Федеральное государственное бюджетное образовательное учреждение высшего образования «Национальный исследовательский университет «МЭИ»

Институт информационных и вычислительных технологий

Кафедра Управления и интеллектуальных технологий

**Отчёт по лабораторной работе № 2**

**По курсу «Разработка программного обеспечения систем управления»**

**«Системы контроля версий Git»**

Выполнила студент группы А-03-20

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Проверил

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Москва 2021

# Цель работы

1. Знать понятия и компоненты систем контроля версий (СКВ), порядок и приемы работы с ними.
2. Уметь участвовать в командной разработке, используя конкретную СКВ — Git, а также популярный хостинг репозитариев — GitHub.

Код:

u211-05@PROG-17 MINGW32 ~/Desktop/lab02

$ mkdir alice

u211-05@PROG-17 MINGW32 ~/Desktop/lab02

$ mkdir bob

u211-05@PROG-17 MINGW32 ~/Desktop/lab02

$ cd alice

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice

$ mkdir project

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project

$ git init

Initialized empty Git repository in C:/Users/u211-05/Desktop/lab02/alice/project

/.git/

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git config user.name 'Alice (KortkovED)'

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git config user.email 'alice@mail.com'

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git status

On branch master

No commits yet

Untracked files:

(use "git add ..." to include in what will be committed)

bin/

main.cpp

obj/

project.cbp

project.depend

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

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git add main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -m 'code: заголовок программы'

[master (root-commit) 1918c1d] code: заголовок программы

1 file changed, 9 insertions(+)

create mode 100644 main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git add project.cbp

warning: LF will be replaced by CRLF in project.cbp.

The file will have its original line endings in your working directory

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -m 'build: заголовок программы'

[master 40f54b6] build: заголовок программы

1 file changed, 40 insertions(+)

create mode 100644 project.cbp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git status

On branch master

Changes not staged for commit:

(use "git add ..." to update what will be committed)

(use "git checkout -- ..." to discard changes in working directory)

modified: main.cpp

Untracked files:

(use "git add ..." to include in what will be committed)

bin/

obj/

project.depend

no changes added to commit (use "git add" and/or "git commit -a")

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git status

On branch master

Changes not staged for commit:

(use "git add ..." to update what will be committed)

(use "git checkout -- ..." to discard changes in working directory)

modified: main.cpp

modified: project.cbp

Untracked files:

(use "git add ..." to include in what will be committed)

bin/

obj/

project.depend

no changes added to commit (use "git add" and/or "git commit -a")

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git add main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -m "code: изменения"

[master c14fa4f] code: изменения

1 file changed, 3 insertions(+), 1 deletion(-)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git status

On branch master

Changes not staged for commit:

(use "git add ..." to update what will be committed)

(use "git checkout -- ..." to discard changes in working directory)

modified: main.cpp

modified: project.cbp

Untracked files:

(use "git add ..." to include in what will be committed)

bin/

obj/

project.depend

no changes added to commit (use "git add" and/or "git commit -a")

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git add -u

warning: LF will be replaced by CRLF in project.cbp.

The file will have its original line endings in your working directory

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -m "code: изменения2"

[master 1774ce0] code: изменения2

2 files changed, 8 insertions(+), 1 deletion(-)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git status

On branch master

Changes not staged for commit:

(use "git add ..." to update what will be committed)

(use "git checkout -- ..." to discard changes in working directory)

modified: main.cpp

Untracked files:

(use "git add ..." to include in what will be committed)

bin/

obj/

project.depend

no changes added to commit (use "git add" and/or "git commit -a")

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -a -m "code: изменения3"

[master e2ff35e] code: изменения3

1 file changed, 2 insertions(+), 3 deletions(-)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git status

On branch master

Untracked files:

(use "git add ..." to include in what will be committed)

bin/

obj/

project.depend

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

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -a -m 'code: изменения31'

On branch master

Untracked files:

bin/

obj/

project.depend

nothing added to commit but untracked files present

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

modified: main.cpp

Untracked files:

(use "git add ..." to include in what will be committed)

.gitignore

obj/

project.depend

no changes added to commit (use "git add" and/or "git commit -a")

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git status

On branch master

Changes not staged for commit:

(use "git add ..." to update what will be committed)

(use "git checkout -- ..." to discard changes in working directory)

modified: main.cpp

Untracked files:

(use "git add ..." to include in what will be committed)

.gitignore

project.depend

no changes added to commit (use "git add" and/or "git commit -a")

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git add .gitignore

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -m "code: ignore"

[master a309c68] code: ignore

1 file changed, 2 insertions(+)

create mode 100644 .gitignore

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git log --stat

commit a309c68e317f17c378f73baae7aa1eb035f5a4dd (HEAD -> master)

Author: Alice (KortkovED)

Date: Mon Mar 22 10:44:02 2021 +0300

code: ignore

.gitignore | 2 ++

1 file changed, 2 insertions(+)

commit e2ff35ebadb4b4a5cb57ac43f131180d49d34eaa

Author: Alice (KortkovED)

Date: Mon Mar 22 10:21:08 2021 +0300

code: изменения3

main.cpp | 5 ++---

1 file changed, 2 insertions(+), 3 deletions(-)

commit 1774ce0848629f33b185b1bd0c884b0d67366a55

Author: Alice (KortkovED)

Date: Mon Mar 22 10:16:22 2021 +0300

code: изменения2

main.cpp | 3 +++

project.cbp | 6 +++++-

2 files changed, 8 insertions(+), 1 deletion(-)

commit c14fa4fcc9ff24ab3ad7d6e6a929ed522c9518dd

Author: Alice (KortkovED)

Date: Mon Mar 22 10:10:16 2021 +0300

code: изменения

main.cpp | 4 +++-

1 file changed, 3 insertions(+), 1 deletion(-)

commit 40f54b66a9b9521919447b03e6baf388044e7fef

Author: Alice (KortkovED)

Date: Mon Mar 22 10:04:39 2021 +0300

build: заголовок программы

project.cbp | 40 ++++++++++++++++++++++++++++++++++++++++

1 file changed, 40 insertions(+)

commit 1918c1d799d19b24348a695060133ee115b1e2d4

Author: Alice (KortkovED)

Date: Mon Mar 22 10:01:24 2021 +0300

code: заголовок программы

main.cpp | 9 +++++++++

1 file changed, 9 insertions(+)

ESCOD

code: изменения

main.cpp | 4 +++-

1 file changed, 3 insertions(+), 1 deletion(-)

commit 40f54b66a9b9521919447b03e6baf388044e7fef

Author: Alice (KortkovED)

Date: Mon Mar 22 10:04:39 2021 +0300

build: заголовок программы

project.cbp | 40 ++++++++++++++++++++++++++++++++++++++++

1 file changed, 40 insertions(+)

commit 1918c1d799d19b24348a695060133ee115b1e2d4

Author: Alice (KortkovED)

Date: Mon Mar 22 10:01:24 2021 +0300

code: заголовок программы

main.cpp | 9 +++++++++

1 file changed, 9 insertions(+)

ESCOC

tion(-)

44e7fef

m>

++++++++++++++++++

5b1e2d4

m>

ESCOD

code: изменения

main.cpp | 4 +++-

1 file changed, 3 insertions(+), 1 deletion(-)

commit 40f54b66a9b9521919447b03e6baf388044e7fef

Author: Alice (KortkovED)

Date: Mon Mar 22 10:04:39 2021 +0300

build: заголовок программы

project.cbp | 40 ++++++++++++++++++++++++++++++++++++++++

1 file changed, 40 insertions(+)

commit 1918c1d799d19b24348a695060133ee115b1e2d4

Author: Alice (KortkovED)

Date: Mon Mar 22 10:01:24 2021 +0300

code: заголовок программы

main.cpp | 9 +++++++++

1 file changed, 9 insertions(+)

...skipping...

SUMMARY OF LESS COMMANDS

Commands marked with \* may be preceded by a number, N.

Notes in parentheses indicate the behavior if N is given.

A key preceded by a caret indicates the Ctrl key; thus ^K is ctrl-K.

h H Display this help.

q :q Q :Q ZZ Exit.

---------------------------------------------------------------------------

MOVING

e ^E j ^N CR \* Forward one line (or N lines).

y ^Y k ^K ^P \* Backward one line (or N lines).

f ^F ^V SPACE \* Forward one window (or N lines).

b ^B ESC-v \* Backward one window (or N lines).

z \* Forward one window (and set window to N).

w \* Backward one window (and set window to N).

ESC-SPACE \* Forward one window, but don't stop at end-of-file.

d ^D \* Forward one half-window (and set half-window to N).

u ^U \* Backward one half-window (and set half-window to N).

ESC-) RightArrow \* Right one half screen width (or N positions).

ESC-( LeftArrow \* Left one half screen width (or N positions).

ESC-} ^RightArrow Right to last column displayed.

ESC-{ ^LeftArrow Left to first column.

F Forward forever; like "tail -f".

ESC-F Like F but stop when search pattern is found.

r ^R ^L Repaint screen.

R Repaint screen, discarding buffered input.

---------------------------------------------------

Default "window" is the screen height.

Default "half-window" is half of the screen height.

---------------------------------------------------------------------------

SEARCHING

/pattern \* Search forward for (N-th) matching line.

?pattern \* Search backward for (N-th) matching line.

n \* Repeat previous search (for N-th occurrence).

N \* Repeat previous search in reverse direction.

ESC-n \* Repeat previous search, spanning files.

ESC-N \* Repeat previous search, reverse dir. & spanning files.

ESC-u Undo (toggle) search highlighting.

&pattern \* Display only matching lines

---------------------------------------------------

A search pattern may be preceded by one or more of:

HELP -- Press RETURN for more, or q when done...skipping...

code: изменения

main.cpp | 4 +++-

1 file changed, 3 insertions(+), 1 deletion(-)

commit 40f54b66a9b9521919447b03e6baf388044e7fef

Author: Alice (KortkovED)

Date: Mon Mar 22 10:04:39 2021 +0300

build: заголовок программы

project.cbp | 40 ++++++++++++++++++++++++++++++++++++++++

1 file changed, 40 insertions(+)

commit 1918c1d799d19b24348a695060133ee115b1e2d4

Author: Alice (KortkovED)

Date: Mon Mar 22 10:01:24 2021 +0300

code: заголовок программы

main.cpp | 9 +++++++++

1 file changed, 9 insertions(+)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git log --oneline --decorate --all --graph

\* a309c68 (HEAD -> master) code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git log --oneline --decorate

a309c68 (HEAD -> master) code: ignore

e2ff35e code: изменения3

1774ce0 code: изменения2

c14fa4f code: изменения

40f54b6 build: заголовок программы

1918c1d code: заголовок программы

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git log -- main.cpp

commit e2ff35ebadb4b4a5cb57ac43f131180d49d34eaa

Author: Alice (KortkovED)

Date: Mon Mar 22 10:21:08 2021 +0300

code: изменения3

commit 1774ce0848629f33b185b1bd0c884b0d67366a55

Author: Alice (KortkovED)

Date: Mon Mar 22 10:16:22 2021 +0300

code: изменения2

commit c14fa4fcc9ff24ab3ad7d6e6a929ed522c9518dd

Author: Alice (KortkovED)

Date: Mon Mar 22 10:10:16 2021 +0300

code: изменения

commit 1918c1d799d19b24348a695060133ee115b1e2d4

Author: Alice (KortkovED)

Date: Mon Mar 22 10:01:24 2021 +0300

code: заголовок программы

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git log --grep "code: "

commit a309c68e317f17c378f73baae7aa1eb035f5a4dd (HEAD -> master)

Author: Alice (KortkovED)

Date: Mon Mar 22 10:44:02 2021 +0300

code: ignore

commit e2ff35ebadb4b4a5cb57ac43f131180d49d34eaa

Author: Alice (KortkovED)

Date: Mon Mar 22 10:21:08 2021 +0300

code: изменения3

commit 1774ce0848629f33b185b1bd0c884b0d67366a55

Author: Alice (KortkovED)

Date: Mon Mar 22 10:16:22 2021 +0300

code: изменения2

commit c14fa4fcc9ff24ab3ad7d6e6a929ed522c9518dd

Author: Alice (KortkovED)

Date: Mon Mar 22 10:10:16 2021 +0300

code: изменения

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git log -- project.cbp

commit 1774ce0848629f33b185b1bd0c884b0d67366a55

Author: Alice (KortkovED)

Date: Mon Mar 22 10:16:22 2021 +0300

code: изменения2

commit 40f54b66a9b9521919447b03e6baf388044e7fef

Author: Alice (KortkovED)

Date: Mon Mar 22 10:04:39 2021 +0300

build: заголовок программы

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git log --grep "build: "

commit 40f54b66a9b9521919447b03e6baf388044e7fef

Author: Alice (KortkovED)

Date: Mon Mar 22 10:04:39 2021 +0300

build: заголовок программы

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git show HEAD

commit a309c68e317f17c378f73baae7aa1eb035f5a4dd (HEAD -> master)

Author: Alice (KortkovED)

Date: Mon Mar 22 10:44:02 2021 +0300

code: ignore

diff --git a/.gitignore b/.gitignore

new file mode 100644

index 0000000..4c7473d

--- /dev/null

+++ b/.gitignore

@@ -0,0 +1,2 @@

+/bin

+/obj

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git show e2ff35

commit e2ff35ebadb4b4a5cb57ac43f131180d49d34eaa

Author: Alice (KortkovED)

Date: Mon Mar 22 10:21:08 2021 +0300

code: изменения3

diff --git a/main.cpp b/main.cpp

index 4e54fe8..ef52f4a 100644

--- a/main.cpp

+++ b/main.cpp

@@ -7,8 +7,7 @@ int main()

cout << "Enter A and B";

int a, b;

cin >> a >> b;

- int c;

- c = a + b;

- cout <<"summa c= "<< c;

+ cout <<" A + B = "<< a + b << '\n';

+ cout <<" A - B = "<< a - b << '\n';

return 0;

}

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git show HEAD

commit a309c68e317f17c378f73baae7aa1eb035f5a4dd (HEAD -> master)

Author: Alice (KortkovED)

Date: Mon Mar 22 10:44:02 2021 +0300

code: ignore

diff --git a/.gitignore b/.gitignore

new file mode 100644

index 0000000..4c7473d

--- /dev/null

+++ b/.gitignore

@@ -0,0 +1,2 @@

+/bin

+/obj

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git show master

commit a309c68e317f17c378f73baae7aa1eb035f5a4dd (HEAD -> master)

Author: Alice (KortkovED)

Date: Mon Mar 22 10:44:02 2021 +0300

code: ignore

diff --git a/.gitignore b/.gitignore

new file mode 100644

index 0000000..4c7473d

--- /dev/null

+++ b/.gitignore

@@ -0,0 +1,2 @@

+/bin

+/obj

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git show HEAD~1

commit e2ff35ebadb4b4a5cb57ac43f131180d49d34eaa

Author: Alice (KortkovED)

Date: Mon Mar 22 10:21:08 2021 +0300

code: изменения3

diff --git a/main.cpp b/main.cpp

index 4e54fe8..ef52f4a 100644

--- a/main.cpp

+++ b/main.cpp

@@ -7,8 +7,7 @@ int main()

cout << "Enter A and B";

int a, b;

cin >> a >> b;

- int c;

- c = a + b;

- cout <<"summa c= "<< c;

+ cout <<" A + B = "<< a + b << '\n';

+ cout <<" A - B = "<< a - b << '\n';

return 0;

}

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git show master~1

commit e2ff35ebadb4b4a5cb57ac43f131180d49d34eaa

Author: Alice (KortkovED)

Date: Mon Mar 22 10:21:08 2021 +0300

code: изменения3

diff --git a/main.cpp b/main.cpp

index 4e54fe8..ef52f4a 100644

--- a/main.cpp

+++ b/main.cpp

@@ -7,8 +7,7 @@ int main()

cout << "Enter A and B";

int a, b;

cin >> a >> b;

- int c;

- c = a + b;

- cout <<"summa c= "<< c;

+ cout <<" A + B = "<< a + b << '\n';

+ cout <<" A - B = "<< a - b << '\n';

return 0;

}

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git diff

diff --git a/main.cpp b/main.cpp

index ef52f4a..add21e9 100644

--- a/main.cpp

+++ b/main.cpp

@@ -9,5 +9,6 @@ int main()

cin >> a >> b;

cout <<" A + B = "<< a + b << '\n';

cout <<" A - B = "<< a - b << '\n';

+ int c;

return 0;

}

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git diff HEAD~2

diff --git a/.gitignore b/.gitignore

new file mode 100644

index 0000000..4c7473d

--- /dev/null

+++ b/.gitignore

@@ -0,0 +1,2 @@

+/bin

+/obj

diff --git a/main.cpp b/main.cpp

index 4e54fe8..add21e9 100644

--- a/main.cpp

+++ b/main.cpp

@@ -7,8 +7,8 @@ int main()

cout << "Enter A and B";

int a, b;

cin >> a >> b;

+ cout <<" A + B = "<< a + b << '\n';

+ cout <<" A - B = "<< a - b << '\n';

int c;

- c = a + b;

- cout <<"summa c= "<< c;

return 0;

}

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git diff HEAD~4 HEAD~3

diff --git a/main.cpp b/main.cpp

index b4392ec..1221b0f 100644

--- a/main.cpp

+++ b/main.cpp

@@ -4,6 +4,8 @@ using namespace std;

int main()

{

- cout << "Hello world!" << endl;

+ cout << "Enter A and B";

+ int a, b;

+ cin >> a >> b;

return 0;

}

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git diff

diff --git a/main.cpp b/main.cpp

index ef52f4a..add21e9 100644

--- a/main.cpp

+++ b/main.cpp

@@ -9,5 +9,6 @@ int main()

cin >> a >> b;

cout <<" A + B = "<< a + b << '\n';

cout <<" A - B = "<< a - b << '\n';

+ int c;

return 0;

}

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git add main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -m "code: proizved"

[master 77c9689] code: proizved

1 file changed, 1 insertion(+)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git reset -- HEAD~1

Unstaged changes after reset:

M main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git checkout HEAD -- main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git remote add origin https://github.com/KorotkovED/cs-lab02.git

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git branch -M master

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git push -u origin master

Logon failed, use ctrl+c to cancel basic credential prompt.

Username for 'https://github.com':

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git remote add origin https://github.com/KorotkovED/cs-lab02.git

fatal: remote origin already exists.

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git branch -M master

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git push -u origin master

Logon failed, use ctrl+c to cancel basic credential prompt.

Username for 'https://github.com': korotkov1212@gmail.com

Enumerating objects: 22, done.

Counting objects: 100% (22/22), done.

Compressing objects: 100% (20/20), done.

Writing objects: 100% (22/22), 2.64 KiB | 207.00 KiB/s, done.

Total 22 (delta 4), reused 0 (delta 0)

remote: Resolving deltas: 100% (4/4), done.

To https://github.com/KorotkovED/cs-lab02.git

\* [new branch] master -> master

Branch 'master' set up to track remote branch 'master' from 'origin'.

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git remote -v

origin https://github.com/KorotkovED/cs-lab02.git (fetch)

origin https://github.com/KorotkovED/cs-lab02.git (push)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git fetch https://github.com/KorotkovED/cs-lab02.git

remote: Enumerating objects: 5, done.

remote: Counting objects: 100% (5/5), done.

remote: Compressing objects: 100% (2/2), done.

remote: Total 3 (delta 1), reused 3 (delta 1), pack-reused 0

Unpacking objects: 100% (3/3), done.

From https://github.com/KorotkovED/cs-lab02

\* branch HEAD -> FETCH\_HEAD

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git log --oneline --decorate --all --graph

\* 77c9689 (HEAD -> master, origin/master) code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git pull --ff-only

From https://github.com/KorotkovED/cs-lab02

77c9689..9f25090 master -> origin/master

Updating 77c9689..9f25090

Fast-forward

main.cpp | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

Already up to date.

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git add main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git commit -m 'code:Alicechange'

[master 1380387] code:Alicechange

1 file changed, 5 insertions(+), 3 deletions(-)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git push https://github.com/KorotkovED/cs-lab02.git

Logon failed, use ctrl+c to cancel basic credential prompt.

Username for 'https://github.com': korotkov1212@gmail.com

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Compressing objects: 100% (3/3), done.

Writing objects: 100% (3/3), 417 bytes | 208.00 KiB/s, done.

Total 3 (delta 1), reused 0 (delta 0)

remote: Resolving deltas: 100% (1/1), completed with 1 local object.

To https://github.com/KorotkovED/cs-lab02.git

9f25090..1380387 master -> master

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (master)

$ git add main.cpp

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (master)

$ git commit -m "code: Amax"

[master 50c4ea3] code: Amax

1 file changed, 8 insertions(+)

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (master)

$ git push https://github.com/KorotkovED/cs-lab02.git

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Delta compression using up to 8 threads

Compressing objects: 100% (3/3), done.

Writing objects: 100% (3/3), 397 bytes | 397.00 KiB/s, done.

Total 3 (delta 1), reused 0 (delta 0), pack-reused 0

remote: Resolving deltas: 100% (1/1), completed with 1 local object.

To https://github.com/KorotkovED/cs-lab02.git

1380387..50c4ea3 master -> master

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (master)

$ git branch double

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (master)

$ git checkout double

Switched to branch 'double'

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git add main.cpp

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git commit -m "code: double"

On branch double

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: main.cpp

Untracked files:

(use "git add <file>..." to include in what will be committed)

main.exe

main.o

no changes added to commit (use "git add" and/or "git commit -a")

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git pull

remote: Enumerating objects: 5, done.

remote: Counting objects: 100% (5/5), done.

remote: Compressing objects: 100% (2/2), done.

remote: Total 3 (delta 1), reused 3 (delta 1), pack-reused 0

Unpacking objects: 100% (3/3), 362 bytes | 24.00 KiB/s, done.

From https://github.com/KorotkovED/cs-lab02

4f8007e..7626679 master -> origin/master

There is no tracking information for the current branch.

Please specify which branch you want to merge with.

See git-pull(1) for details.

git pull <remote> <branch>

If you wish to set tracking information for this branch you can do so with:

git branch --set-upstream-to=origin/<branch> double

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git log --oneline --decorate --all --graph

\* 7626679 (origin/master, origin/HEAD) code: Bmin and Amax

\* 73e8773 (HEAD -> double, master) code: Amax

\* 4f8007e code: изменения4

\* 50c4ea3 code: maxA

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git merge double

Already up to date.

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git push https://github.com/KorotkovED/cs-lab02.git

Total 0 (delta 0), reused 0 (delta 0), pack-reused 0

remote:

remote: Create a pull request for 'double' on GitHub by visiting:

remote: https://github.com/KorotkovED/cs-lab02/pull/new/double

remote:

To https://github.com/KorotkovED/cs-lab02.git

\* [new branch] double -> double

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git log --oneline --decorate --all --graph

\* 7626679 (origin/master, origin/HEAD) code: Bmin and Amax

\* 73e8773 (HEAD -> double, master) code: Amax

\* 4f8007e code: изменения4

\* 50c4ea3 code: maxA

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

Bob

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob

$ git remote -v

fatal: not a git repository (or any of the parent directories): .git

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob

$ git clone project

bash: https://github.com/KorotkovED/cs-lab02.git: No such file or directory

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob

$ git clone https://github.com/KorotkovED/cs-lab02.git project

Cloning into 'project'...

remote: Enumerating objects: 22, done.

remote: Counting objects: 100% (22/22), done.

remote: Compressing objects: 100% (16/16), done.

remote: Total 22 (delta 4), reused 22 (delta 4), pack-reused 0

Unpacking objects: 100% (22/22), done.

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob

$ cd project

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git config user.name 'Bob (KorotkovED)'

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git config user.email 'bob@gmail.com'

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git add main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git push https://github.com/KorotkovED/cs-lab02.git

Logon failed, use ctrl+c to cancel basic credential prompt.

Username for 'https://github.com': korotkov1212@gmail.com

Everything up-to-date

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git add main.cpp

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git commit -m "code: Bobchange"

[master 9f25090] code: Bobchange

1 file changed, 1 insertion(+), 1 deletion(-)

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git push https://github.com/KorotkovED/cs-lab02.git

Logon failed, use ctrl+c to cancel basic credential prompt.

Username for 'https://github.com': korotkov1212@gmail.com

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Compressing objects: 100% (3/3), done.

Writing objects: 100% (3/3), 392 bytes | 196.00 KiB/s, done.

Total 3 (delta 1), reused 0 (delta 0)

remote: Resolving deltas: 100% (1/1), completed with 1 local object.

To https://github.com/KorotkovED/cs-lab02.git

77c9689..9f25090 master -> master

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git pull --ff-only

From https://github.com/KorotkovED/cs-lab02

77c9689..9f25090 master -> origin/master

Already up to date.

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ ^C

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git fetch https://github.com/KorotkovED/cs-lab02.git

remote: Enumerating objects: 5, done.

remote: Counting objects: 100% (5/5), done.

remote: Compressing objects: 100% (2/2), done.

remote: Total 3 (delta 1), reused 3 (delta 1), pack-reused 0

Unpacking objects: 100% (3/3), done.

From https://github.com/KorotkovED/cs-lab02

\* branch HEAD -> FETCH\_HEAD

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

$ git log --oneline --decorate --all --graph

\* 9f25090 (HEAD -> master, origin/master, origin/HEAD) code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/bob/project (master)

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git add main.cpp

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git commit -m "code: Bmin"

On branch master

Your branch is behind 'origin/master' by 1 commit, and can be fast-forwarded.

(use "git pull" to update your local branch)

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: main.cpp

Untracked files:

(use "git add <file>..." to include in what will be committed)

main.exe

main.o

no changes added to commit (use "git add" and/or "git commit -a")

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git push https://github.com/KorotkovED/cs-lab02.git

To https://github.com/KorotkovED/cs-lab02.git

! [rejected] master -> master (fetch first)

error: failed to push some refs to 'https://github.com/KorotkovED/cs-lab02.git'

hint: Updates were rejected because the remote contains work that you do

hint: not have locally. This is usually caused by another repository pushing

hint: to the same ref. You may want to first integrate the remote changes

hint: (e.g., 'git pull ...') before pushing again.

hint: See the 'Note about fast-forwards' in 'git push --help' for details.

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git pull

From https://github.com/KorotkovED/cs-lab02

50c4ea3..73e8773 master -> origin/master

Auto-merging main.cpp

CONFLICT (content): Merge conflict in main.cpp

Automatic merge failed; fix conflicts and then commit the result.

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git log --oneline --decorate --all --graph

\* 3a5288d (HEAD -> master) code: Bmin

| \* 73e8773 (origin/master, origin/HEAD) code: Amax

|/

\* 4f8007e code: изменения4

\* 50c4ea3 code: maxA

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

[detached HEAD 7626679] code: Bmin and Amax

1 file changed, 8 insertions(+)

Successfully rebased and updated refs/heads/master.

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git push https://github.com/KorotkovED/cs-lab02.git

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Delta compression using up to 8 threads

Compressing objects: 100% (3/3), done.

Writing objects: 100% (3/3), 382 bytes | 382.00 KiB/s, done.

Total 3 (delta 1), reused 0 (delta 0), pack-reused 0

remote: Resolving deltas: 100% (1/1), completed with 1 local object.

To https://github.com/KorotkovED/cs-lab02.git

73e8773..7626679 master -> master

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git log --oneline --decorate --all --graph

\* 7626679 (HEAD -> master) code: Bmin and Amax

\* 73e8773 (origin/master, origin/HEAD) code: Amax

\* 4f8007e code: изменения4

\* 50c4ea3 code: maxA

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

Отчет

Команда “git log –stat” показывает сокращенную статистику изменений каждого коммита. Для последнего коммита она покажет автора, дату создания, хэш коммита, название коммита и его последние изменения.

commit a309c68e317f17c378f73baae7aa1eb035f5a4dd (HEAD -> master)

Author: Alice (KortkovED)

Date: Mon Mar 22 10:44:02 2021 +0300

code: ignore

.gitignore | 2 ++

1 file changed, 2 insertions(+)

Просмотр предпоследнего коммита с помощью команды “git show”

$ git show HEAD~1

commit e2ff35ebadb4b4a5cb57ac43f131180d49d34eaa

Author: Alice (KortkovED)

Date: Mon Mar 22 10:21:08 2021 +0300

code: изменения3

diff --git a/main.cpp b/main.cpp

index 4e54fe8..ef52f4a 100644

--- a/main.cpp

+++ b/main.cpp

@@ -7,8 +7,7 @@ int main()

cout << "Enter A and B";

int a, b;

cin >> a >> b;

- int c;

- c = a + b;

- cout <<"summa c= "<< c;

+ cout <<" A + B = "<< a + b << '\n';

+ cout <<" A - B = "<< a - b << '\n';

return 0;

}

Команда “git diff’ позволяет наиболее точно посмотреть отличия файлов, а также проанализировать добавляемые изменения и исправить возможные ошибки.

В данном патче рассматривается разница между файлами кода main.cpp Алисы и Боба.

Вторая строчка патча показывает индекс файла. Третья и четвертая показывают символьными значениями (- и +) изменения в конкретных файлах, а именно в версии файла Алисы и Боба соответственно. Последующие строчки наглядно показывают эти изменения.

u211-05@PROG-17 MINGW32 ~/Desktop/lab02/alice/project (master)

$ git diff

diff --git a/main.cpp b/main.cpp

index ef52f4a..add21e9 100644

--- a/main.cpp

+++ b/main.cpp

@@ -9,5 +9,6 @@ int main()

cin >> a >> b;

cout <<" A + B = "<< a + b << '\n';

cout <<" A - B = "<< a - b << '\n';

+ int c;

return 0;

}

Результат отчета всех веток после загрузки коммитов из удаленного хранилища на “Машину Боба”.

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git log --oneline --decorate --all --graph

\* 3a5288d (HEAD -> master) code: Bmin

\* 4f8007e code: изменения4

\* 50c4ea3 (origin/master, origin/HEAD) code: Amax

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

Как мы видим на коде снизу, произошло раздвоение ветки “master”, и это раздвоение происходит на коммитах, где произошел конфликт.

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git log --oneline --decorate --all --graph

\* 3a5288d (HEAD -> master) code: Bmin

| \* 73e8773 (origin/master, origin/HEAD) code: Amax

|/

\* 4f8007e code: изменения4

\* 50c4ea3 code: maxA

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

После решения конфликта и перемещения коммита Боба поверх Алисы, мы получили статистику:

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/bob/project (master)

$ git log --oneline --decorate --all --graph

\* 7626679 (HEAD -> master) code: Bmin and Amax

\* 73e8773 (origin/master, origin/HEAD) code: Amax

\* 4f8007e code: изменения4

\* 50c4ea3 code: maxA

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

Синхронизация ветки “master” и ее результат:

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git log --oneline --decorate --all --graph

\* 7626679 (origin/master, origin/HEAD) code: Bmin and Amax

\* 73e8773 (HEAD -> double, master) code: Amax

\* 4f8007e code: изменения4

\* 50c4ea3 code: maxA

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы

История всех веток репозитария:

Egor@DESKTOP-MCDP07L MINGW64 ~/Desktop/lab02/alice/project (double)

$ git log --oneline --decorate --all --graph

\* 7626679 (origin/master, origin/HEAD) code: Bmin and Amax

\* 73e8773 (HEAD -> double, master) code: Amax

\* 4f8007e code: изменения4

\* 50c4ea3 code: maxA

\* 1380387 code:Alicechange

\* 9f25090 code: Bobchange

\* 77c9689 code: proizved

\* a309c68 code: ignore

\* e2ff35e code: изменения3

\* 1774ce0 code: изменения2

\* c14fa4f code: изменения

\* 40f54b6 build: заголовок программы

\* 1918c1d code: заголовок программы