Intro to Git

Joseph Gan

9 Nov 2022

Commit Message

- Based on conventionalcommits
- Structure

```
<type>[optional scope]: <description>
<BLANK LINE>
[optional body]
<BLANK LINE>
[optional footer(s)]

feat(profile): implement profile API

With this commit, it adds profile CRUD API with OpenAPI documentation and
controller sliced test

Close #1
```

Commit Message

- Types
  - build, ci, docs, feat, fix, perf, refactor, style, test
- Scopes
  - To be defined at a later stage
- Description
  - Short summary (<= 90 characters)
- Body
  - As much as you want, be as specific as possible
- Footer
  - To reference or close an issue

Enforcement

- Maven git-build-hook plugin
- Setup a pre-commit hook to enforce

Tools

- CLI
  - git-bash
- GUI
  - [x] GitExtensions
  - SourceTree
  - Git-Fork

Tools

- IDE (Built-in)
  - IntelliJ
    - [x] gittoolbox
  - VSCode
    - [x] gitlens
    - [x] gitextensions

Tools

- [x] kdiff3
- diffmerge
- IDE built-in diff

Concept / Terminology

- .gitignore
- hooks (.git/hooks)
  - pre-commit, post-commit, pre-rebase, etc

Feature Demo

- Amend
- Checkout
- Switch
- Reset
  - Mixed, Soft, Hard
- Reflog
- Revert
- Stash

Feature Demo

- Merge
  - No Fast Forward
  - Fast Forward
  - Dealing with Conflicts
- Rebase
  - Rebase Interactively
- Cherry Pick
- Worktree

Feature No Demo

- Bisect
- Submodules

Warning

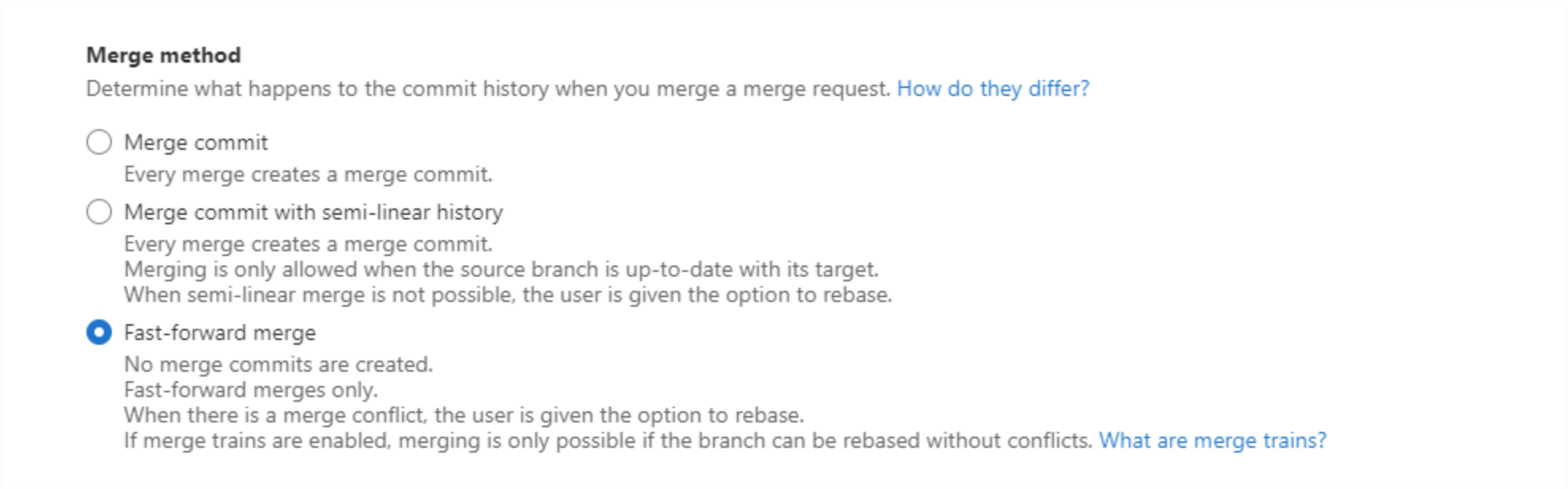
- **Never** rebase + force push in `main` (or any public branch)

Best Practices

- Write good commit message
- Prefer Clean History
- [Therefore] Rebase >>> Merge FF >>> Merge No FF
- Git pull (set rebase as default)
- Practice local feature-branch (easy to switch to main)
  - Practice small commits locally, squash when necessary prior to push or merge back to main

Best Practices

- Gitlab
  - FF Merge as default [who looks at merge commit anyway]
  - Configure default ff merge in Gitlab



Best Practices

- Pull/Merge Request
  - Team dependent
  - Small >>> Huge [reduce overhead + context]
  - Pair programming eliminates it (above)
  - Trunk based development
    - Protected by well defined pipeline