Министерство Образования Республики Молдова
Технический Университет Молдовы
Кафедра Автоматики и Информационных Технологий

Лабораторная работа №2

По дисциплине: «MIDPS»

Тема: «Version Control Systems si modul de setare a unui server»

Выполнила: студентка группы TI-145:

Кысса Виктория

Проверила: старший преподаватель:

Кожокару Светлана

Кишинёв 2016

Obiectivele lucrării

- Intelegerea si folosirea CLI (basiclevel)
- Administrarea remote a masinilor linux machine folosind SSH (remote code editing)
- Version Control Systems (git || mercurial || svn)
- Compileaza codul C/C++/Java/Python prin intermediul CLI, folosind compilatoarele gcc/g++/javac/python

Sarcina lucrarii:

Advanced Level (nota 9 || 10):
- setează un branch to track a remote origin pe care vei putea să faci push (ex. Github, Bitbucket or custom server)
- resetează un branch la commit-ul anterior
  merge 2 branches
- conflict solving between 2 branches

1. Создаем папку с текстовым файлом, добавляем его, делаем commit, push. Затем два раза подряд над файлом производит кое-какие изменения, и делаем add/commit/push.

MINGW64:/c/Users/Kyssa Victoria/Desktop/MIDPS_2/MIDPS/Lab #2

```
Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
Untracked files:
  (use "git add <file>..." to include in what will be committed)

        Lab #2/

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

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git add .

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git commit -m "first commit"
[master d794bb3] first commit
 Committer: Victoria Kyssa <Victoria Kyssa>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Lab #2/Rabota_Git_Hub.txt

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git push
warning: push.default is unset; its implicit value has changed in
Git 2.0 from 'matching' to 'simple'. To squelch this message
and maintain the traditional behavior, use:

  git config --global push.default matching

To squelch this message and adopt the new behavior now, use:

  git config --global push.default simple

When push.default is set to 'matching', git will push local branches
to the remote branches that already exist with the same name.

Since Git 2.0, Git defaults to the more conservative 'simple'
behavior, which only pushes the current branch to the corresponding
remote branch that 'git pull' uses to update the current branch.

See 'git help config' and search for 'push.default' for further information.
(the 'simple' mode was introduced in Git 1.7.11. Use the similar mode
'current' instead of 'simple' if you sometimes use older versions of Git)

Counting objects: 3, done.
Delta compression using up to 2 threads.
```

```
Counting objects: 3, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 374 bytes | 0 bytes/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/VictoriaCissa/MIDPS.git
   585eb31..d794bb3  master -> master

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
nothing to commit, working directory clean

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   Lab #2/Rabota_Git_Hub.txt

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

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git add .

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git commit -m "second commit"
[master 5c82ae3] second commit
 Committer: Victoria Kyssa <Victoria Kyssa>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 7 insertions(+)

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git push
warning: push.default is unset; its implicit value has changed in
Git 2.0 from 'matching' to 'simple'. To squelch this message
and maintain the traditional behavior, use:

  git config --global push.default matching

To squelch this message and adopt the new behavior now, use:

  git config --global push.default simple
```

```
When push.default is set to 'matching', git will push local branches
to the remote branches that already exist with the same name.

Since Git 2.0, Git defaults to the more conservative 'simple'
behavior, which only pushes the current branch to the corresponding
remote branch that 'git pull' uses to update the current branch.

See 'git help config' and search for 'push.default' for further information.
(the 'simple' mode was introduced in Git 1.7.11. Use the similar mode
'current' instead of 'simple' if you sometimes use older versions of Git)

Counting objects: 4, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 478 bytes | 0 bytes/s, done.
Total 4 (delta 0), reused 0 (delta 0)
To https://github.com/VictoriaCissa/MIDPS.git
   d794bb3..5c82ae3  master -> master

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
nothing to commit, working directory clean

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   Lab #2/Rabota_Git_Hub.txt

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

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git add .

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git commit -m "third commit"
[master 8c91ef0] third commit
 Committer: Victoria Kyssa <Victoria Kyssa>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

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

```
MINGW64:/c/Users/Kyssa Victoria/Desktop/MIDPS_2/MIDPS/Lab #2

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git push
warning: push.default is unset; its implicit value has changed in
Git 2.0 from 'matching' to 'simple'. To squelch this message
and maintain the traditional behavior, use:

  git config --global push.default matching

To squelch this message and adopt the new behavior now, use:

  git config --global push.default simple

When push.default is set to 'matching', git will push local branches
to the remote branches that already exist with the same name.

Since Git 2.0, Git defaults to the more conservative 'simple'
behavior, which only pushes the current branch to the corresponding
remote branch that 'git pull' uses to update the current branch.

See 'git help config' and search for 'push.default' for further information.
(the 'simple' mode was introduced in Git 1.7.11. Use the similar mode
'current' instead of 'simple' if you sometimes use older versions of Git)

Counting objects: 4, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 482 bytes | 0 bytes/s, done.
Total 4 (delta 0), reused 0 (delta 0)
To https://github.com/VictoriaCissa/MIDPS.git
   5c82ae3..8c91ef0  master -> master

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
nothing to commit, working directory clean
```

2. Создаем ветку main1. С помощью команды reset , возвращаемся на один шаг назад, то есть в главной ветке (master) у нас 3 commit-a, а в ветке main1 только 2 commit-a. Затем, вносим в новую ветку новый commit, непохожий на те, что было сделаны предварительно, тем самым создавая условия для конфликта при дальнейшем сливании ветвей master и main1.


```
MINGW64:/c/Users/Kyssa Victoria/Desktop/MIDPS_2/MIDPS/Lab #2

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS (master)
$ git branch
* master

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS (master)
$ git checkout main1
Branch main1 set up to track remote branch main1 from origin.
Switched to a new branch 'main1'

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS (main1)
$ git branch
* main1
  master

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS (main1)
$ ls
Lab #1/  Lab #2/  README.md
```

```
Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS (main1)
$ git checkout master
Switched to branch 'master'
Your branch is up-to-date with 'origin/master'.

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
nothing to commit, working directory clean

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS (master)
$ git checkout main1
Switched to branch 'main1'
Your branch is up-to-date with 'origin/main1'.

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS (main1)
$ cd "Lab #2"

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ ls
Rabota_Git_Hub.txt

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ cat Rabota_Git_Hub.txt
#include <iostream>
using namespace std;

int main(){
  cout << "Hello, my dear friends!" << endl;
  return 0;
}
Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ git reset --hard HEAD~1
HEAD is now at 5c82ae3 second commit

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ ls
Rabota_Git_Hub.txt

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ cat Rabota_Git_Hub.txt
#include <iostream>
using namespace std;

int main(){
  cout << "Hello World!" << endl;
  return 0;
}
```

```
Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ cat Rabota_Git_Hub.txt
#include <iostream>
using namespace std;

int main(){
  cout << "Hey, MIDPS!" << endl;
  return 0;
}
Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ git status
On branch main1
Your branch is behind 'origin/main1' 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 checkout -- <file>..." to discard changes in working directory)

        modified:   Rabota_Git_Hub.txt

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

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ git add .

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ git commit -m "Other commit"
[main1 f34afb5] Other commit
 Committer: Victoria Kyssa <Victoria Kyssa>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

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

3. Переключаемся на главную ветку (master), и с помощью команды merge пытаемся слить две имеющиеся ветки. Замечаем, что возникает конфликт из-за несовместимости коммитов. Затем открываем файл, в котором конфликт. В данном файле Git пометил строки, которые создают конфликт. В данном случае, нам нужно выбрать одну из строк, которые конфликтуют. Конфликт разрешен.

```
Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (main1)
$ git checkout master
Switched to branch 'master'
Your branch is up-to-date with 'origin/master'.

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master)
$ git merge main1
Auto-merging Lab #2/Rabota_Git_Hub.txt
CONFLICT (content): Merge conflict in Lab #2/Rabota_Git_Hub.txt
Automatic merge failed; fix conflicts and then commit the result.

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master|MERGING)
$

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master|MERGING)
$ cat Rabota_Git_Hub.txt
#include <iostream>
using namespace std;

int main(){
<<<<<<< HEAD
  cout << "Hello, my dear friends!" << endl;
=======
  cout << "Hey, MIDPS!" << endl;
>>>>>>> main1
  return 0;
}
Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master|MERGING)
$ cat Rabota_Git_Hub.txt
#include <iostream>
using namespace std;

int main(){
cout << "Hey, MIDPS!" << endl;
  return 0;
}
Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master|MERGING)
$ git commit -m "Merging completed"
U       Lab #2/Rabota_Git_Hub.txt
error: commit is not possible because you have unmerged files.
hint: Fix them up in the work tree, and then use 'git add/rm <file>'
hint: as appropriate to mark resolution and make a commit.
fatal: Exiting because of an unresolved conflict.

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master|MERGING)
$ git add .

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master|MERGING)
$ git commit -m "Conflicts Resolved"
[master 5b02938] Conflicts Resolved
 Committer: Victoria Kyssa <Victoria Kyssa>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
```

```
MINGW64:/c/Users/Kyssa Victoria/Desktop/MIDPS_2/MIDPS/Lab #2
$ git commit -m "Conflicts Resolved"
[master 5b02938] Conflicts Resolved
 Committer: Victoria Kyssa <Victoria Kyssa>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author


Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master)
$ git status
On branch master
Your branch is ahead of 'origin/master' by 2 commits.
  (use "git push" to publish your local commits)
nothing to commit, working directory clean

Kyssa Victoria@idea-PC MINGW64 ~/Desktop/MIDPS_2/MIDPS/Lab #2 (master)
$ git push
warning: push.default is unset; its implicit value has changed in
Git 2.0 from 'matching' to 'simple'. To squelch this message
and maintain the traditional behavior, use:

  git config --global push.default matching

To squelch this message and adopt the new behavior now, use:

  git config --global push.default simple

When push.default is set to 'matching', git will push local branches
to the remote branches that already exist with the same name.

Since Git 2.0, Git defaults to the more conservative 'simple'
behavior, which only pushes the current branch to the corresponding
remote branch that 'git pull' uses to update the current branch.

See 'git help config' and search for 'push.default' for further information.
(the 'simple' mode was introduced in Git 1.7.11. Use the similar mode
'current' instead of 'simple' if you sometimes use older versions of Git)

Counting objects: 8, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (6/6), done.
Writing objects: 100% (8/8), 880 bytes | 0 bytes/s, done.
Total 8 (delta 1), reused 0 (delta 0)
To https://github.com/VictoriaCissa/MIDPS.git
   8c91ef0..5b02938  master -> master
```

Выводы

В ходе данной лабораторной работы были изучены основные принципы и метод использования веб-сервис для хостинга IT-проектов и их совместной разработки – Git. Была проведена работа с ветвями: создание новой ветви, добавление commit-ов в ней, возвращение в основную ветвь, и наконец, слияния ветвей, таким образом, чтобы создать конфликт. Подобные конфликты вполне могут произойти с постоянным взаимодействием с Git-ом, поэтому подобные знания очень полезны в дальнейшей работе в совместных проектах. Конфликт был успешно разрешен, как показано на скриншотах. Git – это намного больше, чем сервис хостинга кода, это система контроля версий, а также, отличный помощник любого программиста.

Библиография:

1. https://habrahabr.ru/post/203282/
2. https://githowto.com/ru/resolving_conflicts?ref=driverlayer.com