

Продвинутое использование git

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Цели и задачи работы

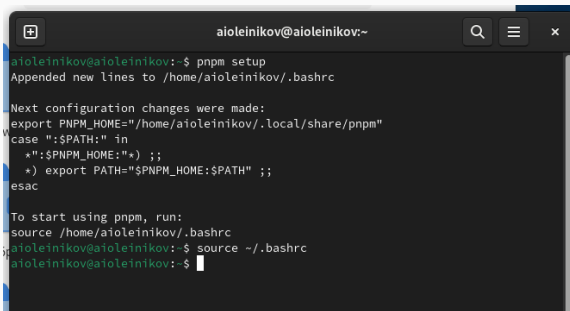
Цель лабораторной работы

Получение навыков правильной работы с репозиториями git.

Задачи лабораторной работы

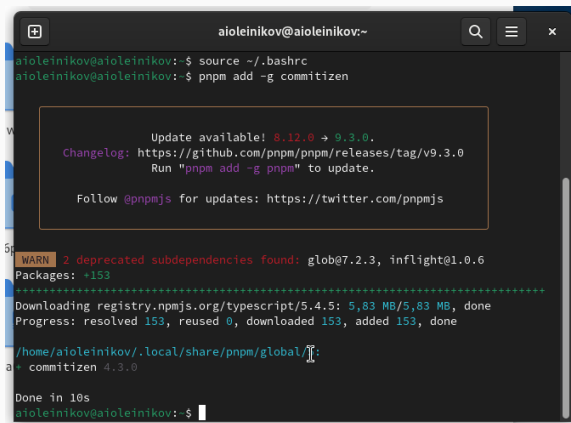
- 1 Выполнить работу для тестового репозитория.
- 2 Преобразовать рабочий репозиторий в репозиторий с git-flow и conventional commits.

Процесс выполнения лабораторной работы

A terminal window with a dark background and light text. The window title is 'aioleinikov@aioleinikov:~'. The terminal shows the command 'pnpm setup' being executed, followed by a message indicating that new lines were appended to the .bashrc file. It then displays the configuration changes made, including the export of PNPM_HOME and the modification of the PATH variable. Finally, it instructs the user to source the .bashrc file to start using pnpm.

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

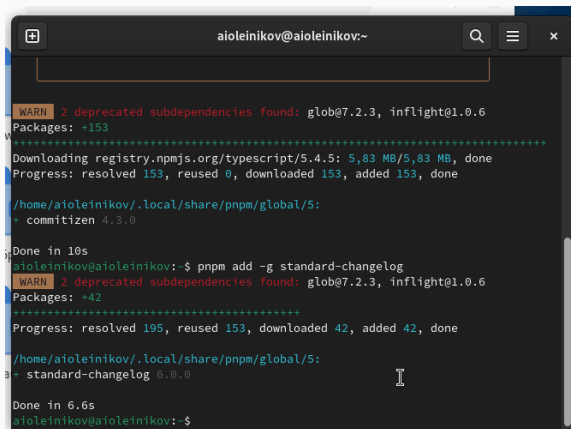
Рис. 1: Node.js



```
aioleinikov@aioleinikov:~  
aioleinikov@aioleinikov:~$ source ~/.bashrc  
aioleinikov@aioleinikov:~$ pnpm add -g commitizen  
  
Update available! 8.12.0 → 9.3.0.  
Changelog: https://github.com/pnpm/pnpm/releases/tag/v9.3.0  
Run "pnpm add -g pnpm" to update.  
  
Follow @pnpmjs for updates: https://twitter.com/pnpmjs  
  
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6  
Packages: +153  
+-----+  
Downloading registry.npmjs.org/typescript/5.4.5: 5,83 MB/5,83 MB, done  
Progress: resolved 153, reused 0, downloaded 153, added 153, done  
  
/home/aioleinikov/.local/share/pnpm/global/📁:  
+ commitizen 4.3.0  
  
Done in 10s  
aioleinikov@aioleinikov:~$
```

Рис. 2: установка commitizen

standard-changelog



```
aioleinikov@aioleinikov:~  
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6  
Packages: +153  
*****  
Downloading registry.npmjs.org/typescript/5.4.5: 5,83 MB/5,83 MB, done  
Progress: resolved 153, reused 0, downloaded 153, added 153, done  
  
/home/aioleinikov/.local/share/pnpm/global/5:  
+ commitizen 4.3.0  
  
Done in 10s  
aioleinikov@aioleinikov:~$ pnpm add -g standard-changelog  
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6  
Packages: +42  
*****  
Progress: resolved 195, reused 153, downloaded 42, added 42, done  
  
/home/aioleinikov/.local/share/pnpm/global/5:  
+ standard-changelog 6.0.0  
  
Done in 6.6s  
aioleinikov@aioleinikov:~$
```

Рис. 3: установка standard-changelog

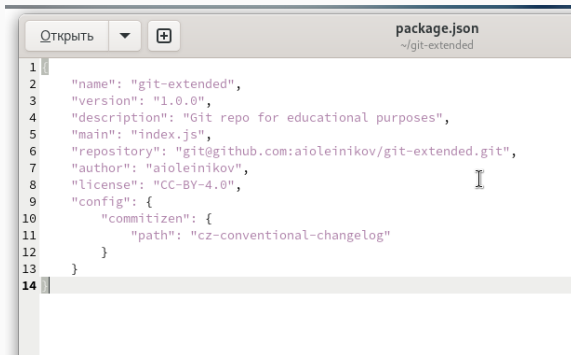
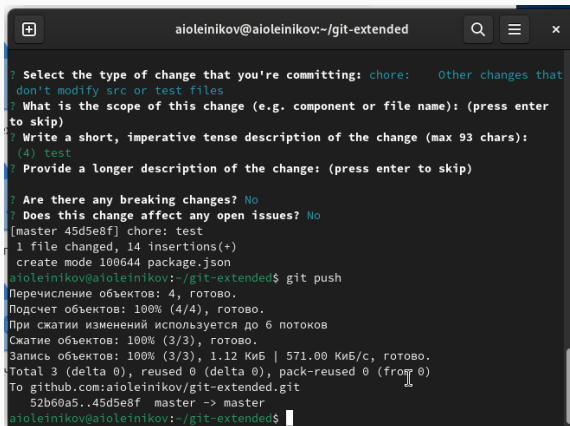


Рис. 4: package.json

Использование commitizen



```
aiolenikov@aiolenikov:~/git-extended
? 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)

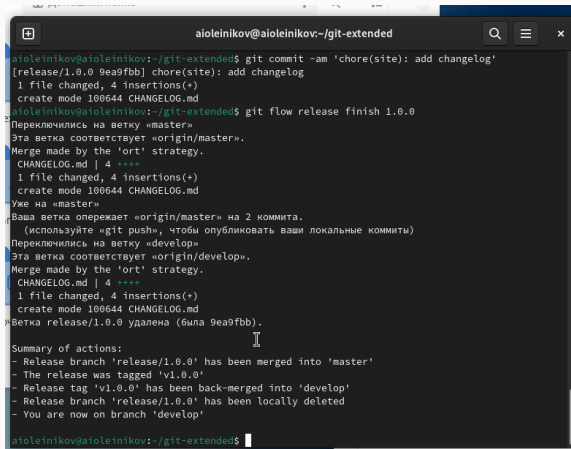
? Are there any breaking changes? No
? Does this change affect any open issues? No
[master 45d5e8f] chore: test
 1 file changed, 14 insertions(+)
 create mode 100644 package.json
aiolenikov@aiolenikov:~/git-extended$ git push
Перечисление объектов: 4, готово.
Подсчет объектов: 100% (4/4), готово.
При сжатии изменений используется до 6 потоков
Сжатие объектов: 100% (3/3), готово.
Запись объектов: 100% (3/3), 1.12 КиБ | 571.00 КиБ/с, готово.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:aiolenikov/git-extended.git
 52b60a5..45d5e8f  master -> master
aiolenikov@aiolenikov:~/git-extended$
```

Рис. 5: Отправка

```
aioleinikov@aioleinikov:~/git-extended$
aioleinikov@aioleinikov:~/git-extended$ git flow init
03 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/]
23 Release branches? [release/]
Hotfix branches? [hotfix/]
Support branches? [support/]
Version tag prefix? [] v
Hooks and filters directory? [/home/aioleinikov/git-extended/.git/hooks]
aioleinikov@aioleinikov:~/git-extended$ git branch
* develop
04 master
aioleinikov@aioleinikov:~/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/aioleinikov/git-extended/pull/new/develop
remote:
To github.com:aioleinikov/git-extended.git
* [new branch]      develop -> develop
aioleinikov@aioleinikov:~/git-extended$
```

Рис. 6: Инициализация и загрузка изменений



```
aioleinikov@aioleinikov:~/git-extended
aioleinikov@aioleinikov:~/git-extended$ git commit -am 'chore(site): add changelog'
[release/1.0.0 9ea9fbb] chore(site): add changelog
1 file changed, 4 insertions(+)
create mode 100644 CHANGELOG.md
aioleinikov@aioleinikov:~/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 9ea9fbb).

Summary of actions:
- Release branch 'release/1.0.0' has been merged into 'master'
- The release was tagged 'v1.0.0'
- Release tag 'v1.0.0' has been back-merged into 'develop'
- Release branch 'release/1.0.0' has been locally deleted
- You are now on branch 'develop'

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

Рис. 7: Завершение релиза

Отправим данные на github

```
aioleinikov@aioleinikov:~/git-extended$  
aioleinikov@aioleinikov:~/git-extended$ git push --all  
Перечисление объектов: 6, готово.  
Подсчет объектов: 100% (6/6), готово.  
При сжатии изменений используется до 6 потоков  
Сжатие объектов: 100% (4/4), готово.  
Запись объектов: 100% (5/5), 2.67 КиБ | 1.34 МиБ/с, готово.  
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)  
To github.com:aioleinikov/git-extended.git  
  45d5e8f..e4d4ae9  develop -> develop  
  45d5e8f..e38401f  master -> master  
aioleinikov@aioleinikov:~/git-extended$ git push --tags  
Перечисление объектов: 1, готово.  
Подсчет объектов: 100% (1/1), готово.  
Запись объектов: 100% (1/1), 156 байтов | 156.00 КиБ/с, готово.  
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)  
To github.com:aioleinikov/git-extended.git  
  * [new tag]         v1.0.0 -> v1.0.0  
aioleinikov@aioleinikov:~/git-extended$ gh release create v1.0.0 -F CHANGELOG.md  
https://github.com/aioleinikov/git-extended/releases/tag/v1.0.0  
aioleinikov@aioleinikov:~/git-extended$
```

Рис. 8: Отправка

Объединение веток

```
-0 aioleinikov@aioleinikov: ~/git-extended$
aioleinikov@aioleinikov:~/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'

at
Now, start committing on your feature. When done, use:

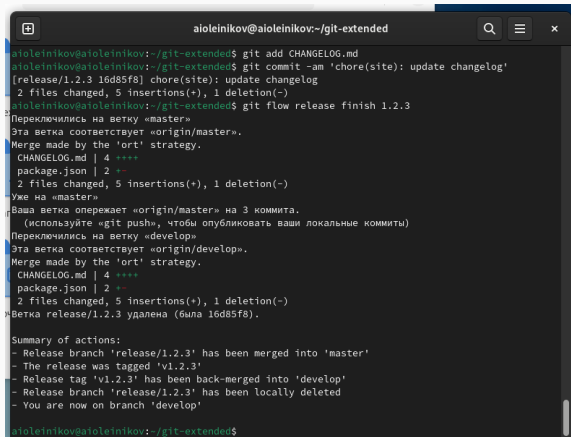
    git flow feature finish feature_branch

aioleinikov@aioleinikov:~/git-extended$ touch test2
aioleinikov@aioleinikov:~/git-extended$ git flow feature finish feature_branch
Переключились на ветку «develop»
ю Эта ветка соответствует «origin/develop».
Уже актуально.
Ветка feature/feature_branch удалена (была e4d4ae9).

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'

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

Рис. 9: Объединение веток



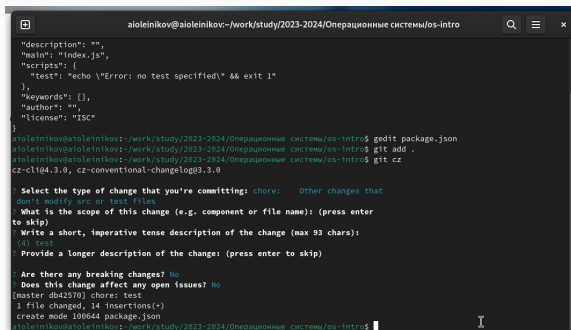
```
aioleinikov@aioleinikov:~/git-extended
aioleinikov@aioleinikov:~/git-extended$ git add CHANGELOG.md
aioleinikov@aioleinikov:~/git-extended$ git commit -am 'chore(site): update changelog'
[release/1.2.3 16d85f8] chore(site): update changelog
2 files changed, 5 insertions(+), 1 deletion(-)
aioleinikov@aioleinikov:~/git-extended$ git flow release finish 1.2.3
Переключились на ветку «master»
Эта ветка соответствует «origin/master».
Merge made by the 'ort' strategy.
CHANGELOG.md | 4 ++++
package.json | 2 +-
2 files changed, 5 insertions(+), 1 deletion(-)
Уже на «master»
Ваша ветка опережает «origin/master» на 3 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 ++++
package.json | 2 +-
2 files changed, 5 insertions(+), 1 deletion(-)
Ветка release/1.2.3 удалена (была 16d85f8).

Summary of actions:
- Release branch 'release/1.2.3' has been merged into 'master'
- The release was tagged 'v1.2.3'
- Release tag 'v1.2.3' has been back-merged into 'develop'
- Release branch 'release/1.2.3' has been locally deleted
- You are now on branch 'develop'

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

Рис. 10: Завершение релиза

Подготовка рабочего репозитория



```
aioleinikov@aioleinikov:~/work/study/2023-2024/Операционные системы/os-intro$  
  "description": "",  
  "main": "index.js",  
  "scripts": {  
    "test": "echo \\\"Error: no test specified\\\" && exit 1"  
  },  
  "keywords": [],  
  "author": "",  
  "license": "ISC"  
}  
aioleinikov@aioleinikov:~/work/study/2023-2024/Операционные системы/os-intro$ gedit package.json  
aioleinikov@aioleinikov:~/work/study/2023-2024/Операционные системы/os-intro$ git add .  
aioleinikov@aioleinikov:~/work/study/2023-2024/Операционные системы/os-intro$ git cz  
cz-cli@4.3.0, 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 db42570] chore: test  
1 file changed, 14 insertions(+)  
create mode 100644 package.json  
aioleinikov@aioleinikov:~/work/study/2023-2024/Операционные системы/os-intro$
```

Рис. 11: package.json и коммит

Подготовка рабочего репозитория

```
aioleinikov@aioleinikov: ~/work/study/2023-2024/Операционные системы/os-intro$
aioleinikov@aioleinikov:~/work/study/2023-2024/Операционные системы/os-intro$ git push
Перечисление объектов: 4, готово.
Подсчет объектов: 100% (4/4), готово.
При сжатии изменений используется до 6 потоков
Сжатие объектов: 100% (3/3), готово.
Запись объектов: 100% (3/3), 1.11 KiB | 1.11 МБ/с, готово.
Total 2 (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:aioleinikov/os-intro.git
   f1df4f5..db42570  master -> master
aioleinikov@aioleinikov:~/work/study/2023-2024/Операционные системы/os-intro$ 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? [] v
Hooks and filters directory? [/home/aioleinikov/work/study/2023-2024/Операционные системы/os-intro/.git/hooks]
aioleinikov@aioleinikov:~/work/study/2023-2024/Операционные системы/os-intro$
```

Рис. 12: Завершение релиза

Выводы по проделанной работе

Мы приобрели практические навыки взаимодействия с дополнительными функциями гитхаб.