**Software Engineering – Lesson 3 – GitHub**

**Luiz Fernando da Silva Cieslak**

What is GitHub? When was it created? Why? By who? What similar platforms exist? Why would you use such a platform?

GitHub is a web-based Git repository hosting service. Before talking of GitHub, it is important to know that Git is a versioning software control created by Linus Torvalds in 2005, which grants a source code management system (SCM) and a distributed revision control system, focusing on speed, data integrity support of several workflows. GitHub was created in 2008 by Tom Preston-Werner, Chris Wanstrath and PJ Hyett. GitHub and Git were created to have a better administration of source-code, with the possibility to have different versions and tests with an integrated backup. Some similar plataforms are: CVS, SVK, Mercurial, BitKeeper and Plastic SCM. I would use this platform to store my project’s code to have a backup of it and manage the versions and prototypes.

**Git tutorial by** [**https://try.github.io**](https://try.github.io/)**:**

> git init

$ git status

$ git status

$ git add octocat.txt

$ git status

$ git commit -m "Add cute octocat story"

$ git add '\*.txt'

$ git commit -m "add all the octocat txt files"

$ git log

$ git remote add origin https://github.com/try-git/try\_git.git

$ git push -u origin master

$ git pull origin master

$ git diff HEAD

$ git add octofamily/octodog.txt

$ git diff --staged

$ git reset octofamily/octodog.txt

$ git checkout -- octocat.txt

$ git branch clean\_up

$ git checkout clean\_up

$ git rm '\*.txt'

$ git commit -m "Remove all the cats"

$ git checkout master

$ git merge clean\_up

$ git branch -d clean\_up

$ git push

**Define the following terms in the context of Git:**

* Repository:

A place designed to store code of a determined project.

* Commit:

A “snapshot” of your current code that will be registered in the repository

* Push:

Command that send all your commits to your repository. You can select to which branch you want to push as well.

* Branch:

It is a copy of the code in the master branch, which is created to work separately in a bug or feature.

* Fork:

Fork is a way to copy a repository that you aren’t a contributor, so that you can make changes to the code and make a push request with your alterations, which needs the contributor’s authorization to keep it in original repository.

* Merge:

Merge is when a secondary branch is merged with the master branch after the work in secondary branch is done. In this process, can occur merge conflicts in the same file of code which must be solved by the developer.

* Clone:

Clone is when you copy your repository to your machine, so you can start work on it.

* Pull:

Pull is a process when you retrieve the newest version of your repository (or specific branch) in GitHub.

* Pull request:

Pull request is the same thing as the Pull, however it is done with another person’s repository.