

Отчёт по лабораторной работе №1

Система контроля версий Git

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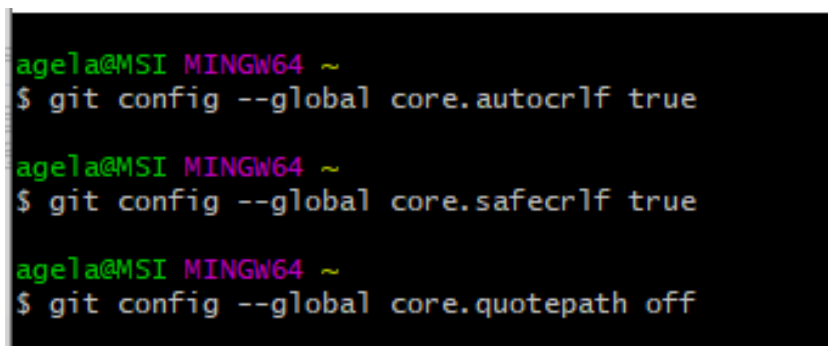
Цель работы

Целью данной работы является изучение и освоение системы контроля версий Git

Выполнение лабораторной работы

Подготовка

Изменение параметров установки окончаний строк и Установка отображения unicode



```
agela@MSI MINGW64 ~  
$ git config --global core.autocrlf true  
  
agela@MSI MINGW64 ~  
$ git config --global core.safecrlf true  
  
agela@MSI MINGW64 ~  
$ git config --global core.quotepath off
```

Рис. 1: Подготовка

Создаем локальный проект

Создаем страницу «Hello, World» Создаем репозиторий Добавляем файл в репозиторий Проверяем состояние репозитория

```

agela@MSI MINGW64 /d
$ mkdir hello

agela@MSI MINGW64 /d
$ cd hello

agela@MSI MINGW64 /d/hello
$ touch hello.html

agela@MSI MINGW64 /d/hello
$ echo "Hello, World!" > hello.html

agela@MSI MINGW64 /d/hello
$ git init
Initialized empty Git repository in D:/hello/.git/

agela@MSI MINGW64 /d/hello (master)
$ git add hello.html
fatal: LF would be replaced by CRLF in hello.html

agela@MSI MINGW64 /d/hello (master)
$ git commit -m "Initial Commit"
On branch master

Initial commit

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    hello.html

nothing added to commit but untracked files present (use "git add" to track)

agela@MSI MINGW64 /d/hello (master)
$

agela@MSI MINGW64 /d/hello (master)
$ git config --global core.safecrlf warn

agela@MSI MINGW64 /d/hello
$ git add hello.html
fatal: bad boolean config value 'warn' for 'core.safecrlf'

agela@MSI MINGW64 /d/hello
$ git config --global core.safecrlf warn

agela@MSI MINGW64 /d/hello (master)
$ git add hello.html
warning: LF will be replaced by CRLF in hello.html.
The file will have its original line endings in your working directory

agela@MSI MINGW64 /d/hello (master)
$ git commit -m "Initial Commit"
[master (root-commit) 0a6ae27] Initial Commit
1 file changed, 1 insertion(+)
 create mode 100644 hello.html

agela@MSI MINGW64 /d/hello (master)
$ git status
On branch master
nothing to commit, working tree clean

```

Рис. 2: Создание проекта

Внесение изменений

Изменяем страницу «Hello, World»


```
agela@MSI MINGW64 /d/hello (master)
$ 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. 3: Внесение изменений

Индексация изменений

Коммитим изменения Добавляем стандартные теги страницы Проверяем список произведенных изменений Получаем старые версии Создаем теги версий Переключаемся по имени тега Просматриваем теги с помощью команды tag

```

age1a@MSI MINGW64 /d/hello (master)
$ git add hello.html

age1a@MSI MINGW64 /d/hello (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   hello.html

age1a@MSI MINGW64 /d/hello (master)
$ git commit
[master 7a73755] Added h1 tag
1 file changed, 1 insertion(+), 1 deletion(-)

age1a@MSI MINGW64 /d/hello (master)
$ git status
On branch master
nothing to commit, working tree clean

age1a@MSI MINGW64 /d/hello (master)
$ git add hello.html
warning: LF will be replaced by CRLF in hello.html.
The file will have its original line endings in your working directory

age1a@MSI MINGW64 /d/hello (master)
$ 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

age1a@MSI MINGW64 /d/hello (master)
$ git commit -m "Added standard HTML page tags"
[master 0f653fe] Added standard HTML page tags
1 file changed, 5 insertions(+), 1 deletion(-)

age1a@MSI MINGW64 /d/hello (master)
$ 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")

age1a@MSI MINGW64 /d/hello (master)
$ git add .
warning: LF will be replaced by CRLF in hello.html.
The file will have its original line endings in your working directory

age1a@MSI MINGW64 /d/hello (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   hello.html

age1a@MSI MINGW64 /d/hello (master)
$ git commit -m "Added HTML header"
[master f20e7dc] Added HTML header

```

Рис. 4: Индексация изменений 1

```

$ git log
commit F20e7dcca09f713b836e6143ac6793253a771254 (HEAD -> master)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

commit 7a737556c0c6607f86892d1f7a88db10f43b19
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:04:49 2022 +0300

    Added h1 tag

commit 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:02:52 2022 +0300

    Initial Commit

age1a@MSI MINGW64 /d/hello (master)
$ git log --pretty=oneline
f20e7dcca09f713b836e6143ac6793253a771254 (HEAD -> master) Added HTML header
0f653febcd918602bf7e9ef21ae9b36e5b1806f6 Added standard HTML page tags
7a737556c0c6607f86892d1f7a88db10f43b19 Added h1 tag
0a6ae277b97f2efffd927866dc57ff8e426ae5fb Initial Commit

age1a@MSI MINGW64 /d/hello (master)
$ git checkout ^C

age1a@MSI MINGW64 /d/hello (master)
$ git checkout 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
Note: switching to '0a6ae277b97f2efffd927866dc57ff8e426ae5fb'.

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 0a6ae27 Initial Commit

age1a@MSI MINGW64 /d/hello ((0a6ae27...))
$ cat hello.html
Hello, World!

age1a@MSI MINGW64 /d/hello ((0a6ae27...))
$ git checkout master
Previous HEAD position was 0a6ae27 Initial Commit
Switched to branch 'master'

age1a@MSI MINGW64 /d/hello (master)
$ cat hello.html
<html>
  <head>
  </head>
  <body>

```

Рис. 5: Индексация изменений 2

```

age1a@MSI MINGW64 /d/hello (master)
$ git tag v1

age1a@MSI MINGW64 /d/hello (master)
$ 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 0f653fe Added standard HTML page tags

age1a@MSI MINGW64 /d/hello ((0f653fe...))
$ cat hello.html
<html>
  <body>
    <h1>Hello, World!</h1>
  </body>
</html>

age1a@MSI MINGW64 /d/hello ((0f653fe...))
$ git tag v1-beta

age1a@MSI MINGW64 /d/hello ((v1-beta))
$ git checkout v1
Previous HEAD position was 0f653fe Added standard HTML page tags
HEAD is now at f20e7dc Added HTML header

age1a@MSI MINGW64 /d/hello ((v1))
$ git checkout v1-beta
Previous HEAD position was f20e7dc Added HTML header
HEAD is now at 0f653fe Added standard HTML page tags

age1a@MSI MINGW64 /d/hello ((v1-beta))
$ git tag
v1
v1-beta

age1a@MSI MINGW64 /d/hello ((v1-beta))
$ git log master --all
commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1, master)
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (HEAD, tag: v1-beta)
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

commit 7a737556c0c0c6607f86892d1f7a88db10f43b19
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:04:49 2022 +0300

    Added h1 tag

commit 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
Author: Lada <age.la.eva@mail.ru>

```

Рис. 6: Индексация изменений 3

Отмена локальных изменений (до индексации)

Переключаемся на ветку master Изменяем hello.html Проверяем состояние Отменяем изменения в рабочем каталоге

```

agela@MSI MINGW64 /d/hello ((v1-beta))
$ git checkout master
Previous HEAD position was 0f653fe Added standard HTML page tags
Switched to branch 'master'

agela@MSI MINGW64 /d/hello (master)
$ 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")

agela@MSI MINGW64 /d/hello (master)
$ git checkout hello.html
Updated 1 path from the index

agela@MSI MINGW64 /d/hello (master)
$ git status
On branch master
nothing to commit, working tree clean

agela@MSI MINGW64 /d/hello (master)
$ cat hello.html
<html>
    <head>
    </head>
    <body>
        <h1>Hello, World!</h1>
    </body>
</html>

```

Рис. 7: Отмена локальных изменений

Отмена проиндексированных изменений (перед коммитом)

Изменяем файл и проиндексируем изменения Проверяем состояние Выполняем сброс
буферной зоны Переключаемся на версию коммита

```

agela@MSI MINGW64 /d/hello (master)
$ git add hello.html
warning: LF will be replaced by CRLF in hello.html.
The file will have its original line endings in your working directory

agela@MSI MINGW64 /d/hello (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   hello.html

agela@MSI MINGW64 /d/hello (master)
$ git reset HEAD hello.html
Unstaged changes after reset:
M       hello.html

agela@MSI MINGW64 /d/hello (master)
$ git checkout hello.html
Updated 1 path from the index

agela@MSI MINGW64 /d/hello (master)
$ git status
On branch master
nothing to commit, working tree clean

```

Рис. 8: Отмена проиндексированных изменений

Отмена КОММИТОВ

Изменяем файл и сделаем коммит Сделаем коммит с новыми изменениями, отменяющими предыдущие Проверим лог

```

agela@MSI MINGW64 /d/hello (master)
$ git add hello.html
warning: LF will be replaced by CRLF in hello.html.
The file will have its original line endings in your working directory

agela@MSI MINGW64 /d/hello (master)
$ git commit -m "Oops, we didn't want this commit"
[master cba03b3] Oops, we didn't want this commit
1 file changed, 1 insertion(+)

agela@MSI MINGW64 /d/hello (master)
$ git revert HEAD
[master 97d10a3] Revert "Oops, we didn't want this commit"
1 file changed, 1 deletion(-)

agela@MSI MINGW64 /d/hello (master)
$ git log
commit 97d10a3f36b266ccfffd69d9a1df5b282a3768300 (HEAD -> master)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:14:09 2022 +0300

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

    This reverts commit cba03b3db05c5e87b0f6474bf491ed4f49e52815.

commit cba03b3db05c5e87b0f6474bf491ed4f49e52815
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:13:58 2022 +0300

    Oops, we didn't want this commit

commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (tag: v1-beta)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

commit 7a737556c0c0c6607f86892d1f7a88db10f43b19
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:04:49 2022 +0300

    Added h1 tag

commit 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:02:52 2022 +0300

    Initial Commit

agela@MSI MINGW64 /d/hello (master)

```

Рис. 9: Отмена коммитов

Удаление коммитов из ветки

Проверяем нашу историю Отмечаем эту ветку Сбрасываем коммиты к предшествующим коммиту Oops

```

agela@MSI MINGW64 /d/hello (master)
$ git log
commit 97d10a3f36b266ccffd69d9a1df5b282a3768300 (HEAD -> master)
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:14:09 2022 +0300

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

    This reverts commit cba03b3db05c5e87b0f6474bf491ed4f49e52815.

commit cba03b3db05c5e87b0f6474bf491ed4f49e52815
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:13:58 2022 +0300

    Oops, we didn't want this commit

commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1)
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (tag: v1-beta)
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

commit 7a737556c0c0c6607f86892d1f7a88db10f43b19
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:04:49 2022 +0300

    Added h1 tag

commit 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:02:52 2022 +0300

    Initial Commit

agela@MSI MINGW64 /d/hello (master)
$ git tag oops

agela@MSI MINGW64 /d/hello (master)
$ git reset --hard v1
HEAD is now at f20e7dc Added HTML header

agela@MSI MINGW64 /d/hello (master)
$ git log
commit f20e7dcca09f713b836e6143ac6793253a771254 (HEAD -> master, tag: v1)
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (tag: v1-beta)
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

commit 7a737556c0c0c6607f86892d1f7a88db10f43b19
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:04:49 2022 +0300

    Added h1 tag

commit 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
Author: Lada <age.1a.eva@mail.ru>
Date: Fri Feb 11 20:02:52 2022 +0300

```

Рис. 10: Удаление коммиттов из ветки

Удаление тега oops

Удаляем тег oops


```

age1a@MSI MINGW64 /d/hello (master)
$ git tag -d oops
Deleted tag 'oops' (was 97d10a3)

age1a@MSI MINGW64 /d/hello (master)
$ git log --all
commit f20e7dcca09f713b836e6143ac6793253a771254 (HEAD -> master, tag: v1)
Author: Lada <age.1a.eva@mail.ru>
Date:   Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (tag: v1-beta)
Author: Lada <age.1a.eva@mail.ru>
Date:   Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

commit 7a737556c0c0c6607f86892d1f7a88db10f43b19
Author: Lada <age.1a.eva@mail.ru>
Date:   Fri Feb 11 20:04:49 2022 +0300

    Added h1 tag

commit 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
Author: Lada <age.1a.eva@mail.ru>
Date:   Fri Feb 11 20:02:52 2022 +0300

    Initial Commit

age1a@MSI MINGW64 /d/hello (master)
$

```

Рис. 11: Удаление тега oops

Внесение изменений в коммиты

Изменяем страницу, а затем сделаем коммит Добавляем email Изменяем предыдущий коммит Просматриваем историю

```

agela@MSI MINGW64 /d/hello (master)
$ git add hello.html
warning: LF will be replaced by CRLF in hello.html.
The file will have its original line endings in your working directory

agela@MSI MINGW64 /d/hello (master)
$ git commit -m "Add an author comment"
[master 3362983] Add an author comment
1 file changed, 1 insertion(+)

agela@MSI MINGW64 /d/hello (master)
$ git add hello.html
warning: LF will be replaced by CRLF in hello.html.
The file will have its original line endings in your working directory

agela@MSI MINGW64 /d/hello (master)
$ git commit --amend -m "Add an author/email comment"
[master 6561e91] Add an author/email comment
Date: Fri Feb 11 20:17:56 2022 +0300
1 file changed, 1 insertion(+)

agela@MSI MINGW64 /d/hello (master)
$ git log
commit 6561e9181a06d293f3d8311d591723c4eeb8e3e1 (HEAD -> master)
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:17:56 2022 +0300

    Add an author/email comment

commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1)
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (tag: v1-beta)
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

commit 7a737556c0c0c6607f86892d1f7a88db10f43b19
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:04:49 2022 +0300

    Added h1 tag

commit 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:02:52 2022 +0300

    Initial Commit

```

Рис. 12: Внесение изменений в коммиты

Перемещение файлов

Перемещаем файл hello.html в каталог lib Делаем коммит этого перемещения

```
agela@MSI MINGW64 /d/hello (master)
$ mkdir lib

agela@MSI MINGW64 /d/hello (master)
$ git mv hello.html lib

agela@MSI MINGW64 /d/hello (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        renamed:    hello.html -> lib/hello.html

agela@MSI MINGW64 /d/hello (master)
$ git commit -m "Moved hello.html to lib"
[master e9f0a09] Moved hello.html to lib
1 file changed, 0 insertions(+), 0 deletions(-)
rename hello.html => lib/hello.html (100%)
```

Рис. 13: Перемещение файлов

Добавление index.html

Добавляем файл index.html в наш репозиторий

Git внутри: Каталог .git

Углубимся в базу данных объектов

```

age1a@MSI MINGW64 /d/hello (master)
$ touch index.html

age1a@MSI MINGW64 /d/hello (master)
$ git add index.html

age1a@MSI MINGW64 /d/hello (master)
$ git commit -m "Added index.html."
[master 53cf244] Added index.html.
1 file changed, 5 insertions(+)
create mode 100644 index.html

age1a@MSI MINGW64 /d/hello (master)
$

age1a@MSI MINGW64 /d/hello (master)
$

age1a@MSI MINGW64 /d/hello (master)
$ ls -C .git
COMMIT_EDITMSG HEAD ORIG_HEAD config description hooks/ index info/ logs/ objects/ packed-refs refs/

age1a@MSI MINGW64 /d/hello (master)
$ ls -C .git/objects
0a/ 13/ 1d/ 33/ 3b/ 41/ 52/ 65/ 6c/ 83/ 97/ cb/ e9/ f2/ pack/
0f/ 15/ 2d/ 39/ 3e/ 4b/ 53/ 6a/ 7a/ 8a/ b6/ cf/ ed/ info/

age1a@MSI MINGW64 /d/hello (master)
$ ls -C .git/objects/0a
6ae277b97f2efffd927866dc57ff8e426ae5fb

age1a@MSI MINGW64 /d/hello (master)
$ cat .git/config
[core]
    repositoryformatversion = 0
    filemode = false
    bare = false
    logallrefupdates = true
    symlinks = false
    ignorecase = true

age1a@MSI MINGW64 /d/hello (master)
$ ls .git/refs
heads/ tags/

age1a@MSI MINGW64 /d/hello (master)
$ ls .git/refs/heads
master

age1a@MSI MINGW64 /d/hello (master)
$ ls .git/refs/tags
v1 v1-beta

age1a@MSI MINGW64 /d/hello (master)
$ cat .git/refs/tags/v1
f20e7dcca09f713b836e6143ac6793253a771254

age1a@MSI MINGW64 /d/hello (master)
$ cat .git/HEAD
ref: refs/heads/master

```

Рис. 14: Git внутри: Каталог .git

Работа непосредственно с объектами git

Найдем последний коммит Выведем последний коммит с помощью SHA1 хэша

Выведем дерево каталогов Выведем каталог lib Выведем файл hello.html

```

age1a@MSI MINGW64 /d/hello (master)
$ git log --max-count=1
commit 53cf24402fa5608dded46f3b52809389871120e0 (HEAD -> master)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:24:06 2022 +0300

    Added index.html.

age1a@MSI MINGW64 /d/hello (master)
$ git cat-file -t 53cf24402fa5608dded46f3b52809389871120e0
commit

age1a@MSI MINGW64 /d/hello (master)
$ git cat-file -p 53cf24402fa5608dded46f3b52809389871120e0
tree b6e9d2191803f3d4018ff0a641eb2f1250dd9b26
parent e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
author Lada <age.la.eva@mail.ru> 1644600246 +0300
committer Lada <age.la.eva@mail.ru> 1644600246 +0300

Added index.html.

age1a@MSI MINGW64 /d/hello (master)
$ git cat-file -p b6e9d2191803f3d4018ff0a641eb2f1250dd9b26
100644 blob cf5bc0ea78289c0be141b578ca407f1159bd25bc    index.html
040000 tree ede82af45b74e18e623af8b9074fb028a9d38df7    lib

age1a@MSI MINGW64 /d/hello (master)
$ git cat-file -p ede82af45b74e18e623af8b9074fb028a9d38df7
100644 blob 414c51c5bf665f8cbeae8aa97605db7caec5381b    hello.html

age1a@MSI MINGW64 /d/hello (master)
$ git cat-file -p 414c51c5bf665f8cbeae8aa97605db7caec5381b
<!-- Author: Ageeva Lada (1032196014@pfur.ru) -->
<html>
  <head>
  </head>
  <body>
    <h1>Hello, World!</h1>
  </body>
</html>

```

Рис. 15: Работа непосредственно с объектами git

Создание ветки

Создаем ветку Добавляем файл стилей style.css Изменяем основную страницу Изменяем index.html

```

agela@MSI MINGW64 /d/hello (master)
$ git checkout -b style
Switched to a new branch 'style'

agela@MSI MINGW64 /d/hello (style)
$ git status
On branch style
nothing to commit, working tree clean

agela@MSI MINGW64 /d/hello (style)
$ touch lib/style.css

agela@MSI MINGW64 /d/hello (style)
$ git add lib/style.css

agela@MSI MINGW64 /d/hello (style)
$ git commit -m "Added css stylesheet"
[style 30da9c0] Added css stylesheet
1 file changed, 3 insertions(+)
create mode 100644 lib/style.css

agela@MSI MINGW64 /d/hello (style)
$ git add lib/hello.html
warning: LF will be replaced by CRLF in lib/hello.html.
The file will have its original line endings in your working directory

agela@MSI MINGW64 /d/hello (style)
$ git commit -m "Hello uses style.css"
[style 06e773a] Hello uses style.css
1 file changed, 1 insertion(+)

agela@MSI MINGW64 /d/hello (style)
$ git add index.html

agela@MSI MINGW64 /d/hello (style)
$ git commit -m "Updated index.html"
[style 66c850b] Updated index.html
1 file changed, 3 insertions(+)

agela@MSI MINGW64 /d/hello (style)
$ git log --all
commit 66c850b551d9bac943b2959fa802671eaa172cc9 (HEAD -> style)
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:39:45 2022 +0300

    Updated index.html

commit 06e773a69d2afa5b6363a711be84231b70d1746c
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:38:47 2022 +0300

    Hello uses style.css

commit 30da9c0d86c34b3fa4c64ea482cf5b6b253225cd
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:37:49 2022 +0300

    Added css stylesheet

commit 53cf24402fa5608dded46f3b52809389871120e0 (master)
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:24:06 2022 +0300

    Added index.html.

commit e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
Author: Lada <age.la.eva@mail.ru>
Date: Fri Feb 11 20:21:37 2022 +0300

    Moved hello.html to lib

```

Рис. 16: Создание ветки

Навигация по веткам

Переключимся на ветку master Вернемся к ветке style

```

age1a@MSI MINGW64 /d/hello (style)
$ git checkout master
Switched to branch 'master'

age1a@MSI MINGW64 /d/hello (master)
$ cat lib/hello.html
<!-- Author: Ageeva Lada (1032196014@pfur.ru) -->
<html>
  <head>
  </head>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>
age1a@MSI MINGW64 /d/hello (master)
$ git checkout style
Switched to branch 'style'

age1a@MSI MINGW64 /d/hello (style)
$ cat lib/hello.html
<!-- Author: Ageeva Lada (1032196014@pfur.ru) -->
<html>
  <head>
    <link type="text/css" rel="stylesheet" media="all" href="style.css" />
  </head>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>

```

Рис. 17: Навигация по веткам

Изменения в ветке master

Создаем файл README в ветке master

Сделайте коммит изменений README.md в ветку master.

Просмотрим отличающиеся ветки

```

age1a@MSI MINGW64 /d/hello (style)
$ git checkout master
Switched to branch 'master'

age1a@MSI MINGW64 /d/hello (master)
$ touch README.md

age1a@MSI MINGW64 /d/hello (master)
$ echo "This is the Hello World example from the git tutorial." > README.md

age1a@MSI MINGW64 /d/hello (master)
$ git add README.md
warning: LF will be replaced by CRLF in README.md.
The file will have its original line endings in your working directory

age1a@MSI MINGW64 /d/hello (master)
$ git commit -m "Added README"
[master a7c5e24] Added README
1 file changed, 1 insertion(+)
create mode 100644 README.md

age1a@MSI MINGW64 /d/hello (master)
$ git log --graph --all
* commit a7c5e249744a17321b976c6b39396008cca62506 (HEAD -> master)
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:42:57 2022 +0300

      Added README

* commit 66c850b551d9bac943b2959fa802671eaa172cc9 (style)
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:39:45 2022 +0300

      Updated index.html

* commit 06e773a69d2afa5b6363a711be84231b70d1746c
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:38:47 2022 +0300

      Hello uses style.css

* commit 30da9c0d86c34b3fa4c64ea482cf5b6b253225cd
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:37:49 2022 +0300

      Added css stylesheet

* commit 53cf24402fa5608dded46f3b52809389871120e0
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:24:06 2022 +0300

      Added index.html.

* commit e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:21:37 2022 +0300

      Moved hello.html to lib

```

Рис. 18: Изменения в ветке master

Слияние

Выполним слияние веток


```

age1a@MSI MINGW64 /d/hello (master)
$ git checkout style
Switched to branch 'style'

age1a@MSI MINGW64 /d/hello (style)
$ git merge master
Merge made by the 'recursive' strategy.
 README.md | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 README.md

age1a@MSI MINGW64 /d/hello (style)
$ git log --graph --all
*   commit 79c20263c6617d8d0fb8e84e52e9575ccaa83bfe (HEAD -> style)
| \
|  Merge: 66c850b a7c5e24
|  Author: Lada <age.1a.eva@mail.ru>
|  Date:   Fri Feb 11 20:43:55 2022 +0300
|
|      Merge branch 'master' into style
|
| *   commit a7c5e249744a17321b976c6b39396008cca62506 (master)
| |  Author: Lada <age.1a.eva@mail.ru>
| |  Date:   Fri Feb 11 20:42:57 2022 +0300
| |
| |      Added README
| |
| *   commit 66c850b551d9bac943b2959fa802671eaa172cc9
| |  Author: Lada <age.1a.eva@mail.ru>
| |  Date:   Fri Feb 11 20:39:45 2022 +0300
| |
| |      Updated index.html
| |
| *   commit 06e773a69d2afa5b6363a711be84231b70d1746c
| |  Author: Lada <age.1a.eva@mail.ru>
| |  Date:   Fri Feb 11 20:38:47 2022 +0300
| |
| |      Hello uses style.css
| |
| *   commit 30da9c0d86c34b3fa4c64ea482cf5b6b253225cd
| |  Author: Lada <age.1a.eva@mail.ru>
| |  Date:   Fri Feb 11 20:37:49 2022 +0300
| |
| |      Added css stylesheet
| |
| *   commit 53cf24402fa5608dded46f3b52809389871120e0
| |  Author: Lada <age.1a.eva@mail.ru>
| |  Date:   Fri Feb 11 20:24:06 2022 +0300
| |
| |      Added index.html.
| |
| *   commit e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
| |  Author: Lada <age.1a.eva@mail.ru>
| |  Date:   Fri Feb 11 20:21:37 2022 +0300
| |
| |      Moved hello.html to lib

```

Рис. 19: Слияние

Создание конфликта

Вернемся в master и создадим конфликт Выполним Просмотр веток

```

age1a@MSI MINGW64 /d/hello (style)
$ git checkout master
Switched to branch 'master'

age1a@MSI MINGW64 /d/hello (master)
$ git add lib/hello.html

age1a@MSI MINGW64 /d/hello (master)
$ git commit -m 'Life is great'
[master bf33679] Life is great
1 file changed, 1 insertion(+)

age1a@MSI MINGW64 /d/hello (master)
$ git log --graph --all
* commit bf336793a940ff4f51cefdc92978e0ed6d11b345 (HEAD -> master)
| Author: Lada <age.la.eva@mail.ru>
| Date: Fri Feb 11 20:50:00 2022 +0300
|
| Life is great
|
| * commit 79c20263c6617d8d0fb8e84e52e9575ccaa83bfe (style)
| | Merge: 66c850b a7c5e24
| | Author: Lada <age.la.eva@mail.ru>
| | Date: Fri Feb 11 20:43:55 2022 +0300
| |
| | Merge branch 'master' into style
| |
| | * commit a7c5e249744a17321b976c6b39396008cca62506
| | Author: Lada <age.la.eva@mail.ru>
| | Date: Fri Feb 11 20:42:57 2022 +0300
| |
| | Added README
| |
| | * commit 66c850b551d9bac943b2959fa802671eaa172cc9
| | Author: Lada <age.la.eva@mail.ru>
| | Date: Fri Feb 11 20:39:45 2022 +0300
| |
| | Updated index.html
| |
| | * commit 06e773a69d2afa5b6363a711be84231b70d1746c
| | Author: Lada <age.la.eva@mail.ru>
| | Date: Fri Feb 11 20:38:47 2022 +0300
| |
| | Hello uses style.css
| |
| | * commit 30da9c0d86c34b3fa4c64ea482cf5b6b253225cd
| | Author: Lada <age.la.eva@mail.ru>
| | Date: Fri Feb 11 20:37:49 2022 +0300
| |
| | Added css stylesheet
| |
| | * commit 53cf24402fa5608dded46f3b52809389871120e0
| | Author: Lada <age.la.eva@mail.ru>
| | Date: Fri Feb 11 20:24:06 2022 +0300
| |
| | Added index.html.

```

Рис. 20: Создание конфликта

Разрешение конфликтов

Возвращаемся к ветке style и попытаемся объединить ее с новой веткой master

Решаем конфликт Сделаем коммит решения конфликта

```

age1a@MSI MINGW64 /d/hello (master)
$ git checkout style
Switched to branch 'style'

age1a@MSI MINGW64 /d/hello (style)
$ git merge master
Auto-merging lib/hello.html
CONFLICT (content): Merge conflict in lib/hello.html
Automatic merge failed; fix conflicts and then commit the result.

age1a@MSI MINGW64 /d/hello (style|MERGING)
$ git add lib/hello.html

age1a@MSI MINGW64 /d/hello (style|MERGING)
$ git commit -m "Merged master fixed conflict."
[style e251644] Merged master fixed conflict.

age1a@MSI MINGW64 /d/hello (style)
$ git checkout style
Already on 'style'

age1a@MSI MINGW64 /d/hello (style)
$
age1a@MSI MINGW64 /d/hello (style)
$ git log --graph
* commit e251644dc89cd54624d575dabd6695d94c93956f (HEAD -> style)
  Merge: 79c2026 bf33679
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:51:53 2022 +0300

      Merged master fixed conflict.

* commit bf336793a940ff4f51cefcd92978e0ed6d11b345 (master)
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:50:00 2022 +0300

      Life is great

* commit 79c20263c6617d8d0fb8e84e52e9575ccaa83bfe
  Merge: 66c850b a7c5e24
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:43:55 2022 +0300

      Merge branch 'master' into style

* commit a7c5e249744a17321b976c6b39396008cca62506
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:42:57 2022 +0300

      Added README

* commit 66c850b551d9bac943b2959fa802671eaa172cc9
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:39:45 2022 +0300

      Updated index.html

* commit 06e773a69d2afa5b6363a711be84231b70d1746c
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:38:47 2022 +0300

      Hello uses style.css

* commit 30da9c0d86c34b3fa4c64ea482cf5b6b253225cd
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:37:49 2022 +0300

      Added css stylesheet

```

Рис. 21: Разрешение конфликтов

Сброс ветки style

Вернемся на ветке style к точке перед тем, как слили ее с веткой master Сбросим ветку style к коммиту перед слиянием с master

```

age1a@MSI MINGW64 /d/hello (style)
$ git reset --hard 66c850b551d9bac943b2959fa802671eaa172cc9
HEAD is now at 66c850b Updated index.html

age1a@MSI MINGW64 /d/hello (style)
$ git log --graph --all
* commit bf336793a940ff4f51cefdc92978e0ed6d11b345 (master)
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:50:00 2022 +0300

    Life is great

* commit a7c5e249744a17321b976c6b39396008cca62506
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:42:57 2022 +0300

    Added README

* commit 66c850b551d9bac943b2959fa802671eaa172cc9 (HEAD -> style)
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:39:45 2022 +0300

    Updated index.html

* commit 06e773a69d2afa5b6363a711be84231b70d1746c
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:38:47 2022 +0300

    Hello uses style.css

* commit 30da9c0d86c34b3fa4c64ea482cf5b6b253225cd
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:37:49 2022 +0300

    Added css stylesheet

* commit 53cf24402fa5608dded46f3b52809389871120e0
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:24:06 2022 +0300

    Added index.html.

* commit e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:21:37 2022 +0300

    Moved hello.html to lib

* commit 6561e9181a06d293f3d8311d591723c4eeb8e3e1
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:17:56 2022 +0300

    Add an author/email comment

* commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1)
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

```

Рис. 22: Сброс ветки style

Сброс ветки master

Сбрасываем ветку master

```

age1a@MSI MINGW64 /d/hello (style)
$ git checkout master
Switched to branch 'master'

age1a@MSI MINGW64 /d/hello (master)
$ git log --graph
* commit bf336793a940ff4f51cefcd92978e0ed6d11b345 (HEAD -> master)
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:50:00 2022 +0300

    Life is great

* commit a7c5e249744a17321b976c6b39396008cca62506
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:42:57 2022 +0300

    Added README

* commit 53cf24402fa5608dded46f3b52809389871120e0
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:24:06 2022 +0300

    Added index.html.

* commit e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:21:37 2022 +0300

    Moved hello.html to lib

* commit 6561e9181a06d293f3d8311d591723c4eeb8e3e1
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:17:56 2022 +0300

    Add an author/email comment

* commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1)
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

* commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (tag: v1-beta)
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

* commit 7a737556c0c0c6607f86892d1f7a88db10f43b19
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:04:49 2022 +0300

    Added h1 tag

* commit 0a6ae277b97f2efffd927866dc57ff8e426ae5fb
  Author: Lada <age.1a.eva@mail.ru>
  Date:   Fri Feb 11 20:02:52 2022 +0300

    Initial Commit

age1a@MSI MINGW64 /d/hello (master)
$ git reset --hard ^C

age1a@MSI MINGW64 /d/hello (master)
$ git reset --hard a7c5e249744a17321b976c6b39396008cca62506
HEAD is now at a7c5e24 Added README

```

Рис. 23: Сброс ветки master 1

```

age1a@MSI MINGW64 /d/hello (master)
$ git reset --hard a7c5e249744a17321b976c6b39396008cca62506
HEAD is now at a7c5e24 Added README

age1a@MSI MINGW64 /d/hello (master)
$ git log --graph --all
* commit a7c5e249744a17321b976c6b39396008cca62506 (HEAD -> master)
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:42:57 2022 +0300

    Added README

* commit 66c850b551d9bac943b2959fa802671eaa172cc9 (style)
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:39:45 2022 +0300

    Updated index.html

* commit 06e773a69d2afa5b6363a711be84231b70d1746c
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:38:47 2022 +0300

    Hello uses style.css

* commit 30da9c0d86c34b3fa4c64ea482cf5b6b253225cd
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:37:49 2022 +0300

    Added css stylesheet

* commit 53cf24402fa5608dded46f3b52809389871120e0
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:24:06 2022 +0300

    Added index.html.

* commit e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:21:37 2022 +0300

    Moved hello.html to lib

* commit 6561e9181a06d293f3d8311d591723c4eeb8e3e1
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:17:56 2022 +0300

    Add an author/email comment

* commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1)
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

* commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (tag: v1-beta)
  Author: Lada <age.la.eva@mail.ru>
  Date:   Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags

```

Рис. 24: Сброс ветки master 2

Перебазирование

Используем команду `rebase` вместо команды `merge`

```

age1a@MSI MINGW64 /d/hello (master)
$ git checkout style
Switched to branch 'style'

age1a@MSI MINGW64 /d/hello (style)
$ git rebase master
Successfully rebased and updated refs/heads/style.

age1a@MSI MINGW64 /d/hello (style)
$ git log --graph
* commit b29f57cc210050b6ae33285823032cd655979733 (HEAD -> style)
| Author: Lada <age.la.eva@mail.ru>
| Date:   Fri Feb 11 20:39:45 2022 +0300
|
|     Updated index.html
|
* commit b042afc024d02705dcb40abcad84d3b1867c7a28
| Author: Lada <age.la.eva@mail.ru>
| Date:   Fri Feb 11 20:38:47 2022 +0300
|
|     Hello uses style.css
|
* commit e9fad5ac957aeb1044d09be699bbce4f2ab41b0d
| Author: Lada <age.la.eva@mail.ru>
| Date:   Fri Feb 11 20:37:49 2022 +0300
|
|     Added css stylesheet
|
* commit a7c5e249744a17321b976c6b39396008cca62506 (master)
| Author: Lada <age.la.eva@mail.ru>
| Date:   Fri Feb 11 20:42:57 2022 +0300
|
|     Added README
|
* commit 53cf24402fa5608dded46f3b52809389871120e0
| Author: Lada <age.la.eva@mail.ru>
| Date:   Fri Feb 11 20:24:06 2022 +0300
|
|     Added index.html.
|
* commit e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
| Author: Lada <age.la.eva@mail.ru>
| Date:   Fri Feb 11 20:21:37 2022 +0300
|
|     Moved hello.html to lib
|
* commit 6561e9181a06d293f3d8311d591723c4eeb8e3e1
| Author: Lada <age.la.eva@mail.ru>
| Date:   Fri Feb 11 20:17:56 2022 +0300
|
|     Add an author/email comment
|
* commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1)
| Author: Lada <age.la.eva@mail.ru>
| Date:   Fri Feb 11 20:07:26 2022 +0300
|
|     Added HTML header

```

Рис. 25: Перебазирование

Слияние в ветку master

```
agela@MSI MINGW64 /d/hello (style)
$ git checkout master
Switched to branch 'master'

agela@MSI MINGW64 /d/hello (master)
$ git merge style
Updating a7c5e24..b29f57c
Fast-forward
 index.html      | 3 +++
 lib/hello.html  | 1 +
 lib/style.css   | 3 +++
 3 files changed, 7 insertions(+)
 create mode 100644 lib/style.css

agela@MSI MINGW64 /d/hello (master)
$ git log
commit b29f57cc210050b6ae33285823032cd655979733 (HEAD -> master, style)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:39:45 2022 +0300

    Updated index.html

commit b042afc024d02705dcb40abca84d3b1867c7a28
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:38:47 2022 +0300

    Hello uses style.css

commit e9fad5ac957aeb1044d09be699bbce4f2ab41b0d
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:37:49 2022 +0300

    Added css stylesheet

commit a7c5e249744a17321b976c6b39396008cca62506
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:42:57 2022 +0300

    Added README

commit 53cf24402fa5608dded46f3b52809389871120e0
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:24:06 2022 +0300

    Added index.html.

commit e9f0a09f34eb3569eb43d7dd9c0fbbb8de9fe45
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:21:37 2022 +0300

    Moved hello.html to lib

commit 6561e9181a06d293f3d8311d591723c4eeb8e3e1
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:17:56 2022 +0300

    Add an author/email comment

commit f20e7dcca09f713b836e6143ac6793253a771254 (tag: v1)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:07:26 2022 +0300

    Added HTML header

commit 0f653febcd918602bf7e9ef21ae9b36e5b1806f6 (tag: v1-beta)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:06:50 2022 +0300

    Added standard HTML page tags
```

Рис. 26: Слияние в ветку master

Клонирование репозитория

Перейдем в рабочий каталог Создадим клон репозитория hello

Просмотр клонированного репозитория

Взглянем на клонированный репозиторий Просмотрим историю репозитория

```
agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/hello (master)
$ cd ..

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01
$ pwd
/d/work/2022/Laboratory/lab01

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01
$ ls
hello/

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01
$ git clone hello cloned_hello
Cloning into 'cloned_hello'...
done.

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01
$ ls
cloned_hello/ hello/

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01
$ cd cloned_hello

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/cloned_hello (master)
$ ls
README.md index.html lib/

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/cloned_hello (master)
$ git log --all
commit b29f57cc210050b6ae33285823032cd655979733 (HEAD -> master, origin/style, origin/master, origin/HEAD)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:39:45 2022 +0300

    Updated index.html

commit b042afc024d02705dcb40abced84d3b1867c7a28
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:38:47 2022 +0300

    Hello uses style.css

commit e9fad5ac957aeb1044d09be699bbce4f2ab41b0d
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:37:49 2022 +0300

    Added css stylesheet

commit a7c5e249744a17321b976c6b39396008cca62506
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:42:57 2022 +0300

    Added README

commit 53cf24402fa5608dded46f3b52809389871120e0
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:24:06 2022 +0300

    Added index.html.

commit e9f0a09f34eb3569eb43d7dd9c0fbbbf8de9fe45
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:21:37 2022 +0300

    Moved hello.html to lib
```

Рис. 27: Клонирование репозитория и Просмотр клонированного репозитория

Что такое origin?

Удаленные ветки

Выведем список удаленных веток

Изменение оригинального репозитория

Внесем изменения в оригинальный репозиторий hello Извлечем изменения

```
agela@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ git remote
origin

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ git remote show origin
* remote origin
  Fetch URL: D:/work/2022/laboratory/lab01/hello
  Push URL: D:/work/2022/laboratory/lab01/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)

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ git branch
* master

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ git branch -a
* master
  remotes/origin/HEAD -> origin/master
  remotes/origin/master
  remotes/origin/style

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ cd ../hello

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/hello (master)
$ git add README
fatal: pathspec 'README' did not match any files

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/hello (master)
$ git add README.md

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/hello (master)
$ git commit -m "Changed README in original repo"
On branch master
nothing to commit, working tree clean

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/hello (master)
$ cd ../cloned_hello

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ git fetch

agela@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ git log --all
commit b29f57cc210050b6ae33285823032cd655979733 (HEAD -> master, origin/style, origin/master, origin/HEAD)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:39:45 2022 +0300

    Updated index.html

commit b042afc024d02705dcb40abcad84d3b1867c7a28
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:38:47 2022 +0300

    Hello uses style.css

commit e9fad5ac957aeb1044d09be699bbce4f2ab41b0d
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:37:49 2022 +0300

    Added css stylesheet

commit a7c5e249744a17321b976c6b39396008cca62506
```

Рис. 28: origin, Удаленные ветки, Изменение оригинального репозитория

Слияние извлеченных изменений Сольем извлеченные изменения в локальную ветку master Проверим файл README.md

Добавление ветки наблюдения

Добавим локальную ветку, которая отслеживает удаленную ветку

Чистые репозитории

Создадим чистый репозиторий

Добавление удаленного репозитория

Отправка изменений

```
agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/cloned_hello (master)
$ git pull
Already up to date.

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/cloned_hello (master)
$ git branch --track style origin/style
Branch 'style' set up to track remote branch 'style' from 'origin'.

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/cloned_hello (master)
$ git branch -a
* master
  style
remotes/origin/HEAD -> origin/master
remotes/origin/master
remotes/origin/style

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/cloned_hello (master)
$ git log --max-count=2
commit b29f57cc210050b6ae33285823032cd655979733 (HEAD -> master, origin/style, origin/master, origin/HEAD, style)
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:39:45 2022 +0300

    Updated index.html

commit b042afc024d02705dcb40abcad84d3b1867c7a28
Author: Lada <age.la.eva@mail.ru>
Date:   Fri Feb 11 20:38:47 2022 +0300

    Hello uses style.css

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/cloned_hello (master)
$ cd ..

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01
$ git clone --bare hello hello.git
Cloning into bare repository 'hello.git'...
done.

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01
$ ls hello.git
HEAD config description hooks/ info/ objects/ packed-refs refs/

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01
$ cd hello

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/hello (master)
$ git remote add shared ../hello.git

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/hello (master)
$ git checkout master
Already on 'master'
M   README.md

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/hello (master)
$ git add README
fatal: pathspec 'README' did not match any files

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/hello (master)
$ git add README.md

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/hello (master)
$ git commit -m "Added shared comment to readme"
[master 10cc65c] Added shared comment to readme
1 file changed, 1 insertion(+)

agela@MSI MINGW64 /d/work/2022/Laboratory/lab01/hello (master)
$ git commit -m "Added shared comment to readme"
> q
>
On branch master
```

Рис. 29: Слияние извлеченных изменений, Добавление ветки наблюдения, Добавление чистого репозитория, Отправка изменений

Извлечение общих изменений

```
age1a@MSI MINGW64 /d/work/2022/laboratory/lab01/hello (master)
$ cd ../cloned_hello

age1a@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ git remote add shared ../hello.git

age1a@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ git branch --track shared master
Branch 'shared' set up to track local branch 'master'.

age1a@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ 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), 380 bytes | 1024 bytes/s, done.
From ../hello
 * branch          master      -> FETCH_HEAD
 * [new branch]    master      -> shared/master
Updating b29f57c..10cc65c
Fast-forward
 README.md | 1 +
 1 file changed, 1 insertion(+)

age1a@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ cat README.md
This is the Hello World example from the git tutorial.
(Changed in the original and pushed to shared)

age1a@MSI MINGW64 /d/work/2022/laboratory/lab01/cloned_hello (master)
$ |
```

Рис. 30: Извлечение общих изменений

Вывод

В ходе выполнения работы я приобрела практические навыки работы с системой контроля версий git и создала свой репозиторий

Список литературы

1. Основы Git
2. Руководство по оформлению Markdown файлов