

# Презентация по лабораторной работе №1

Работа с Git

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# Информация

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## Вводная часть

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## Цель работы

Приобретение практических навыков работы с системой управления версиями Git.

## Задачи

- Создать репозиторий
- Изменить его содержимое, изучить работу с коммитами, версиями и тегами
- Поработать с объектами Git
- Создать дополнительную ветку, провести слияние, разрешение конфликтов
- Создать клон репозитория и слить его с оригинальным
- Залить и извлечь изменения

## Выполнение лабораторной работы

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```
dacossti@DESKTOP-124TDCD:~$ git config --global user.name "Dacossti"
dacossti@DESKTOP-124TDCD:~$ git config --global user.email "osiasstave15@gmail.com"
dacossti@DESKTOP-124TDCD:~$ git config --global core.autocrlf input
dacossti@DESKTOP-124TDCD:~$ git config --global core.safecrlf true
dacossti@DESKTOP-124TDCD:~$ git config --global core.quotepath off
```

Рис. 1: Настройка git

```
dacossti@DESKTOP-124TDCD:~$ mkdir hello
dacossti@DESKTOP-124TDCD:~$ cd hello
dacossti@DESKTOP-124TDCD:~/hello$ touch hello.html
dacossti@DESKTOP-124TDCD:~/hello$ echo "Hello, World!" > hello.html
dacossti@DESKTOP-124TDCD:~/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/dacossti/hello/.git/
dacossti@DESKTOP-124TDCD:~/hello$ git add hello.html
dacossti@DESKTOP-124TDCD:~/hello$ git commit -m "Initial Commit"
[master (root-commit) cd073bf] Initial Commit
 1 file changed, 1 insertion(+)
 create mode 100644 hello.html
dacossti@DESKTOP-124TDCD:~/hello$ git status
On branch master
nothing to commit, working tree clean
```

Рис. 2: Создание репозитория



```
dacossti@DESKTOP-124TCDC:~/hello$ nano hello.html
dacossti@DESKTOP-124TCDC:~/hello$ cat hello.html
<h1>Hello, World!</h1>
dacossti@DESKTOP-124TCDC:~/hello$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   hello.html

no changes added to commit (use "git add" and/or "git commit -a")
dacossti@DESKTOP-124TCDC:~/hello$ git add hello.html
dacossti@DESKTOP-124TCDC:~/hello$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   hello.html
```

Рис. 3: Внесение изменений в содержимое репозитория

```
dacossti@DESKTOP-124TDCD:~/hello$ git commit
[master b6c093e] «Added h1 tag»
1 file changed, 1 insertion(+), 1 deletion(-)
dacossti@DESKTOP-124TDCD:~/hello$ git status
On branch master
nothing to commit, working tree clean
dacossti@DESKTOP-124TDCD:~/hello$ nano hello.html
dacossti@DESKTOP-124TDCD:~/hello$ cat hello.html
<h1>Hello, World!</h1>
dacossti@DESKTOP-124TDCD:~/hello$ nano hello.html
dacossti@DESKTOP-124TDCD:~/hello$ git add hello.html
dacossti@DESKTOP-124TDCD:~/hello$ nano hello.html
dacossti@DESKTOP-124TDCD:~/hello$ cat hello.html
<html>
<head>
</head>
<body>
<h1>Hello, World!</h1>
</body>
</html>
dacossti@DESKTOP-124TDCD:~/hello$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   hello.html

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   hello.html

dacossti@DESKTOP-124TDCD:~/hello$ git commit -m "Added standard HTML page tags"
[master b59bc7f] Added standard HTML page tags
1 file changed, 4 insertions(+)
dacossti@DESKTOP-124TDCD:~/hello$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   hello.html
```

Рис. 4: Внесение нескольких изменений в содержимое репозитория

```
dacossti@DESKTOP-124TDCD:~/hello$ git log
commit 1a44782cac245a2654d36f7f63a86a45618bf504 (HEAD -> master)
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:31:25 2025 +0300

    Added HTML header

commit b50bc7f8d377c23a73bc82a23f7d94b5f7b113b6
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:30:25 2025 +0300

    Added standard HTML page tags

commit b6c093ed48b86b145559c4b0571cbae4ae452127
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:24:22 2025 +0300

    «Added h1 tag»

commit cd073bfa2b66136c94b6ee7d8c1a57a89fceff5
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:20:57 2025 +0300

    Initial Commit

dacossti@DESKTOP-124TDCD:~/hello$ git log --pretty=oneline
1a44782cac245a2654d36f7f63a86a45618bf504 (HEAD -> master) Added HTML header
b50bc7f8d377c23a73bc82a23f7d94b5f7b113b6 Added standard HTML page tags
b6c093ed48b86b145559c4b0571cbae4ae452127 «Added h1 tag»
cd073bfa2b66136c94b6ee7d8c1a57a89fceff5 Initial Commit
dacossti@DESKTOP-124TDCD:~/hello$ git log --pretty=oneline --max-count=2
1a44782cac245a2654d36f7f63a86a45618bf504 (HEAD -> master) Added HTML header
b50bc7f8d377c23a73bc82a23f7d94b5f7b113b6 Added standard HTML page tags
dacossti@DESKTOP-124TDCD:~/hello$ git log --pretty=oneline --until='5 minutes ago'
b6c093ed48b86b145559c4b0571cbae4ae452127 «Added h1 tag»
cd073bfa2b66136c94b6ee7d8c1a57a89fceff5 Initial Commit
dacossti@DESKTOP-124TDCD:~/hello$ git log --pretty=oneline --author=Dacossti>
-bash: syntax error near unexpected token `newline'
dacossti@DESKTOP-124TDCD:~/hello$ git log --pretty=oneline --author=Dacossti
```

Рис. 5: Просмотр истории

# Получение старых версий

```
dacossti@DESKTOP-124TDCD:~/hello$ git checkout b50bc7f
Note: switching to 'b50bc7f'.

You are in 'detached HEAD' state. You can look around, make experimental
changes and commit them, and you can discard any commits you make in this
state without impacting any branches by switching back to a branch.

If you want to create a new branch to retain commits you create, you may
do so (now or later) by using -c with the switch command. Example:

    git switch -c <new-branch-name>

Or undo this operation with:

    git switch -

Turn off this advice by setting config variable advice.detachedHead to false

HEAD is now at b50bc7f Added standard HTML page tags
dacossti@DESKTOP-124TDCD:~/hello$ cat hello.html
<html>
<body>
<h1>Hello, World!</h1>
</body>
</html>
dacossti@DESKTOP-124TDCD:~/hello$ git checkout master
Previous HEAD position was b50bc7f Added standard HTML page tags
Switched to branch 'master'
```

Рис. 6: Просмотр разных версий репозитория

# Создание тегов версий

```
dacossti@DESKTOP-124TDC:~/hello$ git tag v1
dacossti@DESKTOP-124TDC:~/hello$ git checkout v1^
Note: switching to 'v1^'.

You are in 'detached HEAD' state. You can look around, make experimental
changes and commit them, and you can discard any commits you make in this
state without impacting any branches by switching back to a branch.

If you want to create a new branch to retain commits you create, you may
do so (now or later) by using -c with the switch command. Example:

    git switch -c <new-branch-name>

Or undo this operation with:

    git switch -

Turn off this advice by setting config variable advice.detachedHead to false

HEAD is now at b50bc7f Added standard HTML page tags
dacossti@DESKTOP-124TDC:~/hello$ cat hello.html
<html>
<body>
<h1>Hello, World!</h1>
</body>
</html>
dacossti@DESKTOP-124TDC:~/hello$ git tag v1-beta
dacossti@DESKTOP-124TDC:~/hello$ git checkout v1
Previous HEAD position was b50bc7f Added standard HTML page tags
HEAD is now at 1a44782 Added HTML header
dacossti@DESKTOP-124TDC:~/hello$ git checkout v1-beta
Previous HEAD position was 1a44782 Added HTML header
HEAD is now at b50bc7f Added standard HTML page tags
```

Рис. 7: Создание тегов версий

# Создание тегов версий

```
dacossti@DESKTOP-124TCDC:~/hello$ git checkout v1-beta
Previous HEAD position was 1a44782 Added HTML header
HEAD is now at b50bc7f Added standard HTML page tags
dacossti@DESKTOP-124TCDC:~/hello$ git tag
v1
v1-beta
dacossti@DESKTOP-124TCDC:~/hello$ git log master --all
commit 1a44782cac245a2654d36f7f63a06a45618bf504 (tag: v1, master)
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:31:25 2025 +0300

    Added HTML header

commit b50bc7f8d377c23a73bc82a23f7d94b5f7b113b6 (HEAD, tag: v1-beta)
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:30:25 2025 +0300

    Added standard HTML page tags

commit b6c093ed48b86b145559c4b0571cbae4ae452127
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:24:22 2025 +0300

    «Added h1 tag»

commit cd073bfa2b66136c94b6ee7d8ce1a57a89fceff5
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:20:57 2025 +0300

    Initial Commit
```

Рис. 8: Переключение по имени тега и просмотр доступных тегов

## Отмена локальных изменений (до индексации)

```
dacossti@DESKTOP-124TDC:~/hello$ git checkout master
Previous HEAD position was b50bc7f Added standard HTML page tags
Switched to branch 'master'
dacossti@DESKTOP-124TDC:~/hello$ nano hello.html
dacossti@DESKTOP-124TDC:~/hello$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   hello.html

no changes added to commit (use "git add" and/or "git commit -a")
dacossti@DESKTOP-124TDC:~/hello$ git checkout hello.html
Updated 1 path from the index
dacossti@DESKTOP-124TDC:~/hello$ git status
On branch master
nothing to commit, working tree clean
dacossti@DESKTOP-124TDC:~/hello$ cat hello.html
<html>
<head>
</head>
<body>
<h1>Hello, World!</h1>
</body>
</html>
```

Рис. 9: Отмена локальных изменений (до индексации)

## Отмена проиндексированных изменений (перед коммитом)

```
dacossti@DESKTOP-124TCDC:~/hello$ nano hello.html
dacossti@DESKTOP-124TCDC:~/hello$ git add hello.html
dacossti@DESKTOP-124TCDC:~/hello$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   hello.html

dacossti@DESKTOP-124TCDC:~/hello$ git reset HEAD hello.html
Unstaged changes after reset:
M    hello.html
dacossti@DESKTOP-124TCDC:~/hello$ git checkout hello.html
Updated 1 path from the index
dacossti@DESKTOP-124TCDC:~/hello$ git status
On branch master
nothing to commit, working tree clean
```

Рис. 10: Отмена проиндексированных изменений (перед коммитом)



```
dacossti@DESKTOP-124TDC:~/hello$ nano hello.html
dacossti@DESKTOP-124TDC:~/hello$ git add hello.html
dacossti@DESKTOP-124TDC:~/hello$ git commit -m "Oops, we didn't want this commit"
[master 8439e8f] Oops, we didn't want this commit
1 file changed, 1 insertion(+)
dacossti@DESKTOP-124TDC:~/hello$ git revert HEAD
[master f0e4194] Revert "Oops, we didn't want this commit"
1 file changed, 1 deletion(-)
dacossti@DESKTOP-124TDC:~/hello$ git log
commit f0e41940606cb0c1cdedd75e1e8993d39cf35b16 (HEAD -> master)
Author: Dacossti <osiasstave15@gmail.com>
Date: Wed May 28 23:43:54 2025 +0300

    Revert "Oops, we didn't want this commit"

    This reverts commit 8439e8f381cf78d171b9fba5d4bb50829d34a442.

commit 8439e8f381cf78d171b9fba5d4bb50829d34a442
Author: Dacossti <osiasstave15@gmail.com>
Date: Wed May 28 23:43:40 2025 +0300

    Oops, we didn't want this commit
```

Рис. 11: Отмена коммитов

```
dacossti@DESKTOP-1247CDE:~/hello$ git tag oops
dacossti@DESKTOP-1247CDE:~/hello$ git reset --hard v1
HEAD is now at 1a44782 Added HTML header
dacossti@DESKTOP-1247CDE:~/hello$ git log
commit 1a44782cac245a265d36f7f63a06a45618b4584 (HEAD -> master, tag: v1)
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:31:25 2025 +0300

    Added HTML header

commit b50bc7f8d377c23a73bc82a23f9d94b5f7b113b6 (tag: v1-beta)
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:30:25 2025 +0300

    Added standard HTML page tags

commit b6c093ed48b86b145559c4b8571cbe4ae452127
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:24:22 2025 +0300

    «Added h1 tag»

commit cd073bf2b46136c94b6ee7d8c1a57a29fcef45
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:20:57 2025 +0300

    Initial Commit
```

Рис. 12: Удаление коммитов из ветки

```
dacossti@DESKTOP-124TCDC:~/hello$ git tag -d oops
Deleted tag 'oops' (was f0e4194)
dacossti@DESKTOP-124TCDC:~/hello$ git log --all
commit 1a44782cac245a2654d36f7f63a06a45618bf504 (HEAD -> master, tag: v1)
Author: Dacossti <osiasstavel5@gmail.com>
Date: Wed May 28 23:31:25 2025 +0300

    Added HTML header

commit b50bc7f8d377c23a73bc82a23f7d94b5f7b113b6 (tag: v1-beta)
Author: Dacossti <osiasstavel5@gmail.com>
Date: Wed May 28 23:30:25 2025 +0300

    Added standard HTML page tags

commit b6c093ed48b86b145559c4b0571cbae4ae452127
Author: Dacossti <osiasstavel5@gmail.com>
Date: Wed May 28 23:24:22 2025 +0300

    «Added h1 tag»

commit cd073bfa2b66136c94b6ee7d8ce1a57a89fceff5
Author: Dacossti <osiasstavel5@gmail.com>
Date: Wed May 28 23:20:57 2025 +0300

    Initial Commit
```

Рис. 13: Удаление тега oops

# Изменение предыдущего коммита

```
dacossti@DESKTOP-124TDC:~/hello$ nano hello.html
dacossti@DESKTOP-124TDC:~/hello$ git add hello.html
dacossti@DESKTOP-124TDC:~/hello$ git commit -m "Add an author comment"
[master a52e924] Add an author comment
1 file changed, 1 insertion(+)
dacossti@DESKTOP-124TDC:~/hello$ nano hello.html
dacossti@DESKTOP-124TDC:~/hello$ git add hello.html
dacossti@DESKTOP-124TDC:~/hello$ git commit --amend -m "Add an author/email comment"
[master 4f50056] Add an author/email comment
Date: Wed May 28 23:48:20 2025 +0300
1 file changed, 1 insertion(+)
dacossti@DESKTOP-124TDC:~/hello$ git log
commit 4f50056e1de4ee9910d2d97712eb4fb52ca75f (HEAD -> master)
Author: Dacossti <osiasstave15@gmail.com>
Date: Wed May 28 23:48:20 2025 +0300

    Add an author/email comment
```

Рис. 14: Изменение предыдущего коммита

# Перемещение файлов

```
dacossti@DESKTOP-124TCD:~/hello$ mkdir lib
dacossti@DESKTOP-124TCD:~/hello$ git mv hello.html lib
dacossti@DESKTOP-124TCD:~/hello$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        renamed:    hello.html -> lib/hello.html

dacossti@DESKTOP-124TCD:~/hello$ mkdir lib
mkdir: cannot create directory 'lib': File exists
dacossti@DESKTOP-124TCD:~/hello$ mv hello.html lib
mv: cannot stat 'hello.html': No such file or directory
dacossti@DESKTOP-124TCD:~/hello$ git commit -m "Moved hello.html to lib"
[master a11b2a8] Moved hello.html to lib
1 file changed, 0 insertions(+), 0 deletions(-)
rename hello.html => lib/hello.html (100%)
```

Рис. 15: Перемещение файлов

```
dacossti@DESKTOP-124TDC:~/hello$ nano index.html
dacossti@DESKTOP-124TDC:~/hello$ git add index.html
dacossti@DESKTOP-124TDC:~/hello$ git commit -m "Added index.html."
[master f3fe4cf] Added index.html.
1 file changed, 5 insertions(+)
create mode 100644 index.html
dacossti@DESKTOP-124TDC:~/hello$ cat index.html
<html>
<body>
<iframe src="lib/hello.html" width="200" height="200" />
</body>
</html>
```

Рис. 16: Добавление нового файла в репозиторий

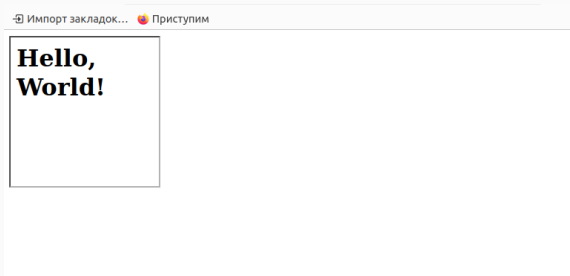


Рис. 17: Добавление нового файла в репозиторий

```
dacossti@DESKTOP-124TCDC:~/hello$ ls -C .git
branches      config        HEAD         index        logs         ORIG_HEAD    refs
COMMIT_EDITMSG description    hooks        info         objects      packed-refs
dacossti@DESKTOP-124TCDC:~/hello$ ls -C .git/objects
00  1a  3c  52  62  84  8a  a1  b5  bd  cd  f3  f7  fa  pack
09  26  4f  56  68  88  91  a5  b6  cb  f0  f4  f8  info
dacossti@DESKTOP-124TCDC:~/hello$ ls -C .git/objects/1a
44782cac245a2654d36f7f63a06a45618bf504
dacossti@DESKTOP-124TCDC:~/hello$ cat .git/config
[core]
    repositoryformatversion = 0
    filemode = true
    bare = false
    logallrefupdates = true
dacossti@DESKTOP-124TCDC:~/hello$ ls .git/refs
heads  tags
dacossti@DESKTOP-124TCDC:~/hello$ ls .git/refs/heads
master
dacossti@DESKTOP-124TCDC:~/hello$ ls .git/refs/tags
v1  v1-beta
dacossti@DESKTOP-124TCDC:~/hello$ cat .git/refs/tags/v1
1a44782cac245a2654d36f7f63a06a45618bf504
dacossti@DESKTOP-124TCDC:~/hello$ cat .git/HEAD
ref: refs/heads/master
```

Рис. 18: Каталог .git



## Работа непосредственно с объектами git

```
dacossti@DESKTOP-124TDC:~/hello$ git log --max-count=1
commit f3fe4cf7f989f1ed070c12642beb496e18e2a2c0 (HEAD -> master)
Author: Dacossti <osiasstave15@gmail.com>
Date:   Wed May 28 23:53:39 2025 +0300

    Added index.html.

dacossti@DESKTOP-124TDC:~/hello$ git cat-file -t f3fe4cf
commit
dacossti@DESKTOP-124TDC:~/hello$ git cat-file -p f3fe4cf
tree f81012e7305fef6023972bcd54f999d24c80339b
parent a11b2a803e8ebc6d86c03534793802779c0fa627
author Dacossti <osiasstave15@gmail.com> 1748465619 +0300
committer Dacossti <osiasstave15@gmail.com> 1748465619 +0300

Added index.html.

dacossti@DESKTOP-124TDC:~/hello$ git cat-file -p f3fe4cf
tree f81012e7305fef6023972bcd54f999d24c80339b
parent a11b2a803e8ebc6d86c03534793802779c0fa627
author Dacossti <osiasstave15@gmail.com> 1748465619 +0300
committer Dacossti <osiasstave15@gmail.com> 1748465619 +0300

Added index.html.
```

Рис. 19: Работа непосредственно с объектами git

```
macossti@DESKTOP-1247CDC:~/hello$ git cat-file -p f81012e7305fef6023972bcd54f999d2
4dc80339b
100644 blob 68583eacd328506a31568f8df6f45ebb874238b5    index.html
040000 tree 5619267058d80fdce15b5177f5425bedc5185ca    lib
macossti@DESKTOP-1247CDC:~/hello$ git cat-file -p 5619267058d80fdce15b5177f5425be1
dc5185ca
100644 blob faleedcd4549903a20cb27570a976941a6155d41    hello.html
macossti@DESKTOP-1247CDC:~/hello$ git cat-file -p faleedcd4549903a20cb27570a976941
a6155d41
<!-- Author: Osias Stave I. D. (osiasstave15@gmail.com)-->
<html>
<head>
</head>
<body>
<h1>Hello, World!</h1>
</body>
</html>
```

Рис. 20: Поиск оригинального файла hello.html

```
hacoss1@DESKTOP-12ATCOC:~/hello$ git checkout -b style
Switched to a new branch 'style'
hacoss1@DESKTOP-12ATCOC:~/hello$ git status
On branch style
nothing to commit, working tree clean
hacoss1@DESKTOP-12ATCOC:~/hello$ touch lib/style.css
hacoss1@DESKTOP-12ATCOC:~/hello$ nano lib/style.css
hacoss1@DESKTOP-12ATCOC:~/hello$ git add lib/style.css
hacoss1@DESKTOP-12ATCOC:~/hello$ git commit -m "Added css stylesheet"
[style 35230d4] Added css stylesheet
1 file changed, 3 insertions(+)
 create mode 100644 lib/style.css
hacoss1@DESKTOP-12ATCOC:~/hello$ nano lib/hello.html
hacoss1@DESKTOP-12ATCOC:~/hello$ nano lib/hello.html
hacoss1@DESKTOP-12ATCOC:~/hello$ git add lib/hello.html
hacoss1@DESKTOP-12ATCOC:~/hello$ git commit -m "Hello uses style.css"
[style 51d4d97] Hello uses style.css
1 file changed, 2 insertions(+)
```

Рис. 21: Создание ветки

```
daconsst@005610P-124TC0C:~/hello$ git log --all
commit 5121c5724f7f7f504f8990910800dcdcb0edf (HEAD -> style)
Author: Dacosstti <osiasstavelis@gmail.com>
Date: Thu May 29 00:05:37 2025 +0300

    Hello uses style.css

commit 35725b4e9968b7418781640e6cc44c27b0812f58
Author: Dacosstti <osiasstavelis@gmail.com>
Date: Thu May 29 00:03:53 2025 +0300

    Added css stylesheet

commit f3f44cf7f989f1ed078c12642beb496e18e2a2c0 (master)
Author: Dacosstti <osiasstavelis@gmail.com>
Date: Wed May 28 23:53:39 2025 +0300

    Added index.html

commit a11b2a883e8ebcd686c83534793862779c0fa627
Author: Dacosstti <osiasstavelis@gmail.com>
Date: Wed May 28 23:52:42 2025 +0300

    Moved hello.html to lib

commit 4f50856ee1de4ce8918d2d577123eb4fb52ca75f
Author: Dacosstti <osiasstavelis@gmail.com>
Date: Wed May 28 23:40:20 2025 +0300

    Add an author/email comment
```

Рис. 22: Просмотр логов новой ветки

```
dacossti@DESKTOP-124TDCD:~/hello$ git checkout master
error: Your local changes to the following files would be overwritten by checkout:
      lib/hello.html
Please commit your changes or stash them before you switch branches.
Aborting
dacossti@DESKTOP-124TDCD:~/hello$ cat lib/hello.html
<!-- Author: Osias Stave I. D. (osiasstavel5@gmail.com)-->
<html>
<head>
<link type="text/css" rel="stylesheet"
media="all" href="lib/style.css" />
</head>
<body>
<iframe src="lib/hello.html" width="200" height="200" />
</body>
</html>
```

Рис. 23: Переключение между ветками

```
dacossti@DESKTOP-124TDCD:~/hello$ touch README.md
dacossti@DESKTOP-124TDCD:~/hello$ echo "This is the Hello World example from the g
it tutorial." > README.md
dacossti@DESKTOP-124TDCD:~/hello$ git add README.md
dacossti@DESKTOP-124TDCD:~/hello$ git commit -m "Added README"
[style c8868ca] Added README
1 file changed, 1 insertion(+)
create mode 100644 README.md
```

Рис. 24: Изменения в ветке master

```
dacossti@BOLSHAKOV-124760K:~/hello$ git log --graph --all
* commit c8b68ca70901051b4940c5f7ca4c2b13c117f92 (HEAD -> style)
  Author: Dacossti <osiasstave15@gmail.com>
  Date: Thu May 29 08:11:23 2025 +0300

    Added README

* commit 51d1d572ef3ff85d4f6f010b9105044dcdb0adf
  Author: Dacossti <osiasstave15@gmail.com>
  Date: Thu May 29 08:05:37 2025 +0300
```

Рис. 25: Просмотр веток

```
lacosst@DESKTOP-12UTCDC:~/hello$ git checkout style
#
lib/hello.html
Already on 'style'
lacosst@DESKTOP-12UTCDC:~/hello$ git merge master
Already up to date.
lacosst@DESKTOP-12UTCDC:~/hello$ git log --graph --all
```

Рис. 26: Слияние веток



```
dacossti@DESKTOP-124TCDC:~/hello$ nano lib/hello.html  
dacossti@DESKTOP-124TCDC:~/hello$ git add lib/hello.html  
dacossti@DESKTOP-124TCDC:~/hello$ git commit -m 'Life is great'
```

Рис. 27: Создание конфликта

```
dacossti@DESKTOP-12WTCDC:~/hello$ git checkout style
Already on 'style'
dacossti@DESKTOP-12WTCDC:~/hello$ git merge master
Already up to date.
dacossti@DESKTOP-12WTCDC:~/hello$ cat lib/hello.html
```

Рис. 28: Разрешение конфликта

```
dacossti@DESKTOP-124TCDC:~/hello$ git checkout style
Already on 'style'
dacossti@DESKTOP-124TCDC:~/hello$ git log --graph
* commit 8148247a7246454dc09196039cd47edfa85bdb95 (HEAD -> style)
  Author: Dacossti <osiasstave15@gmail.com>
  Date: Thu May 29 00:20:36 2025 +0300
```

Рис. 29: Поиск коммита перед слиянием

```
jacoost@DESKTOP-124TDC:~/hello$ git reset --hard 8148247a7246454dc09196039cd47ed  
Fa85bdb95  
HEAD is now at 8148247 Updated index.html
```

Рис. 30: Сброс ветки style

```
dacossti@DESKTOP-1241CDC:~/hello$ git checkout master
Switched to branch 'master'
dacossti@DESKTOP-1241CDC:~/hello$ git log --graph
* commit f3fe4cf7f989f1ed070c12642beb496e18e2a2c0 (HEAD -> master)
  Author: Dacossti <osiasstavel5@gmail.com>
  Date: Wed May 28 23:53:39 2025 +0300
```

Рис. 31: Поиск коммита перед конфликтом

```
jacoss100ESKTOP-124TDC:~/hello$ git reset --hard ecf2b8c3fa595d43c1f84031ebde5b97173878de  
HEAD is now at ecf2b8c Added README
```

Рис. 32: Сброс ветки master

```
dacossti@DESKTOP-124TCDC:~/hello$ git checkout style  
Switched to branch 'style'  
dacossti@DESKTOP-124TCDC:~/hello$ git rebase master
```

Рис. 33: Перебазирование

```
dacossti@DESKTOP-124TDC:~/hello$ git checkout master
Switched to branch 'master'
dacossti@DESKTOP-124TDC:~/hello$ git merge style
Updating ecf2b8c..6fab7f4
Fast-forward
 lib/hello.html | 4 +++-
 lib/style.css   | 3 +++
 2 files changed, 6 insertions(+), 1 deletion(-)
 create mode 100644 lib/style.css
dacossti@DESKTOP-124TDC:~/hello$ git log
commit 6fab7f4f8057362ffbfbaae567478c0f6723b29ed (HEAD -> master, style)
Author: Dacossti <osiasstave15@gmail.com>
Date: Thu May 29 00:20:36 2025 +0300

    Updated index.html
```

Рис. 34: Слияние style в master



# Клонирование репозитория

```
dacossti@DESKTOP-124TKDC:~/hello$ cd ..
dacossti@DESKTOP-124TKDC:~$ pwd
/home/dacossti
dacossti@DESKTOP-124TKDC:~$ ls
frames_2025-04-25_04.30.34.py  hello  ros2_backup
frames_2025-04-25_04.30.34.pdf  lla_ros2_humble  test.py
dacossti@DESKTOP-124TKDC:~$ git clone hello cloned_hello
Cloning into 'cloned_hello'...
done.
dacossti@DESKTOP-124TKDC:~$ ls
cloned_hello  hello  test.py
frames_2025-04-25_04.30.34.py  lla_ros2_humble
frames_2025-04-25_04.30.34.pdf  ros2_backup
dacossti@DESKTOP-124TKDC:~$ cd cloned_hello
ls
index.html  lib  README.md
dacossti@DESKTOP-124TKDC:~/cloned_hello$ git log --all
commit 6fab7f4f8057362f7bf4a5697f78c80f673b29d (HEAD -> master, origin/style, ori
gin/master, origin/HEAD)
Author: Dacossti <cosixstave15@gmail.com>
Date: Thu May 29 00:20:36 2025 +0300

    Updated index.html
```

Рис. 35: Клонирование репозитория

## Что такое origin?

```
dacossti@DESKTOP-124TDCD:~/cloned_hello$ git remote
origin
dacossti@DESKTOP-124TDCD:~/cloned_hello$ git remote show origin
* remote origin
  Fetch URL: /home/dacossti/hello
  Push URL: /home/dacossti/hello
  HEAD branch: master
  Remote branches:
    master tracked
    style tracked
  Local branch configured for 'git pull':
    master merges with remote master
  Local ref configured for 'git push':
    master pushes to master (up to date)
```

Рис. 36: Просмотр имени по умолчанию удаленного репозитория

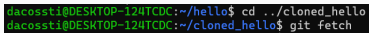
```
dacossti@DESKTOP-124TCDC:~/cloned_hello$ git branch
* master
dacossti@DESKTOP-124TCDC:~/cloned_hello$ git branch -a
* master
  remotes/origin/HEAD -> origin/master
  remotes/origin/master
  remotes/origin/style
```

Рис. 37: Просмотр доступных веток

# Изменение оригинального репозитория

```
dacossti@DESKTOP-124TCDC:~/cloned_hello$ cd ../hello
dacossti@DESKTOP-124TCDC:~/hello$ nano README.md
dacossti@DESKTOP-124TCDC:~/hello$ git add README.md
dacossti@DESKTOP-124TCDC:~/hello$ git commit -m "Changed README in original repo"
On branch master
nothing to commit, working tree clean
```

Рис. 38: Изменение оригинального репозитория

A terminal window with a black background and green text. The prompt is 'dacossti@DESKTOP-124TCDC:~/hello\$'. The first command is 'cd ../cloned\_hello' and the second is 'git fetch'.

```
dacossti@DESKTOP-124TCDC:~/hello$ cd ../cloned_hello
dacossti@DESKTOP-124TCDC:~/cloned_hello$ git fetch
```

Рис. 39: Извлечение изменений

## Слияние извлеченных изменений

```
dacossti@DESKTOP-124TCDC:~/cloned_hello$ cat README.md
This is the Hello World example from the git tutorial.
dacossti@DESKTOP-124TCDC:~/cloned_hello$ git merge origin/master
Already up to date.
dacossti@DESKTOP-124TCDC:~/cloned_hello$ cat README.md
This is the Hello World example from the git tutorial.
dacossti@DESKTOP-124TCDC:~/cloned_hello$ git pull
Already up to date.
```

Рис. 40: Слияние извлеченных изменений

## Добавление ветки наблюдения

```
decsstii@DESKTOP-124TKDC:~/cloned_hello$ git branch --track style origin/style
Branch 'style' set up to track remote branch 'style' from 'origin'.
decsstii@DESKTOP-124TKDC:~/cloned_hello$ git branch -a
* master
  style
  remotes/origin/HEAD -> origin/master
  remotes/origin/master
  remotes/origin/style
decsstii@DESKTOP-124TKDC:~/cloned_hello$ git log --max-count=2
commit 6fab7f4f5857362ffbf4aa5657f78c9f6723b29ed (HEAD -> master, origin/style, ori
gin/master, origin/HEAD, style)
Author: Decsstii <decsstii@yandexmail.com>
```

Рис. 41: Добавление ветки наблюдения

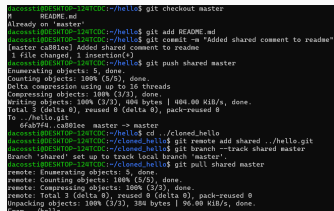
```
dacossti@DESKTOP-124TCDC:~/cloned_hello$ cd ..
dacossti@DESKTOP-124TCDC:~$ git clone --bare hello hello.git
Cloning into bare repository 'hello.git'...
done.
dacossti@DESKTOP-124TCDC:~$ ls hello.git
branches  config  description  HEAD  hooks  info  objects  packed-refs  refs
dacossti@DESKTOP-124TCDC:~$ cd hello
dacossti@DESKTOP-124TCDC:~/hello$ git remote add shared ../hello.git
```

Рис. 42: Создание чистого репозитория



# Отправка и извлечение изменений

```
haccasti@DESKTOP-12ATC0D:~/hello$ git checkout master
M README.md
Already on 'master'
haccasti@DESKTOP-12ATC0D:~/hello$ git add README.md
haccasti@DESKTOP-12ATC0D:~/hello$ git commit -m "Added shared comment to readme"
[master ca801ee] Added shared comment to readme
1 file changed, 1 insertion(+)
```



```
haccasti@DESKTOP-12ATC0D:~/hello$ git push shared master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 16 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (1/1), 404 bytes | 404.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To ../hello.git
 6fab7f4..ca801ee master -> master
haccasti@DESKTOP-12ATC0D:~/hello$ cd ../cloned_hello
haccasti@DESKTOP-12ATC0D:~/cloned_hello$ git remote add shared ../hello.git
haccasti@DESKTOP-12ATC0D:~/cloned_hello$ git branch --track shared master
Branch 'shared' set up to track local branch 'master'.
haccasti@DESKTOP-12ATC0D:~/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), 384 bytes | 96.00 KiB/s, done.
done.
```

Рис. 43: Отправка и извлечение изменений

## Выводы

---

В результате выполнения лабораторной работы были приобретены практические навыки работы с системой управления версиями Git.

## Список литературы

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1. Git [Электронный ресурс]. Wikimedia Foundation, Inc., 2024. URL: <https://ru.wikipedia.org/wiki/Git>.
2. GitHub [Электронный ресурс]. GitHub, Inc., 2024. URL: <https://github.com/>.