Dependency management using git

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Need for dependency management

- Redundancy
- Cumbersome to edit
- Inability to build and test from bleeding edge checkouts

Solution

A
Subtree
B
C
Subtree
D
E
F
G
H
Subtree
I
J
K

Git submodules

- Nest git repositories within another git repository
- Points to a specific commit reference of the child repository
- Ability to build and test from bleeding edge checkouts
- Update specific submodules

Demo time

git subtree

Introduced in 1.7.11

Alternative to git submodule to handle external dependencies.

Inject dependency

It allows you to inject an external project into a sub-folder

Extract project

It can be also used to extract a sub-folder as separate project

Demo time

Links

- Git submodules
- Git subtree
- Git subtree with .gittrees

Other applications/powers

- Managing project dependencies (https://github.com/manaswinidas/droolsjbpm-build-bootstrap/tree/maven-repo-test)
- Eliminates redundancy
- Publish in various platforms like gitbook(documentation)
- Makes maintenance easier

git submodule vs git subtree

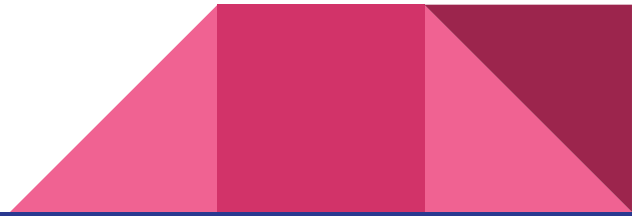
- Harder for beginners
- Just a link to a commit reference in another repository
- Requires submodule to be accessible in a server(like GitHub)
- Smaller repository size
- Component-based development(one at a time)

- Easier for beginners
- Code is merged in parent repository history(entire copy of child repository in parent repository)
- Decentralized
- Bigger repository size
- System-based development(all or none)

Submodules vs subtrees cheat sheet:
https://github.github.com/training-kit/downloads/submodule-vs-subtree-cheat-sheet/

Caveats

- Git subtree - not a direct replacement to git submodule
- External repository you own and are likely to push code back to - use git submodule(easier to push)
- Third party code that you are unlikely to push to - use git subtree(easier to pull)



Other alternatives

- git slave
- git repo
- git subrepo
- Lerna(multi-package JS repos)
- Bit(JS)

Reference:
https://codeburst.io/4-git-submodules-alternatives-you-should-know-592095859b0

Thank you