# GIT Knowhow:

## Basics

* **git init** (to create local repository)
* Create ‘.gitignore’ file with folders and files to never stage)  
  - note that you can stage only specific files under ignored folders by exclusion: !file\_name
* **git add .** (staging all files while ignoring the unwanted files, e.g. repository or virtual env)
* **git status** (to track on the staged files, modified files and active/checked-out branch)
* **git reset** (if having undesired files staged, update the ‘.gitignore’ and run re-staging
* **git commit -m “first commit”**
* **git branch -M main** (renames/Modify the current active to main)
* **git branch** (to see current active branch)
* **git log** (track on commits)
* **git remote add origin https://github.com/shai-baranes/Slot\_machine.git**  
  (get link from GitHub for the first commit only or for connecting new computer…)
* **git push -u origin main** (also for first commit)
* **git push -u origin from\_perplexity** (and if we wanted to update a certain branch out of many to be in focus in our local repo).
* *Note that git creates the first branch as ‘master’, yet we can decide to change it to ‘main’ and we shall have no history for ‘master’.*
* *If all branches are stored locally, no need to pull from repository to get to an earlier branch/code.*

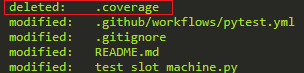
## Advance

* **git log --all --decorate --oneline --graph** To display a commit per line, e.g:   
   *(also depicting visually the tree branches – can be in Alias)*  
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\* **8f5a062** (HEAD -> main, origin/main) updating the README file

\* **2f4c8be** adding README.md

\* **faad10c** first commit   
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* **gitk** another lovely way to get a visual representation of all commits and branches!
* **git branch side\_branch** ; **git branch for\_testing** (adding 2 more branches)
* **git branch** (to see all branches)
* **git checkout side\_branch** (HEAD pointer is now moved to the new branch)
* **git checkout -b side\_branch** (for both creating and checking out into the new branch)
* **git commit -a -m “commit info”** (to both ‘stage’ and ‘commit’ any modified file)
* **To merge 2 diff branches , both stemmed from the master/main:**
  + **git checkout master** (move pointer/header back to master)
  + **git diff master..side\_branch** (shows what will change when merge side to master)
  + **git merge master\_branch**   
    (from the master we merge the side\_branch, ff merge since having direct path)
  + **git branch --merged** (shows which branches merged to the branch we’re on)
  + **git branch -d side\_branch**   
     (after the above cmd we can safely delete the ‘side\_branch’)
  + **git branch -D side\_branch** (forcibly deleting unmerged branch. try to avoid.)
  + **git push --all origin** (to push all local branches to the remote git-hub repository)
* **Working with a clone from remote git repo:**
  + **git clone** [**https://github.com/shai-baranes/MISC.git**](https://github.com/shai-baranes/MISC.git)*(taken from ‘Code’ in repo)*(get you repo to other user or other folder of yours…)
  + **git fetch origin** (if during activity, you want to check whether a new change committed since).
  + **git status** now tells you how behind are you; e.g.   
    *Your branch is behind 'origin/main' by 1 commit, and can be fast-forwarded. (use "git pull" to update your local branch)*
  + **git diff origin/main** (quickly see changes. *if your main is ‘master’ then master it is)*
  + **git pull** to pull these new changes(no need to commit)
  + **git stash --include-untracked** (if you pull and wants to ignore local non committed changes – note you can later find it or discard it) – now try **git pull** again…
  + **git reset --hard**  (discarding local changes - such as stashed)
  + **git clean -fd** (rarely for cases you also want to clean the untracked/ new files. Irreversible)
* **To delete a cached file that is not ignored although listed (since already in repository):**
  + **git rm -r --cached .**
  + **git add .** (you get something similar like the below output)  
    
* **what to do in case I am not satisfied on my last changes (revert)?**
  + **git reset --merge** (if there are conflicts and I’d like to revert to previous state – instead of changing files, stage the change changes and commit resolution).
  + **git reset --hard HEAD** (force action to discard all changes since last commit).
  + **git checkout main [or master]** (to move to my main branch before killing the unwanted branch).
  + **git clean -n** (safe step: If still have untracked files, this cmd will clean it – vs.)
  + **git clean -f** (permanent step: If still have untracked files, this cmd will clean it).
  + **git branch -d <branch-name>** (if changes are merged)or **git branch -D <branch-name>** (if changes are not merged and I don’t really care).
  + **git push origin --delete <branch-name>** (to delete the undesired branch from the remote/github repository).
  + **git fetch -p** (recommended after deleting the remote branch to avoid references to remote branch that is no longer exist)

**TBD – check how to push the entire history with all sub-branches…**

**TBD – learn more about pull / deploy / clone?**