

GitHub good practices

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1. Correspondences Scrum/GitHub/Gitlab

Table 1. Correspondences between Artefacts

Scrum	GitHub	GitLab
User Story	Issues	Issues
Task	Task Lists / dependency issues	Task Lists
Epic	??	Epics
Points/Estimation	Weights (\$)	Weights
Product Backlog	Issues Lists	Issues Lists
Priorities	Labels	Labels
Sprint	Milestone	Milestone
Burndown Chart	A nice app!	Burndown Chart
Agile board	Project board	Issue Board

2. Build

Let's do a quick poll about build tools

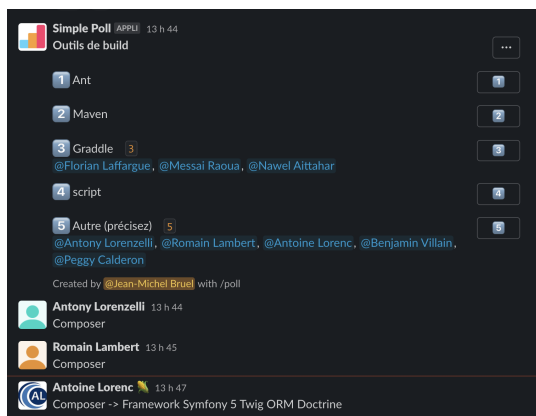


Figure 1. 2021 promotion build tool usage

2014 Study:

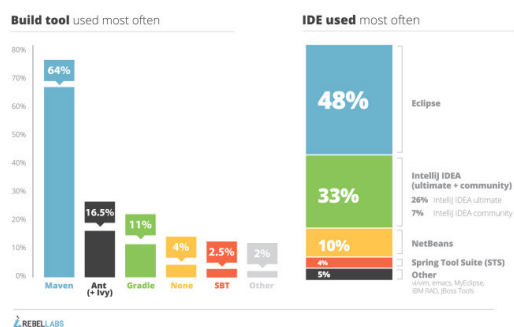


Figure 2. Ant vs Maven vs Gradle (source [here](#))

Ant example (cf. [source](#))

```
<project xmlns:ivy="antlib:org.apache.ivy.ant" name="java-build-tools" default="jar">

  <property name="src.dir" value="src"/>
  ...
  <path id="lib.path.id">
    <fileset dir="${lib.dir}" />
  </path>

  <target name="clean">
    <delete dir="${build.dir}"/>
  </target>

  <target name="compile">
    <mkdir dir="${classes.dir}"/>
    <javac srcdir="${src.dir}" destdir="${classes.dir}"
classpathref="lib.path.id"/>
  </target>

  <target name="jar" depends="compile">
    <mkdir dir="${jar.dir}"/>
    <jar destfile="${jar.dir}/${ant.project.name}.jar" basedir="${classes.dir}"/>
  </target>

</project>
```

Maven example (cf. [source](#))

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
    http://maven.apache.org/maven-v4_0_0.xsd">

  <modelVersion>4.0.0</modelVersion>
  <groupId>com.technologyconversations</groupId>
  <artifactId>java-build-tools</artifactId>
  <packaging>jar</packaging>
  <version>1.0</version>

  <dependencies>
    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>4.11</version>
    </dependency>
  </dependencies>

  <build>
    <plugins>
      <plugin>
        <groupId>org.apache.maven.plugins</groupId>
        <artifactId>maven-compiler-plugin</artifactId>
        <version>2.3.2</version>
      </plugin>
    </plugins>
  </build>

</project>
```

Gradle example (cf. [source](#))

```
apply plugin: 'java'
apply plugin: 'checkstyle'
apply plugin: 'findbugs'
apply plugin: 'pmd'

version = '1.0'

repositories {
  mavenCentral()
}

dependencies {
  testCompile group: 'junit', name: 'junit', version: '4.11'
  testCompile group: 'org.hamcrest', name: 'hamcrest-all', version: '1.3'
}
```

3. Automate issue branches

<https://github.com/marketplace/actions/create-issue-branch>

Add this to your workflow YAML configuration:

```
on:
  issues:
    types: [assigned]
  issue_comment:
    types: [created]
  pull_request:
    types: [closed]

jobs:
  create_issue_branch_job:
    runs-on: ubuntu-latest
    steps:
      - name: Create Issue Branch
        uses: robvanderleek/create-issue-branch@master
        env:
          GITHUB_TOKEN: ${ secrets.GITHUB_TOKEN }
```



github-actions bot commented 1 minute ago

Branch [issue-2-Demonstrate_automation_of_issue_branches](#) created!

Figure 3. As soon as the issue is assigned...

4. Use tags

```
git tag 1.1.0 -m "Release 1.1.0"
git push origin tag 1.1.0
```

Tagging practices:

- You don't tag branches. You tag commits!
- You should add a tag to mark a released version. If you then need to make bug fixes to that release you would create a branch at the tag
- If you checkout a tag, you will need to create a branch to start working from it

More [here](#).

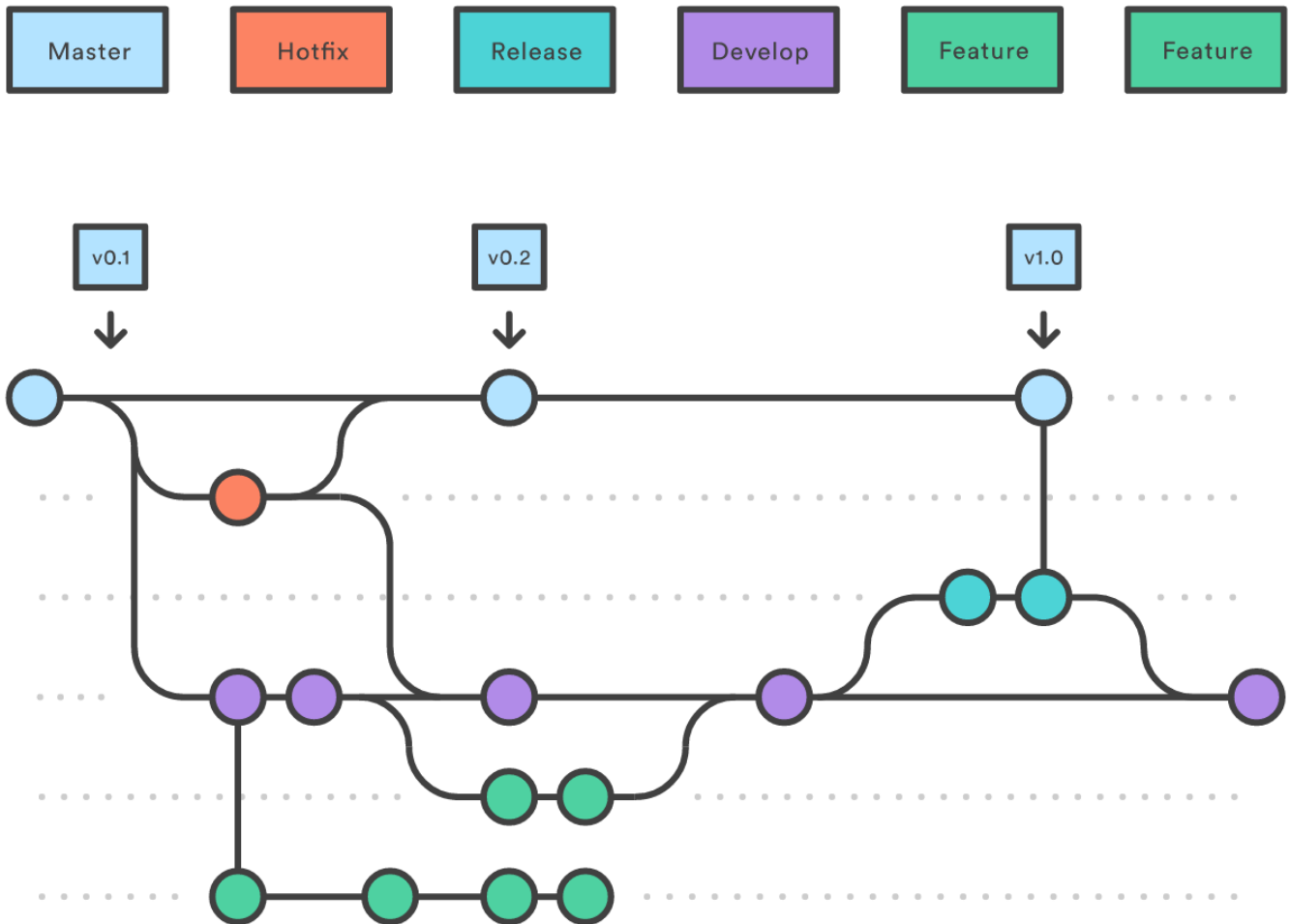


Figure 4. Tags in git flow (source [here](#))

5. Meaningful `.gitignore` file

This repo `.gitignore` file

```
# Output directory for HTML files
output/
Gemfile.lock
*.html
.DS_Store

topics
node_modules
package-lock.json

# Ignore Gradle project-specific cache directory
.gradle

# Ignore Gradle build output directory
build
.project
.settings
```

<https://gitignore.io>

Example for **Node.js** (only beginning!)

```
# Created by https://www.toptal.com/developers/gitignore/api/node
# Edit at https://www.toptal.com/developers/gitignore?templates=node

### Node ###
# Logs
logs
*.log
npm-debug.log*
yarn-debug.log*
yarn-error.log*
lerna-debug.log*
```

6. Meaningful commit messages

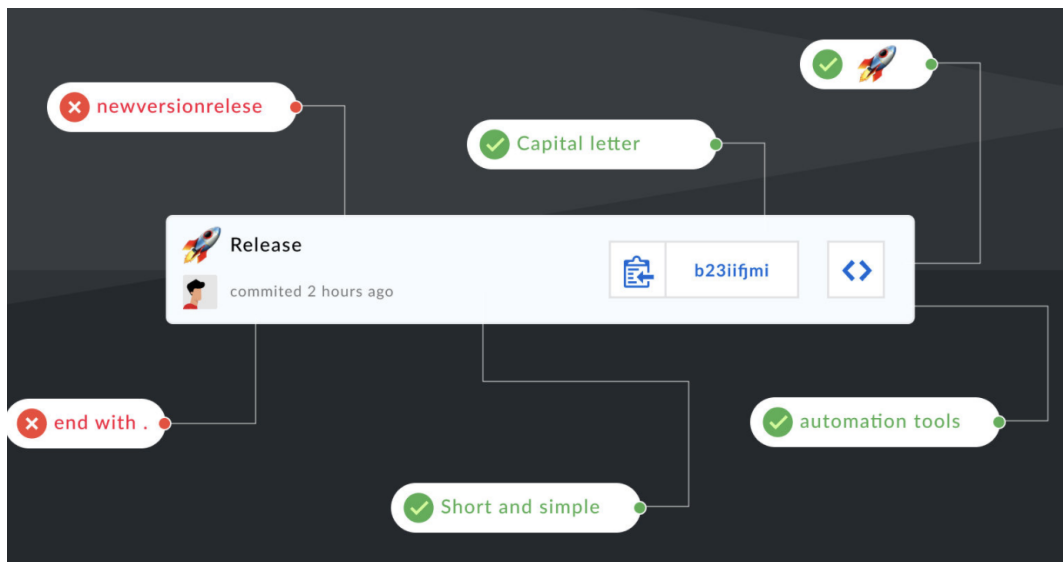


Figure 5. Example of conventions (source [here](#))

Example of `~/.gitconfig` file

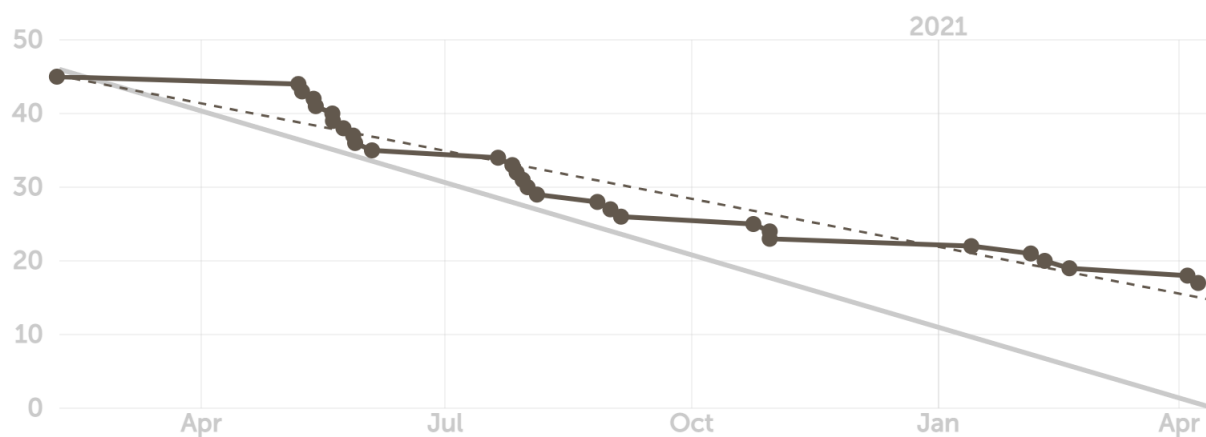
```
# Git Commit, Add all and Push – in one step.
cap = "!f() { git add .; git commit -m \"$@\"; git push; }; f"

# NEW.
new = "!f() { git cap \" NEW: $@\"; }; f"
# IMPROVE.
imp = "!f() { git cap \" IMPROVE: $@\"; }; f"
# FIX.
fix = "!f() { git cap \" FIX: $@\"; }; f"
# RELEASE.
rlz = "!f() { git cap \" RELEASE: $@\"; }; f"
# DOC.
doc = "!f() { git cap \" DOC: $@\"; }; f"
# TEST.
tst = "!f() { git cap \" TEST: $@\"; }; f"
```

6.1. Burndown charts

Nice complementary app that takes a repo and draws the current milestone (not closed) burndown chart :

<http://radekstepan.com>



Milestones		A-Z Sorted by priority
rails/rails	6.1.4	<div><div></div></div> 20%
rails/rails	7.0	<div><div></div></div> 30%
rails/rails	6.0.4	<div><div></div></div> 80%

Figure 6. Example of Burndownchart (source [here](#))












Emoji	Description
 :tada:	When you added a cool new feature.
 :wrench:	When you refactored / improved a small piece of code.
 :hammer:	When you refactored / improved large parts of the code.
 :sparkles:	When you applied clang-format.
 :art:	When you improved / added assets like themes.
 :rocket:	When you improved performance.
 :memo:	When you wrote documentation.
 :beetle:	When you fixed a bug.
 :twisted_rightwards_arrows:	When you merged a branch.
 :fire:	When you removed something.
 :truck:	When you moved / renamed something.

Figure 7. Example of emoji usage convention

7. Useful links

- <https://www.datree.io/resources/github-best-practices>