



Intermediate Workshop

Git pull



Agenda



- What's in a Git repository, really?
- How to work with branches
- How to work with tags
- Some Git internals
- `git merge/revert`, `rebase`, `reset`
- Best practices
- Integration with other tools
- Command line setup

What's in a Git repository, really?



...of a Git repo



Concepts

- Repository
- Commit
- Branch
- Tag
- HEAD
- Tip of a branch



How to work with branches

- Why use branches?
- Long lived branches



How to work with branches

- list all branches (`git branch`)
- create a branch (`git checkout -b <new-name>`)
- checkout a branch (`git fetch <remote> <branch-name>`; `git checkout <branch-name>`)
- push a branch (`git push <remote> branch-name`)



How to work with branches

- merge a branch (`git merge <local-branch-name>` or `git merge <remote>/<branch-name>`)
- When to merge a branch?



How to work with branches

- rename a local branch (`git branch -m <old-name> <new-name>`)
- rename a remote branch (`git push <remote> <old-name>; git push <remote> <new-name>`)



How to work with branches

- delete a local branch (`git branch -D name`)
- delete a remote branch (`git push <remote> :branch-name`)



How to work with branches

Best practices

- When to merge to master?
- When to merge from master?
- How to name branches?
Ex. 173622-fix-twitter-box

How to work with tags

- Why use tags?
- Simple tags vs. annotated vs. signed





How to work with tags

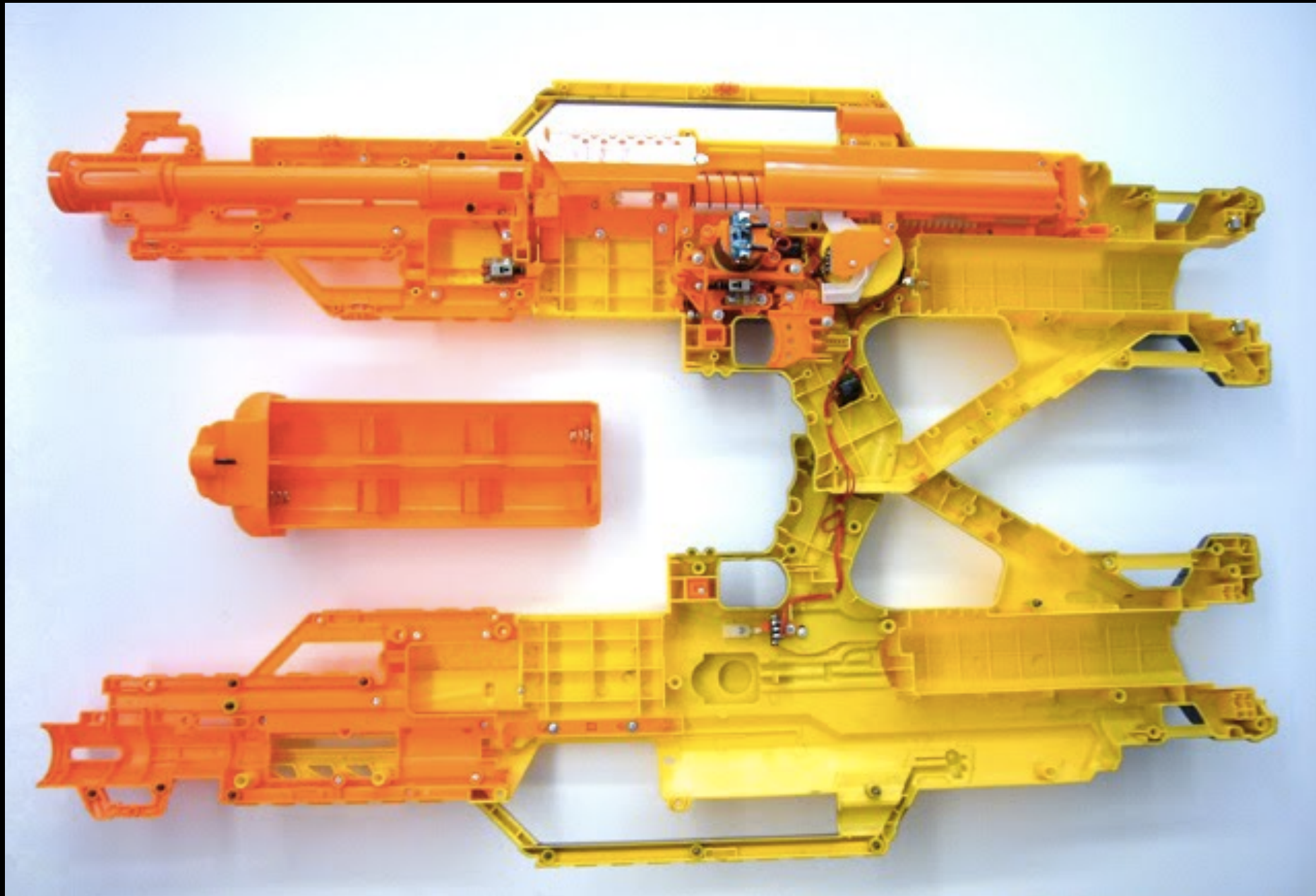
- create a tag (`git tag -am „textual message“ <tag-name> [<sha>]`)
- list tags (`git tag`)
- move a tag (`git tag -f -am „textual message“ tag-name [<sha>]`)
- delete a tag (`git tag -d tag-name`)



How to work with tags

- push tags (git push —tags)

Git Internals





Git Internals

Where do my objects live?

- commits
- branches
- tags
- HEAD
- detached HEAD



Git Internals

How does a git command affect the commit tree?

- git commit
- git branch
- git tag
- HEAD
- detached HEAD



Git Internals

How does a git command affect the commit tree?

- git merge
- git revert
- git rebase



Git Internals

How does a git command affect the commit tree?

- `git reset —hard`
- `git fetch`
- `git pull`



Best Practices for Commits

How big should a commit be?





Best Practices for Commit Messages

First line:

- Imperative
- Capital first letter
- Limit length to 60 chars (everything else in the third line)
- Should not end with a period
- „**Replace metasearch gem with ransack**“



Best Practices for Commit Messages

Second line:

- Blank

Subsequent lines:

- Limit line length to 60 chars
- Description of problem, solution.



Best Practices for Commit Messages

Traceability:

- Include the ticket number (or even the ticket name) to get traceability (through git blame)
- „[#13982] **Replace metasearch gem with ransack**“



Integration with other Tools

- IDEs
- Editors
- Trackers (e.g. Pivotal Tracker)
- Chat (e.g. Slack)



How to setup the shell for Git?

- Aliases
- `git co`
- `co = checkout`
- `git ci, st, ...`
- `git graph`
- `graph = log --oneline --abbrev-commit --all --graph --decorate`
- <http://githowto.com/aliases>



How to setup the shell for Git?

- Shell prompt
- <https://github.com/git/git/blob/master/contrib/completion/git-prompt.sh>



How to setup the shell for Git?

- Autocompletion
- <https://github.com/git/git/tree/master/contrib/completion>

