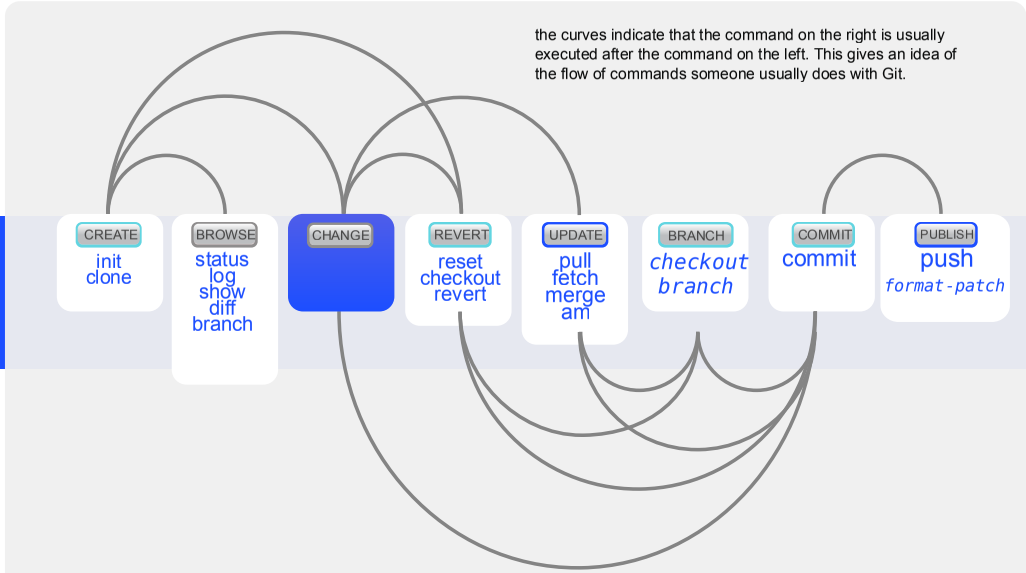
Git Cheat Sheet

http://git.or.cz/

Remember: git command --help

Global Git configuration is stored in $HOME/.gitconfig (git config --help)

Commands Sequence



Create

From existing data

```
cd ~/projects/myproject
git init
git add .
```

From existing repo

```
git clone ~/existing/repo ~/new/repo
git clone git://host.org/project.git
git clone ssh://you@host.org/proj.git
```

Show

Files changed in working directory

```
git status
```

Changes to tracked files

```
git diff
```

What changed between $ID1 and $ID2

```
git diff $id1  $id2
```

History of changes

```
git log
```

History of changes for file with diffs

```
git log -p $file $dir/ec/tory/
```

Who changed what and when in a file

```
git blame $file
```

A commit identified by $ID

```
git show $id
```

A specific file from a specific $ID

```
git show $id:$file
```

All local branches

```
git branch
```

(star '*' marks the current branch)

Cheat Sheet Notation

$id : notation used in this sheet to represent either a commit id, branch or a tag name
$file : arbitrary file name
$branch : arbitrary branch name

Concepts

Git Basics

```
master    : default development branch
origin    : default upstream repository
HEAD      : current branch
HEAD^     : parent of HEAD
HEAD~4    : the great-great grandparent of HEAD
```

Revert

Return to the last committed state

```
git reset --hard
```

⚠ you cannot undo a hard reset

Revert the last commit

```
git revert HEAD
```

Creates a new commit

Revert specific commit

```
git revert $id
```

Creates a new commit

Fix the last commit

```
git commit -a --amend
```

(after editing the broken files)

Checkout the $id version of a file

```
git checkout $id $file
```

Branch

Switch to the $id branch

```
git checkout $id
```

Merge branch1 into branch2

```
git checkout $branch2
git merge branch1
```

Create branch named $branch based on the HEAD

```
git branch $branch
```

Create branch $new_branch based on branch $other and switch to it

```
git checkout -b $new_branch $other
```

Delete branch $branch

```
git branch -d $branch
```

Update

Fetch latest changes from origin

```
git fetch
```

(but this does not merge them).

Pull latest changes from origin

```
git pull
```

(does a fetch followed by a merge)

Apply a patch that some sent you

```
git am -3 patch.mbox
```

(in case of a conflict, resolve and use `git am --resolved`)

Publish

Commit all your local changes

```
git commit -a
```

Prepare a patch for other developers

```
git format-patch origin
```

Push changes to origin

```
git push
```

Mark a version / milestone

```
git tag v1.0
```

Useful Commands

Finding regressions

```
git bisect start          (to start)
git bisect good $id       ($id is the last working version)
git bisect bad $id        ($id is a broken version)

git bisect bad/good       (to mark it as bad or good)
git bisect visualize      (to launch gitk and mark it)
git bisect reset          (once you're done)
```

Check for errors and cleanup repository

```
git fsck
git gc --prune
```

Search working directory for foo()

```
git grep "foo()"
```

Resolve Merge Conflicts

To view the merge conclicts

```
git diff          (complete conflict diff)
git diff --base  $file    (against base file)
git diff --ours  $file    (against your changes)
git diff --theirs $file   (against other changes)
```

To discard conflicting patch

```
git reset --hard
git rebase --skip
```

After resolving conflicts, merge with

```
git add $conflicting_file    (do for all resolved files)
git rebase --continue
```

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