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Practice Assignment 5

Exercise 5-1

Version Control Systems

- a) What is a version control system?
- b) When is a VCS of importance?

Exercise 5-2

- a) What is a Git repository?
- b) Explain the clone operation in Git.
- c) What is branch in a repository?
- d) What is difference between cloning and forking?
- e) What is the difference between git and github?
- f) What is the command “git init”?
- g) What is a commit message, and how is the commit command executed?
- h) What is the difference between pull and pull request?

Exercise 5-3

- a) Bob and Alice are both collaborating on a project on Github. On the branch summation Alice was working on there is a file containing the following: `print(" Hello World")`. She added a method that takes two integers and returns their summation. She opened the terminal and typed: “git add .” then “ git commit -m “add summation method” ” and finally “git push origin summation”. What is currently the state of the branch summation on the repository?
- b) Bob wrote the following:
 - 1. `git commit -m “new feature”`
 - 2. `git commit -m “change in feature”`
 - 3. `git push origin myBranch`
 - 4. `git commit -m “change 2 in feature”`
 - 5. `git push origin myBranch`

How many commits are included in the last push request?

Exercise 5-4

- a) Which of these Git client commands creates a copy of the repository and a working directory in the client's workspace.
- update
 - checkout
 - clone
 - import
 - None of the above
- b) True or False? In Git, if you want to make your local repository reflect changes that have been made in a remote (tracked) repository, you should run the pull command.
- c) Imagine that you just joined a development team that uses Git for version control and collaboration. To start contributing to the project, what Git operation would you most likely invoke first?
- d) Now, imagine that you have a local repository, but other team members have pushed changes into the remote repository. What Git operation would you use to download those changes into your working copy?

Exercise 5-5

- a) Consider the following scenario involving Git. Alice and Bob are both working on a shared project MyProj that is stored in a remote Git repository. Bob does a clone on the remote repository and then checkouts on a new branch. What happens when Bob issues each of those commands?
- b) Next, Bob edits the MyProj file foo.rb. Then, he does an add, a commit and a push. What does Git do when Bob issues these commands?
- c) Next, Alice does a clone on MyProj. Then, Alice and Bob both edit foo.rb in parallel. foo.rb has over 100 lines of code. Alice edits a couple lines at the top of the file, and Bob edits a couple lines at the bottom of the file. Then, Bob does an add/commit/push. Finally, Alice does a add/commit/push. What does Git do when Alice issues the push command?
- d) What Git commands should Alice issue next and what would the result of the command be?