Git Basic Commands
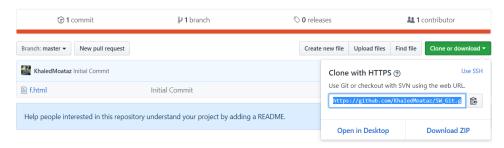
Creating A Repository:

1- Open https://github.com/new.
2- Name the Repository and add a description.
3- Make a local repository on your computer.   "$git init"
4- Add Files to your local repo to be staged for the next commit   "$git add ."
5- Commit the staged files "$git commit -m '<commit_name>' "
6- Link the local repo with the one on GitHub
   "$git remote add origin https://github.com/<user_name>/<repo_name>.git"
7- Push the previous commit to the repo on GitHub
   "$git push -u origin master"

Cloning A Repo:

"$git clone '<repo_url>' "

Status:

To know the status of your files, use "$git status"

Modified_Red: changed but not staged yet to be added in the next commit.

To stage it use: "$git add <file_name>", if we saw its status know it will be written in green.

Pushing Staged Files:

To push locally staged files to the online repo, we have to commit changes first then we push it.

"$git commit -m '<commit_name>' "   then   "$git push"

```
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

        modified:   f.html


Khaled Moataz@DESKTOP-2BJA35U MINGW64 /d/Engineering/Computer Engineering/CMP-Se
cond Year/Second Term/Software Engineering/Labs/Lab 1/Task/M1/SW_Git (master)
$ git commit -m 'M1_First Commit'
[master 22b11ec] M1_First Commit
 1 file changed, 1 insertion(+), 1 deletion(-)

Khaled Moataz@DESKTOP-2BJA35U MINGW64 /d/Engineering/Computer Engineering/CMP-Se
cond Year/Second Term/Software Engineering/Labs/Lab 1/Task/M1/SW_Git (master)
$ git push
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 305 bytes | 305.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/KhaledMoataz/SW_Git.git
   39f0229..22b11ec  master -> master
```

In case our local repo wasn't having the latest updates, we won't be able to push our commits until we have the latest version.

```
Khaled Moataz@DESKTOP-2BJA35U MINGW64 /d/Engineering/Computer Engineering/CMP-Se
cond Year/Second Term/Software Engineering/Labs/Lab 1/Task/M2/SW_Git (master)
$ git push
To https://github.com/KhaledMoataz/SW_Git.git
 ! [rejected]        master -> master (fetch first)
error: failed to push some refs to 'https://github.com/KhaledMoataz/SW_Git.git'
hint: Updates were rejected because the remote contains work that you do
hint: not have locally. This is usually caused by another repository pushing
hint: to the same ref. You may want to first integrate the remote changes
hint: (e.g., 'git pull ...') before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
```

We have to pull the latest version from the online repo using "$git pull"

If there are conflicts in some lines of code, we have to merge them manually if git wasn't able to make it by itself.

```
Khaled Moataz@DESKTOP-2BJA35U MINGW64 /d/Engineering/Computer Engineering/CMP-Se
cond Year/Second Term/Software Engineering/Labs/Lab 1/Task/M2/SW_Git (master)
$ git pull
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
From https://github.com/KhaledMoataz/SW_Git
   39f0229..22b11ec  master       -> origin/master
Auto-merging f.html
CONFLICT (content): Merge conflict in f.html
Automatic merge failed; fix conflicts and then commit the result.

Khaled Moataz@DESKTOP-2BJA35U MINGW64 /d/Engineering/Computer Engineering/CMP-Se
cond Year/Second Term/Software Engineering/Labs/Lab 1/Task/M2/SW_Git (master|MER
GING)
$ |
```

We can open it in any text editor and make such changes.

```
       f.html         ×          Release Notes: 1.31.1

  1      <html>
         Accept Current Change | Accept Incoming Change | Accept Both Changes | Compare Changes
  2      <<<<<<< HEAD (Current Change)
  3      <div id="footer">GIT source control is great</div>
  4      =======
  5      <div id="footer">Use Git, it is the best!</div>
  6      >>>>>>> 22b11ecfab671ff27d4e878e2079c6f475563e24 (Incoming Change)
  7      </html>
```

We can accept any of the two version, or accept both, or make our own new change.


```
Merge branch 'master' of https://github.com/KhaledMoataz/SW_Git

# Conflicts:
#       f.html
#
# It looks like you may be committing a merge.
# If this is not correct, please remove the file
#       .git/MERGE_HEAD
# and try again.


# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
#
# On branch master
# Your branch and 'origin/master' have diverged,
#| and have 1 and 1 different commits each, respectively.
#    (use "git pull" to merge the remote branch into yours)
#
# All conflicts fixed but you are still merging.
#
# Changes to be committed:
<Labs/Lab 1/Task/M2/SW_Git/.git/COMMIT_EDITMSG [unix] (14:47 16/02/2019)17,2 Top
```

When this message appears type "esc" then ":wq" then "enter" it will exit. It appears when typing git commit without giving a message.

You have to commit the changes after merging and then push these commits, they are counted as 2 commits.


```
Khaled Moataz@DESKTOP-2BJA35U MINGW64 /d/Engineering/Computer Engineering/CMP-Second Year/Second Term/Softwa
re Engineering/Labs/Lab 1/Task/M2/SW_Git (master)
$ git status
On branch master
Your branch is ahead of 'origin/master' by 2 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean

Khaled Moataz@DESKTOP-2BJA35U MINGW64 /d/Engineering/Computer Engineering/CMP-Second Year/Second Term/Softwa
re Engineering/Labs/Lab 1/Task/M2/SW_Git (master)
$ git push
Counting objects: 6, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 627 bytes | 209.00 KiB/s, done.
Total 6 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), done.
To https://github.com/KhaledMoataz/SW_Git.git
   22b11ec..aa75b11  master -> master
```

Use "$git log" to view the history of commits.

You can also use Git History by changing the ".com" in GitHub's file URL to ".githistory.xyz".