Git

installation
- git --version
- which git
- git config
  - --system (/etc/gitconfig)
  - --global (~/.gitconfig)
    - user.name ""
    - user.email ""
    - core.editor "emacs"
    - core.excludesfile ~/.gitignore_global
    - alias
      - .st status
      - .co checkout
      - .ci commit
      - .br branch
      - .dfs "diff --staged"
      - .logg "log --graph --decorate --oneline --abbrev-commit --all"
  - (my_project/.git/config)
    - --list
- git help
- my_project/.gitignore
- git completion
  - url -OL https://github.com/git/git/raw/master/contrib/completion/git-completion.bash
  - mv ~/git-completion.bash ~/.git-completion.bash
  - url -OL https://github.com/git/git/raw/master/contrib/completion/git-prompt.sh
  - mv ~/git-prompt.sh ~/.git-prompt.sh
  - emacs -q ~/.bash_profile
    - if [-f ~/.git-completion.bash]; then
      source ~/.git-completion.bash
      fi
    - if [-f ~/.git-prompt.sh]; then
      source ~/.git-prompt.sh
      export PS1='\[\e[0;33m\]\u\[\e[0m\]@\[\e[0;32m\]mac\[\e[0m\]:\[\e[0;34m\]\W\[\033[1;31m\]$(__git_ps1 "(%s)")\[\e[0m\]> '
      fi

basic
- cat .git/HEAD (check where is the HEAD pointer)
- cat .git/config (check configuration)
- git init (initialization)
- git add . (add files to the staging index)
- git commit -m "" (commit files to the repository)
- git log
  - -n
  - -p
  - --since=2016-1-18
  - --until=2016-1-18
  - --author="zrwang"
  - --format=
    - oneline
    - short
    - email
    - raw
    - full
    - fuller
  - --grep="init"
  - --oneline -3
  - --stat --summary
  - --graph
  - --oneline --graph --all --decorate
- git show

concepts and architecture
- add: from working --> staging index
- commit: from staging index --> repository
- checkout: from repository --> working
- HEAD: pointer to "tip" of current branch in repository

making changes to files
- git status
- git add first_file.txt
- git commit -m "this is my first file"
- git diff
  - -b (ignore space changes)
  - -w (ignore all space)
  - --staged
  - - + shift + s + return
  - --color-word
  - SHA-1 (hash value) [index.html]
  - --stat --summary
- git rm
- git mv
  - --cached
- git commit -am "add and commit" (Add and commit all the modified files, but not newly created files.)

undoing changes
- git checkout -- index.html
- git reset HEAD index.html
- git commit --amend -m ""
- git reset
  - --soft (does not change woking & staging)
  - --mixed (change staging but working)
  - --hard (change both staging & working)
- git checkout SHA-1 (hash value) -- index.html
- git revert SHA-1 (hash value)
- git clean
  - -n
  - -f
- git rebase -i HEAD~n
- git reflog (check reference log especially for last several SHA-1s)

commit tree
- git ls-tree master^^ dir/
- git ls-tree HEAD~2 dir/

branching
- git checkout -b "new_branch_name"
- git branch --merged
- git branch -m old_name new_name
- git branch -d branch_to_delete
- git branch -r
- git branch -a

merging
- git merge branch_to_be_merged
- git merge
  - --no-ff
  - --ff-only
- git merge --abort

stashing
- git stash save "changes to be saved in the stash"
- git stash list
- git stash show -p stash@{0}
- git stash pop
- git stash apply
- git stash drop stash@{0}
- git stash clear

remote
- git remote add origin https://github.com/zrwang/remote_repository.git
- git remote -v
- git remote rm origin
- git push -u origin master
- git clone https://github.com/zrwang/remote_repository.git
- git pull
  - git fetch
  - git merge
- git push origin :branch_to_delete

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