Technical University of Moldova

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PR Laboratory 1

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Topic:

Study and understanding the principles of operation and use of the distributed version control system.

Theory:

Versioning Systems (VCS, Version Control Systems) serve to manage multiple versions of files included in a collaborative project. Every change made to the project element is memorized with the author of the change. It is important to note that at any time it is possible to return to an earlier version of the entity.

The main motivation consists in the possibility that different members of the team, possibly located in remote geographical spaces, can work simultaneously on the project, and finally, their modifications will be merged into new versions of the project. There are also other benefits. When a bug is noticed, it may return to a previous version in order to determine when it was inserted into the program. At the same time, one branch development can be followed, in which multiple versions of the project are being developed - for example one that wants to remove the bugs, and the other, which is intended to add of new functionalities before shedding existing ones.

Tasks:

Create distant repository using one of the git services gitlab/github/bitbucket and synchronize it with local repository.

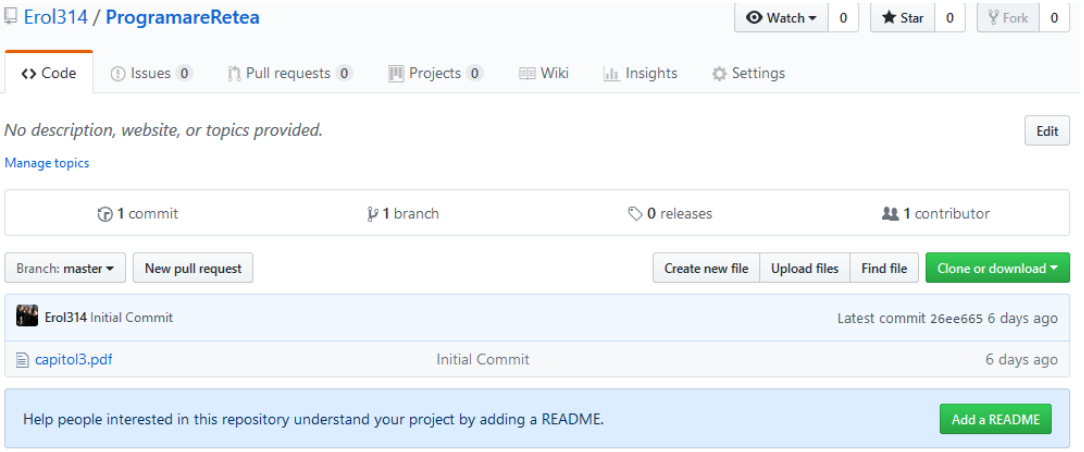

Figure 1: Repository created for PR on GitHub

In figure 1 you can observe already existing repository created at laboratory. To make things done I created a local repository with **Init** command, I added dummy pdf file and added it to rep. with **add .** command. Later I created a repo on GitHub and cloned it with **clone** command. I committed changes with **commit -m** and pushed them with **push** commands. Also i created developer branch in which i will make all day by day updated, Master branch will be updated only after my projects passing all the tests / (the final versions).

In figure 2 we can observe the commands above in Git Bash

```
$ git add .

sezgh@DESKTOP-2KC1FIV MINGW64 /f/Anul_3/Semestru 2/PR/Lab1 (master)
$ 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:   lab 1/images/LOGO_UTM.jpg
        new file:   lab 1/images/img1.PNG
        new file:   lab 1/lab1.aux
        new file:   lab 1/lab1.fdb_latexmk
        new file:   lab 1/lab1.fls
        new file:   lab 1/lab1.log
        new file:   lab 1/lab1.out
        new file:   lab 1/lab1.pdf
        new file:   lab 1/lab1.synctex.gz
        new file:   lab 1/lab1.tex


sezgh@DESKTOP-2KC1FIV MINGW64 /f/Anul_3/Semestru 2/PR/Lab1 (master)
$ git commit -m "Second commit"
[master cace243] Second commit
 10 files changed, 1020 insertions(+)
 create mode 100644 lab 1/images/LOGO_UTM.jpg
 create mode 100644 lab 1/images/img1.PNG
 create mode 100644 lab 1/lab1.aux
 create mode 100644 lab 1/lab1.fdb_latexmk
 create mode 100644 lab 1/lab1.fls
 create mode 100644 lab 1/lab1.log
 create mode 100644 lab 1/lab1.out
 create mode 100644 lab 1/lab1.pdf
 create mode 100644 lab 1/lab1.synctex.gz
 create mode 100644 lab 1/lab1.tex

sezgh@DESKTOP-2KC1FIV MINGW64 /f/Anul_3/Semestru 2/PR/Lab1 (master)
$ git push
Enumerating objects: 15, done.
Counting objects: 100% (15/15), done.
Delta compression using up to 4 threads
Compressing objects: 100% (13/13), done.
Writing objects: 100% (14/14), 238.15 KiB | 7.68 MiB/s, done.
Total 14 (delta 0), reused 0 (delta 0)
To https://github.com/Erol314/ProgramareRetea.git
   26ee665..cace243  master -> master

sezgh@DESKTOP-2KC1FIV MINGW64 /f/Anul_3/Semestru 2/PR/Lab1 (master)
$
```

Figure 2: Some of the GIT commands used

Conclusion

During This lab work i refreshed my knowledge of VCS and GitHub in particular. I can mention that GIT became an standard in developing. It allows developers to work distantly and speeds up the process itself, being a tool for CI/CD.

References

[1] Git, Git basics-Getting a git repository https://git-scm.com/book/en/v2/Git-Basics-Getting-a-Git-Repository