

Dependency management using git



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Manaswini Das / October 28, 2021

Need for dependency management

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

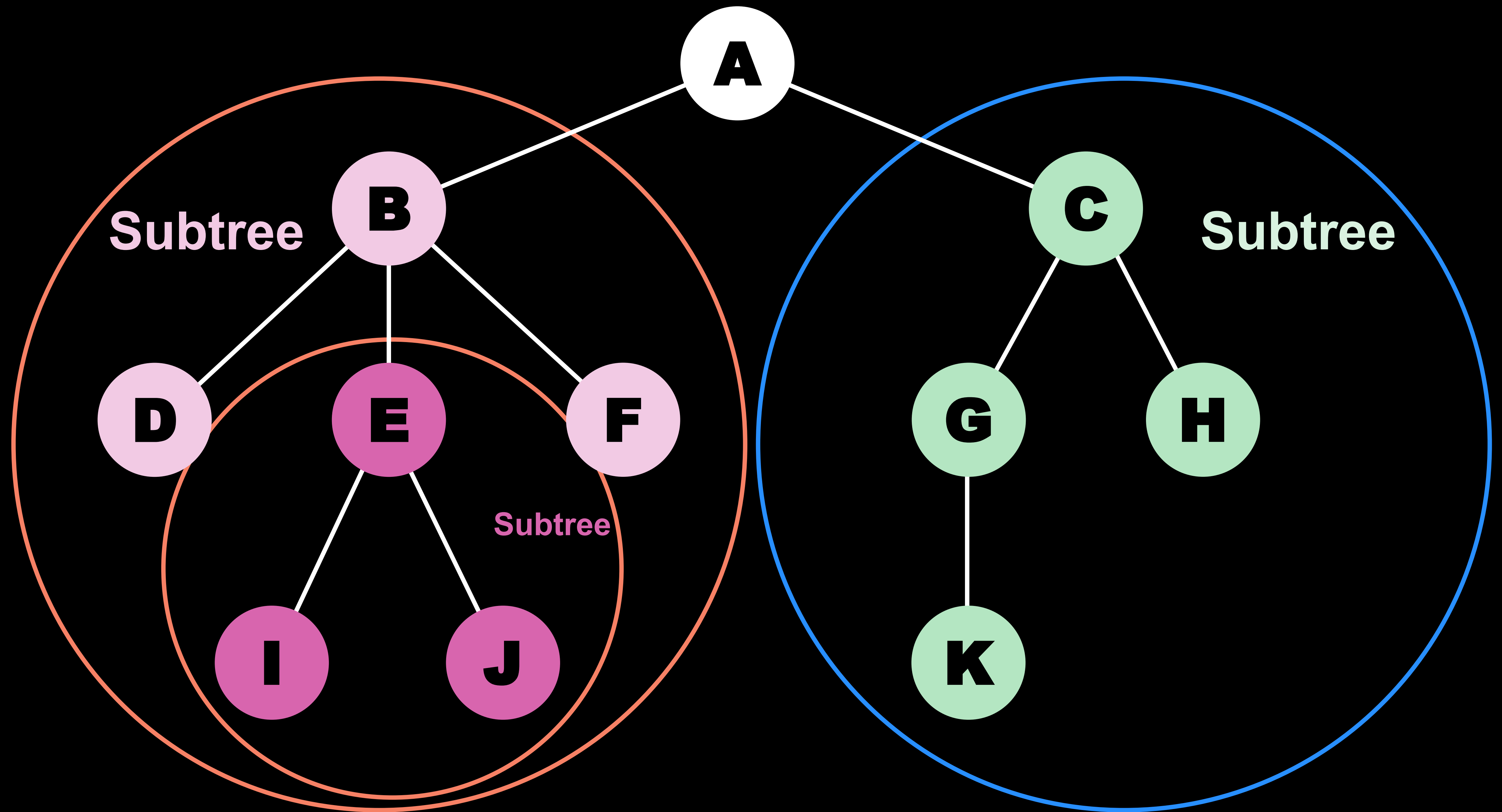


Solution



Picture this...





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



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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



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Links

- [Git submodules](#)
- [Git subtree](#)
- [Git subtree with .gittrees](#)





Applications/powers

- Managing project dependencies
- 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)

[Open the submodules vs subtrees 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

- [gitslave](#)
- [git repo](#)
- [git subrepo](#)
- [Lerna](#) (multi-package JS repos)
- [Bit](#) (JS)





Gitslave(gits)

- **Commands in parent repository cascades to all child repositories**
- **has been used for mid-sized product development with many linked child repositories**
- **value added supplement designed to accelerate performing identical git actions over all linked repositories**





Git repo

- **executable Python script that you can put anywhere in your path**
- **helps manage many Git repositories, does the uploads to revision control systems, and automates parts of the development workflow**
- **still under active development**
- **Maintained by Google**





Git subrepo

- **Has many advantages over subtree and submodule when it comes to ease of use and users cloning your repo, commit history**
- **upstream changes can be pulled in, and local changes can be pushed back**



Thank you

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