

# Презентация по лабораторной работе №4

Архитектура Компьютеров и Операционные Системы

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## Информация

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..... {.columns align=center} ::: {.column width="70%"}

- Г. Лопес теофания
- Студентка НКАбд 02-24
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## Цель работы

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Цель данной работы является получением навыков правильной работы с репозиториями git.

## Задание

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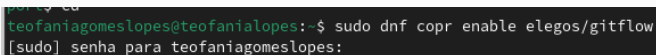
1. Выполнить работу для тестового репозитория.
2. Преобразовать рабочий репозиторий в репозиторий с git-flow и conventional commits.

## Выполнение лабораторной работы

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Gitflow Workflow предполагает выстраивание строгой модели ветвления с учётом выпуска проекта. Сначала я включаю репозиторий copr:

A terminal window with a dark background. The prompt is 'teofaniagomeslopes@teofanialopes:~\$'. The command entered is 'sudo dnf copr enable elegos/gitflow'. The output is '[sudo] senha para teofaniagomeslopes:'.

```
teofaniagomeslopes@teofanialopes:~$ sudo dnf copr enable elegos/gitflow
[sudo] senha para teofaniagomeslopes:
```

Рис. 1: включение copr

Используя dnf install скачаю gitflow:

```
repositorio ativado com êxito.  
teofaniagomeslopes@teofanialopes:~$ sudo dnf install gitflow  
Copr repo for gitflow owned by elegos 510 B/s | 916  
Dependências resolvidas.
```

Рис. 2: dnf install gitflow

Для семантического версионирования и общепринятых коммитов я устанавливаю Nodejs и npm:

```
teofaniagomeslopes@teofanialopes:~$ sudo dnf install nodejs
Última verificação de metadados: 0:01:07 atrás em ter 04 mar 2025 12:14:48.
Dependências resolvidas.
```

Рис. 3: Установка Node.js

```
teofaniagomeslopes@teofanialopes:~$ sudo dnf install pnpm
Última verificação de metadados: 0:05:55 atrás em ter 04 mar 2025 12:14:48.
Dependências resolvidas.
```

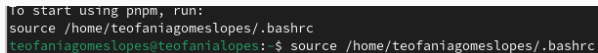
Рис. 4: Установка pnpm

Запуская `pnpm setup` я добавляю каталог с исполняемыми файлами, устанавливаемыми `yarn` для работы с Node.js в переменную `PATH`:

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

Рис. 5: Запуск `pnpm`

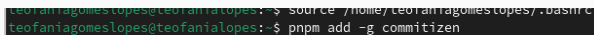
Далее перелогинюсь и выполняю `source ~/.bashrc`:

A terminal window with a dark background. The first line shows a prompt and the command 'source /home/teofaniagomeslopes/.bashrc'. The second line shows the prompt 'teofaniagomeslopes@teofanialopes:~\$' followed by the command 'source /home/teofaniagomeslopes/.bashrc'.

```
to start using pnpm, run:
source /home/teofaniagomeslopes/.bashrc
teofaniagomeslopes@teofanialopes:~$ source /home/teofaniagomeslopes/.bashrc
```

Рис. 6: `~/.bashrc`

Для помощи в форматировании коммитов добавляю программу commitizen:

A terminal window with a dark background. The first line shows a user at a shell prompt sourcing a file: `teofaniagomeslopes@teofanialopes:~$ source /home/teofaniagomeslopes/.bashrc`. The second line shows the user installing the commitizen package globally using pnpm: `teofaniagomeslopes@teofanialopes:~$ pnpm add -g commitizen`.

```
teofaniagomeslopes@teofanialopes:~$ source /home/teofaniagomeslopes/.bashrc
teofaniagomeslopes@teofanialopes:~$ pnpm add -g commitizen
```

Рис. 7: Добавление commitizen

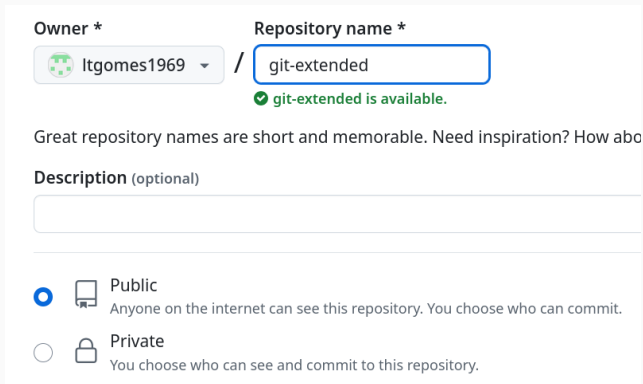
Добавляю standard-changelog для помощи в создании логов:

```
Done in 23.6s  
teofaniagomeslopes@teofanialopes:~$ pnpm add -g standard-changelog  
WARN 2 deprecated subdependencies found: glob@7.2.3, inflight@1.0.6  
Packages: +39
```

Рис. 8: добавление standard-changelog



Создаю репозиторий на GitHub назову его git-extended:




The screenshot shows the GitHub repository creation interface. The 'Owner' field is set to 'Itgomes1969'. The 'Repository name' field is set to 'git-extended' and is highlighted with a blue border. Below the name field, a green checkmark and the text 'git-extended is available.' confirm the name's availability. The 'Description' field is empty. At the bottom, the 'Public' option is selected with a blue radio button, while the 'Private' option is unselected. The 'Public' description states: 'Anyone on the internet can see this repository. You choose who can commit.'

**Owner \*** Itgomes1969 / **Repository name \*** git-extended

✓ git-extended is available.

Great repository names are short and memorable. Need inspiration? How about...

**Description (optional)**

☒  **Public**  
Anyone on the internet can see this repository. You choose who can commit.


☐  **Private**  
You choose who can see and commit to this repository.

Рис. 9: Создание git-extended

Делаю первый коммит и выкладываю на github:

```
teofaniagomeslopes@teofanialopes:~/git-extended$ git commit -m "first commit"
[main (root-commit) 5dacce4] first commit
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 README.md
teofaniagomeslopes@teofanialopes:~/git-extended$ git remote add origin git@github.com:ltgomes1969/git-extended.git
error: remote origin already exists.
teofaniagomeslopes@teofanialopes:~/git-extended$ git remote -v
origin  https://github.com/ltgomes1969/git-extended.git (fetch)
origin  https://github.com/ltgomes1969/git-extended.git (push)
teofaniagomeslopes@teofanialopes:~/git-extended$ git push -u origin master
```

Рис. 10: Первый коммит

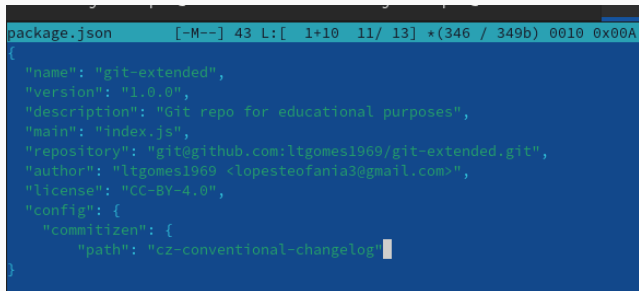
Я инициализирую pnpm:

```
branch master set up to track origin/master .
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ pnpm init
Wrote to /home/teofaniagomeslopes/git-extended/git-extended/package.json

{
  "name": "git-extended",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC"
}
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 11: Инициализирование pnpm

Заполняю несколько параметров пакета (файл package.json):



```
package.json [-M--] 43 L:[ 1+10 11/ 13] *(346 / 349b) 0010 0x00A
{
  "name": "git-extended",
  "version": "1.0.0",
  "description": "Git repo for educational purposes",
  "main": "index.js",
  "repository": "git@github.com:ltgomes1969/git-extended.git",
  "author": "ltgomes1969 <lopesteofania3@gmail.com>",
  "license": "CC-BY-4.0",
  "config": {
    "commitizen": {
      "path": "cz-conventional-changelog"
    }
  }
}
```

Рис. 12: Заполнение пакетов

Добавляю новые файлы и выполняю коммит (указываю тип коммит (feat)) и отправляю на ГИТ:

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

? Select the type of change that you're committing: (Use arrow keys)
> feat:      A new feature
  fix:       A bug fix
  docs:      Documentation only changes
  style:     Changes that do not affect the meaning of the code (white-space, formatting, missing
semi-colons, etc)
  refactor:  A code change that neither fixes a bug nor adds a feature
  perf:     A code change that improves performance
(Move up and down to reveal more choices)
```

Рис. 13: Добавление новых файлов

Инициализирую git-flow и указываю ветки:

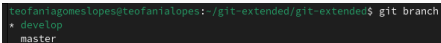
```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git flow init

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

How to name your supporting branch prefixes?
Feature branches? [feature/] feature/
Bugfix branches? [bugfix/] bugfix/
Release branches? [release/] release/
Hotfix branches? [hotfix/] hotfix/
Support branches? [support/] support/
Version tag prefix? []
Hooks and filters directory? [/home/teofaniagomeslopes/git-extended/git-extended/.git/hooks]
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 14: Инициализирование git-flow

Проверяю что я на ветке develop с помощью git branch:

A terminal window with a dark background. The prompt is 'teofaniagomeslopes@teofanialopes:~/git-extended/git-extended\$'. The command 'git branch' has been executed, and the output shows two branches: 'develop' (indicated by an asterisk) and 'master'.

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git branch
* develop
master
```

Рис. 15: Проверка ветки

Загружаю весь репозиторий в хранилище с помощью `git push --all`:

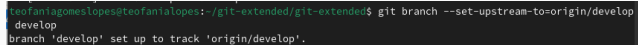


```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git push --all
Username for 'https://github.com': ltgomes1969
Password for 'https://ltgomes1969@github.com':
```

Рис. 16: Загрузка репозиторий



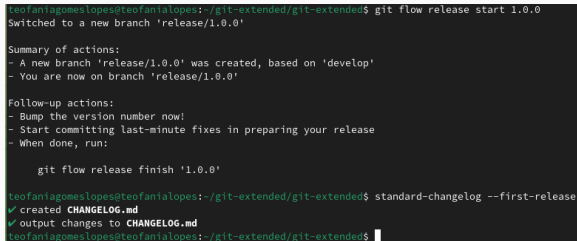
Устанавливаю внешнюю ветку как вышестоящую для этой ветки (develop):



```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git branch --set-upstream-to=origin/develop  
develop  
branch 'develop' set up to track 'origin/develop'.
```

Рис. 17: установка внешней ветки

Создаю релиз с версией 1.0.0 и журнал изменений (standard-changelog)::



```
teofaniagomeslopes@teofaniaalopes:~/git-extended/git-extended$ git flow release start 1.0.0
Switched to a new branch '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'

teofaniagomeslopes@teofaniaalopes:~/git-extended/git-extended$ standard-changelog --first-release
✓ created CHANGELOG.md
✓ output changes to CHANGELOG.md
teofaniagomeslopes@teofaniaalopes:~/git-extended/git-extended$
```

Рис. 18: Создание релиза

Добавляю журнал изменений в индекс:

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git add CHANGELOG.md
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git commit -am 'chore(site): add changelog'
[release/1.0.0 326bb64] chore(site): add changelog
1 file changed, 9 insertions(+)
create mode 100644 CHANGELOG.md
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 19: Добавление журнала изменений

Залью релизную ветку в основную ветку:

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git push --all
Username for 'https://github.com': ltgomes1969
Password for 'https://ltgomes1969@github.com':
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 4 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 2.79 KiB | 2.79 MiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/ltgomes1969/git-extended.git
   3f26b20..451dd6e  develop -> develop
   3f26b20..7f791da  master -> master
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git push --tags
Username for 'https://github.com': ltgomes1969
Password for 'https://ltgomes1969@github.com':
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 https://github.com/ltgomes1969/git-extended.git
 * [new tag]         1.0.0 -> 1.0.0
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

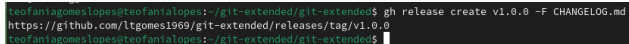
Рис. 20: Замена ветки

Отправляю данные на github:

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git push --all
Username for 'https://github.com': ltgomes1969
Password for 'https://ltgomes1969@github.com':
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 4 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 2.79 KiB | 2.79 MiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/ltgomes1969/git-extended.git
   3f26b20..451dd6e  develop -> develop
   3f26b20..7f791da  master -> master
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git push --tags
Username for 'https://github.com': ltgomes1969
Password for 'https://ltgomes1969@github.com':
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 https://github.com/ltgomes1969/git-extended.git
 * [new tag]         1.0.0 -> 1.0.0
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 21: Отправка на гит

Создаю релиз на github. Для этого использую утилиты работы с github gh (gh release create):



```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ gh release create v1.0.0 -F CHANGELOG.md
https://github.com/ltgomes1969/git-extended/releases/tag/v1.0.0
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 22: Создание релиза

Создаю ветку для новой функциональности:

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ gh release create v1.0.0 -F CHANGELOG.md
https://github.com/ltgomes1969/git-extended/releases/tag/v1.0.0
teofaniagomeslopes@teofanialopes:~/git-extended/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'

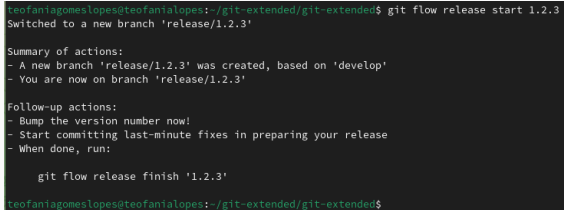
Now, start committing on your feature. When done, use:

    git flow feature finish feature_branch

teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 23: Создание ветки feature\_branch

Далее, продолжаю работу с git как обычно. Создаю релиз с версией 1.2.3:



```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git flow release start 1.2.3
Switched to a new branch 'release/1.2.3'

Summary of actions:
- A new branch 'release/1.2.3' was created, based on 'develop'
- You are now on branch 'release/1.2.3'

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

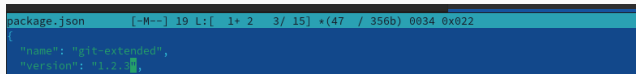
    git flow release finish '1.2.3'

teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 24: Создание релиза с версией 1.2.3



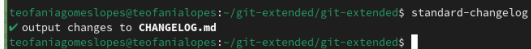
Обновляю номер версии в файле package.json в 1.2.3:



```
package.json  [-M--] 19 L:[ 1+ 2 3/ 15] *(47 / 356b) 0034 0x022
{
  "name": "git-extended",
  "version": "1.2.3",
}
```

Рис. 25: Обновление номера версии

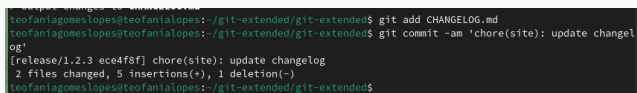
Создаю журнал изменений (standard-changelog):

A terminal window with a dark background and light green text. The prompt is 'teofaniagomeslopes@teofanialopes: ~/git-extended/git-extended\$'. The command 'standard-changelog' has been entered. The output is '✓ output changes to CHANGELOG.md'. The prompt is repeated on the next line with a cursor.

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ standard-changelog
✓ output changes to CHANGELOG.md
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 26: Создание нового журнала изменений

Добавляю журнал изменений в индекс:

A terminal window showing the execution of git commands. The prompt is 'teofaniagomeslopes@teofanialopes:~/git-extended/git-extended\$'. The first command is 'git add CHANGELOG.md'. The second command is 'git commit -am 'chore(site): update changelog''. The output shows the commit hash '[release/1.2.3 ece4f8f]', the commit message 'chore(site): update changelog', and the file statistics '2 files changed, 5 insertions(+), 1 deletion(-)'.

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git add CHANGELOG.md
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git commit -am 'chore(site): update changelog'
[release/1.2.3 ece4f8f] chore(site): update changelog
2 files changed, 5 insertions(+), 1 deletion(-)
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

Рис. 27: Добавление журнала

Залью релизную ветку в основную ветку:

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git flow release finish 1.2.3
Branches 'master' and 'origin/master' have diverged.
And local branch 'master' is ahead of 'origin/master'.
Already on 'master'
Your branch is ahead of 'origin/master' by 3 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 ++++
  package.json | 2 +-
  2 files changed, 5 insertions(+), 1 deletion(-)
Deleted branch release/1.2.3 (was ece4f8f).

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'

teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$
```

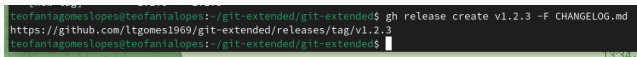
Рис. 28: Замена ветки

Отправляю данные на github:

```
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git push --all
Username for 'https://github.com': ltgomes1969
Password for 'https://ltgomes1969@github.com':
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 4 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 2.76 KiB | 2.76 MiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/ltgomes1969/git-extended.git
   451dd6e..3e2b3b7  develop -> develop
   7f791da..0100bbe  master -> master
* [new branch]      feature/feature_branch -> feature/feature_branch
teofaniagomeslopes@teofanialopes:~/git-extended/git-extended$ git push --tags
```

Рис. 29: Отправка данных

Создаю релиз на github с комментарием из журнала изменений:

A terminal window with a dark background and green text. The prompt is 'teofaniagomeslopes@teofaniagomeslopes: ~/git-extended/git-extended\$'. The command entered is 'gh release create v1.2.3 -F CHANGELOG.md'. The output is 'https://github.com/ltgomes1969/git-extended/releases/tag/v1.2.3'. The prompt is then 'teofaniagomeslopes@teofaniagomeslopes: ~/git-extended/git-extended\$'.

```
teofaniagomeslopes@teofaniagomeslopes: ~/git-extended/git-extended$ gh release create v1.2.3 -F CHANGELOG.md
https://github.com/ltgomes1969/git-extended/releases/tag/v1.2.3
teofaniagomeslopes@teofaniagomeslopes: ~/git-extended/git-extended$
```

Рис. 30: Создание релиза

## Выводы

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При выполнении лабораторной работы я получила навыки правильной работы с репозиториями git.