

Лабораторная работа №1

Работа с git

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Информация

Докладчик

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- Студент
- Российский университет дружбы народов
- 1132226527@pfur.ru

Цели и задачи

- Научиться взаимодействовать с git.

Основная часть

Подготовка и настройка git

```
panatyukhin@pashka-VirtualBox:~$ git config --global user.name Irgulbic
panatyukhin@pashka-VirtualBox:~$ git config --global user.email pashok228123@gmail.com
panatyukhin@pashka-VirtualBox:~$ git config --global core.autocrlf input
panatyukhin@pashka-VirtualBox:~$ git config --global core.safecrlf true
panatyukhin@pashka-VirtualBox:~$ git config --global core.quotePath off
```

Figure 1: Настройка юзера и параметры установки окончаний строк

Создание проекта

```
panatyukhin@pashka-VirtualBox:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
panatyukhin@pashka-VirtualBox:~$ mkdir study
panatyukhin@pashka-VirtualBox:~$ cd study/
panatyukhin@pashka-VirtualBox:~/study$ mkdir hello
panatyukhin@pashka-VirtualBox:~/study$ touch /hello/hello.html
touch: cannot touch '/hello/hello.html': No such file or directory
panatyukhin@pashka-VirtualBox:~/study$ touch hello/hello.html
panatyukhin@pashka-VirtualBox:~/study$ echo "Hello, world!" > hello/hello.html
panatyukhin@pashka-VirtualBox:~/study$ echo "Hello, world!" > hello/hello.html
panatyukhin@pashka-VirtualBox:~/study$ cd hello/
panatyukhin@pashka-VirtualBox:~/study/hello$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/panatyukhin/study/hello/.git/
panatyukhin@pashka-VirtualBox:~/study/hello$ git add hello.html
panatyukhin@pashka-VirtualBox:~/study/hello$ git commit -m "Initial Commit"
[master (root-commit) 7465d52] Initial Commit
1 file changed, 1 insertion(+)
```

Figure 2: Работа с репозиторием

Внесение изменений и индексация

```
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log --pretty=
db35f0240475a4821e82369a47b14d56203668e6 (HEAD -> master) Added
ba13cea5e13f71768ad80131b3e17f8261695df9 Added standard HTML pa
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log --pretty=
db35f0240475a4821e82369a47b14d56203668e6 (HEAD -> master) Added
ba13cea5e13f71768ad80131b3e17f8261695df9 Added standard HTML pa
b4745cbb91f27e4eb3de071aa7f475b3d4c92cc4 added h2 tag
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log --pretty=oneline --max-count=3
db35f0240475a4821e82369a47b14d56203668e6 (HEAD -> master) Added HTML header
ba13cea5e13f71768ad80131b3e17f8261695df9 Added standard HTML page tags
b4745cbb91f27e4eb3de071aa7f475b3d4c92cc4 added h2 tag
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log --pretty=oneline --max-count=3man git-
log
fatal: ambiguous argument 'git-log': unknown revision or path not in the working tree.
Use '--' to separate paths from revisions, like this:
'git <command> [<revision>...] -- [<file>...]'
panatyukhin@pashka-VirtualBox: ~/study/hello$ man git-log

[1]- Stopped man git-log
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log
git log
commit db35f0240475a4821e82369a47b14d56203668e6 (HEAD -> master)
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:23:15 2025 +0300

    Added HTML header

commit ba13cea5e13f71768ad80131b3e17f8261695df9
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:22:05 2025 +0300

    Added standard HTML page tags

commit b4745cbb91f27e4eb3de071aa7f475b3d4c92cc4
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:18:34 2025 +0300

    added h2 tag
```

Figure 3: git commit

Работа с историей и тегами

```
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log --pretty=
db35f0240475a4821e82369a47b14d56203668e6 (HEAD -> master) Added
ba13cea5e13f71768ad80131b3e17f8261695df9 Added standard HTML pa
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log --pretty=
db35f0240475a4821e82369a47b14d56203668e6 (HEAD -> master) Added
ba13cea5e13f71768ad80131b3e17f8261695df9 Added standard HTML pa
b4745cbb91f27e4eb3de071aa7f475b3d4c92cc4 added h2 tag
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log --pretty=oneline --max-count=3
db35f0240475a4821e82369a47b14d56203668e6 (HEAD -> master) Added HTML header
ba13cea5e13f71768ad80131b3e17f8261695df9 Added standard HTML page tags
b4745cbb91f27e4eb3de071aa7f475b3d4c92cc4 added h2 tag
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log --pretty=oneline --max-count=3man git-
log
fatal: ambiguous argument 'git-log': unknown revision or path not in the working tree.
Use '--' to separate paths from revisions, like this:
'git <command> [<revision>...] -- [<file>...]'
panatyukhin@pashka-VirtualBox: ~/study/hello$ man git-log

[1]- Stopped man git-log
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log
git log
commit db35f0240475a4821e82369a47b14d56203668e6 (HEAD -> master)
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:23:15 2025 +0300

    Added HTML header

commit ba13cea5e13f71768ad80131b3e17f8261695df9
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:22:05 2025 +0300

    Added standard HTML page tags

commit b4745cbb91f27e4eb3de071aa7f475b3d4c92cc4
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:18:34 2025 +0300

    added h2 tag

panatyukhin@pashka-VirtualBox: ~/study/hello$ git tag v1-beta
panatyukhin@pashka-VirtualBox: ~/study/hello$ git checkout v1
Previous HEAD position was ba13cea Added standard HTML page tags
HEAD is now at db35f02 Added HTML header
panatyukhin@pashka-VirtualBox: ~/study/hello$ git checkout v1-beta
Previous HEAD position was db35f02 Added HTML header
HEAD is now at ba13cea Added standard HTML page tags
panatyukhin@pashka-VirtualBox: ~/study/hello$ git tag
v1
v1-beta
panatyukhin@pashka-VirtualBox: ~/study/hello$ git log master --all
commit db35f0240475a4821e82369a47b14d56203668e6 (tag: v1, master)
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:23:15 2025 +0300

    Added HTML header

commit ba13cea5e13f71768ad80131b3e17f8261695df9 (HEAD, tag: v1-beta)
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:22:05 2025 +0300

    Added standard HTML page tags

commit b4745cbb91f27e4eb3de071aa7f475b3d4c92cc4
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:18:34 2025 +0300

    added h2 tag

commit 746d52b373ae163952f912274234445f2e31a40
```

Отмена изменений

```
GNU nano 7.2 h
<html>
  <head>
    <!--esddcvvasd-->
  </head>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>

panatyukhin@pashka-VirtualBox:~/study/hello$ nano hello.html
panatyukhin@pashka-VirtualBox:~/study/hello$ git add hello.html
panatyukhin@pashka-VirtualBox:~/study/hello$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   hello.html

panatyukhin@pashka-VirtualBox:~/study/hello$ git reset HEAD hello.html
Unstaged changes after reset:
M       hello.html
panatyukhin@pashka-VirtualBox:~/study/hello$ git checkout hello.html
Updated 1 path from the index
panatyukhin@pashka-VirtualBox:~/study/hello$ git status
On branch master

[master 4e84011] Oops, we didnt want this commit
1 file changed, 1 insertion(+)
panatyukhin@pashka-VirtualBox:~/study/hello$ git revert HEAD
[master 0bee4a3] Revert "Oops, we didnt want this commit"
1 file changed, 1 deletion(-)
panatyukhin@pashka-VirtualBox:~/study/hello$ git log
commit 0bee4a33d447202c7454cd2253ac08b59b87254c (HEAD -> master)
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:44:38 2025 +0300

    Revert "Oops, we didnt want this commit"

    This reverts commit 4e84011fc83e02d3b4d4c648511346f247455d18.

commit 4e84011fc83e02d3b4d4c648511346f247455d18
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:44:25 2025 +0300

    Oops, we didnt want this commit

commit db35f0240475a4821e82369a47b14d56203668e6 (tag: v1)
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:23:15 2025 +0300

    Added HTML header

commit ba13cea5e13f71768ad80131b3e17f8261695df9 (tag: v1-beta)
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 20:22:05 2025 +0300

    Added standard HTML page tags

commit b4745cbb91f27e4eb3de071aa7f475b3d4c92cc4
Author: Irgulbic <pashok228123@gmail.com>
```


Работа с ветками

```
panatyukhin@pashka-VirtualBox:~/study/hello$ git checkout -b style
Switched to a new branch 'style'
panatyukhin@pashka-VirtualBox:~/study/hello$ git status
git: 'status' is not a git command. See 'git --help'.

The most similar command is
status
panatyukhin@pashka-VirtualBox:~/study/hello$ git status
On branch style
Changes not staged for commit:
  (use "git add/rm <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        deleted:    lib/index.html

no changes added to commit (use "git add" and/or "git commit -a")
panatyukhin@pashka-VirtualBox:~/study/hello$ git checkout master
D
lib/index.html
Switched to branch 'master'
panatyukhin@pashka-VirtualBox:~/study/hello$ git add .
panatyukhin@pashka-VirtualBox:~/study/hello$ git commit -m "deleted wrong file"
[master 4d92952] deleted wrong file
1 file changed, 5 deletions(-)
delete mode 100644 lib/index.html
panatyukhin@pashka-VirtualBox:~/study/hello$ git checkout style
Switched to branch 'style'
panatyukhin@pashka-VirtualBox:~/study/hello$ git status
On branch style
nothing to commit, working tree clean
panatyukhin@pashka-VirtualBox:~/study/hello$ touch lib/style.css
panatyukhin@pashka-VirtualBox:~/study/hello$ nano lib/style.css
panatyukhin@pashka-VirtualBox:~/study/hello$ git add lib/style.css
[style a6a5118] added css stylesheet
1 file changed, 3 insertions(+)
```

```
panatyukhin@pashka-VirtualBox:~/study/hello$ git checkout master
git checkout master
Switched to branch 'master'
panatyukhin@pashka-VirtualBox:~/study/hello$ cat lib/hello.html
<!-- Author: Matyukhin Pavel (1132226527@rudn.ru) -->
<html>
  <head>
  </head>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>
panatyukhin@pashka-VirtualBox:~/study/hello$ git checkout style
Switched to branch 'style'
panatyukhin@pashka-VirtualBox:~/study/hello$ cat lib/hello.html
<!-- Author: Matyukhin Pavel (1132226527@rudn.ru) -->
<html>
  <head>
    <link type="text/css" rel="stylesheet" media="all" href="style.css" />
  </head>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>
```

Слияние и разрешение конфликтов

```
panatyukhin@pashka-VirtualBox:~/study/hello$ git checkout style
Switched to branch 'style'
panatyukhin@pashka-VirtualBox:~/study/hello$ git merge master
Merge made by the 'ort' strategy.
 README.md      | 1 +
 lib/index.html | 5
 2 files changed, 1 insertion(+), 5 deletions(-)
 create mode 100644 README.md
 delete mode 100644 lib/index.html
```

```
GNU nano 7.2 lib/hello.html
<!-- Author: Matyukhin Pavel (1132226527@rudn.ru) -->
<html>
  <head>
<----- HEAD
=====
  <link type="text/css" rel="stylesheet" media="
>>>>>> master
  </head>
  <body>
    <h1>Hello, world! Life if great!</h1>
  </body>
</html>
```

```
panatyukhin@pashka-VirtualBox:~/study/hello$ git log --graph --
* commit 7616a3b97a979759f336aeb7d917ac7ac0c70d75 (HEAD -> mast
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 21:40:54 2025 +0300

    Life is great

* commit 2bd8f8f113d70e7b0c2624e2e1d7a246ccb4a1d8 (style)
Merge: d187104 c156538
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 21:38:14 2025 +0300

    Merge branch 'master' into style

* commit c156538abab248e8012c09edc50bb68e3a10199b
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 21:37:05 2025 +0300

    added README

* commit 4d92952eaf4d7fc8bd6e8c48f962efa58cf12aef
Author: Irgulbic <pashok228123@gmail.com>
Date: Thu Feb 20 21:27:24 2025 +0300

    deleted wrong file

* commit d1871043095fd1953a6a23d25e53fdb78d02bdc1
Author: Irgulbic <pashok228123@gmail.com>
```

Работа с удаленными репозиториями

```
panatyukhin@pashka-VirtualBox:~/study/hello$ cd ..
panatyukhin@pashka-VirtualBox:~/study$ pwd
/home/panatyukhin/study
panatyukhin@pashka-VirtualBox:~/study$ ls
hello
panatyukhin@pashka-VirtualBox:~/study$ git clone hello cloned_hello
Cloning into 'cloned_hello'...
done.
panatyukhin@pashka-VirtualBox:~/study$ ls
cloned_hello  hello
panatyukhin@pashka-VirtualBox:~/study/cloned_hello$ git remote add shared ../hello.git
panatyukhin@pashka-VirtualBox:~/study/cloned_hello$ git branch --track shared master
branch 'shared' set up to track 'master'.
panatyukhin@pashka-VirtualBox:~/study/cloned_hello$ git pull shared master
fatal: couldn't find remote ref master
panatyukhin@pashka-VirtualBox:~/study/cloned_hello$ cat README.md
This is the Hello World example from the git tutorial.
panatyukhin@pashka-VirtualBox:~/study/cloned_hello$ git pull shared master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 388 bytes | 388.00 KiB/s, done.
From ../hello
 * branch                master       -> FETCH_HEAD
 * [new branch]          master       -> shared/master
Updating 552279b..7b1e9d5
Fast-forward
 README.md | 1 +
```

Вывод

Научился взаимодействовать с git.