

# Операционные системы

Продвинутое использование git

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## Цели и задачи работы

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Получение навыков правильной работы с репозиториями git.

- 1 Выполнить работу для тестового репозитория.
- 2 Преобразовать рабочий репозиторий в репозиторий с git-flow и conventional commits.

## Процесс выполнения лабораторной работы

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```
mohamadhidzhazy@mohamadhidzhazy:~$  
mohamadhidzhazy@mohamadhidzhazy:~$ pnpm setup  
Appended new lines to /home/mohamadhidzhazy/.bashrc  
  
Next configuration changes were made:  
export PNPM_HOME="/home/mohamadhidzhazy/.local/share/pnpm"  
case ":$PATH:" in  
  *:$PNPM_HOME:*) ;;  
  *) export PATH="$PNPM_HOME:$PATH" ;;  
esac  
  
To start using pnpm, run:  
source /home/mohamadhidzhazy/.bashrc  
mohamadhidzhazy@mohamadhidzhazy:~$ source ~/.bashrc  
mohamadhidzhazy@mohamadhidzhazy:~$
```

Рис. 1: Node.js

```
mohamadhidzhazy@mohamadhidzhazy:~$  
mohamadhidzhazy@mohamadhidzhazy:~$ pnpm add -g commitizen
```

Update available! 9.13.0 → 10.5.2.  
Changelog: <https://github.com/pnpm/pnpm/releases/tag/v10.5.2>  
Run "pnpm self-update" to update.

Follow @pnpmjs for updates: <https://x.com/pnpmjs>

```
  
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6  
Packages: +151  
+++++  
Progress: resolved 151, reused 0, downloaded 151, added 151, done  
  
/home/mohamadhidzhazy/.local/share/pnpm/global/5:  
+ commitizen 4.3.1  
  
Done in 2.7s  
mohamadhidzhazy@mohamadhidzhazy:~$
```

Рис. 2: установка commitizen

```
mohamadhidzhazy@mohamadhidzhazy:~$  
mohamadhidzhazy@mohamadhidzhazy:~$ pnpm add -g standard-changelog  
Progress: resolved 1, reused 1, downloaded 0, added 0  
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6  
Packages: +39  
++++  
Progress: resolved 190, reused 151, downloaded 39, added 39, done  
  
/home/mohamadhidzhazy/.local/share/pnpm/global/5:  
+ standard-changelog 6.0.0  
  
Done in 3.4s  
mohamadhidzhazy@mohamadhidzhazy:~$
```

Рис. 3: установка standard-changelog



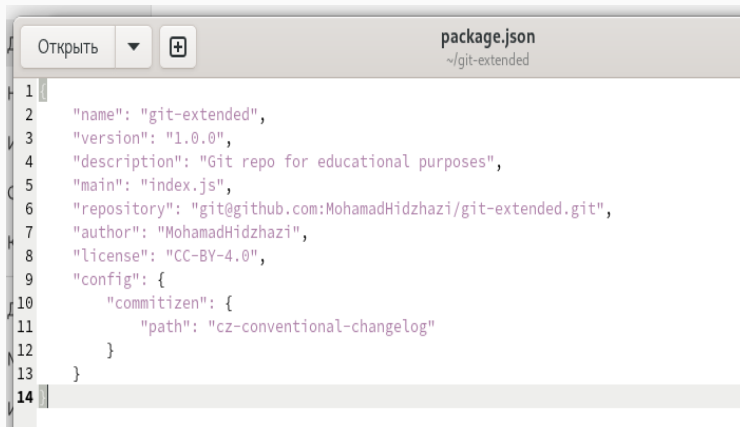


Рис. 4: package.json

# Использование commitizen

```
mohamadhidzhazy@mohamadhidzhazy: ~/git-extended$ git add .
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git cz
cz-cli@4.3.1, cz-conventional-changelog@3.3.0

? Select the type of change that you're committing: chore:    Other changes that don't modify
src or test files
? What is the scope of this change (e.g. component or file name): (press enter to skip)
? Write a short, imperative tense description of the change (max 93 chars):
  (4) test
? Provide a longer description of the change: (press enter to skip)

? Are there any breaking changes? No
? Does this change affect any open issues? No
[master 97ce97a] chore: test
 1 file changed, 14 insertions(+)
  create mode 100644 package.json
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git push
Перечисление объектов: 4, готово.
Подсчет объектов: 100% (4/4), готово.
При сжатии изменений используется до 4 потоков
Сжатие объектов: 100% (3/3), готово.
Запись объектов: 100% (3/3), 499 байтов | 499.00 КиБ/с, готово.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:MohamadHidzhazi/git-extended.git
 b8be104..97ce97a  master -> master
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$
```

Рис. 5: Отправка

```
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git flow init

Which branch should be used for bringing forth production releases?
- master
Branch name for production releases: [master]
Branch name for "next release" development: [develop]

How to name your supporting branch prefixes?
Feature branches? [feature/]
Bugfix branches? [bugfix/]
Release branches? [release/]
Hotfix branches? [hotfix/]
Support branches? [support/]
Version tag prefix? []
Hooks and filters directory? [/home/mohamadhidzhazy/git-extended/.git/hooks]
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git branch
* develop
  master
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git push --all
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'develop' on GitHub by visiting:
remote:   https://github.com/MohamadHidzhazi/git-extended/pull/new/develop
remote:
To github.com:MohamadHidzhazi/git-extended.git
 * [new branch]      develop -> develop
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$
```

Рис. 6: Инициализация и загрузка изменений

```

mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git branch --set-upstream-to=origin/develop dev
elop
branch 'develop' set up to track 'origin/develop'.
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git flow release start 1.0.0
Переключились на новую ветку «release/1.0.0»

Summary of actions:
- A new branch 'release/1.0.0' was created, based on 'develop'
- You are now on branch 'release/1.0.0'

Follow-up actions:
- Bump the version number now!
- Start committing last-minute fixes in preparing your release
- When done, run:

    git flow release finish '1.0.0'

mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ standard-changelog --first-release
✓ created CHANGELOG.md
✓ output changes to CHANGELOG.md
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git add CHANGELOG.md
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git commit -am 'chore(site): add changelog'
[release/1.0.0 ea4552b] chore(site): add changelog
1 file changed, 4 insertions(+)
 create mode 100644 CHANGELOG.md
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git flow release finish 1.0.0
Переключились на ветку «master»
Эта ветка соответствует «origin/master».
Merge made by the 'ort' strategy.
CHANGELOG.md | 4 +++
1 file changed, 4 insertions(+)
 create mode 100644 CHANGELOG.md
Уже на «master»

```

Рис. 7: Завершение релиза

## Отправим данные на github

```
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git push --all  
Перечисление объектов: 6, готово.  
Подсчет объектов: 100% (6/6), готово.  
При сжатии изменений используется до 4 потоков  
Сжатие объектов: 100% (4/4), готово.  
Запись объектов: 100% (5/5), 562 байта | 562.00 КиБ/с, готово.  
Total 5 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)  
remote: Resolving deltas: 100% (2/2), done.  
To github.com:MohamadHidzhazi/git-extended.git  
 97ce97a..f49a534 develop -> develop  
 97ce97a..080ec2f master -> master  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git push --tags  
Перечисление объектов: 1, готово.  
Подсчет объектов: 100% (1/1), готово.  
Запись объектов: 100% (1/1), 166 байтов | 83.00 КиБ/с, готово.  
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)  
To github.com:MohamadHidzhazi/git-extended.git  
 * [new tag]          1.0.0 -> 1.0.0  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ gh release create v1.0.0 -F CHANGELOG.md  
https://github.com/MohamadHidzhazi/git-extended/releases/tag/v1.0.0  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$
```

Рис. 8: Отправка

```
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git flow feature start feature_branch  
Переключились на новую ветку «feature/feature_branch»  
  
Summary of actions:  
- A new branch 'feature/feature_branch' was created, based on 'develop'  
- You are now on branch 'feature/feature_branch'  
  
Now, start committing on your feature. When done, use:  
  
    git flow feature finish feature_branch  
  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ touch test2  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git flow feature finish feature_branch  
Переключились на ветку «develop»  
Эта ветка соответствует «origin/develop».  
Уже актуально.  
Ветка feature/feature_branch удалена (была f49a534).  
  
Summary of actions:  
- The feature branch 'feature/feature_branch' was merged into 'develop'  
- Feature branch 'feature/feature_branch' has been locally deleted  
- You are now on branch 'develop'  
  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$
```

Рис. 9: Объединение веток

```

mohamadhidzhazy@mohamadhidzhazy:~/work/study/2024-2025/Операционные системы/os-intro$ gedit package.json
mohamadhidzhazy@mohamadhidzhazy:~/work/study/2024-2025/Операционные системы/os-intro$ git add .

mohamadhidzhazy@mohamadhidzhazy:~/work/study/2024-2025/Операционные системы/os-intro$ git cz
cz-cli@4.3.1, cz-conventional-changelog@3.3.0

? Select the type of change that you're committing: chore:   Other changes that don't modify
src or test files
? What is the scope of this change (e.g. component or file name): (press enter to skip)
? Write a short, imperative tense description of the change (max 93 chars):
  (4) test
? Provide a longer description of the change: (press enter to skip)

? Are there any breaking changes? No
? Does this change affect any open issues? No
[master 421d11c] chore: test
 1 file changed, 14 insertions(+)
 create mode 100644 package.json
mohamadhidzhazy@mohamadhidzhazy:~/work/study/2024-2025/Операционные системы/os-intro$ git push
Перечисление объектов: 4, готово.
Подсчет объектов: 100% (4/4), готово.
При сжатии изменений используется до 4 потоков
Сжатие объектов: 100% (3/3), готово.
Запись объектов: 100% (3/3), 494 байта | 494.00 КиБ/с, готово.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To github.com:MohamadHidzhazi/os-intro.git
 a421330..421d11c master -> master
mohamadhidzhazy@mohamadhidzhazy:~/work/study/2024-2025/Операционные системы/os-intro$

```

Рис. 10: Завершение релиза

## Подготовка рабочего репозитория

```
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git flow feature start feature_branch  
Переключились на новую ветку «feature/feature_branch»  
  
Summary of actions:  
- A new branch 'feature/feature_branch' was created, based on 'develop'  
- You are now on branch 'feature/feature_branch'  
  
Now, start committing on your feature. When done, use:  
  
    git flow feature finish feature_branch  
  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ touch test2  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$ git flow feature finish feature_branch  
Переключились на ветку «develop»  
Эта ветка соответствует «origin/develop».  
Уже актуально.  
Ветка feature/feature_branch удалена (была f49a534).  
  
Summary of actions:  
- The feature branch 'feature/feature_branch' was merged into 'develop'  
- Feature branch 'feature/feature_branch' has been locally deleted  
- You are now on branch 'develop'  
  
mohamadhidzhazy@mohamadhidzhazy:~/git-extended$
```

Рис. 11: package.json и коммит



```
Summary of actions:
- Release branch 'release/1.0.0' has been merged into 'master'
- The release was tagged '1.0.0'
- Release tag '1.0.0' has been back-merged into 'develop'
- Release branch 'release/1.0.0' has been locally deleted
- You are now on branch 'develop'

mohamadhidzhazy@mohamadhidzhazy:~/work/study/2024-2025/Операционные системы/os-intro$ git push
--all
Перечисление объектов: 7, готово.
Подсчет объектов: 100% (7/7), готово.
При сжатии изменений используется до 4 потоков
Сжатие объектов: 100% (5/5), готово.
Запись объектов: 100% (5/5), 635 байтов | 635.00 КиБ/с, готово.
Total 5 (delta 3), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
To github.com:MohamadHidzhazi/os-intro.git
  421d11c..234b987  develop -> develop
  421d11c..203bd5d  master -> master
mohamadhidzhazy@mohamadhidzhazy:~/work/study/2024-2025/Операционные системы/os-intro$ git push
--tags
Перечисление объектов: 1, готово.
Подсчет объектов: 100% (1/1), готово.
Запись объектов: 100% (1/1), 166 байтов | 166.00 КиБ/с, готово.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:MohamadHidzhazi/os-intro.git
 * [new tag]          1.0.0 -> 1.0.0
mohamadhidzhazy@mohamadhidzhazy:~/work/study/2024-2025/Операционные системы/os-intro$
```

Рис. 12: Завершение релиза

## Выводы по проделанной работе

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Мы приобрели практические навыки взаимодействия с дополнительными функциями гитхаб.