# **VCS (Version Control Software)**

- 1. As soon as you start your Development process, a VCS keeps a copy of your work to a cloud storage which prevents file loss.
- 2. Since a VCS saves your files to a cloud storage, your friend who wants to work with you can easily get a copy of your project leaving the original copy in the cloud storage. And when he/she is done a VCS will do all the code merging for you, It's nice isn't it?
- 3. Finally, for every time you save your file, a VCS creates a new instance of your file and keeps the older version. This instances are called commit. Let's say you have just finished building your application, but want to add a feature, just like the 3rd problem above, you decided to revert back, instead of spending hours debugging your 'extra feature ' you can just easily ask a VCS to take you back to when you're code was working it's that simple.

# **Git/Git Hub**

git saves your work locally on your machine just in case you're in a place with no/slow internet connection and can't access the cloud version of your work. And when you finally get a stable network, it'll upload your work the Cloud storage (This is called pushing). And I think another reason is because of the wide range of features the GitHub website offers, such as forking another Dev/organization's project and make pull requests making it easy to contribute to open source projects and all that.

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### **Git Hub**

### STAGE & SNAPSHOT

Working with snapshots and the Git staging area

• git status

show modified files in working directory, staged for you next commit.

• git add [file]

add a file as it looks now to your next commit (stage)

• git reset [file]

unstage a file while retaining the changes in working directory

• git diff

diff of what is changed but not staged

• git diff --staged

diff of what is staged but not yet commited

• git commit -m "[descriptive message]"

commit your staged content as a new commit snapshot

### BRANCH & MERGE

Isolating work in branches, changing context, and integrating changes

• git branch

list your branches. a \* will appear next to the currently active branch

• git branch [branch-name]

create a new branch at the current commit

• git checkout

switch to another branch and check it out into your working directory

• git merge [branch]

merge the specified branch's history into the current one

### Git Hub

### SHARE & UPDATE

Retrieving updates from another repository and updating local repos

- git remote add [alias] [url]
  add a git URL as an alias
  - git fetch [alias]

fetch down all the branches from that Git remote

• git merge [alias]/[branch]

merge a remote branch into your current branch to bring it up to date

• git push [alias] [branch]

Transmit local branch commits to the remote repository branch

• git pull

fetch and merge any commits from the tracking remote branch

### REWRITE HISTORY

Rewriting branches, updating commits and clearing history

• git rebase [branch]

apply any commits of current branch ahead of specified one

• git reset --hard [commit]

clear staging area, rewrite working tree from specified commit