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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:

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Проверил:

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## Obiectivele lucrării

- Intelegerea si folosirea CLI (basic level)
- 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 lucrării:

### 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:/d/MDPS

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git add .

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git commit -m "raz"
[master da72c6d] raz
Committer: Sgushonka <Sgushonka>
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, 135 insertions(+)
create mode 100644 Theone.txt

Alionka@Alionka-PC MINGW64 /d/MDPS (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 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 1.11 KiB | 0 bytes/s, done.
Total 3 (delta 1), reused 0 (delta 0)
To https://github.com/FiodorovaAliona/MIDPS.git
   e55c970..da72c6d  master -> master

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
```

```
MINGW64:/d/MDPS

Alionka@Alionka-PC MINGW64 /d/MDPS (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:   Theone.txt

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

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git add .

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git commit -m "izmen1"
[master 0047eee] izmen1
Committer: Sgushonka <Sgushonka>
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(-)

Alionka@Alionka-PC MINGW64 /d/MDPS (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
```

```
MINGW64:/d/MDPS

Alionka@Alionka-PC MINGW64 /d/MDPS (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:   Theone.txt

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

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git add .

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git commit -m "izmen2"
[master da27a55] izmen2
Committer: Sgushonka <Sgushonka>
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(-)

Alionka@Alionka-PC MINGW64 /d/MDPS (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
```

```
MINGW64:/d/MDPS

remote branch that 'git pull' uses to update the current branch.

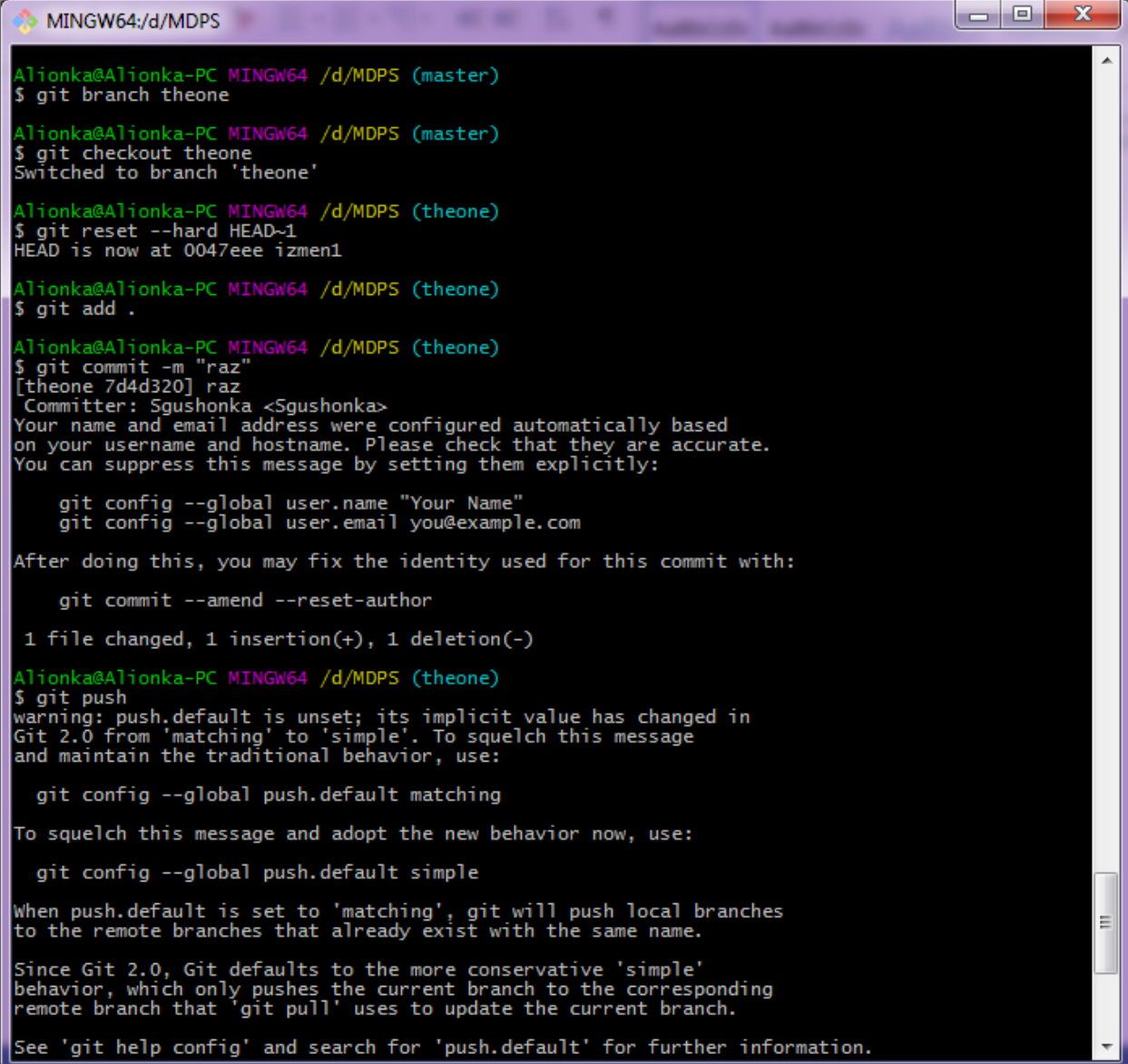
See 'git help config' and search for 'push.default' for further information.
(the 'simple' mode was introduced in Git 1.7.11. Use the similar mode
'current' instead of 'simple' if you sometimes use older versions of Git)

Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 282 bytes | 0 bytes/s, done.
Total 3 (delta 2), reused 0 (delta 0)
To https://github.com/FiodorovaAliona/MIDPS.git
   0047eee..da27a55  master -> master

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
nothing to commit, working directory clean

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$
```

2. Создаем ветку theone. С помощью команды reset, возвращаемся на один шаг назад, то есть в главной ветке (master) у нас 3 commit-а, а в ветке main1 только 2 commit-а. 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 theone.

A screenshot of a terminal window titled 'MINGW64:/d/MDPS'. The terminal shows a series of Git commands and their outputs. The user is working on the 'master' branch, creates a new branch 'theone', checks it out, resets to HEAD~1, adds a file, commits it with the message 'raz', and then pushes it. The terminal also displays a warning about the 'push.default' configuration and instructions on how to set it to 'simple' or 'matching'.

```
Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git branch theone

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git checkout theone
Switched to branch 'theone'

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ git reset --hard HEAD~1
HEAD is now at 0047eee izmen1

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ git add .

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ git commit -m "raz"
[theone 7d4d320] raz
Committer: Sgushonka <Sgushonka>
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(-)

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ 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.
```

```
MINGW64/d/MDPS
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)

fatal: The current branch theone has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin theone

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ git push --set-upstream origin theone
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 308 bytes | 0 bytes/s, done.
Total 3 (delta 2), reused 0 (delta 0)
To https://github.com/FiodorovaAliona/MIDPS.git
 * [new branch]      theone -> theone
Branch theone set up to track remote branch theone from origin.

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ git status
On branch theone
Your branch is up-to-date with 'origin/theone'.
nothing to commit, working directory clean

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ |
```

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.

```
MINGW64/d/MDPS
Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ git push --set-upstream origin theone
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 308 bytes | 0 bytes/s, done.
Total 3 (delta 2), reused 0 (delta 0)
To https://github.com/FiodorovaAliona/MIDPS.git
 * [new branch]      theone -> theone
Branch theone set up to track remote branch theone from origin.

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ git status
On branch theone
Your branch is up-to-date with 'origin/theone'.
nothing to commit, working directory clean

Alionka@Alionka-PC MINGW64 /d/MDPS (theone)
$ git checkout master
Switched to branch 'master'
Your branch is up-to-date with 'origin/master'.

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git merge theone
Auto-merging Theone.txt
CONFLICT (content): Merge conflict in Theone.txt
Automatic merge failed; fix conflicts and then commit the result.

Alionka@Alionka-PC MINGW64 /d/MDPS (master|MERGING)
$
```



```
MINGW64:/d/MDPS

Alionka@Alionka-PC MINGW64 /d/MDPS (master|MERGING)
$ cat Theone.txt
#include<iostream>
#include<conio.h>
#include<string.h>
#include<stdlib.h>

using namespace std;

int MenuChoose1, s;

struct vector{
    long *pointer;
    int size;
};

vector V,tmp;

void init(vector *vr, int size){
    vr->pointer=new long[size];
    vr->size=size;
    cout<<"Enter elements of Vector."<<endl;
    for(int i=0;i<size;i++)
        cin>>vr->pointer[i];
}

void DLT(vector *vr){
    delete[]vr->pointer;
    vr->size=0;
}

void change(vector *vr, int s){
    tmp.pointer=new long[vr->size];
    for(int i=0;i<vr->size;i++)
        tmp.pointer[i]=vr->pointer[i];
    tmp.size=vr->size;
}
```

```
case 5 : {
    cout<<"nadeiusi v etot raz srabotaet"<<sum()<<".
"<<endl;

    system("pause");
    system("cls");
    break;
}
case 6: {
    DLT(&V);
    exit(0);
    break;
}
}
system("pause");
return 0;
}

Alionka@Alionka-PC MINGW64 /d/MDPS (master|MERGING)
$ git commit -m "Merging completed"
U    Theone.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.

Alionka@Alionka-PC MINGW64 /d/MDPS (master|MERGING)
$ git add .

Alionka@Alionka-PC MINGW64 /d/MDPS (master|MERGING)
$ git commit -m "Conflict Resolved"
[master 0883d34] Conflict Resolved
  Committer: Sgushonka <Sgushonka>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
```



```
MINGW64:/d/MDPS
Alionka@Alionka-PC MINGW64 /d/MDPS (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 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 313 bytes | 0 bytes/s, done.
Total 3 (delta 2), reused 0 (delta 0)
To https://github.com/FiodorovaAliona/MIDPS.git
   da27a55..0883d34  master -> master

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
nothing to commit, working directory clean

Alionka@Alionka-PC MINGW64 /d/MDPS (master)
$ |
```

## **Приложения:**

### **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.

### **Библиография:**

1. <https://habrahabr.ru/post/203282/>
2. [https://github.com/ru/resolving\\_conflicts?ref=driverlayer.com](https://github.com/ru/resolving_conflicts?ref=driverlayer.com)