

Лабораторная работа № 2

git

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01 января 1970

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- Изучить идеологию и применение средств контроля версий.
- Освоить умения по работе с git.

```
[ichileshe@ichileshe ~]$ sudo dnf install git
[sudo] password for ichileshe:
Last metadata expiration check: 3:45:10 ago on Thu 29 Feb 2024 05:56:48
PM MSK.
Package git-2.44.0-1.fc39.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[ichileshe@ichileshe ~]$
```

Рис. 1: git

Установка gh

dnf install gh

```
[lchileshe@lchileshe ~]$ sudo dnf install gh
Last metadata expiration check: 3:45:56 ago on Thu 29 Feb 2024 05:56:40
PM MSK.
Dependencies resolved.
=====
Package      Architecture Version                      Repository      Size
=====
Installing:
gh           x86_64        2.43.1-1.fc39              updates        9.1 M
Transaction Summary
=====
Install 1 Package

Total download size: 9.1 M
Installed size: 46 M
Is this ok [y/N]: y
Downloading Packages:
gh-2.43.1-1.fc39.x86_64.rpm                3.4 MB/s | 9.1 MB    00:02
-----
Total                                       2.3 MB/s | 9.1 MB    00:03
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      : 1/1
  Installing     : gh-2.43.1-1.fc39.x86_64 1/1
  Running rpm postinstall: 1/1
```

Базовая настройка git

Установка имени и адреса электронной почты владельца репозитория

```
[lchileshe@lchileshe ~]$ git config --global user.name "LupupaChileshe"  
[lchileshe@lchileshe ~]$ git config --global user.email 'vchileshe988@gmail.com'
```

Настроим utf-8 в выводе сообщений git

```
[lchileshe@lchileshe ~]$ git config --global core.quotePath false
[lchileshe@lchileshe ~]$ git config --global core.quotePath false
[lchileshe@lchileshe ~]$ git config --global core.autocrlf input
[lchileshe@lchileshe ~]$ git config --global core.safecrlf warn
[lchileshe@lchileshe ~]$
```

Рис. 3: utf-8

Создание ssh-ключей

по алгоритму rsa с ключём размером 4096 бит:

ssh-keygen -t rsa -b 4096

```
[lchileshe@lchileshe ~]$ ssh-keygen -t rsa -b 4096
Generating public/private rsa key pair.
Enter file in which to save the key (/home/lchileshe/.ssh/id_rsa):
Created directory '/home/lchileshe/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/lchileshe/.ssh/id_rsa
Your public key has been saved in /home/lchileshe/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:1FBjXpstv60YX2A51fkMuUYA8TwpRFk8zkF69KlkA8o lchileshe@lchileshe
The key's randomart image is:
+---[RSA 4096]-----+
|      ..*+*+*+   |
|      =.+*+*+   |
|      ...0^+*+*+   |
|      .E . B*+*+   |
|      S  +==+ 0   |
|      ,0* .       |
|      +          |
|      0 0 .       |
|      0.0         |
+-----+-----+
```

по алгоритму ed25519:

```
ssh-keygen -t ed25519
```

```
[lchileshe@lchileshe ~]$ ssh-keygen -t ed25519
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/lchileshe/.ssh/id_ed25519):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/lchileshe/.ssh/id_ed25519
Your public key has been saved in /home/lchileshe/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:BzLzgmpJVTO9R4MVC0iKBwllphP3htD8ujIu80941fYk lchileshe@lchileshe
The key's randomart image is:
+--[ED25519 256]--+
| +oo^ . +=o. |
| . =.o^o.+o |
| ..B..+oo |
| .. B.o |
| .. o S |
| ... ..*. |
|. + oo.E.o |
|o.+..o... |
|.-oo. |
+-----[SHA256]-----+
```

Настройка автоматических подписей коммитов git

использование введенного адреса электронной почты для указания Git

```
[lchileshe@lchileshe ~]$ git config --global user.signingkey vchilehe988@gmail.com
[lchileshe@lchileshe ~]$ git config --global commit.gpgsign true
[lchileshe@lchileshe ~]$ git config --global gpg.program $(which gpg2)
[lchileshe@lchileshe ~]$ gh auth login
? What account do you want to log into? GitHub.com
? What is your preferred protocol for Git operations on this host? SSH
? Upload your SSH public key to your GitHub account? /home/lchileshe/.ssh/id_rsa.pub
? Title for your SSH key: GitHub CLI
? How would you like to authenticate GitHub CLI? Login with a web browser
r

| First copy your one-time code: 4124-3F4F
Press Enter to open github.com in your browser...
✓ Authentication complete.
- gh config set -h github.com git_protocol ssh
✓ Configured git protocol
✓ Uploaded the SSH key to your GitHub account: /home/lchileshe/.ssh/id_rsa.pub
✓ Logged in as LupupaChileshe
[lchileshe@lchileshe ~]$
```

Создание репозитория курса на основе шаблона

Создание репозитория курса на основе шаблона

```
[lchileshe@lchileshe Операционные системы]$ git clone --recursive git@github.com:
LupupaChileshe/study_2023-2024_os-intro.git os-intr
Cloning into 'os-intr'...
remote: Enumerating objects: 32, done.
remote: Counting objects: 100% (32/32), done.
remote: Compressing objects: 100% (31/31), done.
remote: Total 32 (delta 1), reused 18 (delta 0), pack-reused 0
Receiving objects: 100% (32/32), 18.60 KiB | 3.72 MiB/s, done.
Resolving deltas: 100% (1/1), done.
Submodule 'template/presentation' (https://github.com/yanadharna/academic-present
ation-markdown-template.git) registered for path 'template/presentation'
Submodule 'template/report' (https://github.com/yanadharna/academic-laboratory-re
port-template.git) registered for path 'template/report'
Cloning into '/home/lchileshe/work/study/2023-2024/Операционные системы/os-intr/t
emplate/presentation'...
remote: Enumerating objects: 95, done.
remote: Counting objects: 100% (95/95), done.
remote: Compressing objects: 100% (67/67), done.
remote: Total 95 (delta 34), reused 87 (delta 26), pack-reused 0
Receiving objects: 100% (95/95), 96.99 KiB | 928.00 KiB/s, done.
Resolving deltas: 100% (34/34), done.
Cloning into '/home/lchileshe/work/study/2023-2024/Операционные системы/os-intr/t
emplate/report'...
remote: Enumerating objects: 126, done.
remote: Counting objects: 100% (126/126), done.
remote: Compressing objects: 100% (87/87), done.
remote: Total 126 (delta 52), reused 108 (delta 34), pack-reused 0
Receiving objects: 100% (126/126), 335.80 KiB | 1.53 MiB/s, done.
```

Настройка каталога курса

```
[lchileshe@lchileshe Операционные системы]$ cd os-intr
[lchileshe@lchileshe os-intr]$ ls
CHANGELOG.md  LICENSE      README.en.md      template
config        Makefile     README.git-flow.md
COURSE        package.json README.md
[lchileshe@lchileshe os-intr]$ rm package.json
[lchileshe@lchileshe os-intr]$ ls
CHANGELOG.md  LICENSE      README.git-flow.md
config        Makefile     README.md
COURSE        README.en.md template
[lchileshe@lchileshe os-intr]$ echo os-intro > COURSE
[lchileshe@lchileshe os-intr]$ make
Usage:
  make <target>

Targets:
  list           List of courses
  prepare       Generate directories structure
  submodule      Update submodules
```

Рис. 7: каталога курса

Загрузка файлов на сервер

git add . git commit -am 'feat(main): make course structure' git push

The screenshot shows a GitHub repository interface. At the top, there's a navigation bar with 'master' selected, '1 Branch', '0 Tags', a search bar, and buttons for 'Add file' and 'Code'. Below this, the repository name 'LupupaChileshe' is displayed with the commit message 'feat(main): make course structure' and '481c582 · 2 days ago' and '3 Commits'. The main content area is a table listing files and their commit history:

File	Commit Message	Time
config	Initial commit	2 days ago
labs	feat(main): make course structure	2 days ago
presentation	feat(main): make course structure	2 days ago
project-personal	feat(main): make course structure	2 days ago
template	Initial commit	2 days ago
.gitattributes	Initial commit	2 days ago
.gitignore	Initial commit	2 days ago
.gitmodules	Initial commit	2 days ago
CHANGELOG.md	Initial commit	2 days ago
COURSE	feat(main): make course structure	2 days ago
LICENSE	Initial commit	2 days ago
Makefile	Initial commit	2 days ago
README.en.md	Initial commit	2 days ago
README.git-flow.md	Initial commit	2 days ago

On the right side, there's an 'About' section with a description 'No description, website, or topics provided.' and various statistics: 'Readme', 'CC-BY-4.0 license', 'Activity', '0 stars', '1 watching', and '0 forks'. Below this are sections for 'Releases' (No releases published, Create a new release), 'Packages' (No packages published, Publish your first package), and 'Languages' (Python 95.4%, TeX 3.3%, Makefile 1.2%, Other 0.1%). At the bottom, there's a 'Suggested workflows' section.