

Продвинутое использование git

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Цели и задачи работы

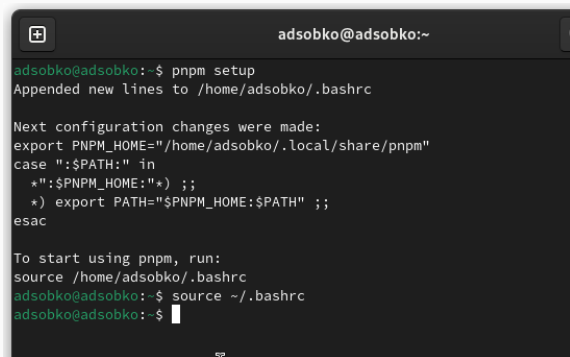
Цель лабораторной работы

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 title bar shows 'adsobko@adsobko:~'. The prompt is 'adsobko@adsobko:~\$'. The user has entered 'pnpm setup'. The output shows that new lines were appended to '/home/adsobko/.bashrc'. It then displays the configuration changes made to the file, including setting 'PNPM_HOME' and updating the 'PATH' variable. Finally, it instructs the user to source the file to start using pnpm, and the user has entered 'source ~/.bashrc' and 'adsobko@adsobko:~\$' again.

```
adsobko@adsobko:~$ pnpm setup
Appended new lines to /home/adsobko/.bashrc

Next configuration changes were made:
export PNPM_HOME="/home/adsobko/.local/share/pnpm"
case ":$PATH:" in
  *:$PNPM_HOME:*) ;;
  *) export PATH="$PNPM_HOME:$PATH" ;;
esac

To start using pnpm, run:
source /home/adsobko/.bashrc
adsobko@adsobko:~$ source ~/.bashrc
adsobko@adsobko:~$
```

Рис. 1: Node.js

```
adsobko@adsobko:~$  
adsobko@adsobko:~$ pnpm add -g commitizen  
  
Update available! 8.12.0 → 9.1.4.  
Changelog: https://github.com/pnpm/pnpm/releases/tag/v9.1.4  
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/adsobko/.local/share/pnpm/global/5:  
+ commitizen 4.3.0  
  
Done in 9.2s  
adsobko@adsobko:~$
```

Рис. 2: установка commitizen

standard-changelog

```
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/adsobko/.local/share/pnpm/global/5:
+ commitizen 4.3.0

Done in 9.2s
adsobko@adsobko:~$ 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/adsobko/.local/share/pnpm/global/5:
+ standard-changelog 6.0.0

Done in 5.6s
adsobko@adsobko:~$
```

Рис. 3: установка standard-changelog

package.json

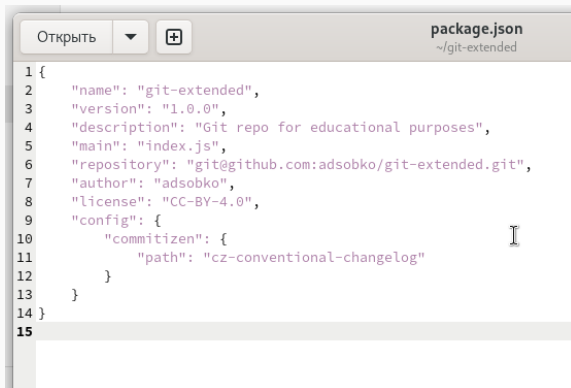
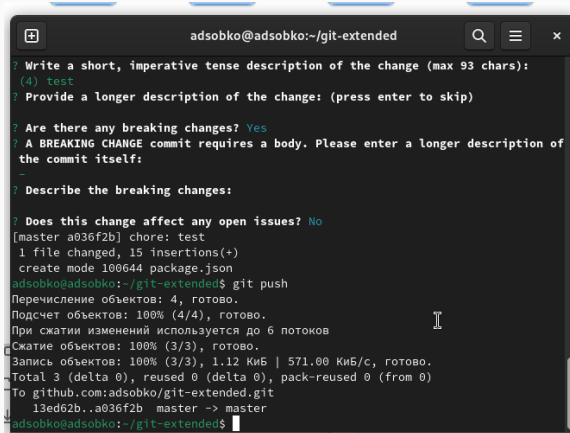


Рис. 4: package.json

Использование commitizen

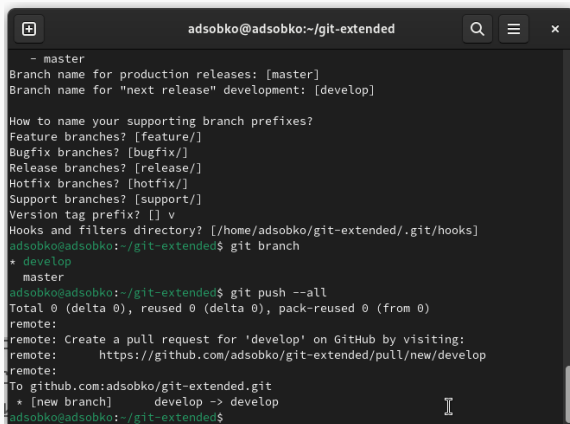


```
adsobko@adsobko:~/git-extended
? Write a short, imperative tense description of the change (max 93 chars):
  (4) test
? Provide a longer description of the change: (press enter to skip)

? Are there any breaking changes? Yes
? A BREAKING CHANGE commit requires a body. Please enter a longer description of
  the commit itself:
  -
? Describe the breaking changes:

? Does this change affect any open issues? No
[master a036f2b] chore: test
 1 file changed, 15 insertions(+)
 create mode 100644 package.json
adsobko@adsobko:~/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:adsobko/git-extended.git
   13ed62b..a036f2b  master -> master
adsobko@adsobko:~/git-extended$
```

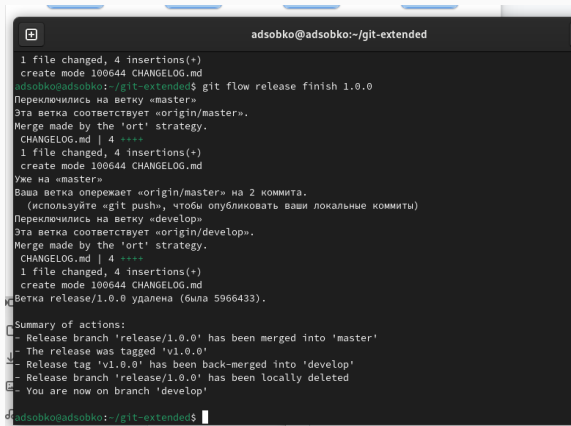
Рис. 5: Отправка

A terminal window titled 'adsobko@adsobko:~/git-extended' with search, menu, and close icons in the title bar. The terminal shows the output of the 'git-flow' command, which asks for branch names and prefixes. The user has accepted defaults. Then, the user runs 'git branch', showing 'develop' as the current branch. Finally, the user runs 'git push --all', which triggers a push to GitHub, creating a pull request for 'develop'.

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

Рис. 6: Инициализация и загрузка изменений



```
adsobko@adsobko:~/git-extended
1 file changed, 4 insertions(+)
create mode 100644 CHANGELOG.md
adsobko@adsobko:~/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 5966433).

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'

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

Рис. 7: Завершение релиза

Отправим данные на github

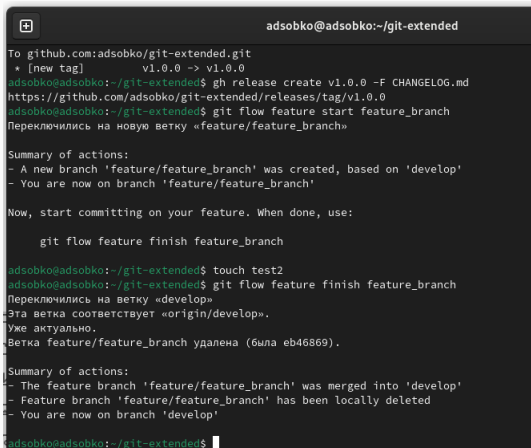
```
adsobko@adsobko:~/git-extended

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'

adsobko@adsobko:~/git-extended$
adsobko@adsobko:~/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), 2.66 КиБ | 2.66 МБ/с, готово.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:adsobko/git-extended.git
 a036f2b..eb46869 develop -> develop
 a036f2b..5d3d605 master -> master
adsobko@adsobko:~/git-extended$ git push --tags
Перечисление объектов: 1, готово.
Подсчет объектов: 100% (1/1), готово.
Запись объектов: 100% (1/1), 153 байта | 153.00 КиБ/с, готово.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:adsobko/git-extended.git
 * [new tag]          v1.0.0 -> v1.0.0
adsobko@adsobko:~/git-extended$ gh release create v1.0.0 -F CHANGELOG.md
https://github.com/adsobko/git-extended/releases/tag/v1.0.0
adsobko@adsobko:~/git-extended$
```

Рис. 8: Отправка

Объединение веток



```
adsobko@adsobko:~/git-extended
To github.com:adsobko/git-extended.git
* [new tag]          v1.0.0 -> v1.0.0
adsobko@adsobko:~/git-extended$ gh release create v1.0.0 -F CHANGELOG.md
https://github.com/adsobko/git-extended/releases/tag/v1.0.0
adsobko@adsobko:~/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

adsobko@adsobko:~/git-extended$ touch test2
adsobko@adsobko:~/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 eb46869).

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'

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

Рис. 9: Объединение веток

```
adsobko@adsobko:~/git-extended

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'

adsobko@adsobko:~/git-extended$ git push --all
Перечисление объектов: 9, готово.
Подсчет объектов: 100% (9/9), готово.
При сжатии изменений используется до 6 потоков
Сжатие объектов: 100% (6/6), готово.
Запись объектов: 100% (6/6), 2.78 КиБ | 1.39 МБ/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:adsobko/git-extended.git
   eb46869..cd74eb9  develop -> develop
   5d3d605..63c2196  master -> master
adsobko@adsobko:~/git-extended$ git push --tags
Перечисление объектов: 1, готово.
Подсчет объектов: 100% (1/1), готово.
Запись объектов: 100% (1/1), 154 байта | 154.00 КиБ/с, готово.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:adsobko/git-extended.git
   * [new tag]         v1.2.3 -> v1.2.3
adsobko@adsobko:~/git-extended$ gh release create v1.2.3 -F CHANGELOG.md
https://github.com/adsobko/git-extended/releases/tag/v1.2.3
adsobko@adsobko:~/git-extended$
```

Рис. 10: Завершение релиза

Подготовка рабочего репозитория

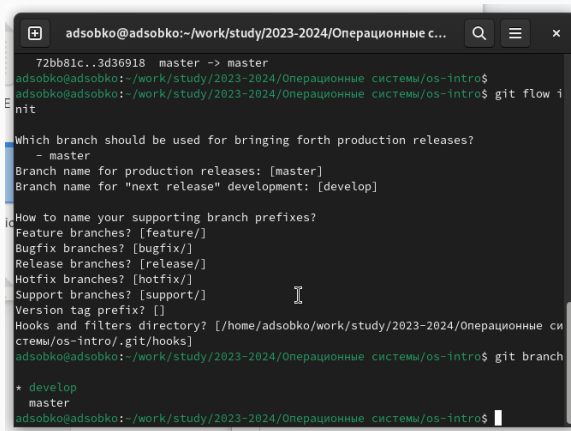
```
adsobko@adsobko: ~/work/study/2023-2024/Операционные системы/os-intro$ gedit package.json
adsobko@adsobko: ~/work/study/2023-2024/Операционные системы/os-intro$ git add .
adsobko@adsobko: ~/work/study/2023-2024/Операционные системы/os-intro$ git cz
cz-cli@4.3.0, cz-conventional-changelog@3.3.0

? 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 3d36918] chore: test
1 file changed, 14 insertions(+)
create mode 100644 package.json
adsobko@adsobko: ~/work/study/2023-2024/Операционные системы/os-intro$
```

Рис. 11: package.json и коммит

Подготовка рабочего репозитория



```
adsobko@adsobko:~/work/study/2023-2024/Операционные с... 72bb81c..3d36918 master -> master
adsobko@adsobko:~/work/study/2023-2024/Операционные системы/os-intro$
adsobko@adsobko:~/work/study/2023-2024/Операционные системы/os-intro$ git flow i
nit
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/adsobko/work/study/2023-2024/Операционные си
стемы/os-intro/.git/hooks]
adsobko@adsobko:~/work/study/2023-2024/Операционные системы/os-intro$ git branch

* develop
master
adsobko@adsobko:~/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.