

# **Отчёт по лабораторной работе №2**

**Управление версиями**

Шах Дхирадж НПИБД-02-20

# Содержание

1	Цель работы	4
2	Выполнение лабораторной работы	5
3	Вывод	13

# List of Figures

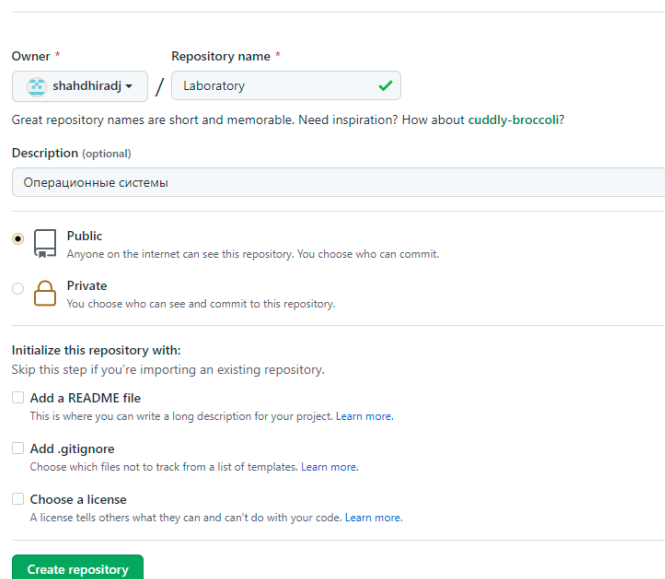
2.1	Создание репозитория . . . . .	5
2.2	Инициализация репозитория . . . . .	6
2.3	Создание SSH-ключа . . . . .	6
2.4	Добавление ключа на github.com . . . . .	7
2.5	Загрузка файлов . . . . .	7
2.6	Загрузка файлов . . . . .	8
2.7	Отправка в сетевой репозиторий по SSH . . . . .	8
2.8	Инициализация git-flow . . . . .	9
2.9	Начало релиза . . . . .	9
2.10	Завершение релиза . . . . .	10
2.11	Отправка изменений в сетевой репозиторий . . . . .	11
2.12	Объединение веток в сетевом репозитории . . . . .	12

# **1 Цель работы**

Целью данной работы является изучение идеологии и применения средств контроля версий.

## 2 Выполнение лабораторной работы

Создаем учетную запись на github.com и репозиторий



The screenshot shows the GitHub 'Create repository' page. At the top, there are two input fields: 'Owner' with a dropdown menu showing 'shahdhiradj' and 'Repository name' with the text 'Laboratory' and a green checkmark. Below these is a note: 'Great repository names are short and memorable. Need inspiration? How about [cuddly-broccoli?](#)'. Under the 'Description (optional)' label, there is a text input field containing the Russian text 'Операционные системы'. Below the description field, there are two radio button options: 'Public' (selected) with the subtext 'Anyone on the internet can see this repository. You choose who can commit.' and 'Private' with the subtext 'You choose who can see and commit to this repository.'. Further down, under the heading 'Initialize this repository with:', there is a note 'Skip this step if you're importing an existing repository.' followed by three unchecked checkboxes: 'Add a README file' (with subtext 'This is where you can write a long description for your project. [Learn more.](#)'), 'Add .gitignore' (with subtext 'Choose which files not to track from a list of templates. [Learn more.](#)'), and 'Choose a license' (with subtext 'A license tells others what they can and can't do with your code. [Learn more.](#)'). At the bottom of the form is a green button labeled 'Create repository'.

Figure 2.1: Создание репозитория

Инициализируем локальный репозиторий и создаю в нем файл README.md

```
Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory
File Edit View Terminal Tabs Help
Setting up liberror-perl (0.17025-1) ...
Setting up git (1:2.17.1-lubuntu0.9) ...
Setting up git-flow (1.11.0-1) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
root@shahsdiradj-VirtualBox:/home/shahsdiradj/laboratory#
root@shahsdiradj-VirtualBox:/home/shahsdiradj/laboratory#
root@shahsdiradj-VirtualBox:/home/shahsdiradj/laboratory# exit
exit
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git init
Initialized empty Git repository in /home/shahsdiradj/laboratory/.git/
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ echo "# Лабораторные работы" >>
README.md
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git add README.md
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git config --global user.name s
hah
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git config --global user.email
"1032195900@pfur.ru"
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git commit -m "first commit"
[master (root-commit) ac08365] first commit
1 file changed, 1 insertion(+)
create mode 100644 README.md
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
```

Figure 2.2: Инициализация репозитория

Создаем SSH-ключ и прописываем его в настройках на github.com

```
Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory
File Edit View Terminal Tabs Help
The key fingerprint is:
SHA256:0w9LVLIRb6j85jkzh/v1S5QNsXpGiucN7GHLNFZp8g shah 1032195900@pfur.ru
The key's randomart image is:
+---[RSA 2048]---+
| .o +o |
| . =..*.. |
| . o E= |
| . +.O . |
| o S.*= 0 |
| . ==+B.. |
| .o . .+OO. |
| .o=0 . ... |
| o++ .o .. |
+---[SHA256]-----+
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ cat ~/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQcQ/0hAIacKBL9Qonn2PhDfdRiLJcHtEXNHERcecyY
ef8sLWTSQRkrqx2+Aou/cjiVthUQY0HDluQJpmPLSErAPokqMicrBaxyE2CLzArrnuxKvr8H0plsBNFX
srtuRQdonA8B6c781zFGsDGHMuFCCAhuYu3b3ZVXLCdWHLj8ruMVYAIP/tvMthmDzmciSZWorYS0FJMM
Am5meZM0mZ4F04UFC7fJJKAuM+P7iqEJVJvTGBH3+1vcYvu00uSNBapD3V2kip6fT0AdiFd75xf0pk7o
v0sFXxicC7ne/III/7W31vg49YdghG64C/0ldifYl61Wc+rj37WMMN0U70kv shah 1032195900@pfu
r.ru
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git remote add origin git@github
b.com:shahdhiradj/Laboratory.git
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
```

Figure 2.3: Создание SSH-ключа

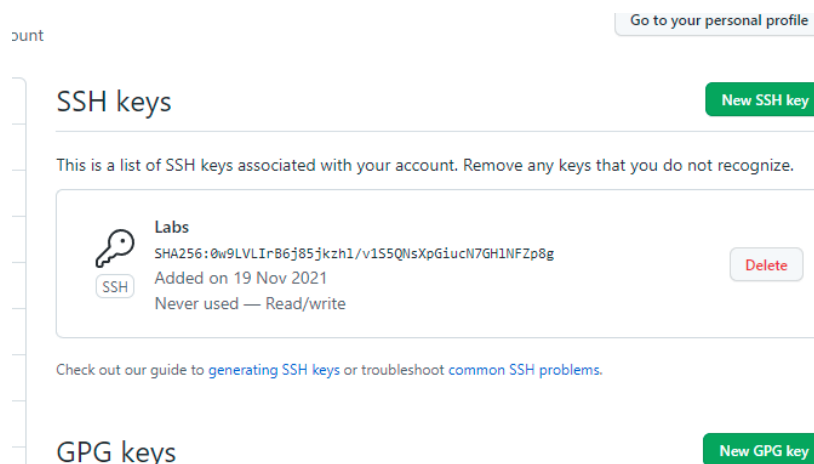


Figure 2.4: Добавление ключа на github.com

Загружаем файлы лицензионного соглашения и gitignore. Отправляем все файлы в сетевой репозиторий.

```
Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory
File Edit View Terminal Tabs Help
srtuRQdonA8B6c781zFGsDGHMufCCAhuYu3b3ZVXLCdWHLj8ruMVYAip/tvMthmDzmcisZWorYS0FJMM
AmSmeZMomZ4F04UFC7fJJKAuM+P7iqEJVJvTGBH3+1vcYvu00uSNBapD3V2kip6fT0ADiFd75xf0pk7o
v0sFXxic7ne/IIi/7W31vg49YdghGG4C/0ldifYl61Wc+rj37wMMNOU70kv shah 1032195900@pfu
r.ru
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git remote add origin git@github
b.com:shahdhiradj/Laboratory.git
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ wget https://creativecommons.or
g/licenses/by/4.0/legalcode.txt -O LICENSE
--2021-11-19 10:49:01-- https://creativecommons.org/licenses/by/4.0/legalcode.t
xt
Resolving creativecommons.org (creativecommons.org)... 104.20.150.16, 172.67.34.
140, 104.20.151.16, ...
Connecting to creativecommons.org (creativecommons.org)|104.20.150.16|:443... co
nected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [text/plain]
Saving to: 'LICENSE'

LICENSE          [ <=>          ] 18,22K  --.-KB/s   in 0s

2021-11-19 10:49:02 (43,2 MB/s) - 'LICENSE' saved [18657]

shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
```

Figure 2.5: Загрузка файлов

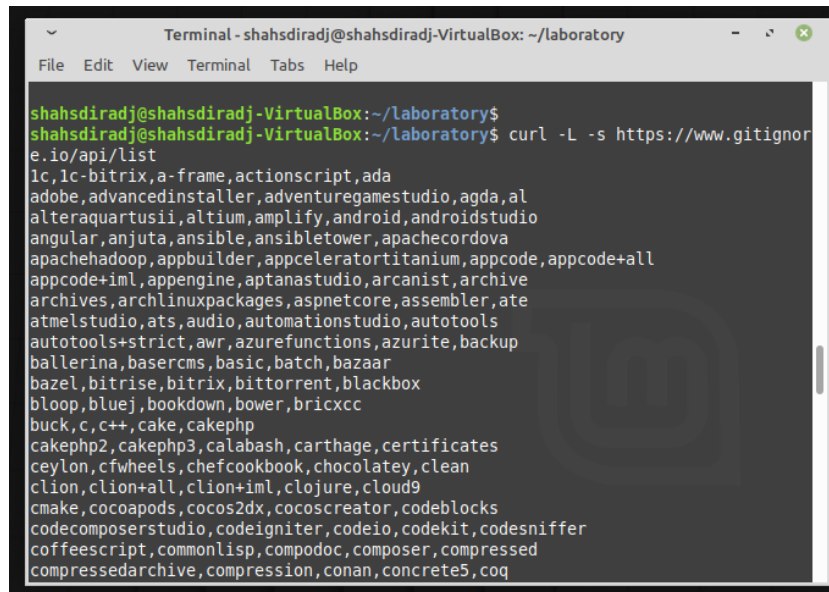
A terminal window titled 'Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory'. The user runs the command 'curl -L -s https://www.gitignore.io/api/list'. The output is a long list of file names, each on a new line, including '1c,1c-bitrix,a-frame,actionscript,ada', 'adobe,advancedinstaller,adventuregamestudio,agda,al', 'alteraquartusii,altium,amplify,android,androidstudio', 'angular,anjuta,ansible,ansibletower,apachecordova', 'apachehadoop,appbuilder,appcelerator titanium,appcode,appcode+all', 'appcode+iml,appengine,aptanastudio,arcanist,archive', 'archives,archlinuxpackages,aspnetcore,assembler,ate', 'atmelstudio,ats,audio,automationstudio,autotools', 'autotools+strict,awr,azurefunctions,azurite,backup', 'ballerina,basercms,basic,batch,bazaar', 'bazel,bitrise,bitrix,bittorrent,blackbox', 'bloop,bluej,bookdown,bower,bricxcc', 'buck,c,c++,cake,cakephp', 'cakephp2,cakephp3,calabash,carthage,certificates', 'ceylon,cfwheels,cheffcookbook,chocolatey,clean', 'clion,clion+all,clion+iml,clojure,cloud9', 'cmake,cocoapods,cocos2dx,cocoscreator,codeblocks', 'codecomposerstudio,codeigniter,codeio,codekit,codesniffer', 'coffeescript,commonlisp,compodoc,composer,compressed', and 'compressedarchive,compression,conan,concrete5,coq'.

Figure 2.6: Загрузка файлов

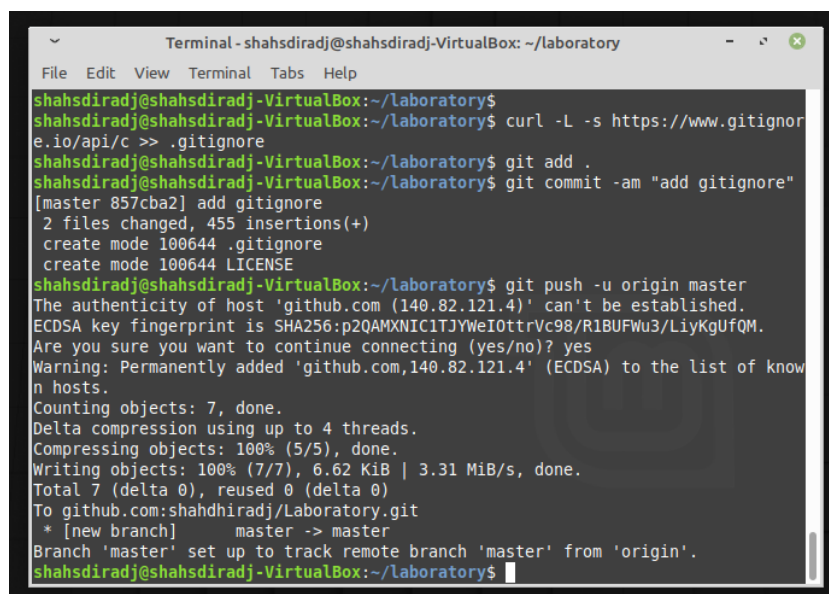
A terminal window titled 'Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory'. The user runs a series of commands: 'curl -L -s https://www.gitignore.io/api/c >> .gitignore', 'git add .', 'git commit -am "add gitignore"', and 'git push -u origin master'. The output shows the commit process: '[master 857cba2] add gitignore', '2 files changed, 455 insertions(+)', 'create mode 100644 .gitignore', 'create mode 100644 LICENSE'. The push process shows: 'The authenticity of host 'github.com (140.82.121.4)' can't be established. ECDSA key fingerprint is SHA256:p2QAMXNIC1TJYWeI0ttrVc98/R1BUFWu3/LiyKgUfQM. Are you sure you want to continue connecting (yes/no)? yes', 'Warning: Permanently added 'github.com,140.82.121.4' (ECDSA) to the list of known hosts.', 'Counting objects: 7, done.', 'Delta compression using up to 4 threads.', 'Compressing objects: 100% (5/5), done.', 'Writing objects: 100% (7/7), 6.62 KiB | 3.31 MiB/s, done.', 'Total 7 (delta 0), reused 0 (delta 0)', 'To github.com:shahsdiradj/Laboratory.git', '\* [new branch] master -> master', 'Branch 'master' set up to track remote branch 'master' from 'origin'.

Figure 2.7: Отправка в сетевой репозиторий по SSH

Использование системы управления версиями. Создаем ветку, начинаем и завершаем в ней релиз.



```
Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory
File Edit View Terminal Tabs Help
Compressing objects: 100% (5/5), done.
Writing objects: 100% (7/7), 6.62 KiB | 3.31 MiB/s, done.
Total 7 (delta 0), reused 0 (delta 0)
To github.com:shahdhiradj/Laboratory.git
* [new branch] master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ 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/shahsdiradj/laboratory/.git/hooks]
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
```

Figure 2.8: Инициализация git-flow

```
Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory
File Edit View Terminal Tabs Help
d version"
[release/1.0.0 d64dc09] chore(main): add version
1 file changed, 1 insertion(+)
create mode 100644 VERSION
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git flow release finish -m "ver
1" 1.0.0
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
Merge made by the 'recursive' strategy.
VERSION | 1 +
1 file changed, 1 insertion(+)
create mode 100644 VERSION

shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git flow release finish -m "ver
1" 1.0.0
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 2 commits.
(use "git push" to publish your local commits)
Switched to branch 'develop'
Merge made by the 'recursive' strategy.
VERSION | 1 +
1 file changed, 1 insertion(+)
create mode 100644 VERSION
Deleted branch release/1.0.0 (was d64dc09).

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'

shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
```

Figure 2.9: Начало релиза

```
Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory
File Edit View Terminal Tabs Help
1 file changed, 1 insertion(+)
create mode 100644 VERSION

shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git flow release finish -m "ver
1" 1.0.0
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 2 commits.
(use "git push" to publish your local commits)
Switched to branch 'develop'
Merge made by the 'recursive' strategy.
VERSION | 1 +
1 file changed, 1 insertion(+)
create mode 100644 VERSION
Deleted branch release/1.0.0 (was d64dc09).

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'

shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$ git push --all
Counting objects: 5, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 485 bytes | 485.00 KiB/s, done.
Total 5 (delta 3), reused 0 (delta 0)
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
To github.com:shahdhiradj/Laboratory.git
857cba2..1475624 master -> master
* [new branch]      develop -> develop
shahsdiradj@shahsdiradj-VirtualBox:~/laboratory$
```

Figure 2.10: Завершение релиза

```
Terminal - shahsdiradj@shahsdiradj-VirtualBox: ~/laboratory
File Edit View Terminal Tabs Help
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'
Merge made by the 'recursive' strategy.
VERSION | 1 +
1 file changed, 1 insertion(+)
create mode 100644 VERSION
Deleted branch release/1.0.0 (was d64dc09).



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'

shahsdiradj@shahsdiradj-VirtualBox:~/Laboratory$ git push --all
Counting objects: 5, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 485 bytes | 485.00 KiB/s, done.
Total 5 (delta 3), reused 0 (delta 0)
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
To github.com:shahdhiradj/Laboratory.git
857cba2..1475624 master -> master
* [new branch]      develop -> develop
shahsdiradj@shahsdiradj-VirtualBox:~/Laboratory$ git push --tags
Counting objects: 1, done.
Writing objects: 100% (1/1), 156 bytes | 156.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0)
To github.com:shahdhiradj/Laboratory.git
* [new tag]         v1.0.0 -> v1.0.0
shahsdiradj@shahsdiradj-VirtualBox:~/Laboratory$
shahsdiradj@shahsdiradj-VirtualBox:~/Laboratory$
```


Figure 2.11: Отправка изменений в сетевой репозиторий

Выполним объединение веток



## Merge tag 'v1.0.0' into develop #1



 **Open** shahdhiradj wants to merge 1 commit into `master` from `develop` 


Conversation 0 Commits 1 Checks 0 Files changed 0

 shahdhiradj commented now Owner 😊 ...

ver 1 v1.0.0

  Merge tag 'v1.0.0' into develop ... efd85c4

  shahdhiradj merged commit c3f9445 into `master` now Revert

 **Pull request successfully merged and closed** Delete branch

You're all set—the `develop` branch can be safely deleted.

Figure 2.12: Объединение веток в сетевом репозитории

## 3 Вывод

Мы приобрели практические навыки работы с системой контроля версий git и создали свой репозиторий