

Лабораторной работе 2

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Цель работы

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

Задание

- ▶ Последовательность работ по установке программного обеспечения:

Сначала установили git

foot

```
[babdullakhi@babdullakhi ~]$ sudo dnf install git
[sudo] password for babdullakhi:
Fedora 39 - x86_64 - Updates          37 kB/s | 20 kB      00:00
Fedora 39 - x86_64 - Updates          1.4 MB/s | 3.7 MB    00:02
google-chrome                        16 kB/s | 1.3 kB     00:00
google-chrome                        9.7 kB/s | 3.6 kB     00:00
Last metadata expiration check: 0:00:01 ago on Wed 28 Feb 2024 11:33:16
PM MSK.
Package git-2.43.2-1.fc39.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[babdullakhi@babdullakhi ~]$
```

затем установил gh Fedora:

```
[babdullakhi@babdullakhi ~]$ sudo dnf install gh
Last metadata expiration check: 0:01:58 ago on Wed 28 Feb 2024 11:33:16
PM MSK.
Dependencies resolved.
=====I=====
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                5.6 MB/s | 9.1 MB    00:01
-----
Total                                      3.4 MB/s | 9.1 MB    00:02
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 scriptlet: gh-2.43.1-1.fc39.x86_64    1/1
  Verifying      : gh-2.43.1-1.fc39.x86_64      1/1

Installed:
  gh-2.43.1-1.fc39.x86_64
```

Теперь базовая настройка git: давайте установим имя владельца репозитория.

```
Complete!  
[babdullakhi@babdullakhi ~]$ git config --global user.name "Bahara12"  
[babdullakhi@babdullakhi ~]$
```

Теперь базовая настройка git: давайте установим email владельца репозитория.

```
[babdullakhi@babdullakhi ~]$ git config --global user.email "baharaabdul  
lahi4@gmail.com"  
[babdullakhi@babdullakhi ~]$ █
```

Настройка utf-8 в выводе сообщения git и Настройте имя начальной ветки

- ▶ Параметр autocrlf
- ▶ параметр Safecrlf

```
[babdullakhi@babdullakhi ~]$ git config --global core.quotepath false
[babdullakhi@babdullakhi ~]$ git config --global init.defaultBranch master
[babdullakhi@babdullakhi ~]$ git config --global core.autocrlf input
[babdullakhi@babdullakhi ~]$ git config --global core.safecrlf warn
[babdullakhi@babdullakhi ~]$
```


Создайте ключи ssh с использованием алгоритма rsa с размером ключа 4096 бит.

```
[babdullakhi@babdullakhi ~]$ ssh-keygen -t rsa -b 4096
Generating public/private rsa key pair.
Enter file in which to save the key (/home/babdullakhi/.ssh/id_rsa):
Created directory '/home/babdullakhi/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/babdullakhi/.ssh/id_rsa
Your public key has been saved in /home/babdullakhi/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:RCMMvSv8nqFAt6tVye5p040cZieplRx1AYdT4p+vmp4 babdullakhi@babdullak
hi
The key's randomart image is:
+---[RSA 4096]-----+
|      +B+ o          |
|      .oo+o .        |
|      .. o.          |
|      .oo+           |
|      .o...*.S       |
|      ...o+...       |
|      ..oo*o .       |
|      o+0**+=        |
|      oBE*B+         |
+-----[SHA256]-----+
[babdullakhi@babdullakhi ~]$
```

затем используйте алгоритм ed25519:

```
[babdullakhi@babdullakhi ~]$ ssh-keygen -t ed25519
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/babdullakhi/.ssh/id_ed25519):

Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/babdullakhi/.ssh/id_ed25519
Your public key has been saved in /home/babdullakhi/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:PD0QffUK8A8C+mojebH7s60DYRDjj3/7VDS+RhpHxYI babdullakhi@babdullak
hi
The key's randomart image is:
+--[ED25519 256]--+
|  o.  o... oo  |
|  ... . oEoo... |
|  ... . ..B.  .|
|  ooo o = = .  |
|  ..o.S + = o  |
|  o.+ . B .    |
|  o B.. o o     |
|  + +o+ .      |
|  ..=*o        |
+-----[SHA256]-----+
[babdullakhi@babdullakhi ~]$
```

Создание ключей pgp:

Генерация ключа.

```
[babdullakhi@babdullakhi ~]$ gpg --full-generate-key

gpg (GnuPG) 2.4.3; Copyright (C) 2023 g10 Code GmbH
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

gpg: directory '/home/babdullakhi/.gnupg' created
Please select what kind of key you want:
  (1) RSA and RSA
  (2) DSA and Elgamal
  (3) DSA (sign only)
  (4) RSA (sign only)
  (9) ECC (sign and encrypt) *default*
 (10) ECC (sign only)
 (14) Existing key from card
Your selection? 1
RSA keys may be between 1024 and 4096 bits long.
What keysize do you want? (3072) 4096
Requested keysize is 4096 bits
Please specify how long the key should be valid.
    0 = key does not expire
    <n> = key expires in n days
    <n>w = key expires in n weeks
    <n>m = key expires in n months
    <n>y = key expires in n years
Key is valid for? (0) 0
Key does not expire at all
Is this correct? (y/N) y

GnuPG needs to construct a user ID to identify your key.

Real name: Bahara Abdullahi
Email address: baharaabdullahi4@gmail.com
Comment:
```

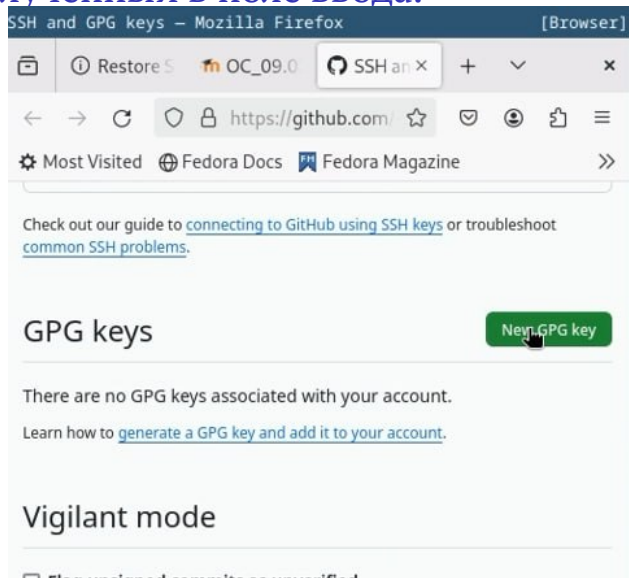
Добавьте ключи PGP в GitHub:

- ▶ затем покажите нам список ключей и скопируйте отпечаток закрытого ключа.

```
[babdullakhi@babdullakhi ~]$ gpg --list-secret-keys --keyid-format LONG
gpg: checking the trustdb
gpg: marginals needed: 3  completes needed: 1  trust model: pgp
gpg: depth: 0  valid: 1  signed: 0  trust: 0-, 0q, 0n, 0m, 0f, 1u
[keyboxd]
-----
sec   rsa4096/54D0D1024F510A01 2024-02-28 [SC]
      01EC06789E1A51E463BF246854D0D1024F510A01
uid           [ultimate] Bahara Abdullahi <baharaabdullahi4@gmail.
com>
ssb   rsa4096/F68013A61E3AE2E8 2024-02-28 [E]

[babdullakhi@babdullakhi ~]$
```

Заходим на GitHub(<http://github.com/setting/key>), нажимаем кнопку New GPG key и вставляем полученный в поле ввода.



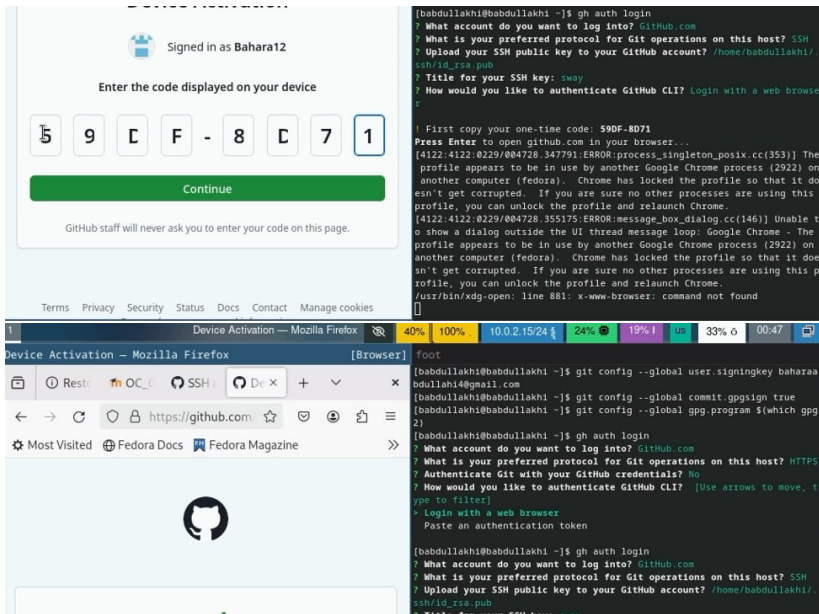
Настройка автоматического подписания коммитов git

- ▶ введенный адрес электронной почты, скажите Git использовать его при подписании коммитов:

```
[babdullakhi@babdullakhi ~]$ git config --global user.signingkey baharaa  
bdullahi4@gmail.com  
[babdullakhi@babdullakhi ~]$ git config --global commit.gpgsign true  
[babdullakhi@babdullakhi ~]$ git config --global gpg.program $(which gpg  
2)  
[babdullakhi@babdullakhi ~]$
```

Настройка gh:

▶ Сначала необходимо войти в систему.



The image shows a two-part process for setting up the GitHub CLI. The top part is a web browser window displaying the GitHub authentication page. It shows the user is signed in as 'Bahara12' and prompts them to enter a code from their device. The code '59DF-8D71' is shown in a sequence of boxes, with the last box containing '1'. A green 'Continue' button is visible. The bottom part of the image shows a terminal window with the same user, 'babbdullakhi', running the 'gh auth login' command. The terminal output shows the user selecting 'GitHub.com' as the account, 'SSH' as the preferred protocol, and 'Login with a web browser' as the authentication method. The terminal also shows the user's SSH public key and the command to paste the authentication token.

Signed in as Bahara12

Enter the code displayed on your device

5 9 C F - 8 C 7 1

Continue

GitHub staff will never ask you to enter your code on this page.

Terms Privacy Security Status Docs Contact Manage cookies

Device Activation — Mozilla Firefox 40% 100% 10.0.2.15/24 24% 19% us 33% 00:47

Device Activation — Mozilla Firefox [Browser] foot

```
[babbdullakhi@babbdullakhi ~]$ git config --global user.signingkey bhabaraa
bdullahi4@gmail.com
[babbdullakhi@babbdullakhi ~]$ git config --global commit.gpgsign true
[babbdullakhi@babbdullakhi ~]$ git config --global gpg.program $(which gpg
2)
[babbdullakhi@babbdullakhi ~]$ gh auth login
? What account do you want to log into? GitHub.com
? What is your preferred protocol for Git operations on this host? HTTPS
? Authenticate Git with your GitHub credentials? No
? How would you like to authenticate GitHub CLI? [Use arrows to move, t
ype to filter]
> Login with a web browser
  Paste an authentication token

[babbdullakhi@babbdullakhi ~]$ 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/babbdullakhi/.
ssh/id_rsa.pub
? What is your preferred SSH host? /home/babbdullakhi/.ssh/config
```

Настройка каталога курса. Перейдите в каталог курса:

```
[babdullakhi@babdullakhi Операционные системы]$ cd ~/work/study/2023-2024/"Операционные системы"/os-intro  
[babdullakhi@babdullakhi os-intro]$ █
```


Удалите ненужные файлы и создайте необходимые каталоги:

```
[babdullakhi@babdullakhi Операционные системы]$ cd ~/work/study/2023-2024/"Операционные системы"/os-intro
[babdullakhi@babdullakhi os-intro]$ rm package.json
[babdullakhi@babdullakhi os-intro]$ echo os-intro > COURSE
[babdullakhi@babdullakhi os-intro]$ make
Usage:
  make <target>

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

[babdullakhi@babdullakhi os-intro]$
```

```
[babdullakhi@babdullakhi os-intro]$ make
Usage:
    make <target>

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

[babdullakhi@babdullakhi os-intro]$ Makes prepare
bash: Makes: command not found
```

Загрузить сервер:

► Можно загрузить файлы на сервер с помощью команды

1. `git add .`
2. `git commit -am 'bahara'`
3. `git push`

Вывод :

- ▶ В ходе лабораторной работы мы изучили использование средств контроля версий, таких как Git. Это позволяет нам отслеживать изменения в коде и документах, сохраняя историю изменений для удобства совместной работы над проектами.

Спасибо за внимание !