

Операционные системы

Продвинутое использование git

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Цели и задачи работы

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

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

Рис. 1: Node.js

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

Update available! 9.13.0 → 10.15.1.
Changelog: <https://github.com/pnpm/pnpm/releases/tag/v10.15.1>
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/timursimdyanov/.local/share/pnpm/global/5:  
+ commitizen 4.3.1  
  
Done in 3.2s  
timursimdyanov@timursimdyanov:~$
```

Рис. 2: установка commitizen

```
timursimdyanov@timursimdyanov:~$  
timursimdyanov@timursimdyanov:~$ pnpm add -g standard-changelog  
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6  
Packages: +34  
+++++  
Progress: resolved 185, reused 151, downloaded 34, added 34, done  
  
/home/timursimdyanov/.local/share/pnpm/global/5:  
+ standard-changelog 7.0.1  
  
Done in 4.5s  
timursimdyanov@timursimdyanov:~$
```

Рис. 3: установка standard-changelog

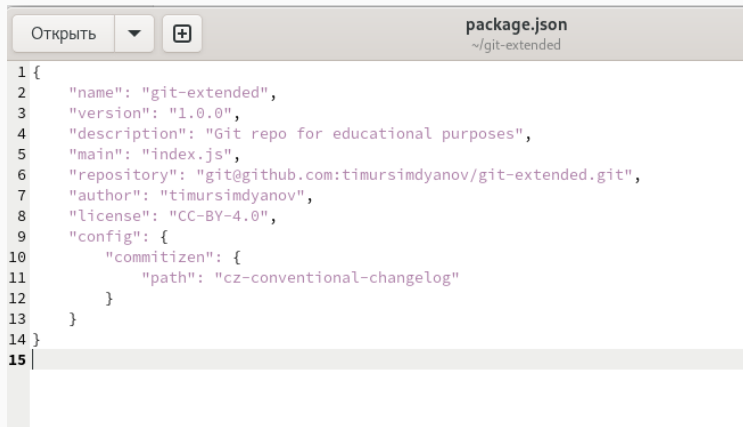


Рис. 4: package.json

Использование commitizen

```
timursimdyanov@timursimdyanov:~/git-extended$
timursimdyanov@timursimdyanov:~/git-extended$ git add .
timursimdyanov@timursimdyanov:~/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 981b305] chore: test
 1 file changed, 15 insertions(+)
 create mode 100644 package.json
timursimdyanov@timursimdyanov:~/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), 1.12 КиБ | 1.12 МиБ/с, готово.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:timursimdyanov/git-extended.git
 07c9d85..981b305  master -> master
timursimdyanov@timursimdyanov:~/git-extended$
```

Рис. 5: Отправка

```
timursimdyanov@timursimdyanov:~/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/timursimdyanov/git-extended/.git/hooks]

timursimdyanov@timursimdyanov:~/git-extended$ git branch
* develop
  master

timursimdyanov@timursimdyanov:~/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/timursimdyanov/git-extended/pull/new/develop
remote:
To github.com:timursimdyanov/git-extended.git
 * [new branch]      develop -> develop
timursimdyanov@timursimdyanov:~/git-extended$
```

Рис. 6: Инициализация и загрузка изменений

```
add changelog
[release/1.0.0 7194112] chore(site): add changelog
1 file changed, 4 insertions(+)
create mode 100644 CHANGELOG.md
timursimdyanov@timursimdyanov:~/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»
Ваша ветка опережает «origin/master» на 2 коммита.
(используйте «git push», чтобы опубликовать ваши локальные коммиты)
Переключились на ветку «develop»
Эта ветка соответствует «origin/develop».
Merge made by the 'ort' strategy.
CHANGELOG.md | 4 +++++
1 file changed, 4 insertions(+)
create mode 100644 CHANGELOG.md
Ветка release/1.0.0 удалена (была 7194112).

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'

timursimdyanov@timursimdyanov:~/git-extended$
```

Рис. 7: Завершение релиза

Отправим данные на github

```
timursimdyanov@timursimdyanov:~/git-extended$  
timursimdyanov@timursimdyanov:~/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), 2.67 КиБ | 2.67 МиБ/с, готово.  
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)  
To github.com:timursimdyanov/git-extended.git  
  981b305..9acbfe5  develop -> develop  
  981b305..646daf7  master -> master  
timursimdyanov@timursimdyanov:~/git-extended$ git push --tags  
Перечисление объектов: 1, готово.  
Подсчет объектов: 100% (1/1), готово.  
Запись объектов: 100% (1/1), 157 байтов | 157.00 КиБ/с, готово.  
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)  
To github.com:timursimdyanov/git-extended.git  
  * [new tag]          1.0.0 -> 1.0.0  
timursimdyanov@timursimdyanov:~/git-extended$ gh release create v1.0.0 -F  
CHANGELOG.md  
https://github.com/timursimdyanov/git-extended/releases/tag/v1.0.0  
timursimdyanov@timursimdyanov:~/git-extended$
```

Рис. 8: Отправка

```
timursimdyanov@timursimdyanov:~/git-extended$ git flow feature start feature_branch
Перекючились 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

timursimdyanov@timursimdyanov:~/git-extended$ touch test2
timursimdyanov@timursimdyanov:~/git-extended$ git flow feature finish feature_branch
Перекючились на ветку «develop»
Эта ветка соответствует «origin/develop».
Уже актуально.
Ветка feature/feature_branch удалена (была 9acbfe5).

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'

timursimdyanov@timursimdyanov:~/git-extended$
```

Рис. 9: Объединение веток

```
Summary of actions:
- Release branch 'release/1.2.3' has been merged into 'master'
- The release was tagged '1.2.3'
- Release tag '1.2.3' has been back-merged into 'develop'
- Release branch 'release/1.2.3' has been locally deleted
- You are now on branch 'develop'

timursimdyanov@timursimdyanov:~/git-extended$ git push --all
Перечисление объектов: 9, готово.
Подсчет объектов: 100% (9/9), готово.
При сжатии изменений используется до 4 потоков
Сжатие объектов: 100% (6/6), готово.
Запись объектов: 100% (6/6), 2.79 КиБ | 2.79 МиБ/с, готово.
Total 6 (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:timursimdyanov/git-extended.git
   9acbfe5..9f87b03  develop -> develop
   646daf7..f825974  master -> master
timursimdyanov@timursimdyanov:~/git-extended$ git push --tags
Перечисление объектов: 1, готово.
Подсчет объектов: 100% (1/1), готово.
Запись объектов: 100% (1/1), 158 байтов | 158.00 КиБ/с, готово.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:timursimdyanov/git-extended.git
 * [new tag]           1.2.3 -> 1.2.3
timursimdyanov@timursimdyanov:~/git-extended$ gh release create v1.2.3 -F
CHANGELOG.md
https://github.com/timursimdyanov/git-extended/releases/tag/v1.2.3
timursimdyanov@timursimdyanov:~/git-extended$
```

Рис. 10: Завершение релиза

Подготовка рабочего репозитория

```
timursimdyanov@timursimdyanov:~/work/study/2024-2025/Операционные системы/
os-intro$ git add .
timursimdyanov@timursimdyanov:~/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 14a2f41] chore: test
 1 file changed, 14 insertions(+)
 create mode 100644 package.json
timursimdyanov@timursimdyanov:~/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), 1.11 КиБ | 1.11 МиБ/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:timursimdyanov/os-intro.git
 3ed28aa..14a2f41 master -> master
timursimdyanov@timursimdyanov:~/work/study/2024-2025/Операционные системы/
os-intro$
```

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'

timursimdyanov@timursimdyanov:~/work/study/2024-2025/Операционные системы/
os-intro$ git push --all
Перечисление объектов: 6, готово.
Подсчет объектов: 100% (6/6), готово.
При сжатии изменений используется до 4 потоков
Сжатие объектов: 100% (5/5), готово.
Запись объектов: 100% (5/5), 2.83 КиБ | 2.83 МиБ/с, готово.
Total 5 (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:timursimdyanov/os-intro.git
  14a2f41..c290c6d  develop -> develop
  14a2f41..c9130fd  master -> master

timursimdyanov@timursimdyanov:~/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), 158 байтов | 158.00 КиБ/с, готово.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:timursimdyanov/os-intro.git
 * [new tag]         1.0.0 -> 1.0.0
timursimdyanov@timursimdyanov:~/work/study/2024-2025/Операционные системы/
os-intro$
```

Рис. 12: Завершение релиза

Выводы по проделанной работе

Мы приобрели практические навыки взаимодействия с дополнительными функциями гитхаб.