Ministerul Educației al Republicii Moldova
Universitatea Tehnică a Moldovei

RAPORT

La lucrarea de laborator nr. 2
la disciplina «MIDPS»
«**Version Control Systems si modul de setare a unui server**»

A efectuat: studentul gr. T-145 Ialticenco A.
A verificat: lector univ. Cojocaru S.

Chisinau 2016

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
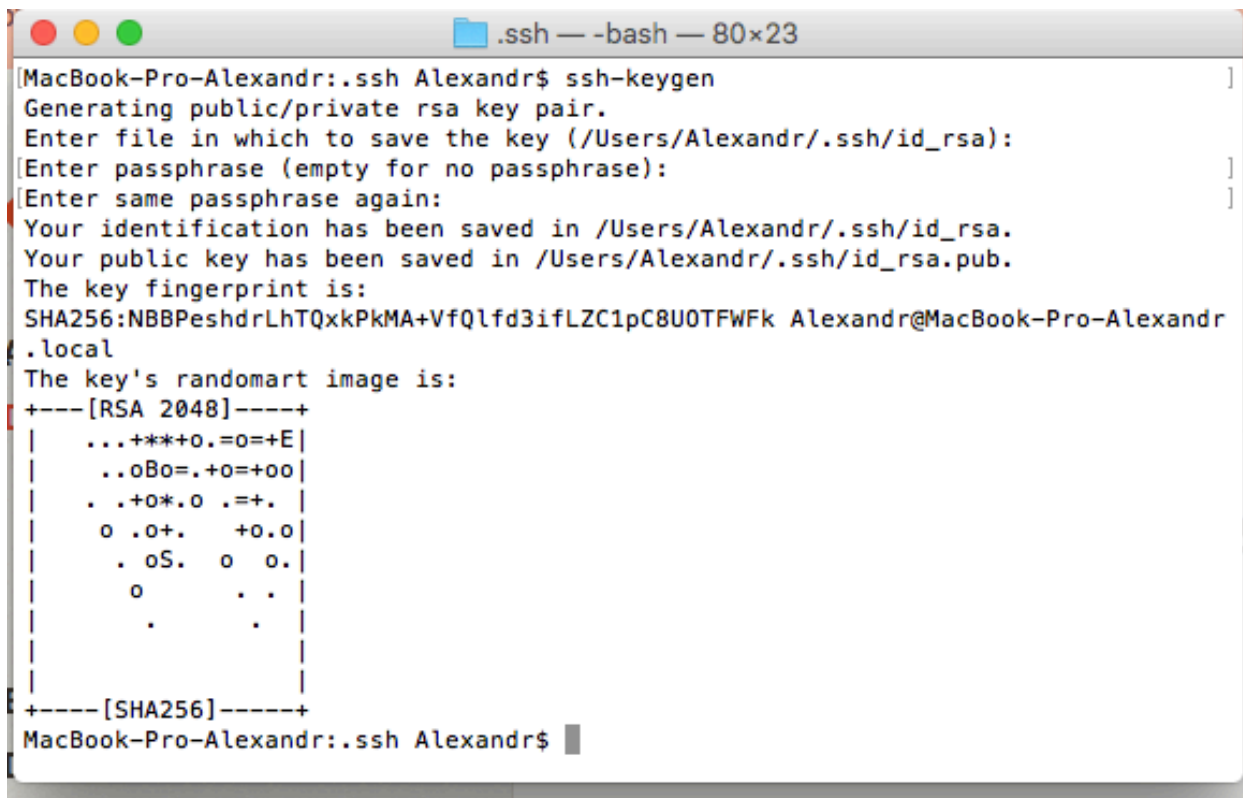
Sarcina lucrarii

- *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
- *Bonus Point*:

Scrie un script care va compila HelloWolrdPrograms projects.

1. Configurarea autentificarii ssh

```
[MacBook-Pro-Alexandr:.ssh Alexandr$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/Users/Alexandr/.ssh/id_rsa):
[Enter passphrase (empty for no passphrase):
[Enter same passphrase again:
Your identification has been saved in /Users/Alexandr/.ssh/id_rsa.
Your public key has been saved in /Users/Alexandr/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:NBBPeshdrLhTQxkPkMA+VfQlfd3ifLZC1pC8UOTFWFk Alexandr@MacBook-Pro-Alexandr
.local
The key's randomart image is:
+---[RSA 2048]----+
|    ...+**+o.=o=+E|
|    ..oBo=.+o=+oo|
|   . .+o*.o .=+. |
|    o .o+.   +o.o|
|     . oS.  o  o.|
|      o      . . |
|       .       . |
|               |
|               |
+----[SHA256]-----+
MacBook-Pro-Alexandr:.ssh Alexandr$
```

```
The key fingerprint is:
SHA256:NBBPeshdrLhTQxkPkMA+VfQlfd3ifLZC1pC8UOTFWFk Alexandr@MacBook-Pro-Alexandr
.local
The key's randomart image is:
+---[RSA 2048]----+
|   ...+**+o.=o=+E|
|    ..oBo=.+o=+oo|
|   . .+o*.o .=+. |
|    o .o+.   +o.o|
|     . oS.  o  o.|
|        o     . .|
|         .      .|
|                 |
|                 |
+----[SHA256]-----+
[MacBook-Pro-Alexandr:.ssh Alexandr$ cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQDA01wESpNYRZZ/1PKHlnTeYSkZI2Oe030zxrZTYUYa
nUh2JVIMk0k7gYJdwqj6B9uRwRGOJ/fzSjCaEQOt22I5JhFtxnrdxQTozNyGeBKjBpWFBOw/1JHa0wC6
naddIqhPSw/OjIUIre4MYcHhQM043yBn6Y05gnGzFKqogSGiAGrYBkJaOa83L3W38X0NStu/vcxJK3p5
R/1Cx8+waA0q7yVF2+drxjHmh/Nyn/dXB9w6p0/hPFTyfeX17o8l3ueRrOcwOMCTyK634ej09iSPWaeX
/3OfNpM9HHtNRmTtoZxvNBsgrugDfsSuvAxvO55RVBm2pY3t2AjnMJjPce9x Alexandr@MacBook-Pr
o-Alexandr.local
MacBook-Pro-Alexandr:.ssh Alexandr$
```


Search GitHub   Pull requests   Issues   Gist

Personal settings

Profile

Account settings

Emails

Notification center

Billing

SSH keys

Security

OAuth applications

Personal access tokens

Repositories

Organizations

SSH keys   New SSH key

There are no SSH keys with access to your account.

Title

MIDPS_key

Key

ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAABAQDA01wESpNYRZZ/1PKHlnTeYSkZI2Oe030zxrZTYUYanUh2JVIMk0k7gYJd
wqj6B9uRwRGOJ/fzSjCaEQOt22I5JhFtxnrdxQTozNyGeBKjBpWFBOw/1JHa0wC6naddIqhPSw/OjIUIre4MYcHhQM043
yBn6Y05gnGzFKqogSGiAGrYBkJaOa83L3W38X0NStu/vcxJK3p5R/1Cx8+waA0q7yVF2+drxjHmh/Nyn/dXB9w6p0/hPF
TyfeX17o8l3ueRrOcwOMCTyK634ej09iSPWaeX/3OfNpM9HHtNRmTtoZxvNBsgrugDfsSuvAxvO55RVBm2pY3t2AjnMJj
Pce9x

Add SSH key

⑦ Check out our guide to generating SSH keys or troubleshoot common SSH Problems.

SSH keys   New SSH key

This is a list of SSH keys associated with your account. Remove any keys that you do not recognize.

🔑 **MIDPS_key**   Delete
ca:fe:fa:e3:59:15:c0:66:4e:74:58:55:2e:9c:76:8b
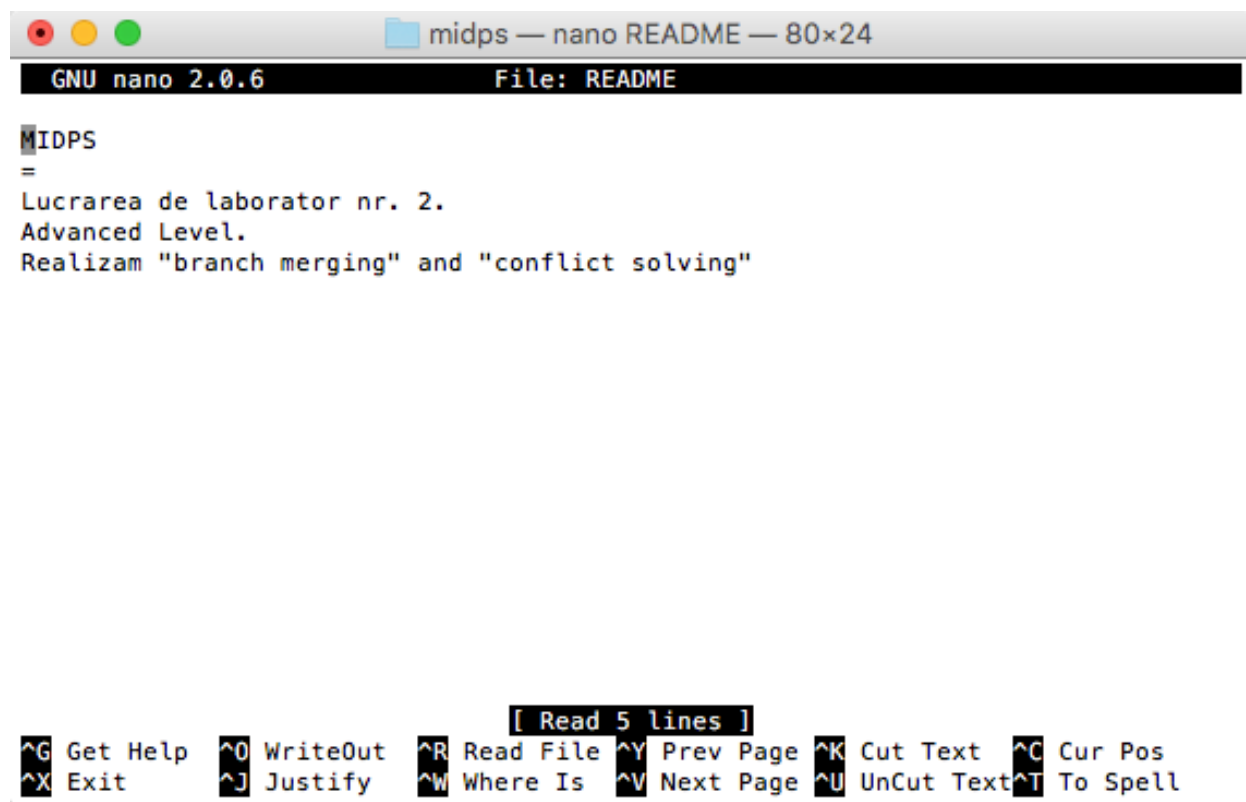Added on Mar 3, 2016 — Never used

⑦ Check out our guide to generating SSH keys or troubleshoot common SSH Problems.

```
nUh2JVIMk0k7gYJdwqj6B9uRwRGOJ/fzSjCaEQOt22I5JhFtxnrdxQTozNyGeBKjBpWFBOw/1JHa0wC6
naddIqhPSw/OjIUIre4MYcHhQM043yBn6Y05gnGzFKqogSGiAGrYBkJaOa83L3W38X0NStu/vcxJK3p5
R/1Cx8+waA0q7yVF2+drxjHmh/Nyn/dXB9w6p0/hPFTyfeX17o8l3ueRrOcwOMCTyK634ej09iSPWaeX
/30fNpM9HHtNRmTtoZxvNBsgrugDfsSuvAxvO55RVBm2pY3t2AjnMJjPce9x Alexandr@MacBook-Pr
o-Alexandr.local
[MacBook-Pro-Alexandr:.ssh Alexandr$ ssh -T                                      ]
usage: ssh [-1246AaCfGgKkMNnqsTtVvXxYy] [-b bind_address] [-c cipher_spec]
           [-D [bind_address:]port] [-E log_file] [-e escape_char]
           [-F configfile] [-I pkcs11] [-i identity_file]
           [-L [bind_address:]port:host:hostport] [-l login_name] [-m mac_spec]
           [-O ctl_cmd] [-o option] [-p port]
           [-Q cipher | cipher-auth | mac | kex | key]
           [-R [bind_address:]port:host:hostport] [-S ctl_path] [-W host:port]
           [-w local_tun[:remote_tun]] [user@]hostname [command]
[MacBook-Pro-Alexandr:.ssh Alexandr$ ssh -T git@github.com                       ] s
 The authenticity of host 'github.com (192.30.252.131)' can't be established.
 RSA key fingerprint is SHA256:nThbg6kXUpJWGl7E1IGOCspRomTxdCARLviKw6E5SY8.
 Are you sure you want to continue connecting (yes/no)? yes
 Warning: Permanently added 'github.com,192.30.252.131' (RSA) to the list of know
 n hosts.
 Hi AlexandrYaltychenko! You've successfully authenticated, but GitHub does not p
 rovide shell access.
 MacBook-Pro-Alexandr:.ssh Alexandr$
```

2. Clonarea repozitoriului gol creat pe github.com

```
Last login: Wed Mar 16 15:43:33 on ttys000
[MacBook-Pro-Alexandr:~ Alexandr$ git clone https://github.com/AlexandrYaltychenk]
o/midps.git
Cloning into 'midps'...
warning: You appear to have cloned an empty repository.
Checking connectivity... done.
MacBook-Pro-Alexandr:~ Alexandr$
```

3. Crearea fișierului README în nano

```
● ● ●                    📁 midps — nano README — 80×24
  GNU nano 2.0.6                    File: README

MIDPS
=
Lucrarea de laborator nr. 2.
Advanced Level.
Realizam "branch merging" and "conflict solving"









                           [ Read 5 lines ]
^G Get Help   ^O WriteOut   ^R Read File ^Y Prev Page ^K Cut Text   ^C Cur Pos
^X Exit       ^J Justify    ^W Where Is  ^V Next Page ^U UnCut Text^T To Spell
```

4. Crearea fișierului .gitignore în nano (ca sa fie ignorat fișierul .DS_Store generat de sistemul de operare Mac OS X)

```
● ● ●                    📁 midps — nano .gitignore — 80×24
  GNU nano 2.0.6                    File: .gitignore

.DS_Store









                           [ Read 2 lines ]
^G Get Help   ^O WriteOut   ^R Read File ^Y Prev Page ^K Cut Text   ^C Cur Pos
^X Exit       ^J Justify    ^W Where Is  ^V Next Page ^U UnCut Text^T To Spell
```

5. Desfășurarea primului add .

```
On branch master

Initial commit

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

         .gitignore
         README

nothing added to commit but untracked files present (use "git add" to track)
[MacBook-Pro-Alexandr:midps Alexandr$ git add .
[MacBook-Pro-Alexandr:midps Alexandr$ git status
On branch master

Initial commit

Changes to be committed:
   (use "git rm --cached <file>..." to unstage)

         new file:    .gitignore
         new file:    README

MacBook-Pro-Alexandr:midps Alexandr$
```

6. Desfășurarea primului commit


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

         .gitignore
         README

nothing added to commit but untracked files present (use "git add" to track)
[MacBook-Pro-Alexandr:midps Alexandr$ git add .
[MacBook-Pro-Alexandr:midps Alexandr$ git status
On branch master

Initial commit

Changes to be committed:
   (use "git rm --cached <file>..." to unstage)

         new file:    .gitignore
         new file:    README

[MacBook-Pro-Alexandr:midps Alexandr$ git commit -m "Primul commit"
 [master (root-commit) 01f9ec2] Primul commit
  2 files changed, 7 insertions(+)
  create mode 100644 .gitignore
  create mode 100644 README
MacBook-Pro-Alexandr:midps Alexandr$
```

7. Desfășurarea primului push (Deci branch-ul to track a remote origin a fost setat cu succes)

```
  ● ● ●                    📁 midps — -bash — 80×37

[MacBook-Pro-Alexandr:midps Alexandr$ git commit -m "Primul commit"          ]
 [master (root-commit) 01f9ec2] Primul commit
  2 files changed, 7 insertions(+)
   create mode 100644 .gitignore
   create mode 100644 README
[MacBook-Pro-Alexandr:midps Alexandr$ 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 4 threads.
 Compressing objects: 100% (3/3), done.
 Writing objects: 100% (4/4), 362 bytes | 0 bytes/s, done.
 Total 4 (delta 0), reused 0 (delta 0)
 To https://github.com/AlexandrYaltychenko/midps.git
  * [new branch]      master -> master
 MacBook-Pro-Alexandr:midps Alexandr$
 MacBook-Pro-Alexandr:midps Alexandr$ ▌
```

8. Adăugarea unui nou fișier hello.java la repozitoriul github

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

        java/

 nothing added to commit but untracked files present (use "git add" to track)
[MacBook-Pro-Alexandr:midps Alexandr$ git add .
[MacBook-Pro-Alexandr:midps Alexandr$ git status
 On branch master
 Your branch is up-to-date with 'origin/master'.
 Changes to be committed:
   (use "git reset HEAD <file>..." to unstage)

        new file:   java/hello.java

[MacBook-Pro-Alexandr:midps Alexandr$ git commit -m "Am adaugat fisierul hello.ja]
 va"
 [master 80b3552] Am adaugat fisierul hello.java
  1 file changed, 5 insertions(+)
  create mode 100644 java/hello.java
[MacBook-Pro-Alexandr:midps Alexandr$ 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
```

```
   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 4 threads.
 Compressing objects: 100% (3/3), done.
 Writing objects: 100% (4/4), 458 bytes | 0 bytes/s, done.
 Total 4 (delta 0), reused 0 (delta 0)
 To https://github.com/AlexandrYaltychenko/midps.git
    01f9ec2..80b3552  master -> master
 MacBook-Pro-Alexandr:midps Alexandr$ 
```
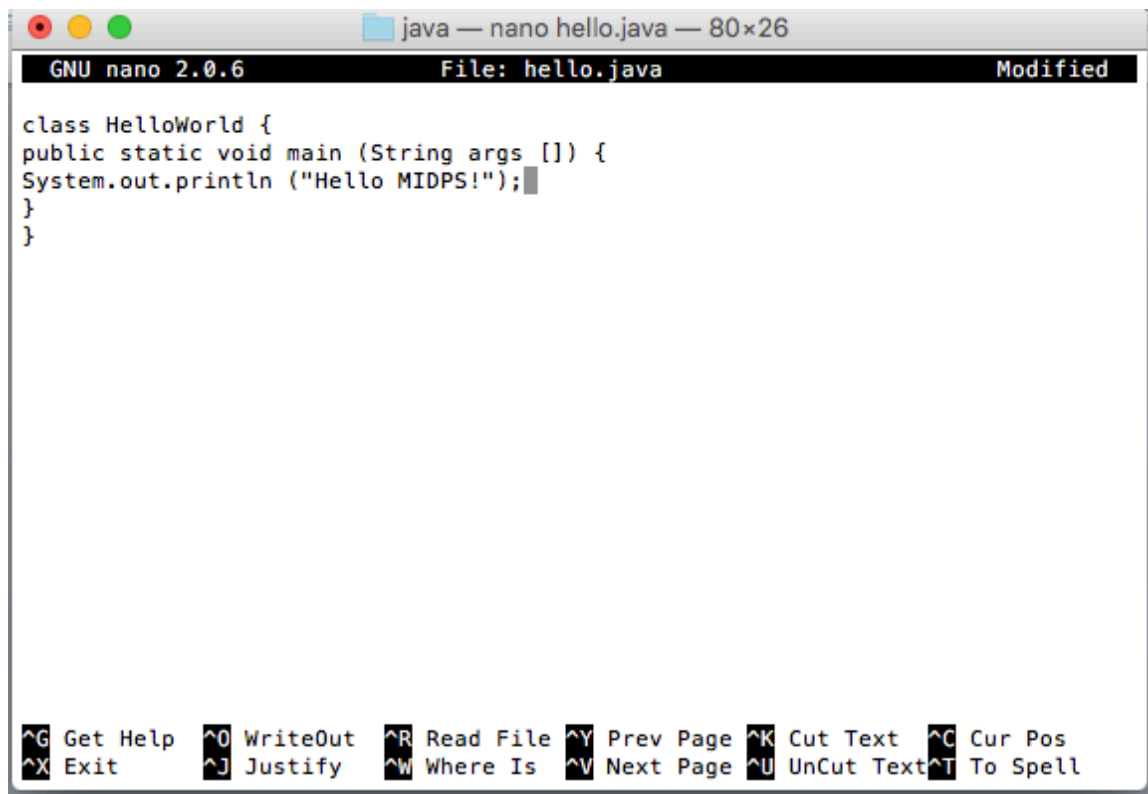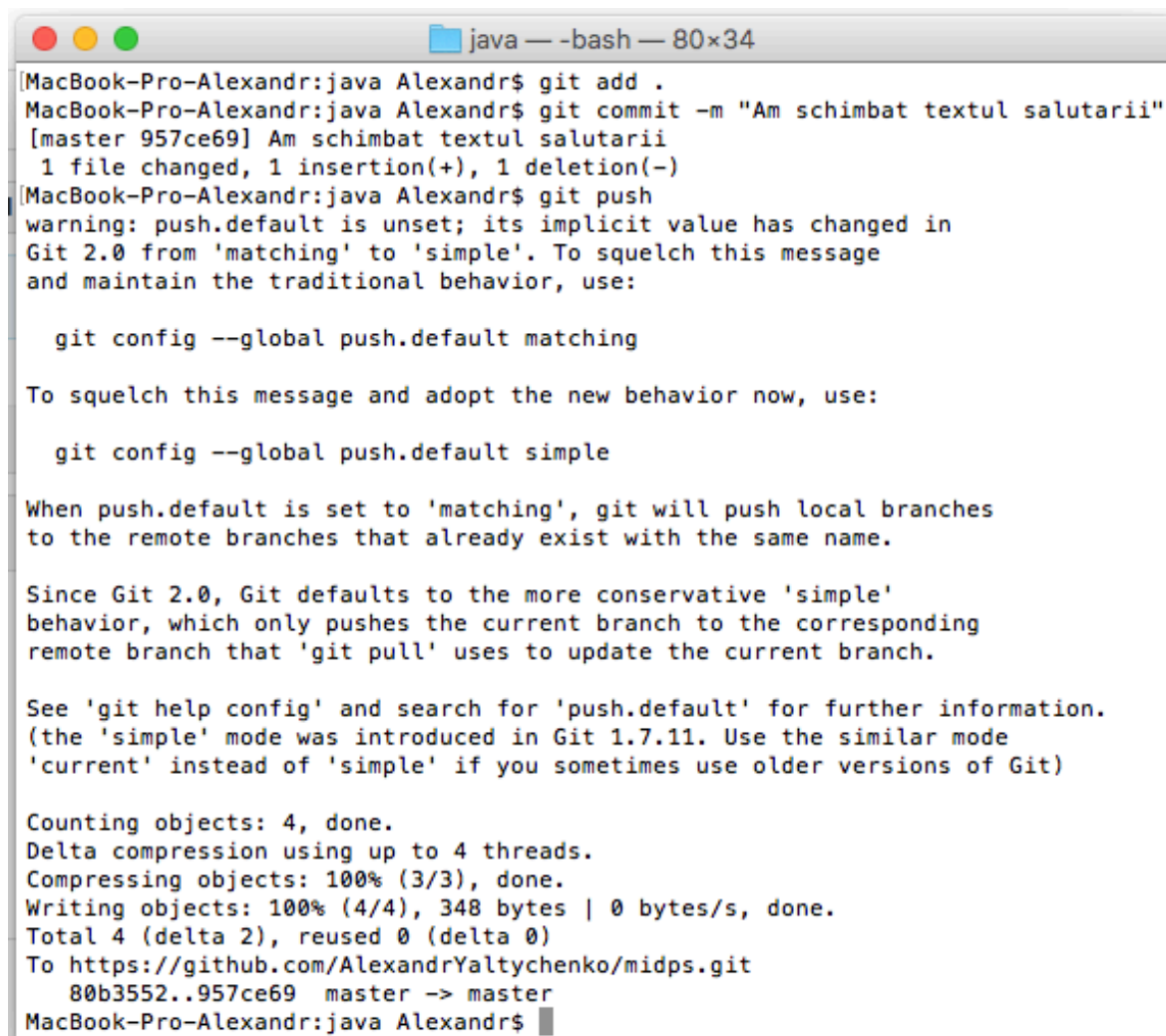
9. Editarea mesajului afișat în hello.java

```
GNU nano 2.0.6                  File: hello.java                      Modified

class HelloWorld {
public static void main (String args []) {
System.out.println ("Hello MIDPS!");
}
}




^G Get Help    ^O WriteOut   ^R Read File ^Y Prev Page ^K Cut Text  ^C Cur Pos
^X Exit        ^J Justify    ^W Where Is  ^V Next Page ^U UnCut Text^T To Spell
```

10. Înca un commit si push

```
MacBook-Pro-Alexandr:java Alexandr$ git add .
MacBook-Pro-Alexandr:java Alexandr$ git commit -m "Am schimbat textul salutarii"
 [master 957ce69] Am schimbat textul salutarii
 1 file changed, 1 insertion(+), 1 deletion(-)
MacBook-Pro-Alexandr:java Alexandr$ 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 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 348 bytes | 0 bytes/s, done.
Total 4 (delta 2), reused 0 (delta 0)
To https://github.com/AlexandrYaltychenko/midps.git
   80b3552..957ce69  master -> master
MacBook-Pro-Alexandr:java Alexandr$
```

11. Implementarea recomandărilor lui git pentru ca warning-urile să nu fie afișate

```
[master 957ce69] Am schimbat textul salutarii
 1 file changed, 1 insertion(+), 1 deletion(-)
[MacBook-Pro-Alexandr:java Alexandr$ 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 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 348 bytes | 0 bytes/s, done.
Total 4 (delta 2), reused 0 (delta 0)
To https://github.com/AlexandrYaltychenko/midps.git
   80b3552..957ce69  master -> master
[MacBook-Pro-Alexandr:java Alexandr$ git config --global push.default matching
[MacBook-Pro-Alexandr:java Alexandr$ git config --global push.default simple
MacBook-Pro-Alexandr:java Alexandr$
```

12. Crearea branch-ului 'another' și selectarea acestuia

```
[MacBook-Pro-Alexandr:java Alexandr$ git branch another
[MacBook-Pro-Alexandr:java Alexandr$ git checkout another
Switched to branch 'another'
[MacBook-Pro-Alexandr:java Alexandr$ git status
On branch another
nothing to commit, working directory clean
MacBook-Pro-Alexandr:java Alexandr$
```

13. Găsirea solutiei pe Stack Overflow cum poate fi ușor îndeplinită resetarea ultimului commit

14. Verificarea git-log-ului al branch-ului 'another' si resetarea ultimului commit

15. Încă un push

```
    Am adaugat fisierul hello.java

commit 01f9ec2418c3232ab32400e7d8d62ac972ac7264
Author: Alexandr <sashaialt95@gmail.com>
Date:   Wed Mar 16 15:59:45 2016 +0200

    Primul commit
[MacBook-Pro-Alexandr:midps Alexandr$ git status
On branch another
nothing to commit, working directory clean
[MacBook-Pro-Alexandr:midps Alexandr$ git reset --hard HEAD~1
HEAD is now at 80b3552 Am adaugat fisierul hello.java
[MacBook-Pro-Alexandr:midps Alexandr$ git push
fatal: The current branch another has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin another

[MacBook-Pro-Alexandr:midps Alexandr$ git push --set-upstream origin another
Total 0 (delta 0), reused 0 (delta 0)
To https://github.com/AlexandrYaltychenko/midps.git
 * [new branch]      another -> another
Branch another set up to track remote branch another from origin.
MacBook-Pro-Alexandr:midps Alexandr$
```

16. Încă o editare a fișierului hello.java (branch-ul 'another')

```
[MacBook-Pro-Alexandr:java Alexandr$ cat hello.java
class HelloWorld {
public static void main (String args []) {
System.out.println ("Hello World");
}
}
[MacBook-Pro-Alexandr:java Alexandr$ nano hello.java
[MacBook-Pro-Alexandr:java Alexandr$ cd..
-bash: cd..: command not found
[MacBook-Pro-Alexandr:java Alexandr$ cd ..
[MacBook-Pro-Alexandr:midps Alexandr$ git status
On branch another
Your branch is up-to-date with 'origin/another'.
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:   java/hello.java

no changes added to commit (use "git add" and/or "git commit -a")
[MacBook-Pro-Alexandr:midps Alexandr$ git add .
[MacBook-Pro-Alexandr:midps Alexandr$ git commit -m "Am adaugat in salutare cuvin]
tul Chisinau"
[another 99aebfa] Am adaugat in salutare cuvintul Chisinau
```

17. Selectarea branch-ului 'master'

```
[MacBook-Pro-Alexandr:midps Alexandr$ git checkout master
 Switched to branch 'master'
 Your branch is up-to-date with 'origin/master'.
 MacBook-Pro-Alexandr:midps Alexandr$
```

18. Verificarea log-ului si "branch merging" (apare conflictul)


```
 Your branch is up-to-date with 'origin/master'.
[MacBook-Pro-Alexandr:midps Alexandr$ git log
 commit 957ce697c94be1c0a7c530a392846be8a90787f6
 Author: Alexandr <sashaialt95@gmail.com>
 Date:   Wed Mar 16 16:29:41 2016 +0200

     Am schimbat textul salutarii

 commit 80b3552da13b159d12b429f723a0a9316643de2c
 Author: Alexandr <sashaialt95@gmail.com>
 Date:   Wed Mar 16 16:07:54 2016 +0200

     Am adaugat fisierul hello.java

 commit 01f9ec2418c3232ab32400e7d8d62ac972ac7264
 Author: Alexandr <sashaialt95@gmail.com>
 Date:   Wed Mar 16 15:59:45 2016 +0200

     Primul commit
[MacBook-Pro-Alexandr:midps Alexandr$ git merge another
 Auto-merging java/hello.java
 CONFLICT (content): Merge conflict in java/hello.java
 Automatic merge failed; fix conflicts and then commit the result.
 MacBook-Pro-Alexandr:midps Alexandr$
```
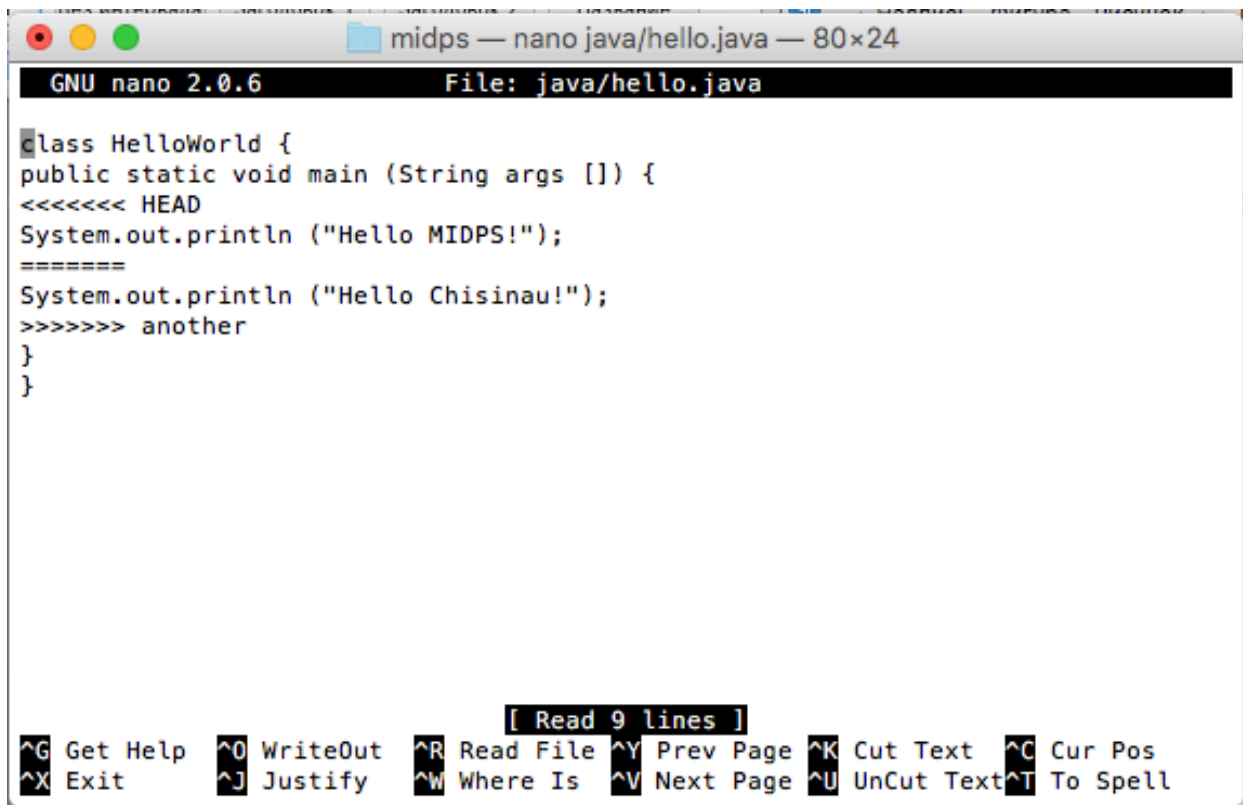
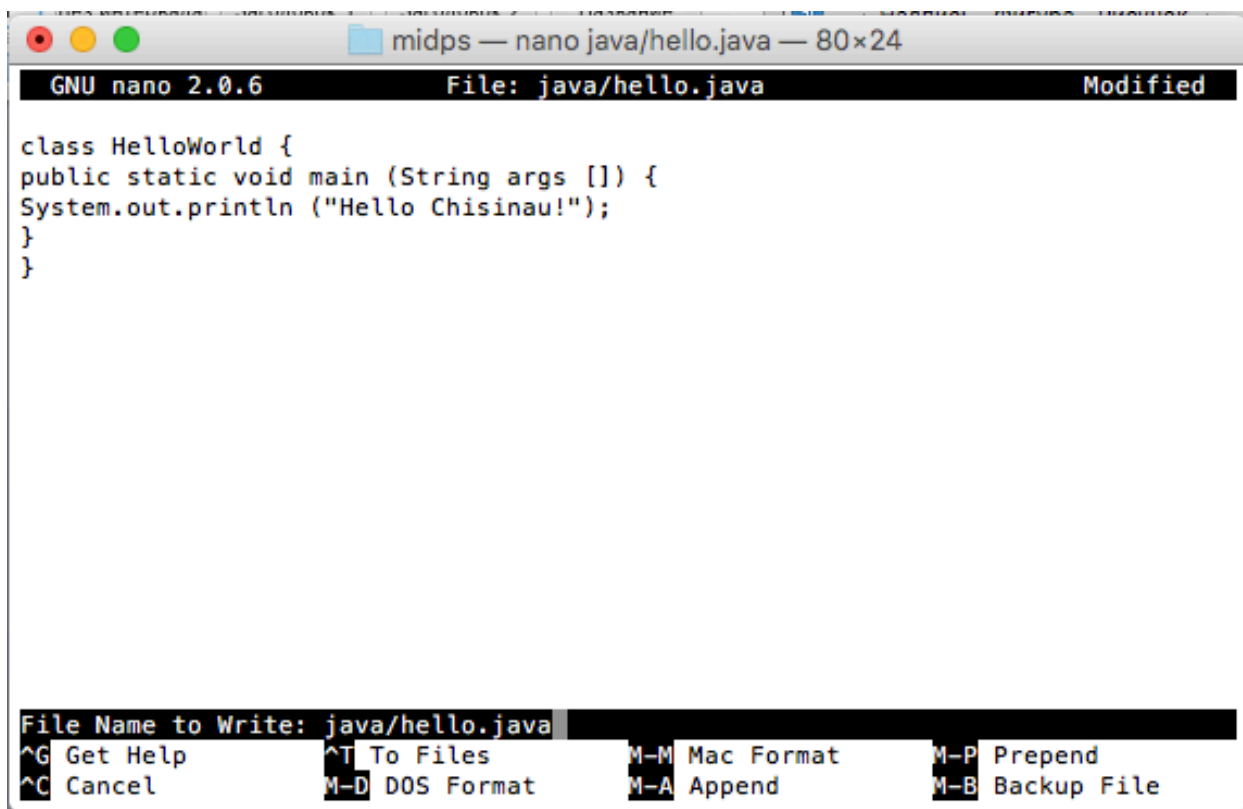**19. Soluționarea confilctului prin editarea fișierului hello.java**

```
  GNU nano 2.0.6               File: java/hello.java

class HelloWorld {
public static void main (String args []) {
<<<<<<< HEAD
System.out.println ("Hello MIDPS!");
=======
System.out.println ("Hello Chisinau!");
>>>>>>> another
}
}




                        [ Read 9 lines ]
^G Get Help   ^O WriteOut  ^R Read File ^Y Prev Page ^K Cut Text  ^C Cur Pos
^X Exit       ^J Justify   ^W Where Is  ^V Next Page ^U UnCut Text^T To Spell
```

```
  GNU nano 2.0.6               File: java/hello.java                  Modified

class HelloWorld {
public static void main (String args []) {
System.out.println ("Hello Chisinau!");
}
}




File Name to Write: java/hello.java
^G Get Help        ^T To Files      M-M Mac Format      M-P Prepend
^C Cancel          M-D DOS Format   M-A Append          M-B Backup File
```

20. Terminarea procesului de «branch merging»

```
● ● ●                    📁 midps — -bash — 80×24

commit 01f9ec2418c3232ab32400e7d8d62ac972ac7264
Author: Alexandr <sashaialt95@gmail.com>
Date:   Wed Mar 16 15:59:45 2016 +0200

    Primul commit
[MacBook-Pro-Alexandr:midps Alexandr$ git merge another
Auto-merging java/hello.java
CONFLICT (content): Merge conflict in java/hello.java
Automatic merge failed; fix conflicts and then commit the result.
[MacBook-Pro-Alexandr:midps Alexandr$ nano java/hello.java
[MacBook-Pro-Alexandr:midps Alexandr$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
You have unmerged paths.
  (fix conflicts and run "git commit")

Unmerged paths:
  (use "git add <file>..." to mark resolution)

        both modified:   java/hello.java

no changes added to commit (use "git add" and/or "git commit -a")
MacBook-Pro-Alexandr:midps Alexandr$ █
```

```
● ● ●                    📁 midps — -bash — 80×24

[MacBook-Pro-Alexandr:midps Alexandr$ git add .
[MacBook-Pro-Alexandr:midps Alexandr$ git commit -m "Conflict rezolvat"
 [master 97fed2c] Conflict rezolvat
 MacBook-Pro-Alexandr:midps Alexandr$ █
```

Bonus Point:

Bash-script-ul pentru compilarea hello_world-urilor in limbaje C, Java, C++, Python:

```
#!/bin/bash
gcc hello_c.c -o hello_c
javac hello_java.java
g++ hello_c++.cpp -o hello_c++
python -m py_compile hello_python.py
```

Concluziile

În cadrul acestei lucrări de laborator am studiat principiile și modul de utilizare a sistemului de control al versiunilor – Git. Prin intermediul CLI am configurat SSH autentificarea, am făcut primul git commit și am sincronizat dispozitoriul local cu cel remote, plasat pe server. Mai departe am reusit sa fac "branch merging" si solutionez conflictul care a aparut. Cunoștințele, obtinute pe parcursul desfășurarii lucrării de laborator vor fi foarte utile pentru realizarea proiectelor, ce urmeaza.

Bibliografie

1. https://training.github.com/kit/downloads/github-git-cheat-sheet.pdf - Git Cheat Sheet