Ministerul Educaţiei al Republicii Moldova

Universitatea Tehnică a Moldovei

Facultatea Calculatoare Informatică şi Microelectronică

Catedra Automatică şi Tehnologii Informaţionale

Disciplina: Medii Interactive de Dezvoltare a Produselor Soft

Lucrare de laborator nr.1

Tema: Version Control Systems si modul de setare a unui server

A efectuat student: ____________(L.Fustei, gr. TI-152)

A controlat:______________(lect.superior R.Melnic)

(lect.asistent I.Cojanu)

Chişinău 2016

I. Scopul lucrarii:

Studierea utilizarii unui Version Control System si modul de setare a unui server.

II. Obiective:

Deprinderea abilitatilor de folosire a unui Version Control System si modul de setare a unui server.

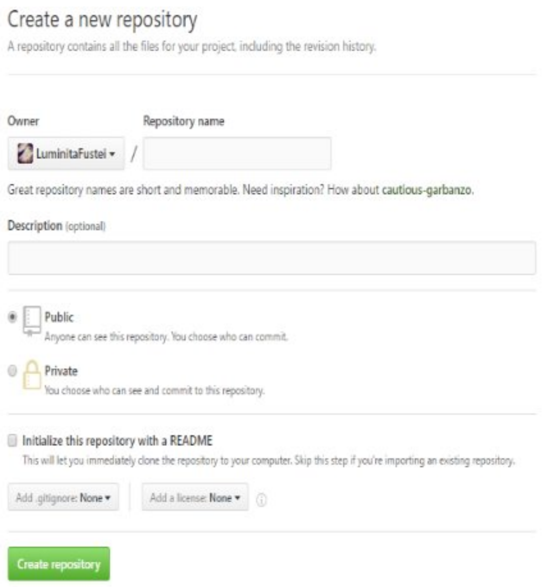
III. Mersul lucrarii:

1. Initializarea unui nou repozitoriu;
2. Configurarea VCS;
3. Commit, push pe branch;
4. Folosirea fiserului .gitignore;
5. Revenirea la versiunile anterioare;
6. Crearea branch-urilor noi;
7. Commit pe ambele branch-uri;
8. Merge la 2 branch-uri;
9. Rezolvarea conflictelor.

IV. Analiza lucrarii de laborator:

Linkul la repozitoriu **https://github.com/LuminitaFustei/MIDPS**

Pentru creearea repozitoriului am folosit metoda online. Pentru aceasta avem nevoie sa deschidem pagina noastra pe ***github***, si sa apasam butonul ***new repositories***.



Create a new repository

A repository contains all the files for your project, including the revision history.

Owner: LuminitaFustei ▾ / Repository name:

Great repository names are short and memorable. Need inspiration? How about cautious-garbanzo.

Description (optional)

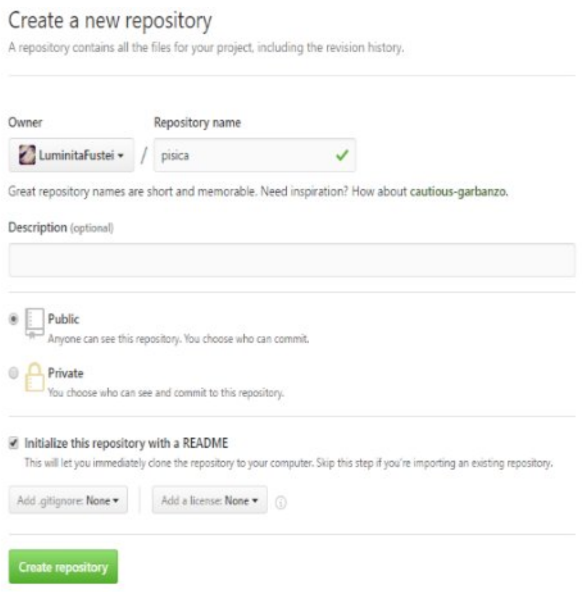
● Public
Anyone can see this repository. You choose who can commit.

○ Private
You choose who can see and commit to this repository.

□ Initialize this repository with a README
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: None ▾ | Add a license: None ▾

Create repository



Create a new repository

A repository contains all the files for your project, including the revision history.

Owner: LuminitaFustei ▾ / Repository name: pisica ✓

Great repository names are short and memorable. Need inspiration? How about cautious-garbanzo.

Description (optional)

● Public
Anyone can see this repository. You choose who can commit.

○ Private
You choose who can see and commit to this repository.

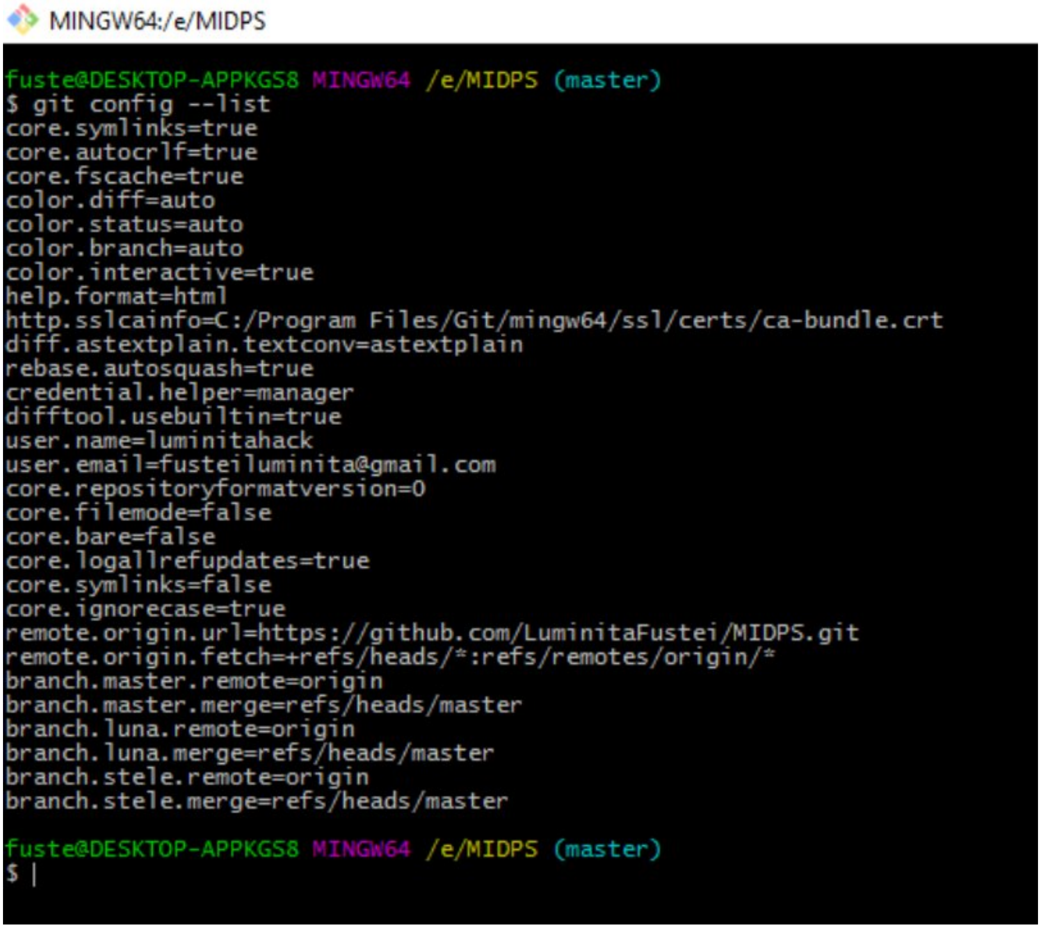
☑ Initialize this repository with a README
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: None ▾ | Add a license: None ▾

Create repository

Configurarea git-ului consta in mai multe etape. Pentru inceput vom configura numele si email-ul. Aplicam urmatoarele comenzi:

- **git config -global user.name ”Name”**
- **git config -global user.email Email**

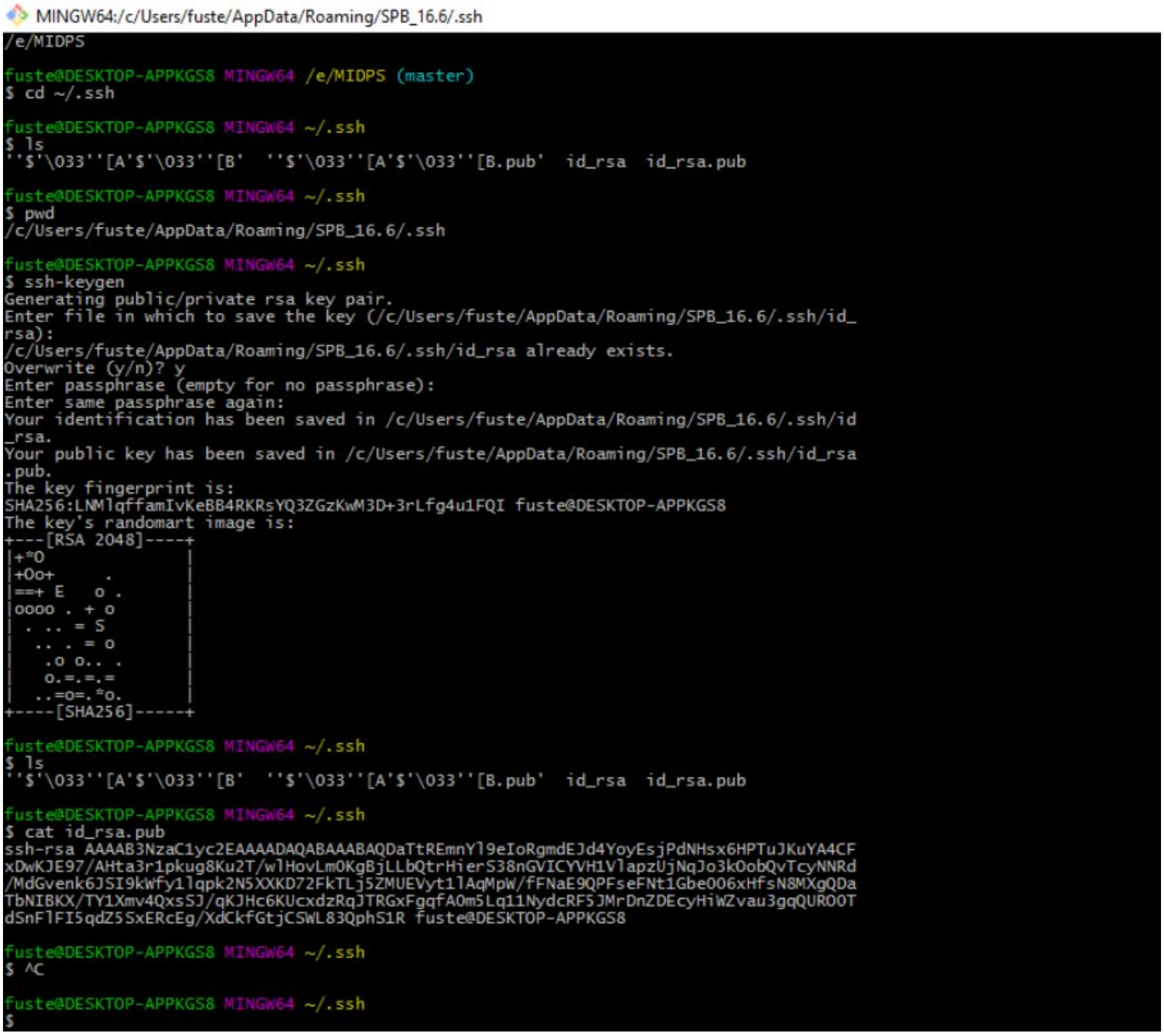


```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git config --list
core.symlinks=true
core.autocrlf=true
core.fscache=true
color.diff=auto
color.status=auto
color.branch=auto
color.interactive=true
help.format=html
http.sslcainfo=C:/Program Files/Git/mingw64/ssl/certs/ca-bundle.crt
diff.astextplain.textconv=astextplain
rebase.autosquash=true
credential.helper=manager
difftool.usebuiltin=true
user.name=luminitahack
user.email=fusteiluminita@gmail.com
core.repositoryformatversion=0
core.filemode=false
core.bare=false
core.logallrefupdates=true
core.symlinks=false
core.ignorecase=true
remote.origin.url=https://github.com/LuminitaFustei/MIDPS.git
remote.origin.fetch=+refs/heads/*:refs/remotes/origin/*
branch.master.remote=origin
branch.master.merge=refs/heads/master
branch.luna.remote=origin
branch.luna.merge=refs/heads/master
branch.stele.remote=origin
branch.stele.merge=refs/heads/master

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ |
```

Urmatorul pas consta in generarea la cheia SSH(Secure Shell). Scriem in CLI **ssh-keygen**, iar cheia obtinuta o copiem in setarile noastre de pe git.

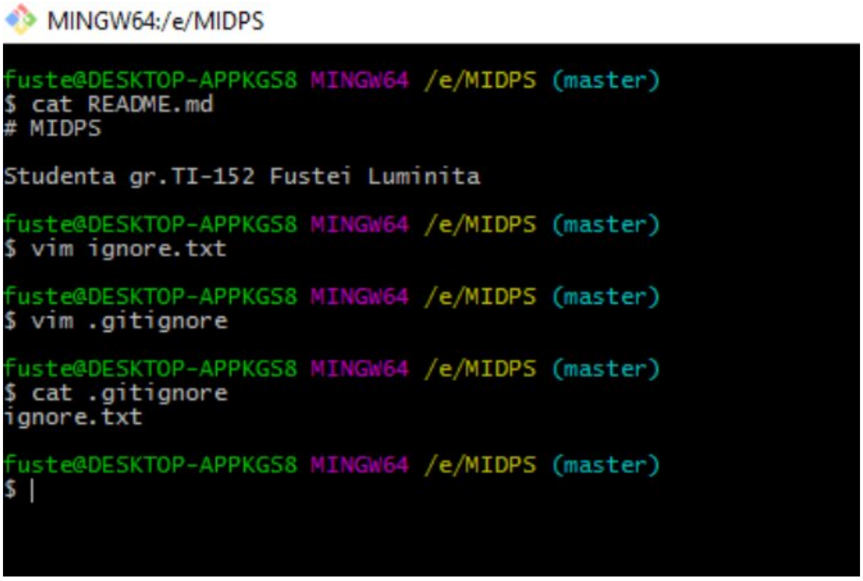
Este de dorit sa initializam repozitoriul nostru cu fiserul **README.md** si un **.gitignore**. In fisierul **README.md** vom adauga niste informatie pentru cei care se vor folosi de repozitoriul creat.

In fisierul **.gitignore** vom adauga toate fisierele ce trebuiesc ignorate in sensul larg al cuvintului fisierele citite in **.gitignore** nu vor putea fi incarcate.



MINGW64:/c/Users/fuste/AppData/Roaming/SPB_16.6/.ssh

```
/e/MIDPS

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ cd ~/.ssh

fuste@DESKTOP-APPKGS8 MINGW64 ~/.ssh
$ ls
''$'\033''[A'$'\033''[B'  ''$'\033''[A'$'\033''[B.pub'  id_rsa  id_rsa.pub

fuste@DESKTOP-APPKGS8 MINGW64 ~/.ssh
$ pwd
/c/Users/fuste/AppData/Roaming/SPB_16.6/.ssh

fuste@DESKTOP-APPKGS8 MINGW64 ~/.ssh
$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/c/Users/fuste/AppData/Roaming/SPB_16.6/.ssh/id_
rsa):
/c/Users/fuste/AppData/Roaming/SPB_16.6/.ssh/id_rsa already exists.
Overwrite (y/n)? y
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /c/Users/fuste/AppData/Roaming/SPB_16.6/.ssh/id
_rsa.
Your public key has been saved in /c/Users/fuste/AppData/Roaming/SPB_16.6/.ssh/id_rsa
.pub.
The key fingerprint is:
SHA256:LNMlqffamIvKeBB4RKRsYQ3ZGzKwM3D+3rLfg4u1FQI fuste@DESKTOP-APPKGS8
The key's randomart image is:
+---[RSA 2048]----+
|+*O              |
|+Oo+      .      |
|==+ E    o .     |
|oooo . + o       |
| . .. = S        |
|  .. . = o       |
|   .o o.. .      |
|   o.=.=.=       |
|  ..=o=.*o.      |
+----[SHA256]-----+

fuste@DESKTOP-APPKGS8 MINGW64 ~/.ssh
$ ls
''$'\033''[A'$'\033''[B'  ''$'\033''[A'$'\033''[B.pub'  id_rsa  id_rsa.pub

fuste@DESKTOP-APPKGS8 MINGW64 ~/.ssh
$ cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQDaTtREmnYl9eIoRgmdEJd4YoyEsjPdNHsx6HPTuJKuYA4CF
xDwKJE97/AHta3r1pkug8Ku2T/wlHovLm0KgBjLLbQtrHierS38nGVICYVH1VlapzUjNqJo3kOobQvTcyNNRd
/MdGvenk6JSI9kWfy1lqpk2N5XXKD72FkTLj5ZMUEVyt1lAqMpW/fFNaE9QPFseFNt1Gbe006xHfsN8MXgQDa
TbNIBKX/TY1Xmv4QxsSJ/qKJHc6KUcxdzRqJTRGxFgqfA0m5Lq11NydcRF5JMrDnZDEcyHiWZvau3gqQUROOT
dSnFlFI5qdZ5SxERcEg/XdCkfGtjCSWL83QphS1R fuste@DESKTOP-APPKGS8

fuste@DESKTOP-APPKGS8 MINGW64 ~/.ssh
$ ^C

fuste@DESKTOP-APPKGS8 MINGW64 ~/.ssh
$
```

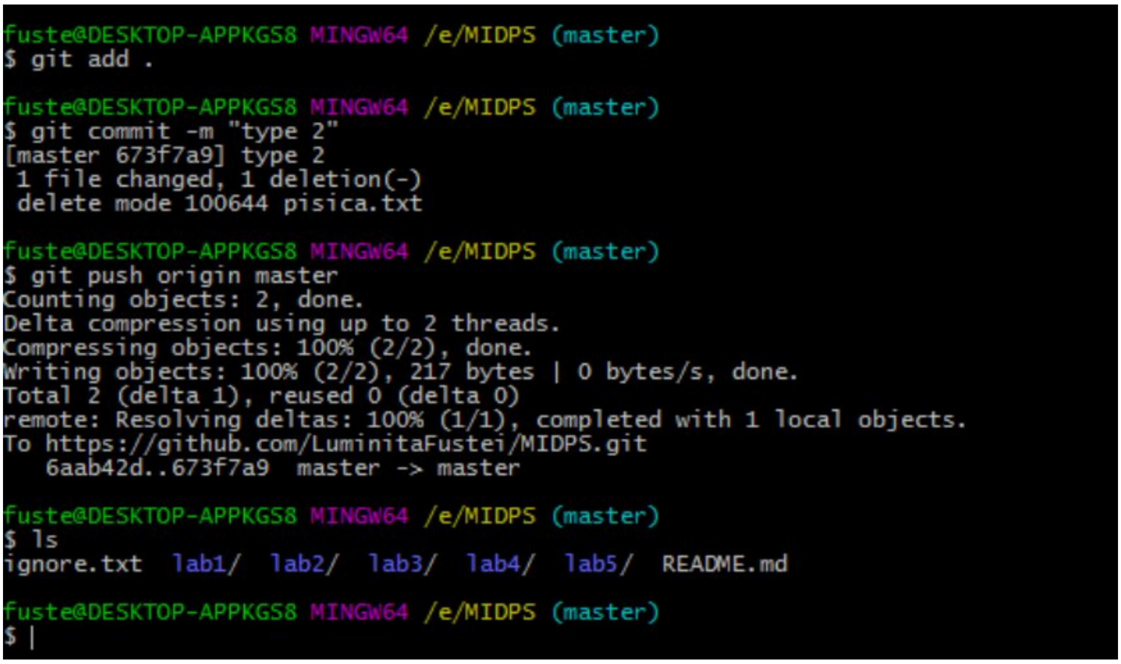


MINGW64:/e/MIDPS

```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ cat README.md
# MIDPS

Studenta gr.TI-152 Fustei Luminita

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ vim ignore.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ vim .gitignore

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ cat .gitignore
ignore.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ |
```

Vom adauga fisierele noi create pe repozitoriul nostru. La moment vom avea nevoie de urmatoarele comenzi:

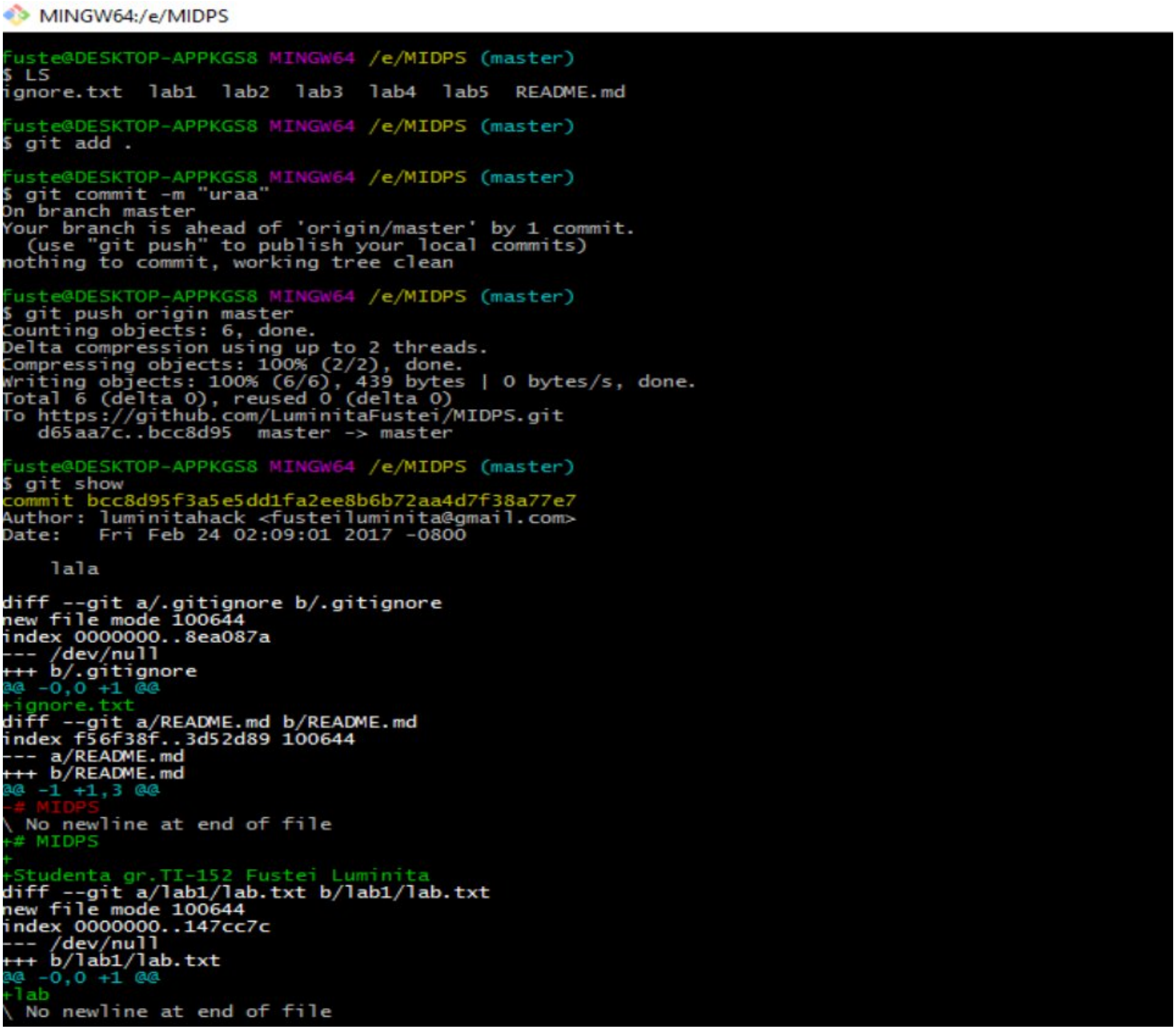
- **git add .** - comanda care indexeaza toate fisierele (git add *);
- **git commit -m** – comanda face un snapshot la toate schimbarile noastre;
- **git push origin master** – comanda incarca toate fisierele index pe git.



```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git add .

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git commit -m "type 2"
[master 673f7a9] type 2
 1 file changed, 1 deletion(-)
 delete mode 100644 pisica.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git push origin master
Counting objects: 2, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 217 bytes | 0 bytes/s, done.
Total 2 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local objects.
To https://github.com/LuminitaFustei/MIDPS.git
   6aab42d..673f7a9  master -> master

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ |
```

Pentru a ne asigura ca am aplicat pasii corect si fara probleme vom utiliza:

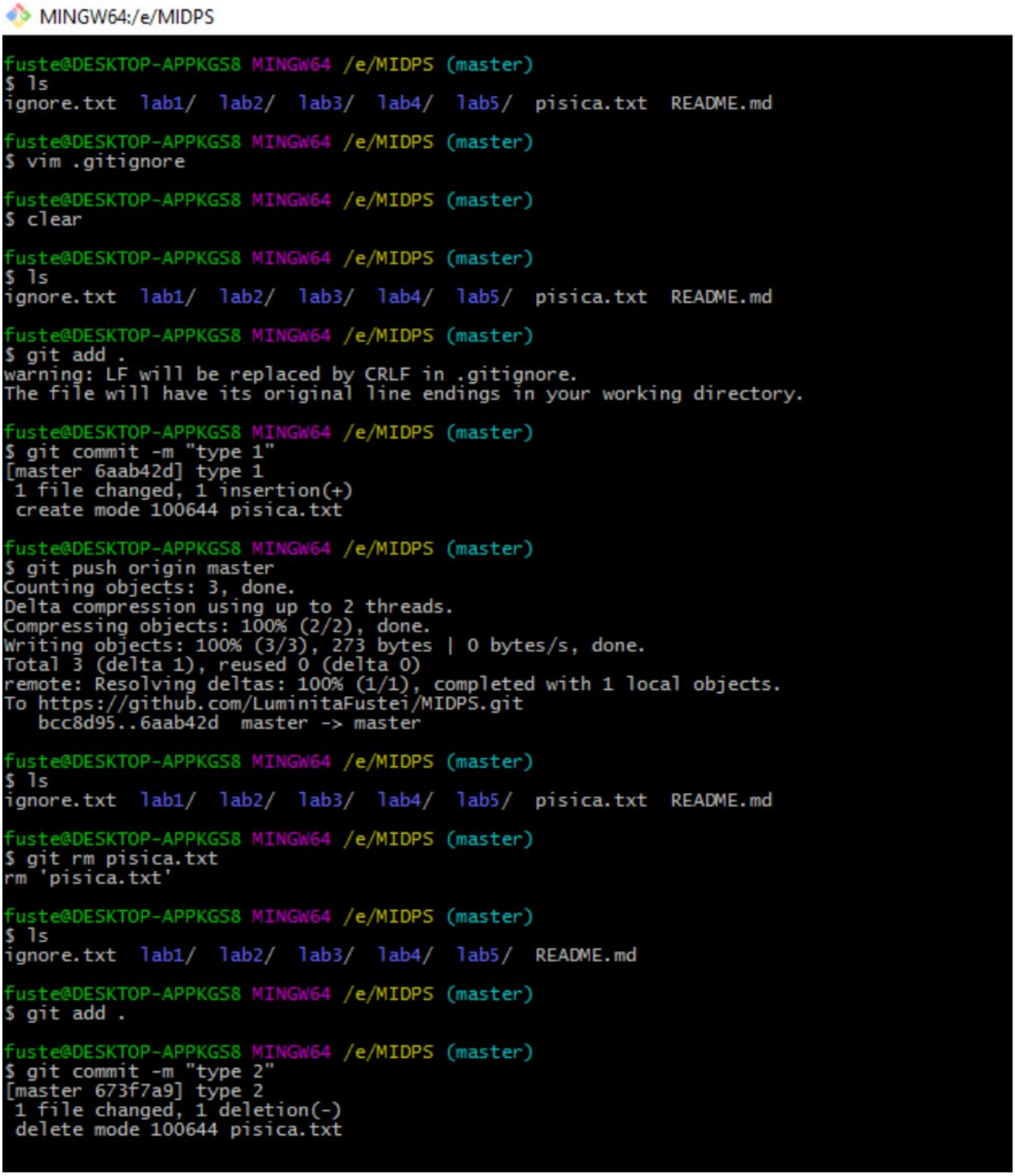
git status si **git show**:



```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ LS
ignore.txt  lab1  lab2  lab3  lab4  lab5  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git add .

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git commit -m "uraa"
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)
nothing to commit, working tree clean

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git push origin master
Counting objects: 6, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (6/6), 439 bytes | 0 bytes/s, done.
Total 6 (delta 0), reused 0 (delta 0)
To https://github.com/LuminitaFustei/MIDPS.git
   d65aa7c..bcc8d95  master -> master

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git show
commit bcc8d95f3a5e5dd1fa2ee8b6b72aa4d7f38a77e7
Author: luminitahack <fusteiluminita@gmail.com>
Date:   Fri Feb 24 02:09:01 2017 -0800

    lala

diff --git a/.gitignore b/.gitignore
new file mode 100644
index 0000000..8ea087a
--- /dev/null
+++ b/.gitignore
@@ -0,0 +1 @@
+ignore.txt
diff --git a/README.md b/README.md
index f56f38f..3d52d89 100644
--- a/README.md
+++ b/README.md
@@ -1 +1,3 @@
-# MIDPS
\ No newline at end of file
+# MIDPS
+
+Studenta gr.TI-152 Fustei Luminita
diff --git a/lab1/lab.txt b/lab1/lab.txt
new file mode 100644
index 0000000..147cc7c
--- /dev/null
+++ b/lab1/lab.txt
@@ -0,0 +1 @@
+lab
\ No newline at end of file
```

Una dintre caracteristicile principale a unui **VCS** este faptul ca ne permite

sa revenim la o versiune mai veche. Aceasta poate fi efectuata cu ajutorul comenzii **git reset -TYPE ”codul comitului”.**



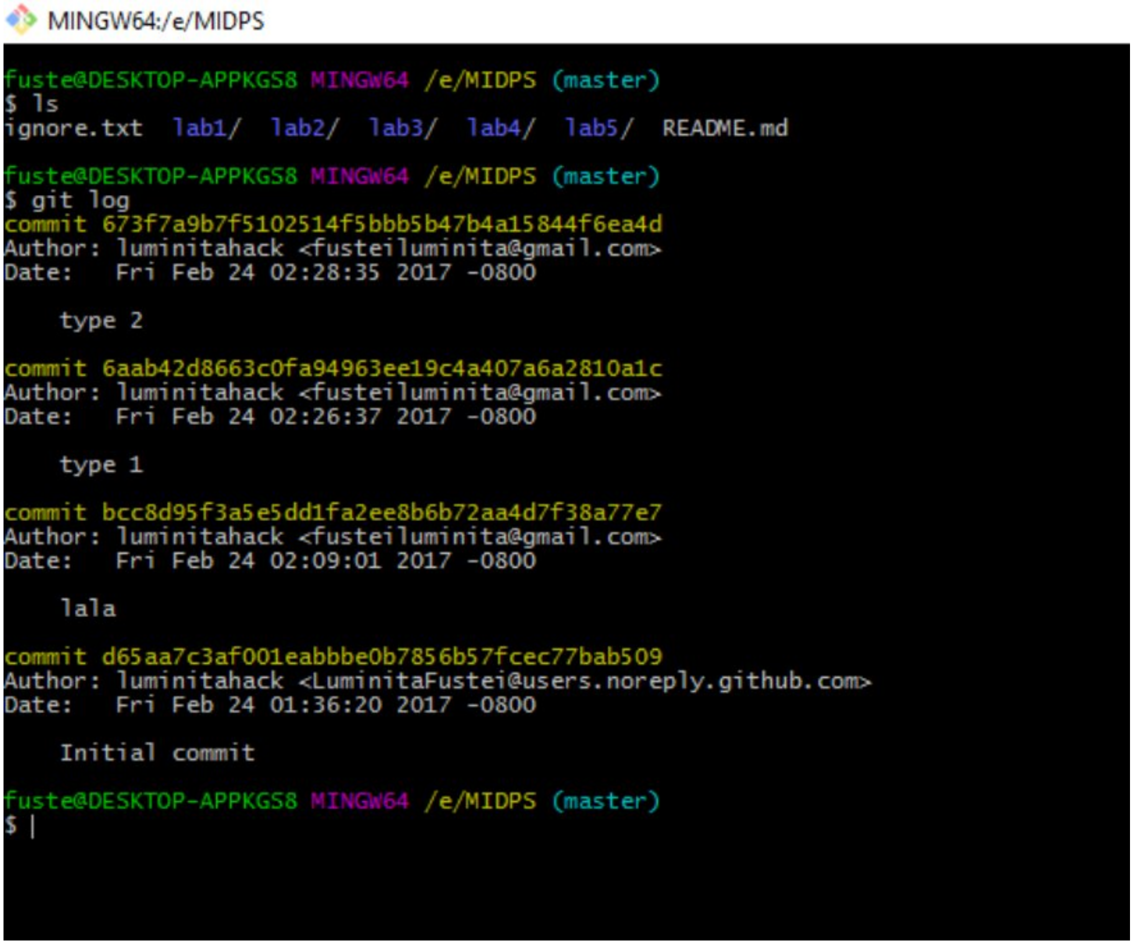
MINGW64:/e/MIDPS

```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  pisica.txt  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ vim .gitignore

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ clear

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  pisica.txt  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git add .
warning: LF will be replaced by CRLF in .gitignore.
The file will have its original line endings in your working directory.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git commit -m "type 1"
[master 6aab42d] type 1
 1 file changed, 1 insertion(+)
 create mode 100644 pisica.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git push origin master
Counting objects: 3, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 273 bytes | 0 bytes/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local objects.
To https://github.com/LuminitaFustei/MIDPS.git
   bcc8d95..6aab42d  master -> master

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  pisica.txt  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git rm pisica.txt
rm 'pisica.txt'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git add .

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git commit -m "type 2"
[master 673f7a9] type 2
 1 file changed, 1 deletion(-)
 delete mode 100644 pisica.txt
```

Dupa datele executate observam ca, cind am facut commit, s-au ignorat fisierele incluse in **.gitignore**.

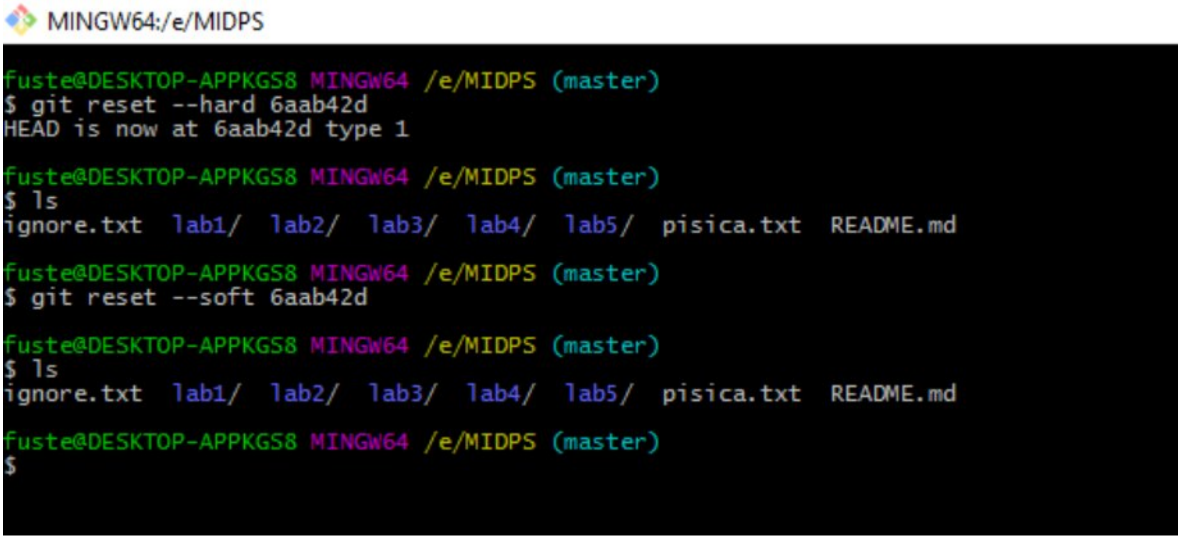
Am creat un fiesier nou ***pisica.txt*** in ***type 1***. Apoi l-am sters si am facut **commit** la ***type 2***, in care am sters fisierul ***pisica.txt*** dorim sa revenim la type 1. Pentru inceput vom lansa comanda **git -**

log care ne arata log-ul de *commit-uri* si codul pentru fiecare commit.Vom avea nevoie de primele 7 cifre de la *commit-ul* anterior.



```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git log
commit 673f7a9b7f5102514f5bbb5b47b4a15844f6ea4d
Author: luminitahack <fusteiluminita@gmail.com>
Date:   Fri Feb 24 02:28:35 2017 -0800

    type 2

commit 6aab42d8663c0fa94963ee19c4a407a6a2810a1c
Author: luminitahack <fusteiluminita@gmail.com>
Date:   Fri Feb 24 02:26:37 2017 -0800

    type 1

commit bcc8d95f3a5e5dd1fa2ee8b6b72aa4d7f38a77e7
Author: luminitahack <fusteiluminita@gmail.com>
Date:   Fri Feb 24 02:09:01 2017 -0800

    lala

commit d65aa7c3af001eabbbe0b7856b57fcec77bab509
Author: luminitahack <LuminitaFustei@users.noreply.github.com>
Date:   Fri Feb 24 01:36:20 2017 -0800

    Initial commit

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ |
```

Acum vom folosi comenzile descrise mai sus.

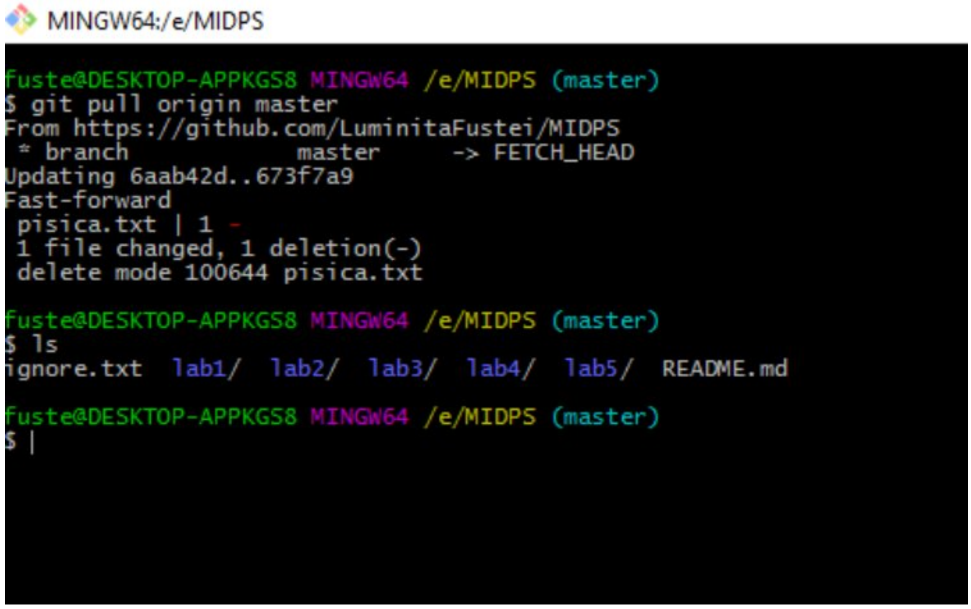


```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git reset --hard 6aab42d
HEAD is now at 6aab42d type 1

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  pisica.txt  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git reset --soft 6aab42d

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  pisica.txt  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$
```

Daca am facut niste schimbari in repozitoriu si nu ne satisfac, putem usor reveni la ultima versiune care era pe git utilizind comanda:

git pull origin ”branch”;

Comanda **git pull** v-a face update la repozitoriul nostru pina la ultima versiune.



MINGW64:/e/MIDPS

```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git pull origin master
From https://github.com/LuminitaFustei/MIDPS
 * branch            master     -> FETCH_HEAD
Updating 6aab42d..673f7a9
Fast-forward
 pisica.txt | 1 -
 1 file changed, 1 deletion(-)
 delete mode 100644 pisica.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ |
```

Observam ca dupa ce am executat comanda **git pull** repezitoriul nostru a revenit la ultima versiune, eliminind fisierul *pisica.txt.*

VCS ne permite sa avem mai multe **branch-uri.** Din traducere *branch* semnifica *”creanga”*. *Branch-urile* sunt foarte comod de folosit cind dorim sa lucram paralel la un proiect si apoi dorim sa unim toate modificarile.

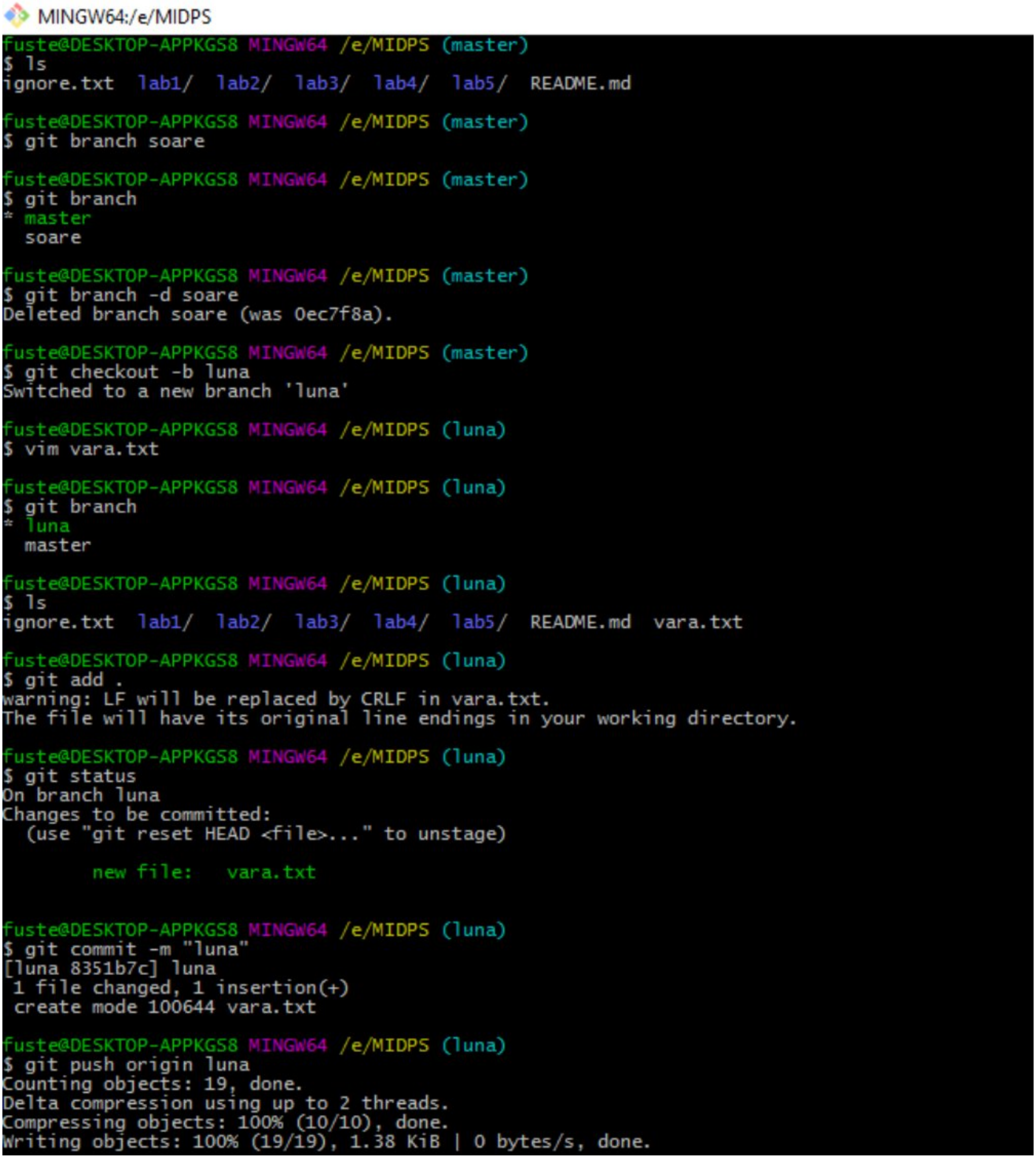
git branch ”name” - creeaza un *branch* nou cu numele ”name”;

git branch – vizualizarea *branch-urilor*(* indica *branch-ul* curent);

git branch -d ”nume” - sterge *branch-ul* nume;

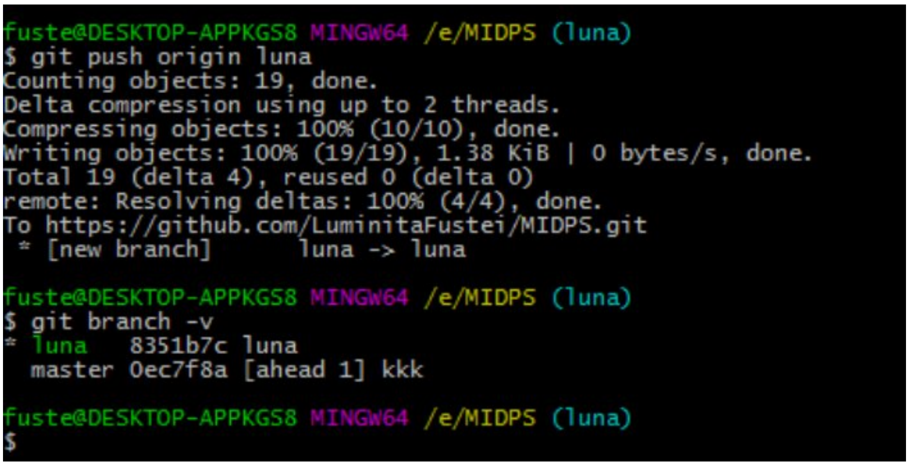
git branch -v – vizualizam ultimele *commit-uri* din lista noastra de *branch-uri*;

git checkout -b ”name” - creeaza un *branch* nou cu numele ”name” si face switch la el.



MINGW64:/e/MIDPS

```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  README.md

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git branch soare

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git branch
* master
  soare

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git branch -d soare
Deleted branch soare (was 0ec7f8a).

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git checkout -b luna
Switched to a new branch 'luna'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ vim vara.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git branch
* luna
  master

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ ls
ignore.txt  lab1/  lab2/  lab3/  lab4/  lab5/  README.md  vara.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git add .
warning: LF will be replaced by CRLF in vara.txt.
The file will have its original line endings in your working directory.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git status
On branch luna
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

        new file:   vara.txt


fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git commit -m "luna"
[luna 8351b7c] luna
 1 file changed, 1 insertion(+)
 create mode 100644 vara.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git push origin luna
Counting objects: 19, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (10/10), done.
Writing objects: 100% (19/19), 1.38 KiB | 0 bytes/s, done.
```



```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git push origin luna
Counting objects: 19, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (10/10), done.
Writing objects: 100% (19/19), 1.38 KiB | 0 bytes/s, done.
Total 19 (delta 4), reused 0 (delta 0)
remote: Resolving deltas: 100% (4/4), done.
To https://github.com/LuminitaFustei/MIDPS.git
 * [new branch]      luna -> luna

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git branch -v
* luna   8351b7c luna
  master 0ec7f8a [ahead 1] kkk

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$
```

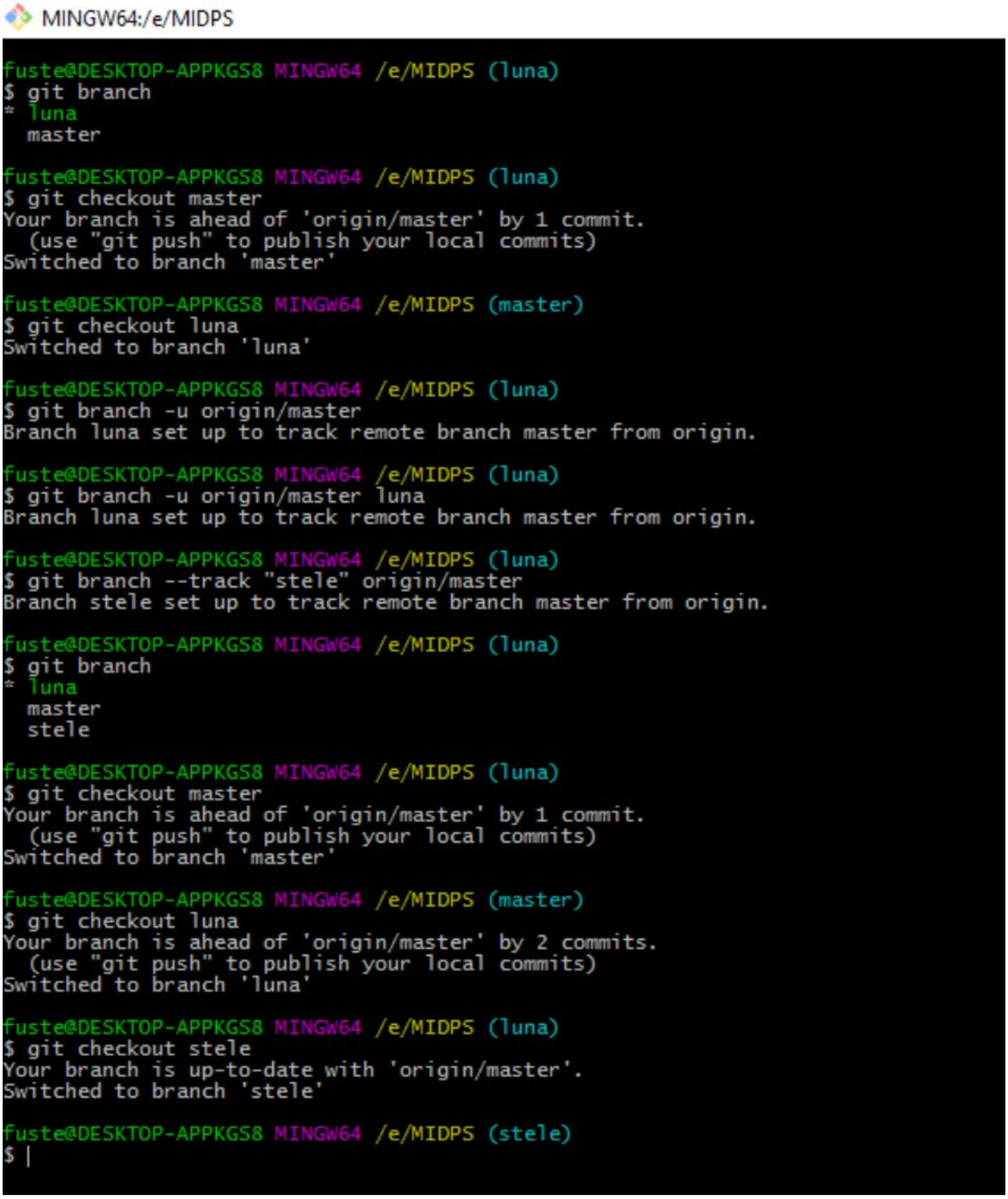
git checkout ”nume” - face switch la *branch-ul* ”nume”;

git branch -u upstream/name – face track la *branch-ul* indicat din *branch-ul* curent;

git branch -u upstream/name – face track din *branch-ul* ”nume” la *branch-ul* indicat;

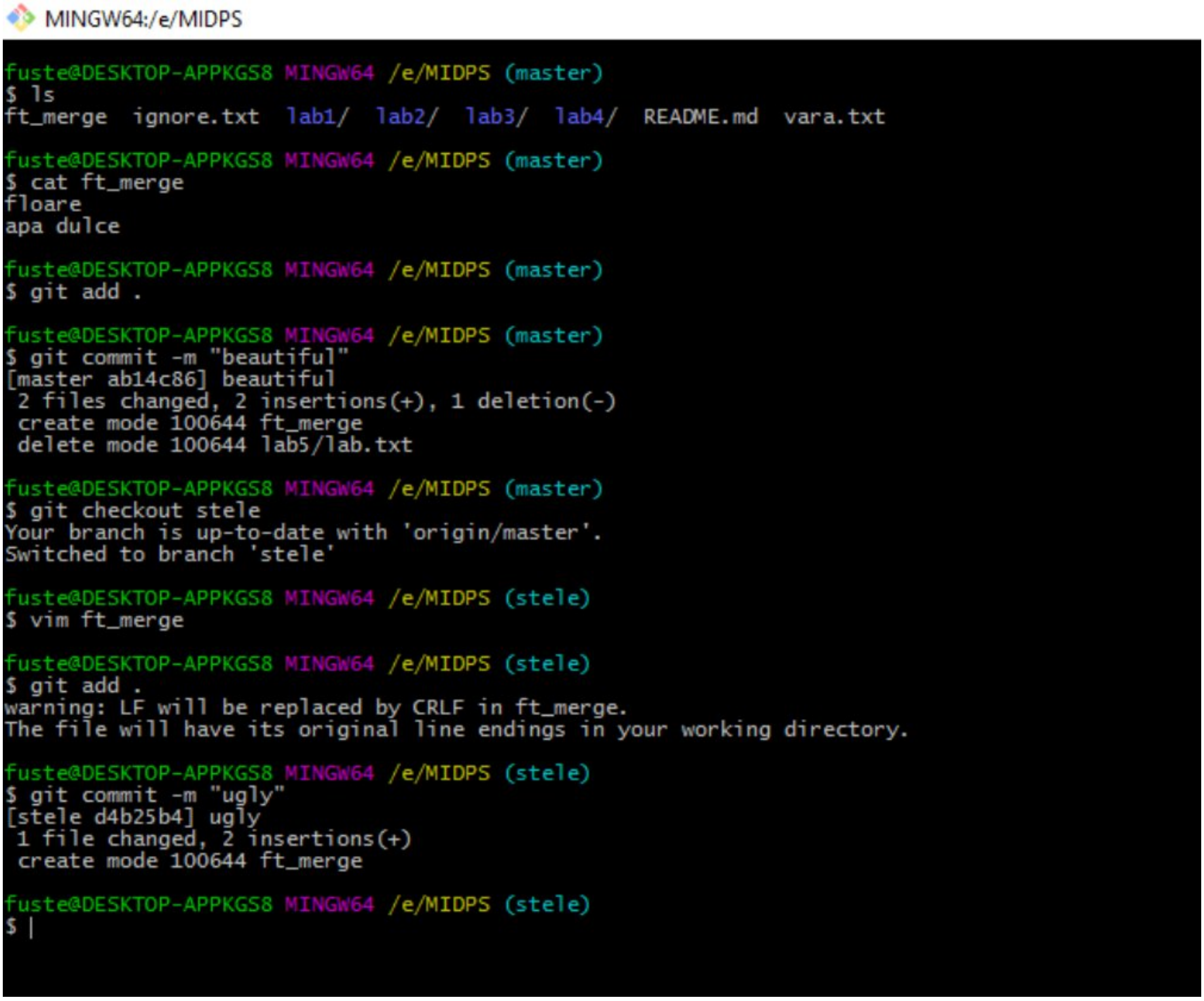
git branch --track ”name” upstream/name – creeaza *branch-ul* ”nume” si ii face track la *branch-ul* indicat;

git branch -unset-usptream – scoate tracking-ul la *branch-ul* in care ne aflam.



MINGW64:/e/MIDPS

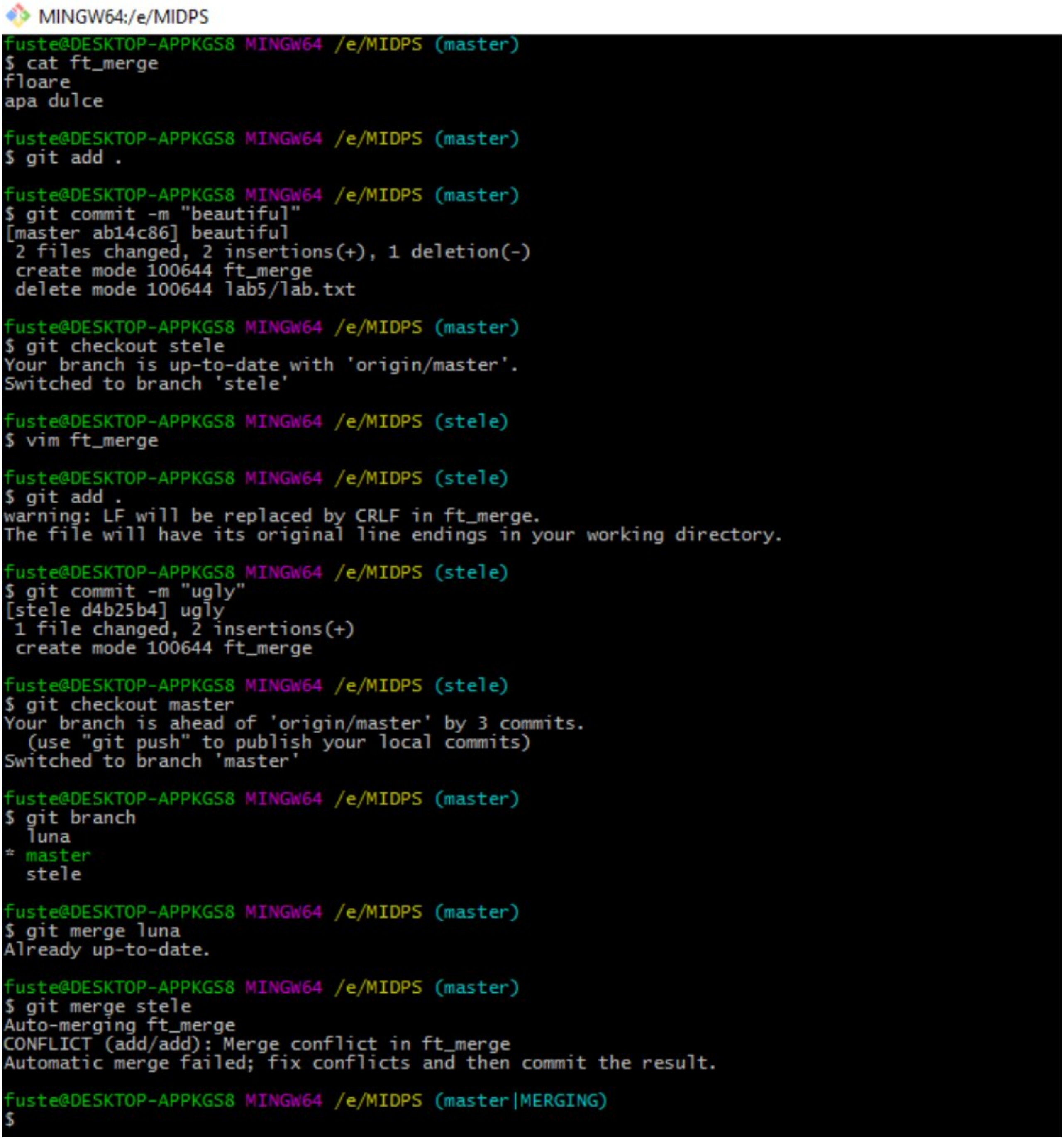
```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git branch
* luna
  master

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git checkout master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)
Switched to branch 'master'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git checkout luna
Switched to branch 'luna'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git branch -u origin/master
Branch luna set up to track remote branch master from origin.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git branch -u origin/master luna
Branch luna set up to track remote branch master from origin.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git branch --track "stele" origin/master
Branch stele set up to track remote branch master from origin.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git branch
* luna
  master
  stele

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git checkout master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)
Switched to branch 'master'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git checkout luna
Your branch is ahead of 'origin/master' by 2 commits.
  (use "git push" to publish your local commits)
Switched to branch 'luna'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (luna)
$ git checkout stele
Your branch is up-to-date with 'origin/master'.
Switched to branch 'stele'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ |
```



```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ ls
ft_merge  ignore.txt  lab1/  lab2/  lab3/  lab4/  README.md  vara.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ cat ft_merge
floare
apa dulce

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git add .

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git commit -m "beautiful"
[master ab14c86] beautiful
 2 files changed, 2 insertions(+), 1 deletion(-)
 create mode 100644 ft_merge
 delete mode 100644 lab5/lab.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git checkout stele
Your branch is up-to-date with 'origin/master'.
Switched to branch 'stele'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ vim ft_merge

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ git add .
warning: LF will be replaced by CRLF in ft_merge.
The file will have its original line endings in your working directory.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ git commit -m "ugly"
[stele d4b25b4] ugly
 1 file changed, 2 insertions(+)
 create mode 100644 ft_merge

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ |
```

Putem avea *conflicte* in cazul cind dorim sa facem *merge* la 2 *branch-uri* si unele rinduri sunt diferite.In asemenea caz ne vine in ajutor un *mergetool*. Drept *mergetool* am ales **kdiff3.** Pentru a seta *kdiff3* ca *mergetool* default folosim comanda: **git config -global merge.tool kdiff3.**

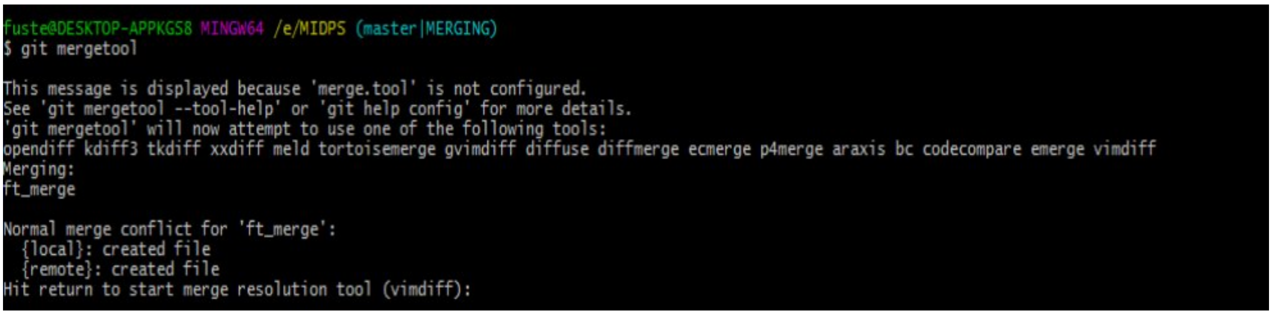
In continuare vom lucra cu 2 *branch-uri* - ”master” si ”luna”. Vom crea in fiecare *branch* un fisier ”*ft_merge*” continutul caruia va fi diferit.



MINGW64:/e/MIDPS

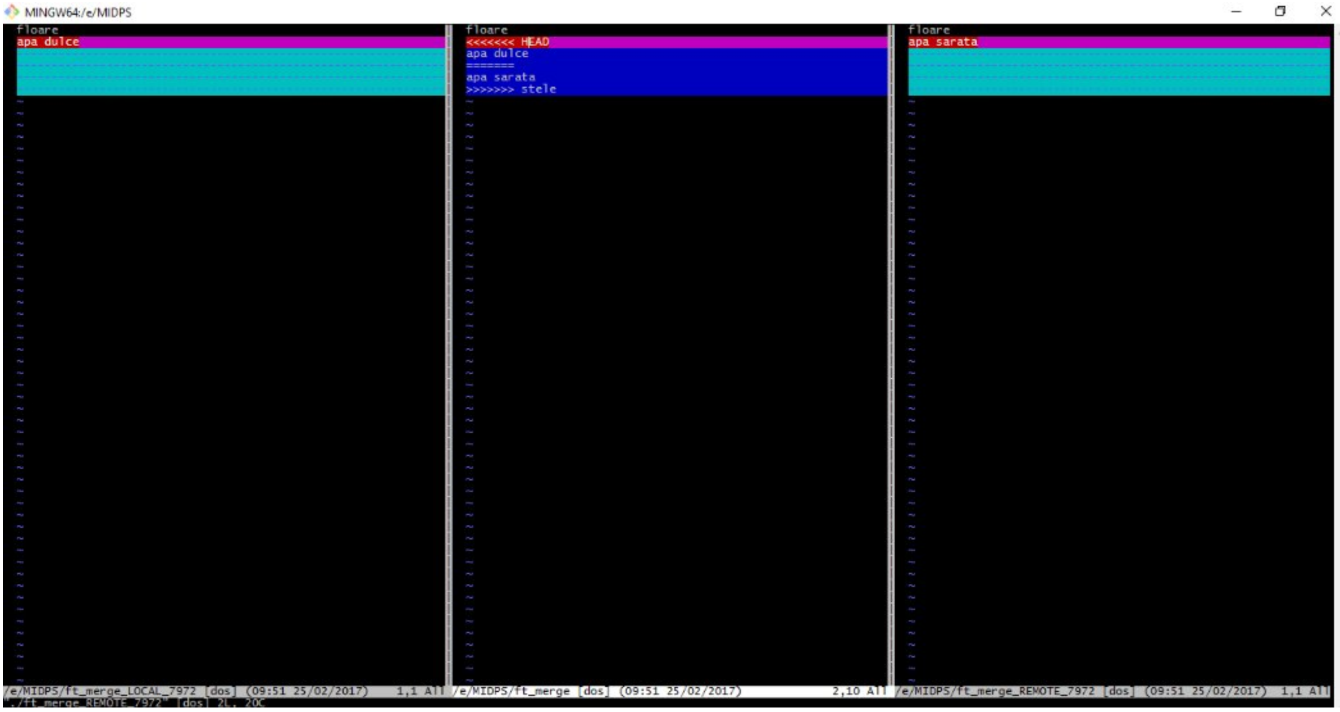
```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ cat ft_merge
floare
apa dulce

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git add .

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git commit -m "beautiful"
[master ab14c86] beautiful
 2 files changed, 2 insertions(+), 1 deletion(-)
 create mode 100644 ft_merge
 delete mode 100644 lab5/lab.txt

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git checkout stele
Your branch is up-to-date with 'origin/master'.
Switched to branch 'stele'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ vim ft_merge

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ git add .
warning: LF will be replaced by CRLF in ft_merge.
The file will have its original line endings in your working directory.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ git commit -m "ugly"
[stele d4b25b4] ugly
 1 file changed, 2 insertions(+)
 create mode 100644 ft_merge

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (stele)
$ git checkout master
Your branch is ahead of 'origin/master' by 3 commits.
  (use "git push" to publish your local commits)
Switched to branch 'master'

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git branch
  luna
* master
  stele

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git merge luna
Already up-to-date.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git merge stele
Auto-merging ft_merge
CONFLICT (add/add): Merge conflict in ft_merge
Automatic merge failed; fix conflicts and then commit the result.

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master|MERGING)
$
```

In continuare vom incerca sa facem merge si sa rezolvam acest conflict.



```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master|MERGING)
$ git mergetool

This message is displayed because 'merge.tool' is not configured.
See 'git mergetool --tool-help' or 'git help config' for more details.
'git mergetool' will now attempt to use one of the following tools:
opendiff kdiff3 tkdiff xxdiff meld tortoisemerge gvimdiff diffuse diffmerge ecmerge p4merge araxis bc codecompare emerge vimdiff
Merging:
ft_merge

Normal merge conflict for 'ft_merge':
  {local}: created file
  {remote}: created file
Hit return to start merge resolution tool (vimdiff):
```

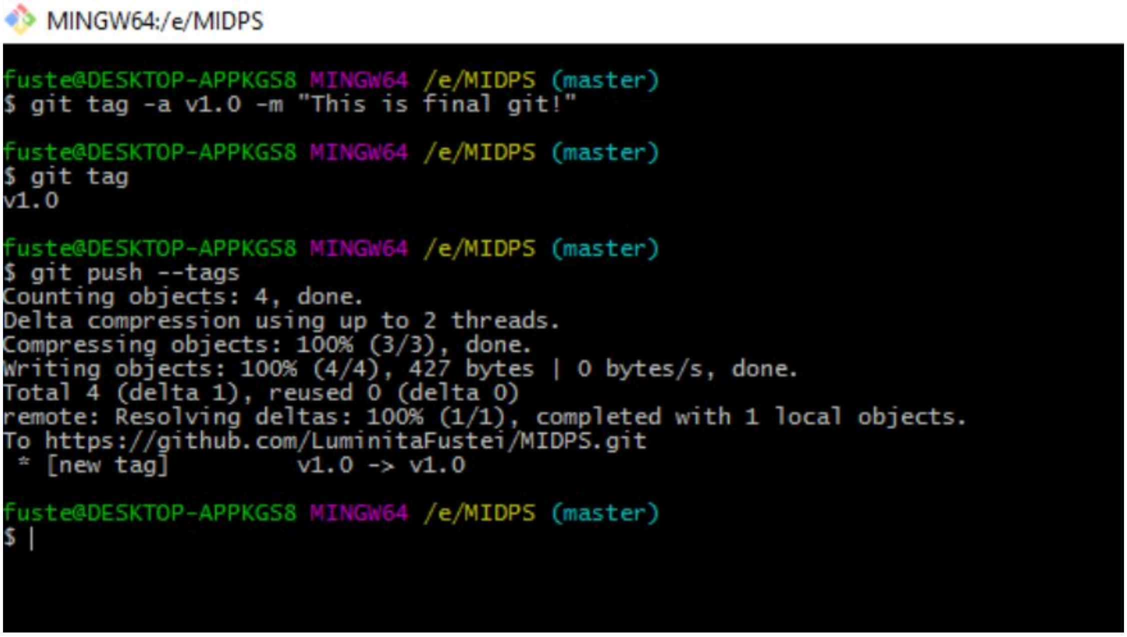
Dupa acest pas rezolvam conflictul cu ajutorul **kdiff3.** Acesta ne afiseaza urmatoarea fereastra:



MINGW64:/e/MIDPS

```
floare                    floare                    floare
apa dulce                 <<<<<<< HEAD              apa sarata
                          apa dulce
                          =======
                          apa sarata
                          >>>>>>> stele
/e/MIDPS/ft_merge_LOCAL_7972 [dos] (09:51 25/02/2017)   1,1 All /e/MIDPS/ft_merge [dos] (09:51 25/02/2017)   2,10 All /e/MIDPS/ft_merge_REMOTE_7972 [dos] (09:51 25/02/2017)  1,1 All
"./ft_merge_REMOTE_7972" [dos] 2L, 20C
```

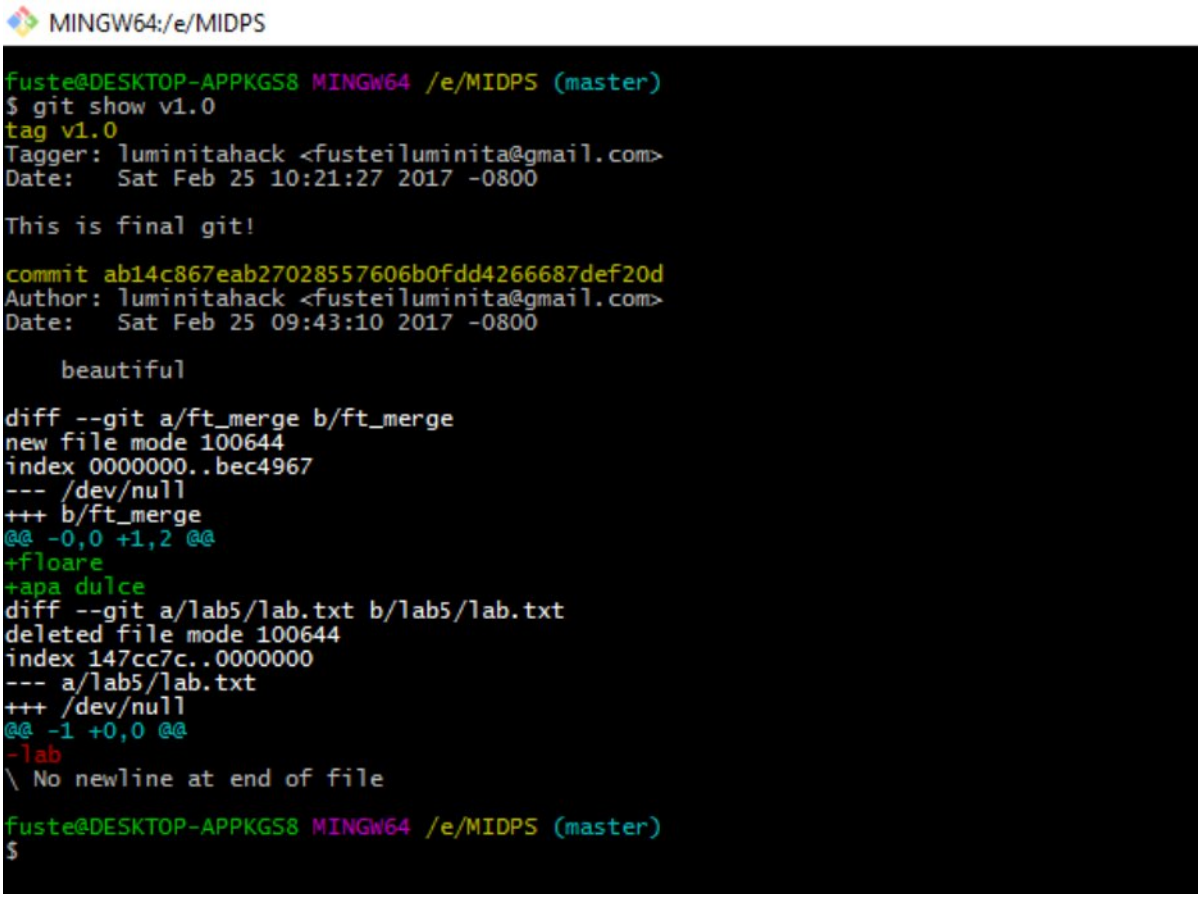
Tagurile sunt foarte comod de folosit si cu ajutorul lor putem face un track eficient al versiunilor.



MINGW64:/e/MIDPS

```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git tag -a v1.0 -m "This is final git!"

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git tag
v1.0

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git push --tags
Counting objects: 4, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 427 bytes | 0 bytes/s, done.
Total 4 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local objects.
To https://github.com/LuminitaFustei/MIDPS.git
 * [new tag]         v1.0 -> v1.0

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ |
```

Pentru a putea vedea versiunea tag-uita folosim comanda: **git show ”tag”**



MINGW64:/e/MIDPS

```
fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$ git show v1.0
tag v1.0
Tagger: luminitahack <fusteiluminita@gmail.com>
Date:   Sat Feb 25 10:21:27 2017 -0800

This is final git!

commit ab14c867eab27028557606b0fdd4266687def20d
Author: luminitahack <fusteiluminita@gmail.com>
Date:   Sat Feb 25 09:43:10 2017 -0800

    beautiful

diff --git a/ft_merge b/ft_merge
new file mode 100644
index 0000000..bec4967
--- /dev/null
+++ b/ft_merge
@@ -0,0 +1,2 @@
+floare
+apa dulce
diff --git a/lab5/lab.txt b/lab5/lab.txt
deleted file mode 100644
index 147cc7c..0000000
--- a/lab5/lab.txt
+++ /dev/null
@@ -1 +0,0 @@
-lab
\ No newline at end of file

fuste@DESKTOP-APPKGS8 MINGW64 /e/MIDPS (master)
$
```

Concluzie:

In lucrarea data am studiat **VCS**. Am facut cunostinta cu platforma **github**. Toate lucrarile si comenzile le-am efectuat in terminal pe sistemul de operare Windows. Folosirea **VCS** constituie un sir de avantaje pentru lucrul cu produsele soft, ceea ce ne permite sa efectuam lucrul mai rapid, mai eficient si fara probleme. El ne permite lucrul in paralel sau echipa si revenirea la versiunile anterioare. In laborator am inclus majoritatea lucrarilor esentiale ce stau la baza platformei **git**. In aceasta lucrare am facut cunostinta cu lucruri noi si foarte utile precum ar fi branch-urile (creare/stergere), merge la branch-uri si rezolvarea conflicteleor utilizind **kdiff3**. In opinia mea VCS este bine de stiut pentru orice programator, deoarece el este foarte practic si eficient atit in lucru cit si in dezvoltarea softului.

Bibliografie:

https://www.youtube.com/watch?v=HVsySz-h9r4

https://www.youtube.com/watch?v=Y9XZQO1n_7c

https://www.youtube.com/watch?v=u2rZLVWOWvs