

2 实验内容 1 Github Actions DevOps 实践

项目的目录结构截图(IDE 的界面)。

Action 页面：

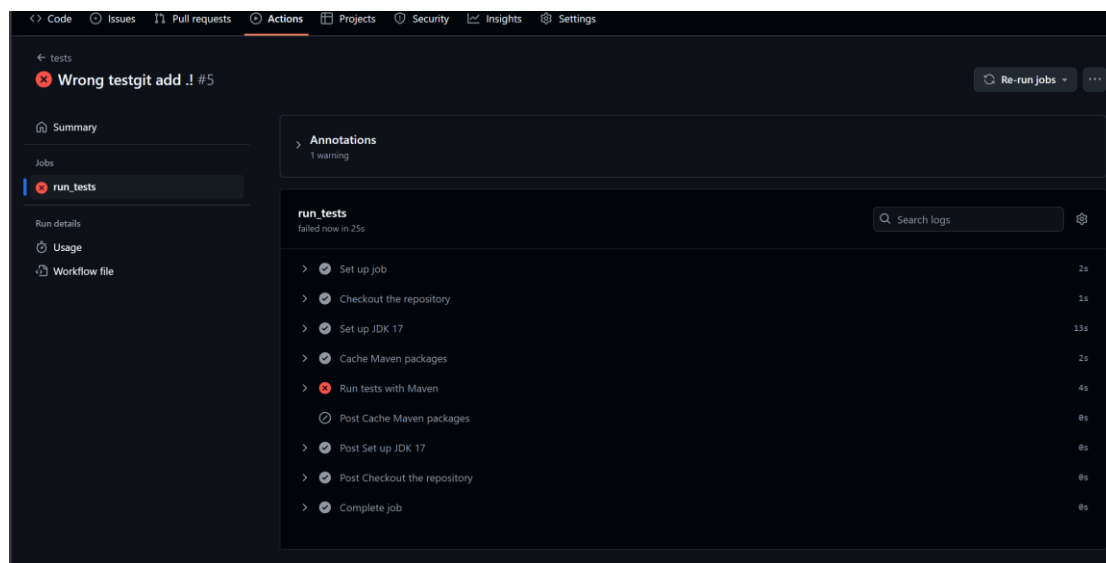
执行自动化测试成功界面：



执行自动化测试成功具体信息：

```
487
488 -----
489  T E S T S
490 -----
491 Running L2022211985_14_Test
492 Tests run: 6, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.073 sec
493
494 Results :
495
496 Tests run: 6, Failures: 0, Errors: 0, Skipped: 0
497
498 [INFO] -----
499 [INFO] BUILD SUCCESS
500 [INFO] -----
501 [INFO] Total time: 4.269 s
502 [INFO] Finished at: 2024-11-11T07:40:27Z
503 [INFO] -----
```

执行自动化测试失败界面：



执行自动化测试失败具体信息：

```
93 Error: Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:2.12.4:test (default-test) on project Lab4-2022211985: There are test
failures.
94 Error:
95 Error: Please refer to /home/runner/work/Lab4-2022211985/Lab4-2022211985/target/surefire-reports for the individual test results.
96 Error: -> [Help 1]
97 Error:
97 Error: To see the full stack trace of the errors, re-run Maven with the -e switch.
98 Error: Re-run Maven using the -X switch to enable full debug logging.
99 Error:
100 Error: For more information about the errors and possible solutions, please read the following articles:
101 Error: [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureException
102 Error: Process completed with exit code 1.
```

3 实验内容 2 Jenkins DevOps 实践

步骤六操作截图：

源码管理：

源码管理

☐ 无

☒ Git

Repositories

Repository URL

git@github.com:OSSDP/Lab4-2022211985.git

Failed to connect to repository: Command "git.exe ls-remote -h -- git@github.com:OSSDP/Lab4-2022211985.git HEAD" returned status code 128:

stdout:

stderr: ssh: connect to host github.com port 22: Connection refused

fatal: Could not read from remote repository.

Please make sure you have the correct access rights and the repository exists.

Credentials

ChuXuChen (GitHub_SSH私钥)

+ 添加

高级

Add Repository

Branches to build

指定分支 (为定时代表any)

*/dev

Add Branch

源码库浏览器

(自动)

Additional Behaviours

新增

添加凭据:

类型

SSH Username with private key

范围

Global (Jenkins, nodes, items, all child items, etc)

ID

GitHubPrivateKey

描述

GitHub_SSH私钥

Username

ChuXuChen

☐ Treat username as secret

Private Key

☒ Enter directly

Key

在下面输入新秘文

```
-----BEGIN PRIVATE KEY-----
MIIIEQIBAAKCAQEA...
```

构建触发器:

构建触发器

☐ 触发远程构建 (例如,使用脚本) ?

☐ Build after other projects are built ?

☐ Build periodically ?

☐ GitHub hook trigger for GITScm polling ?

☒ Poll SCM ?

日程表 ?

H/3 * * * *

Would last have run at 2024年11月11日星期一— GMT+08:00 下午9:03:35; would next run at 2024年11月11日星期一— GMT+08:00 下午9:03:35.

☐ 忽略钩子 post-commit ?

构建步骤:

Build Steps

≡ Execute Windows batch command ?

命令

参阅 可用环境变量列表

mvn validate

高级 ▾

≡ Execute Windows batch command ?

命令

参阅 可用环境变量列表

mvn test

高级 ▾

≡ Execute Windows batch command ?

命令

参阅 可用环境变量列表

set CH_TOKEN=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
gh pr create --title 'Auto PR from dev-Jenkins to main' --body "This is an auto PR from
Jenkins." --base main --head dev --repo OSSDP/Lab4-2022211985

高级 ▾

增加构建步骤 ▾

结果:

✅ #1 (2024年11月12日 上午10:23:56)



启动用户root



This run spent:

- 39 ms waiting;
- 22 sec build duration;
- 22 sec total from scheduled to completion.



Revision: d72f3eba00e567b60021a062d1fcd6c2eca1eff

Repository: git@github.com:OSSDP/Lab4-2022211985.git

- refs/remotes/origin/dev



没有变化。

PR 成功合并:

The screenshot displays a GitHub Pull Request (PR) titled "Auto PR from dev-Jenkins to main #1". The PR is in the "Open" state and was created by "ChuXuChen". The PR description states: "This is an auto PR from Jenkins." The PR shows two commits: "Undo Wrong test" and "Fuck GBK". The PR has two checks: "Require approval from specific reviewers before merging" and "All checks have passed". The PR is currently in progress, with a "Convert to draft" button. The PR is assigned to "ChuXuChen" and has no reviewers. The PR is labeled "cc553b0" and "d72f3eb". The PR is in the "main" branch and is being merged into the "main" branch. The PR is currently in progress, with a "Convert to draft" button. The PR is assigned to "ChuXuChen" and has no reviewers. The PR is labeled "cc553b0" and "d72f3eb". The PR is in the "main" branch and is being merged into the "main" branch.

4 小结

本次实验让我了解了 **GitHub** 提供的自动化测试功能，这对我很有用。

本次实验让我感受到了 **Jenkins** 的魅力。除非迫不得已，我再也不会使用它。