

Операционные системы

Продвинутое использование git

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Цели и задачи работы

Процесс выполнения лабораторной работы

Выводы по проделанной работе

1. 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.

2. Процесс выполнения лабораторной работы

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

Рисунок 1: Node.js

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

```
Update available! 10.27.0 → 10.30.3.  
Changelog: https://pnpm.io/v/10.30.3  
To update, run: pnpm self-update
```

```
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6
```

```
Packages: +149
```

```
+++++
```

```
Progress: resolved 149, reused 0, downloaded 149, added 149, done
```

```
/home/davidniambi/.local/share/pnpm/global/5:
```

```
+ commitizen 4.3.1
```

```
Done in 3.3s using pnpm v10.27.0
```

```
davidniambi@davidniambi:~$
```

Рисунок 2: установка commitizen


```
davidniambi@davidniambi:~$ pnpm add -g standard-changelog
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6
Packages: +32
+++++
Progress: resolved 181, reused 149, downloaded 32, added 32, done

/home/davidniambi/.local/share/pnpm/global/5:
+ standard-changelog 7.0.1

Done in 3.7s using pnpm v10.27.0
davidniambi@davidniambi:~$
```

Рисунок 3: установка standard-changelog

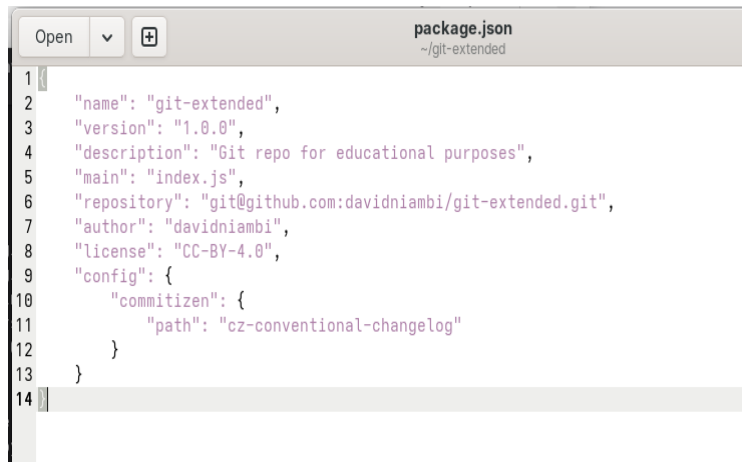


Рисунок 4: package.json

Использование commitizen

```
davidniambi@davidniambi:~/git-extended$
davidniambi@davidniambi:~/git-extended$ git add .
davidniambi@davidniambi:~/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 89aa783] chore: test
 1 file changed, 14 insertions(+)
 create mode 100644 package.json
davidniambi@davidniambi:~/git-extended$ git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 1.12 KiB | 1.12 MiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:davidniambi/git-extended.git
   3c29ef1..89aa783  master -> master
davidniambi@davidniambi:~/git-extended$
```

Рисунок 5: Отправка

```
davidniambi@davidniambi:~/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? [] v
Hooks and filters directory? [/home/davidniambi/git-extended/.git/hooks]
davidniambi@davidniambi:~/git-extended$ git branch
* develop
  master
davidniambi@davidniambi:~/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/davidniambi/git-extended/pull/new/develop
remote:
To github.com:davidniambi/git-extended.git
 * [new branch]      develop -> develop
davidniambi@davidniambi:~/git-extended$
```

Рисунок 6: Инициализация и загрузка изменений

```

davidniambi@davidniambi:~/git-extended$ standard-changelog --first-release
davidniambi@davidniambi:~/git-extended$ git add CHANGELOG.md
davidniambi@davidniambi:~/git-extended$ git commit -am 'chore(site): add changelog'
[release/1.0.0 b5934a8] chore(site): add changelog
1 file changed, 4 insertions(+)
 create mode 100644 CHANGELOG.md
davidniambi@davidniambi:~/git-extended$ git flow release finish 1.0.0
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
Merge made by the 'ort' strategy.
CHANGELOG.md | 4 +++
1 file changed, 4 insertions(+)
 create mode 100644 CHANGELOG.md
Already on 'master'
Your branch is ahead of 'origin/master' by 2 commits.
(use "git push" to publish your local commits)
Switched to branch 'develop'
Your branch is up to date with 'origin/develop'.
Merge made by the 'ort' strategy.
CHANGELOG.md | 4 +++
1 file changed, 4 insertions(+)
 create mode 100644 CHANGELOG.md
Deleted branch release/1.0.0 (was b5934a8).

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'

davidniambi@davidniambi:~/git-extended$

```

Рисунок 7: Завершение релиза

Отправим данные на github

```
davidniambi@davidniambi:~/git-extended$ git push --all
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 2.67 KiB | 2.67 MiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:davidniambi/git-extended.git
  89aa783..efaf817  develop -> develop
  89aa783..da00f00  master -> master
davidniambi@davidniambi:~/git-extended$ git push --tags
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Writing objects: 100% (1/1), 156 bytes | 156.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:davidniambi/git-extended.git
 * [new tag]          v1.0.0 -> v1.0.0
davidniambi@davidniambi:~/git-extended$ gh release create v1.0.0 -F CHANGELOG.md
https://github.com/davidniambi/git-extended/releases/tag/v1.0.0
davidniambi@davidniambi:~/git-extended$
```

Рисунок 8: Отправка

```
davidniambi@davidniambi:~/git-extended$ git flow feature start feature_branch
Switched to a new branch '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

davidniambi@davidniambi:~/git-extended$ touch test2
davidniambi@davidniambi:~/git-extended$ git flow feature finish feature_branch
Switched to branch 'develop'
Your branch is up to date with 'origin/develop'.
Already up to date.
Deleted branch feature/feature_branch (was efaf817).

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'

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

Рисунок 9: Объединение веток

```
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'

davidniambi@davidniambi:~/git-extended$ git push --all
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 8 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 2.77 KiB | 2.77 MiB/s, done.
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:davidniambi/git-extended.git
    efaf817..b2197e5  develop -> develop
    da00f00..eec960f  master -> master
davidniambi@davidniambi:~/git-extended$ git push --tags
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Writing objects: 100% (1/1), 156 bytes | 156.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:davidniambi/git-extended.git
    * [new tag]         v1.2.3 -> v1.2.3
davidniambi@davidniambi:~/git-extended$ gh release create v1.2.3 -F CHANGELOG.md
https://github.com/davidniambi/git-extended/releases/tag/v1.2.3
davidniambi@davidniambi:~/git-extended$
```

Рисунок 10: Завершение релиза

Подготовка рабочего репозитория

```
davidniambi@davidniambi:~/work/study/2025-2026/Операционные системы/2026-1--study--os-intro$ gedit package.json
davidniambi@davidniambi:~/work/study/2025-2026/Операционные системы/2026-1--study--os-intro$ git add .
davidniambi@davidniambi:~/work/study/2025-2026/Операционные системы/2026-1--study--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 72dbe5a] chore: test
 1 file changed, 11 insertions(+), 11 deletions(-)
davidniambi@davidniambi:~/work/study/2025-2026/Операционные системы/2026-1--study--os-intro$ git push
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 1.11 KiB | 1.11 MiB/s, done.
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:davidniambi/2026-1--study--os-intro.git
 4dbd97a..72dbe5a  master -> master
davidniambi@davidniambi:~/work/study/2025-2026/Операционные системы/2026-1--study--os-intro$
```

Рисунок 11: package.json и коммит

```
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'

davidniambi@davidniambi:~/work/study/2025-2026/Операционные системы/2026-1--study--os-intro$ git push --all
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 8 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 2.75 KiB | 2.75 MiB/s, done.
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:davidniambi/2026-1--study--os-intro.git
   72dbe5a..7cbddae  develop -> develop
   72dbe5a..710246c  master -> master

davidniambi@davidniambi:~/work/study/2025-2026/Операционные системы/2026-1--study--os-intro$ git push --tags
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Writing objects: 100% (1/1), 155 bytes | 155.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:davidniambi/2026-1--study--os-intro.git
 * [new tag]         v1.0.0 -> v1.0.0
davidniambi@davidniambi:~/work/study/2025-2026/Операционные системы/2026-1--study--os-intro$
```

Рисунок 12: Завершение релиза

3. Выводы по проделанной работе

Мы приобрели практические навыки взаимодействия с дополнительными функциями гитхаб.