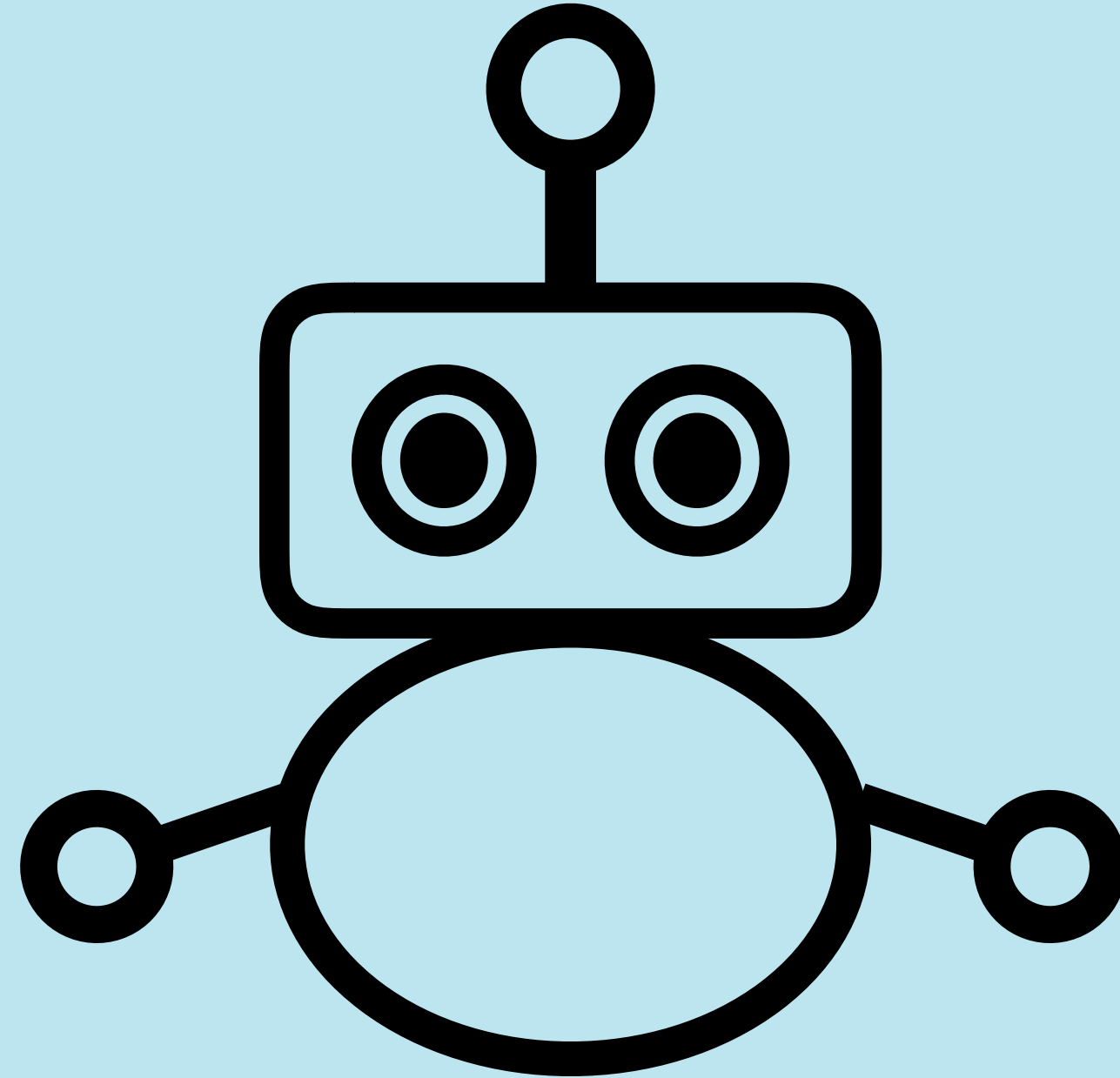


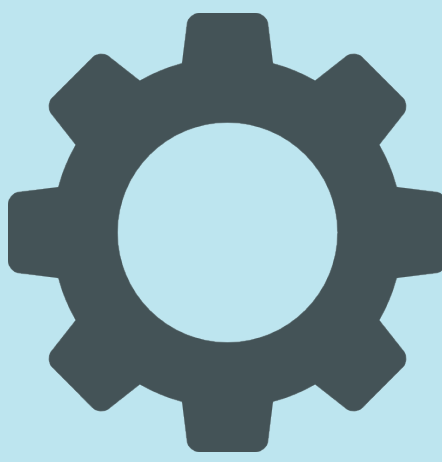
Our Great Bot Overlords



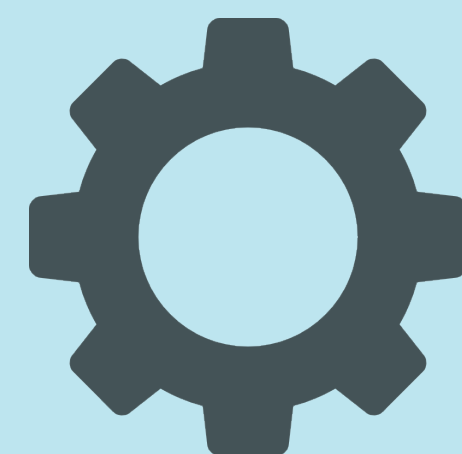
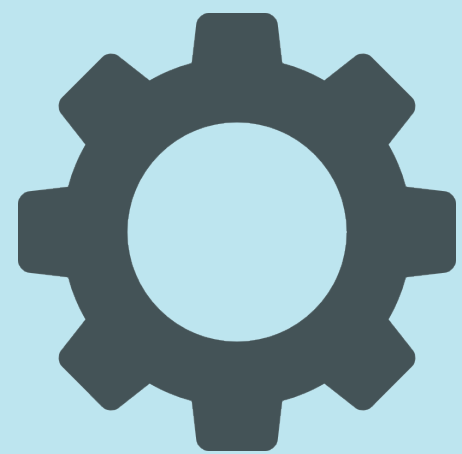
Automation for Speed & Sanity

Shelley Vohr
@codebytere

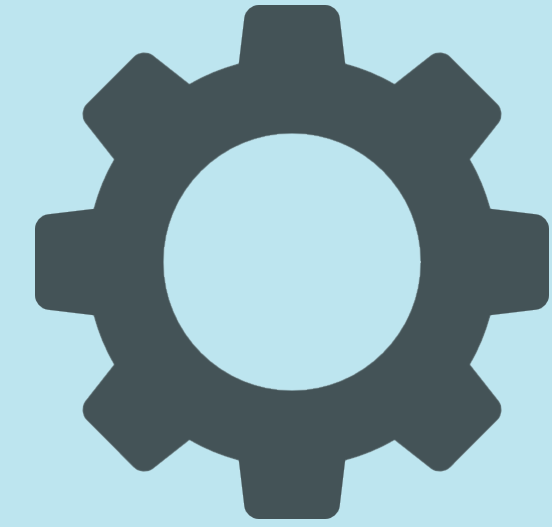
What's Automation Anyway?



> the creation of technology and its application in order to control and monitor the production and delivery of various goods and services. It performs tasks that were previously performed by humans.



Why Do We Automate?

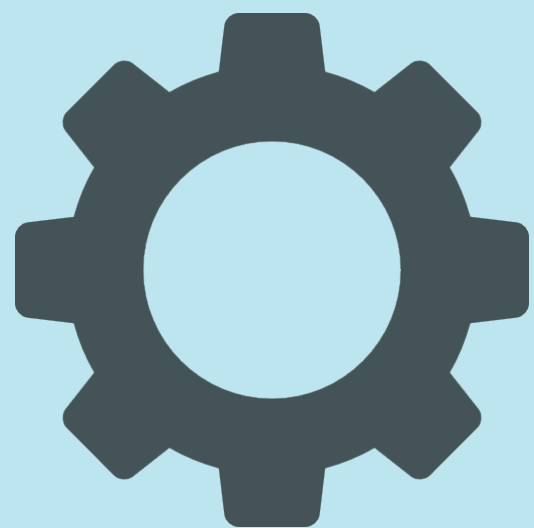


Streamline Developer Workflow

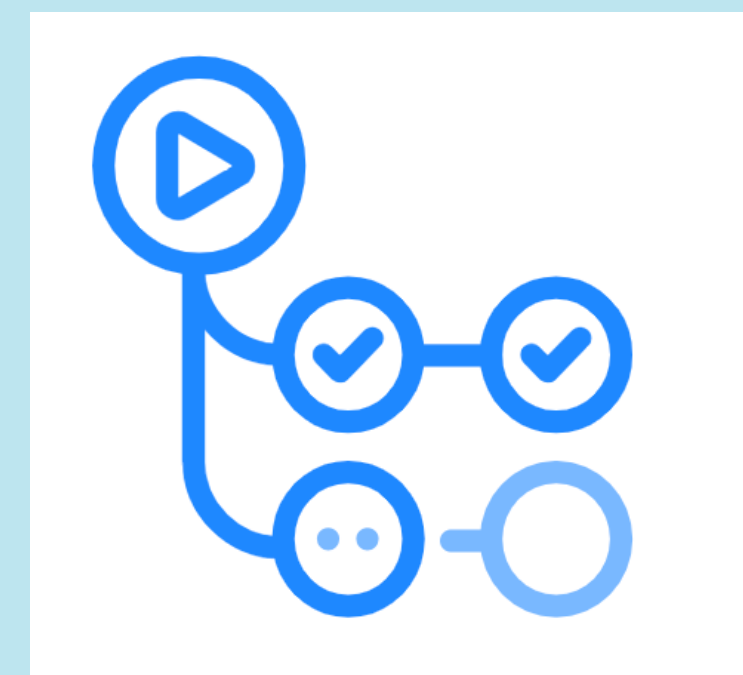
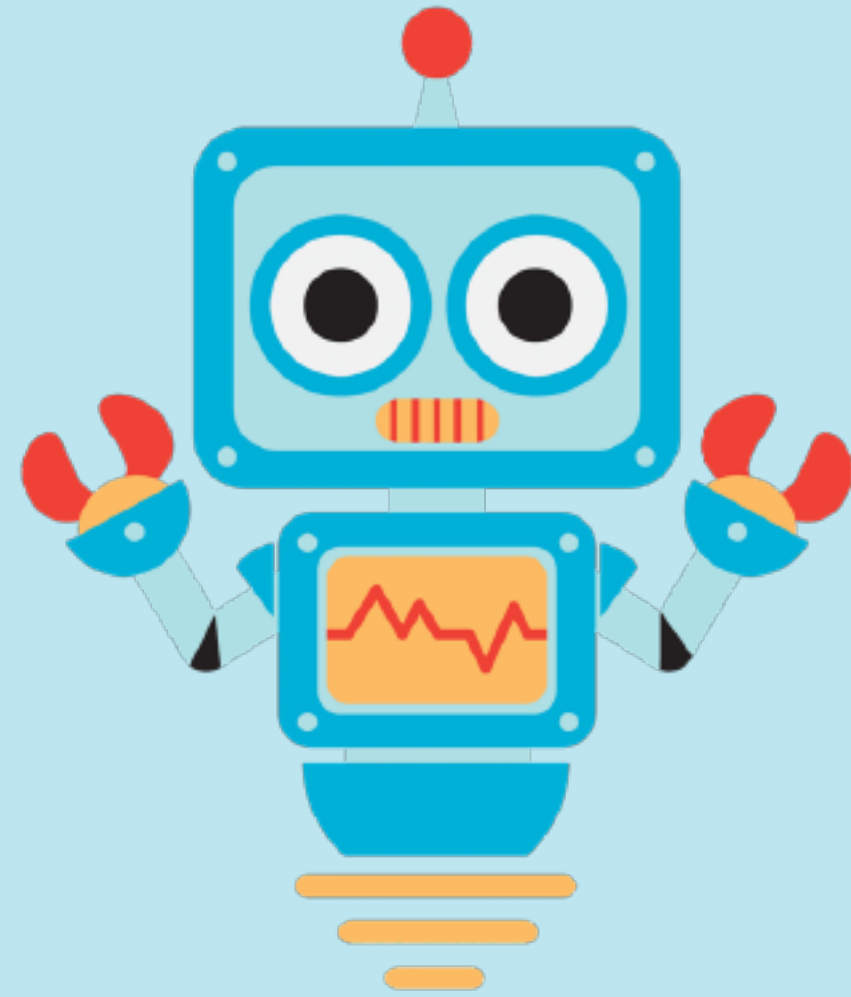
Enforce Requirements

Regain Developer Time

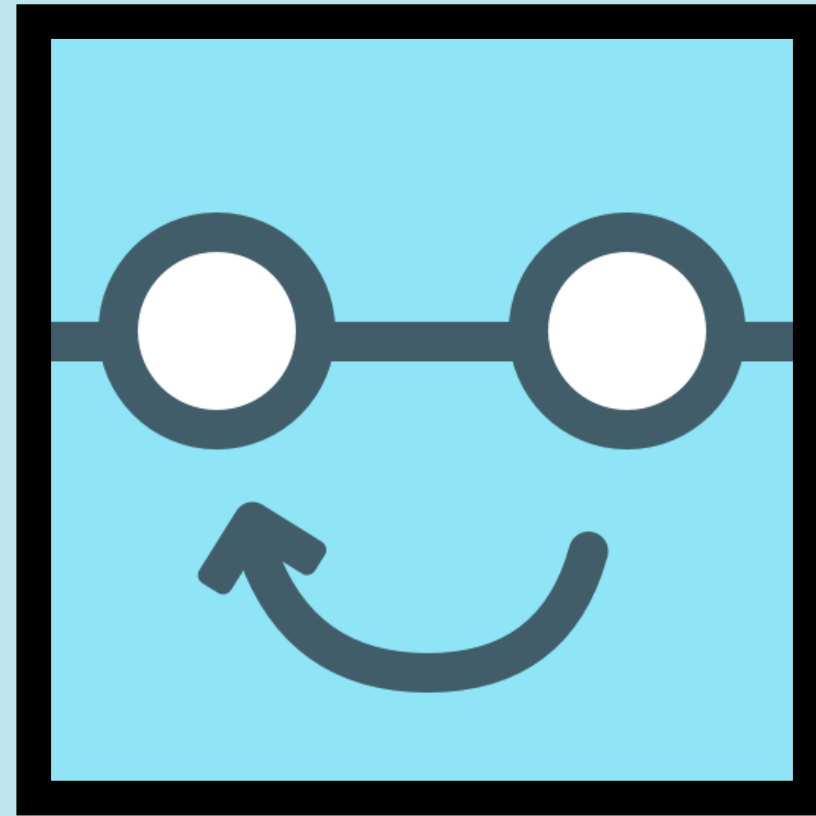
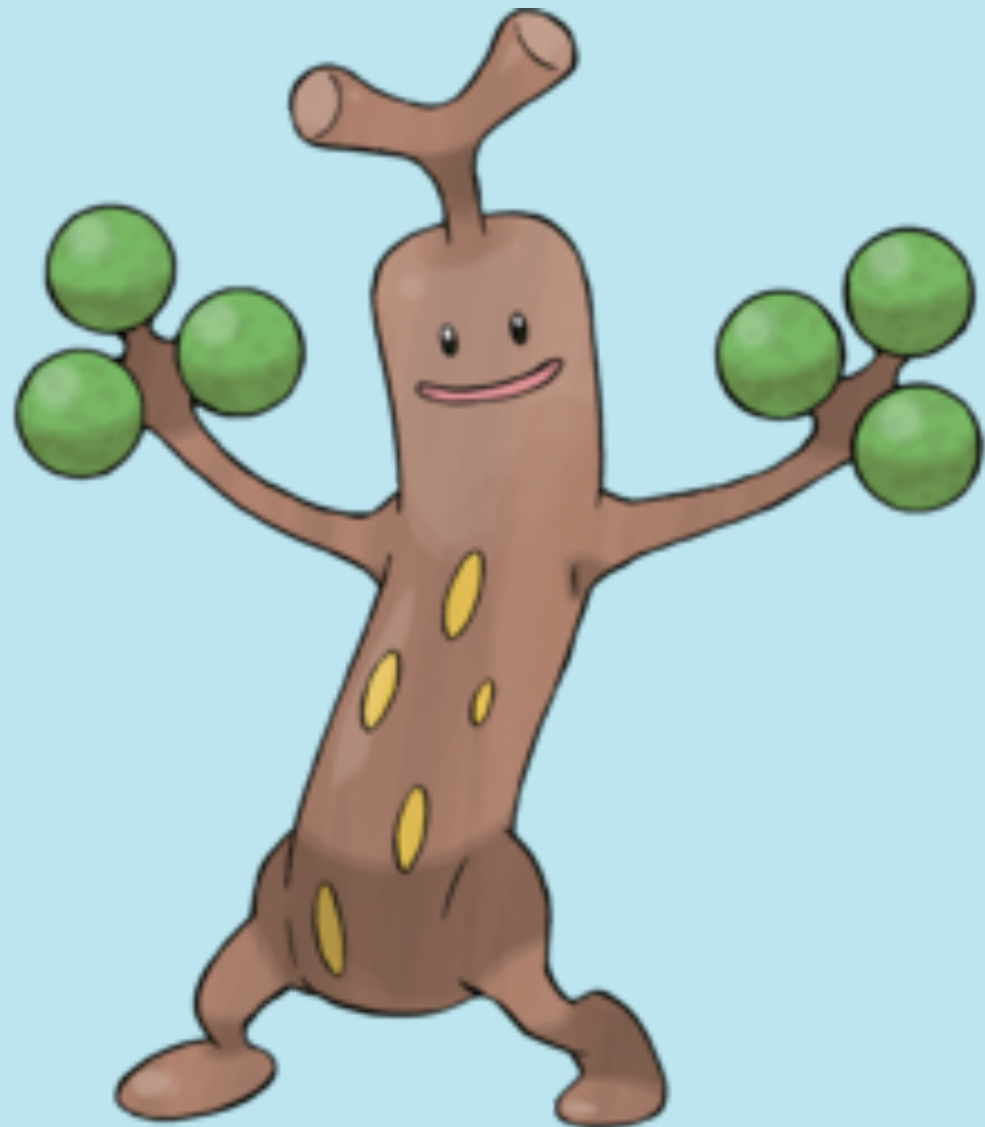
Explicate Responsibilities



How's Automation Done?



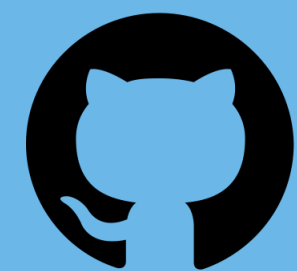
Automation in Electron



Case Study #1: Trop

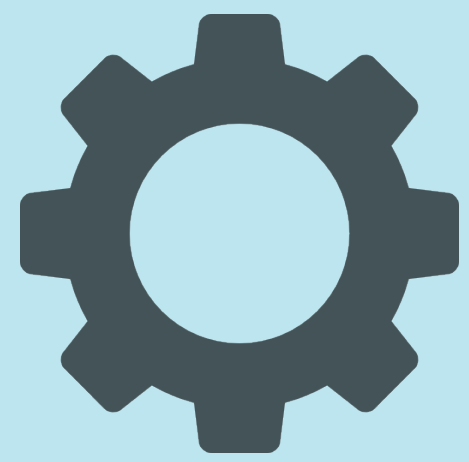


BACKPORT AUTOMATION SYSTEM



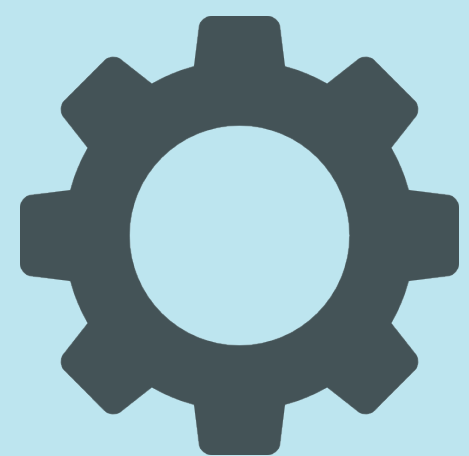
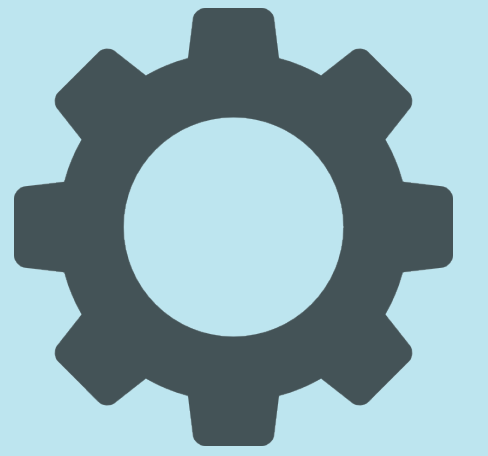
github.com/electron/trop

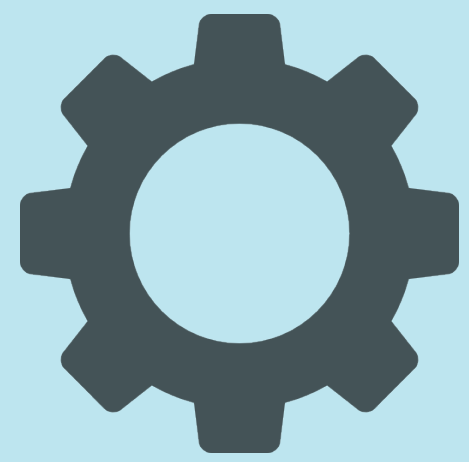
```
[ ... 'backport'.slice(4)].reverse().join``
```



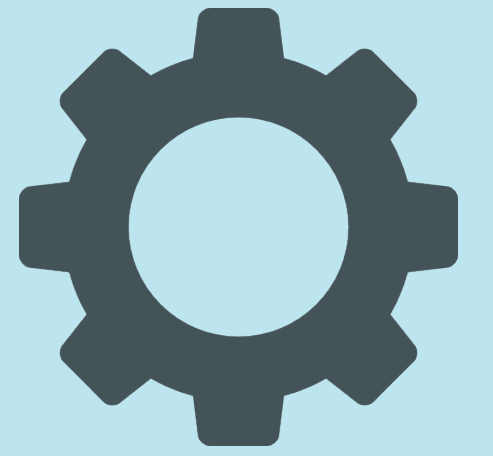
What's Backporting?

> The action of taking parts from a newer version of a software system or software component and porting them to an older version of the same software.



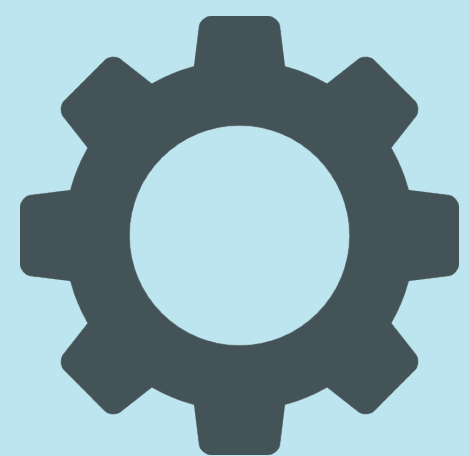


What's Backporting?

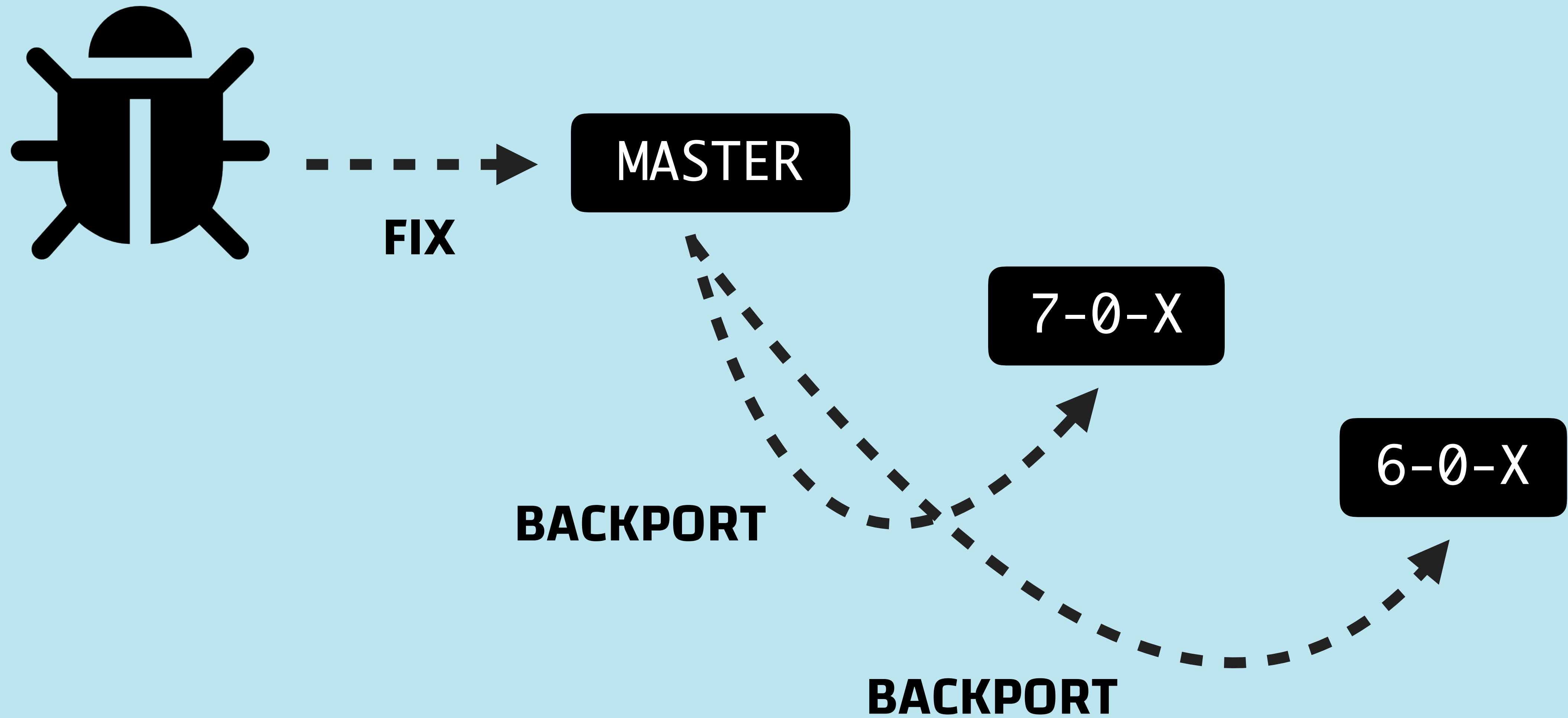


> The action of taking parts from a newer version of a software system or software component and porting them to an older version of the same software.

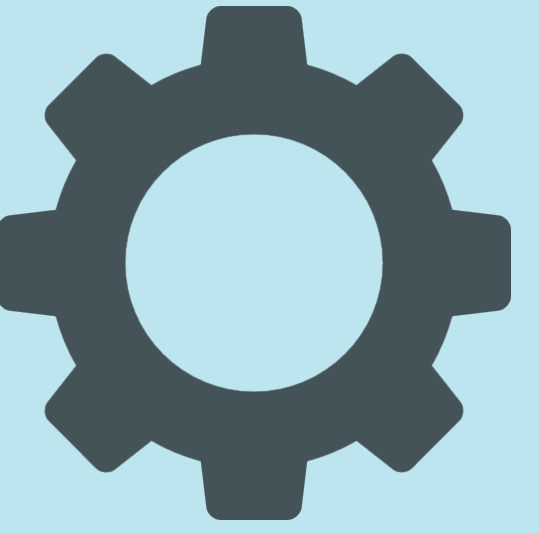
In our case - a commit or series of commits applied to a branch.



What's Backporting?



The Problem

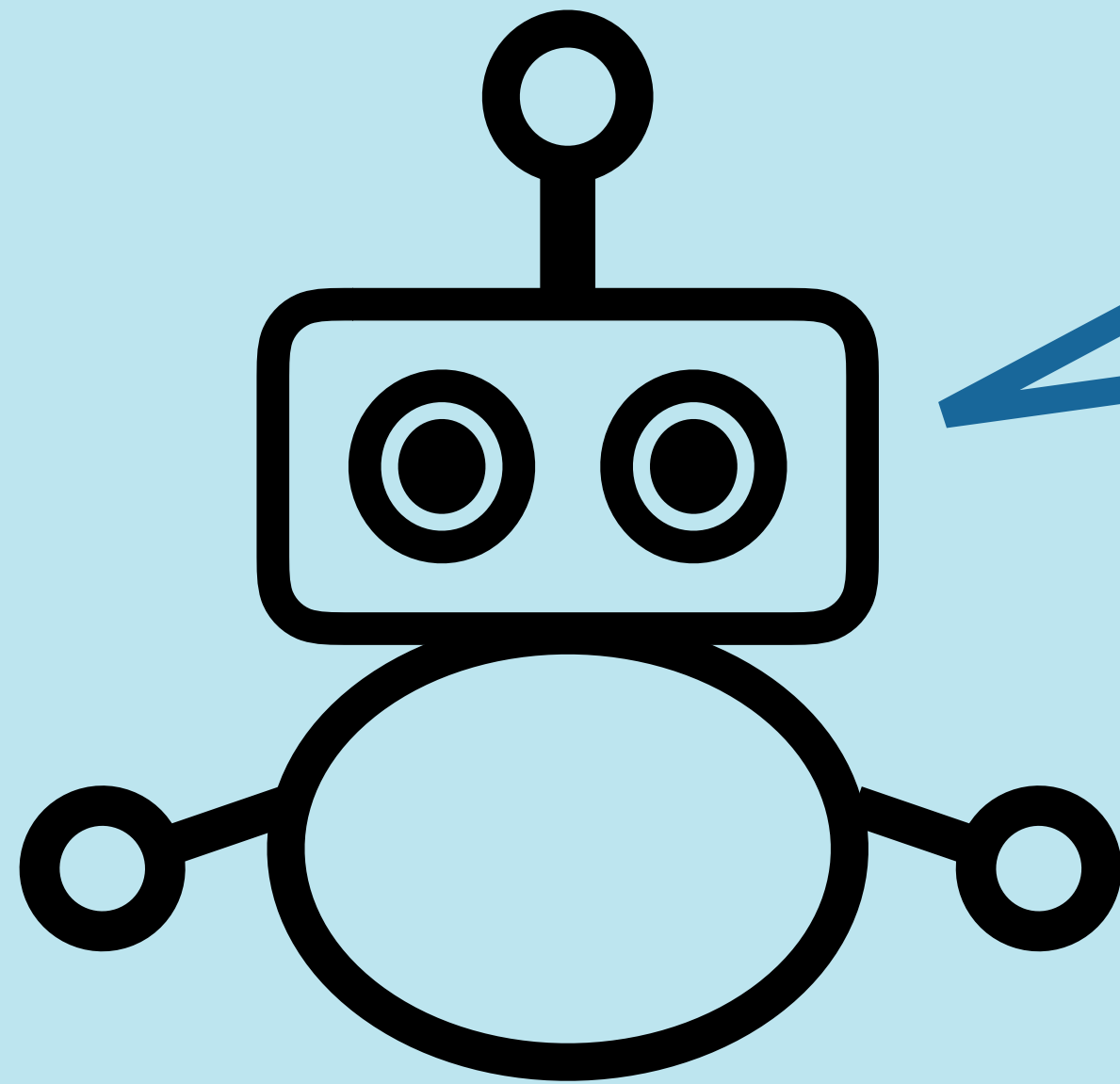


1. Repetitive

2. Time-Consuming

3. Easy to forget

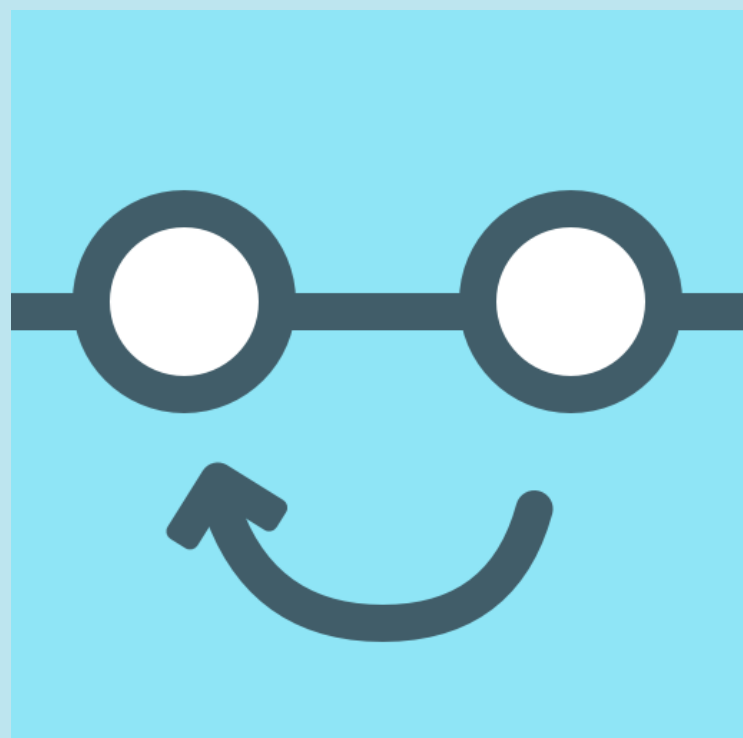
4. Important



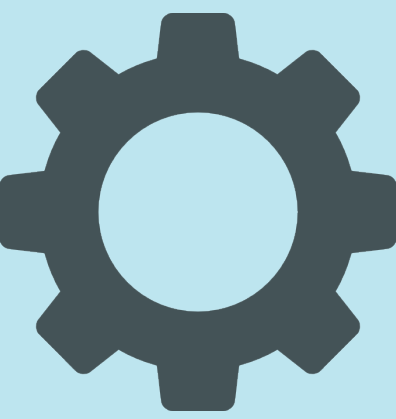
Enter Trop



1. Listen for PR merge event on GitHub
2. Cherry pick commits to a new branch
3. Open a PR against the release branch
4. Approve and merge PR to release branch
5. Celebrate 🎉



How Much Human Is There?



test: close window before destroying browserView #20420 Edit

Merged codebytere merged 1 commit into 7-0-x from trop/7-0-x-bp-test-close-window-before-destroying-browserview-1570149053700 3 days ago

Conversation 1 Commits 1 Checks 9 Files changed 1 +2 -2

trop bot commented 4 days ago Contributor +😊 ...

Backport of #20411

See that PR for details.

Notes: no-notes

test: close window before destroying browserView 5f3ade5

Reviewers codebytere ✓

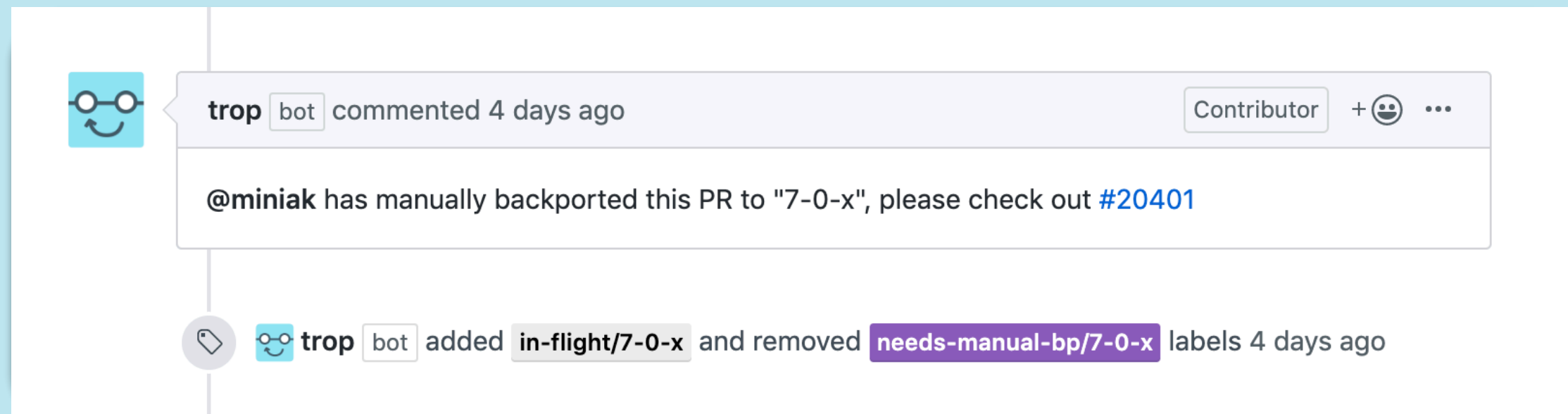
Assignees No one—assign yourself

Labels 7-0-x backport

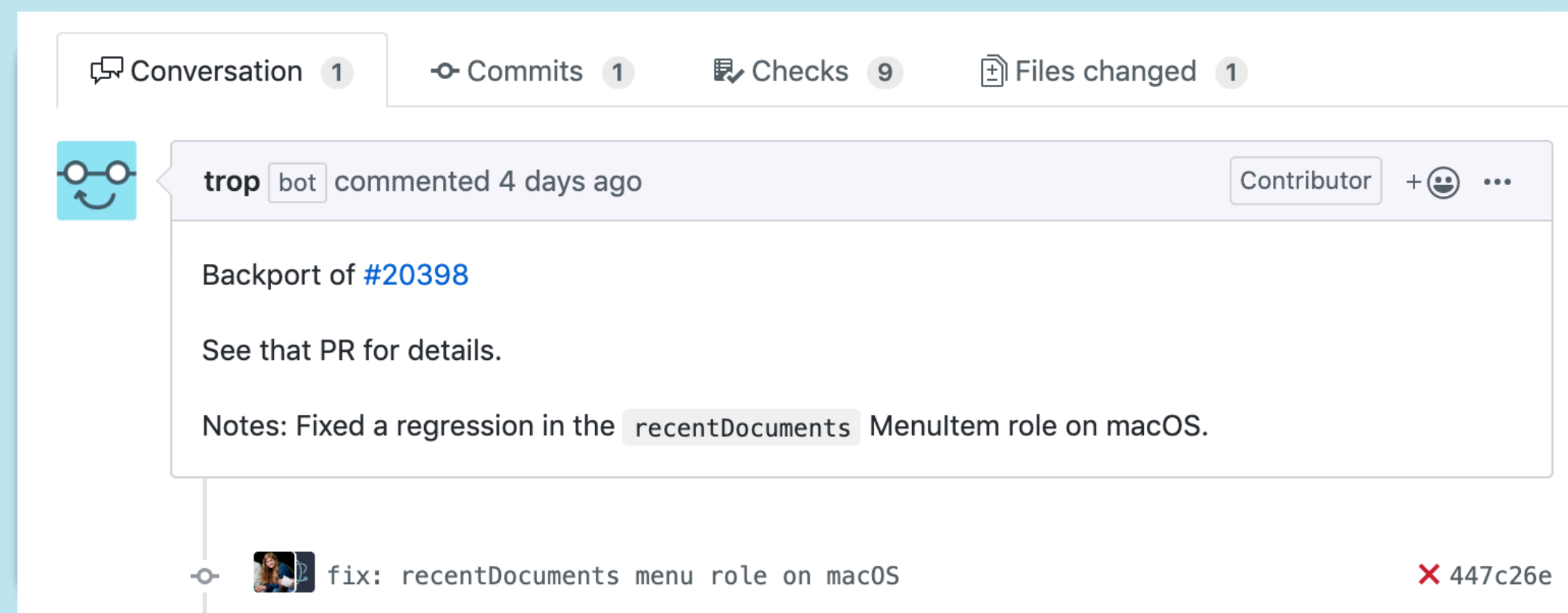
Humans must **approve**

Humans must **merge**

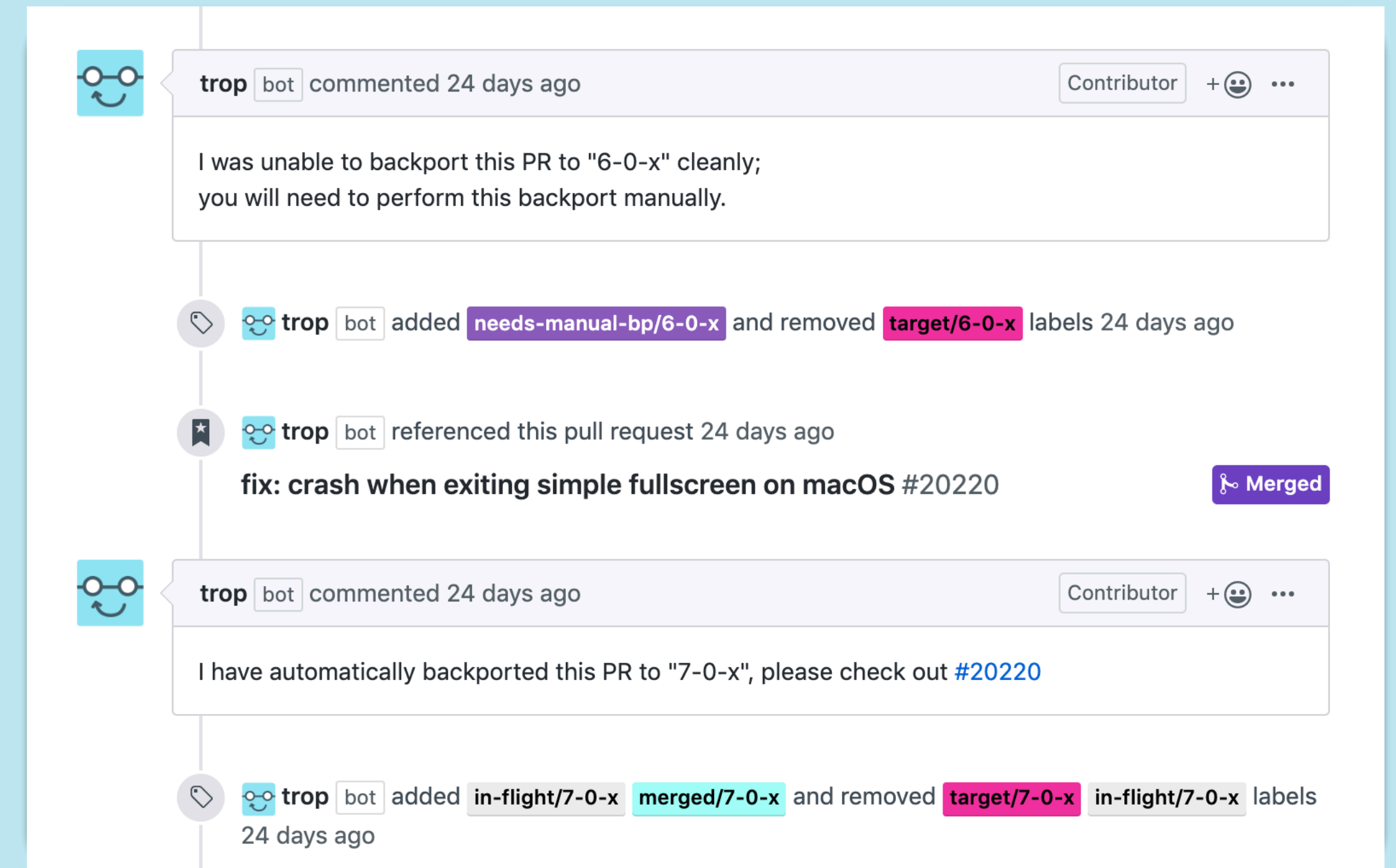
Trop IRL



A screenshot of a GitHub comment from the user **trop bot**, commented 4 days ago. The comment text is: "@miniak has manually backported this PR to '7-0-x', please check out [#20401](#)". Below the comment, a label action is shown: "trop bot added **in-flight/7-0-x** and removed **needs-manual-bp/7-0-x** labels 4 days ago".



A screenshot of a GitHub commit page. The top navigation bar shows: Conversation 1, Commits 1, Checks 9, and Files changed 1. The main content area shows a comment from **trop bot** (commented 4 days ago) with the text: "Backport of [#20398](#)
See that PR for details.
Notes: Fixed a regression in the `recentDocuments` MenuItem role on macOS." Below the comment, the commit message is visible: "fix: recentDocuments menu role on macOS" with a commit hash of "447c26e".



A screenshot of a GitHub pull request page. The top comment from **trop bot** (commented 24 days ago) says: "I was unable to backport this PR to '6-0-x' cleanly; you will need to perform this backport manually." Below this, a label action is shown: "trop bot added **needs-manual-bp/6-0-x** and removed **target/6-0-x** labels 24 days ago". A second comment from **trop bot** (commented 24 days ago) says: "I have automatically backported this PR to '7-0-x', please check out [#20220](#)". Below this, another label action is shown: "trop bot added **in-flight/7-0-x** **merged/7-0-x** and removed **target/7-0-x** **in-flight/7-0-x** labels 24 days ago". The pull request title is "fix: crash when exiting simple fullscreen on macOS #20220" and it is marked as "Merged".

Case Study #2: Roller



DEPENDENCY MANAGEMENT BOT



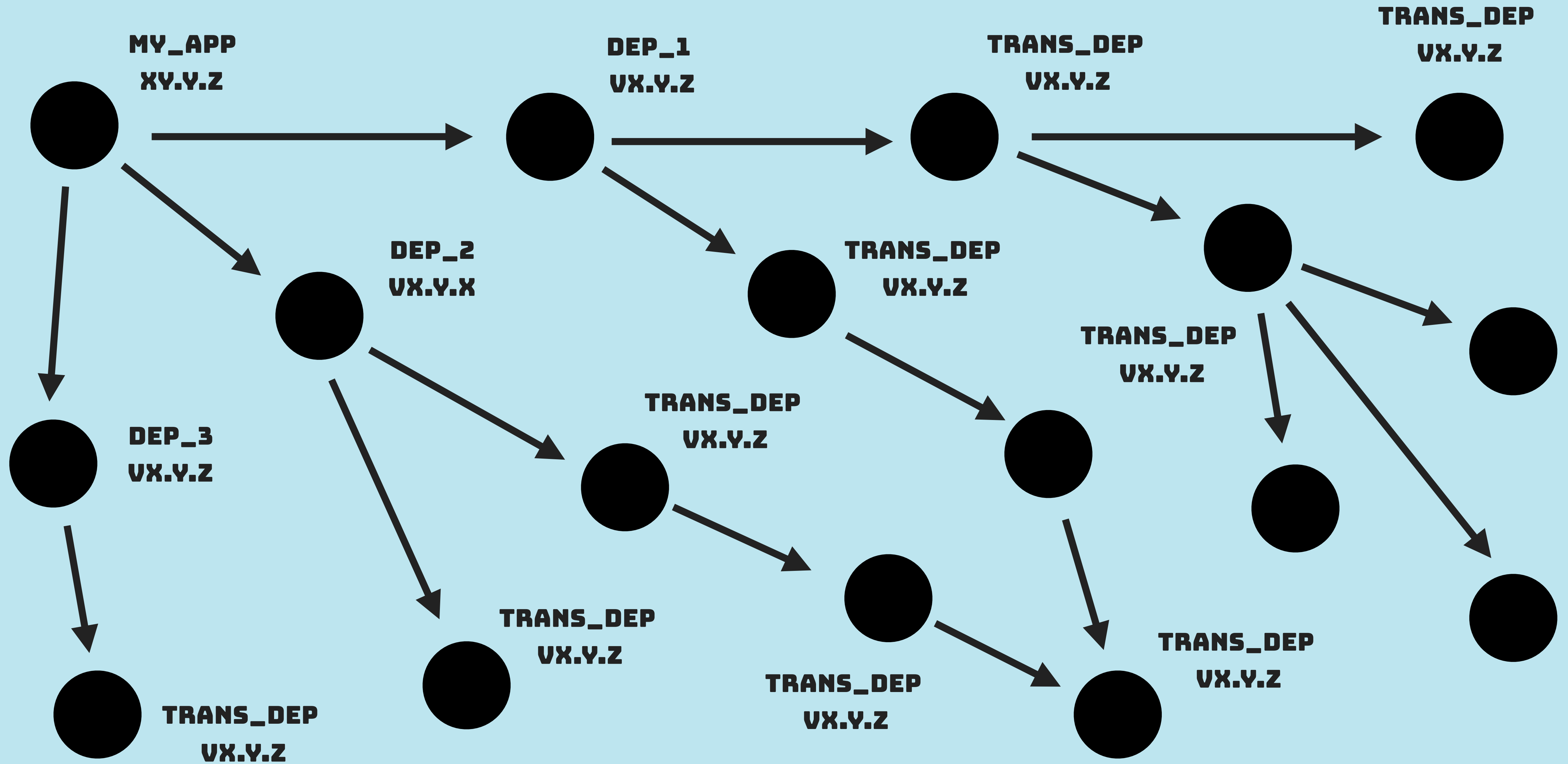
github.com/electron/roller



rollin' on upstream

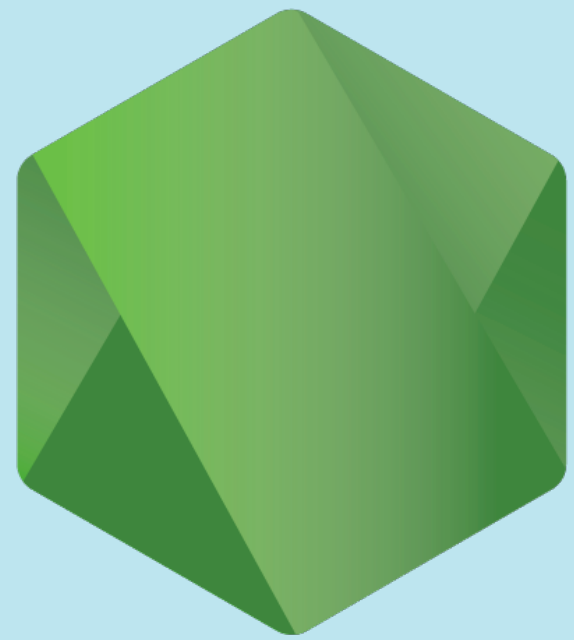


Dependency Management?



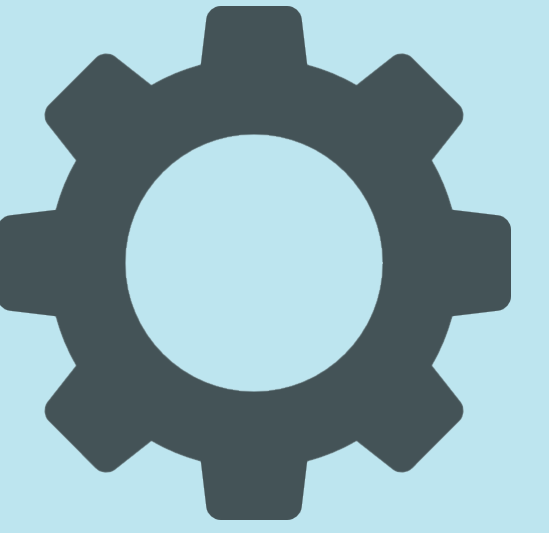
Dependency Management?

Electron relies on **Node.js & Chromium**.

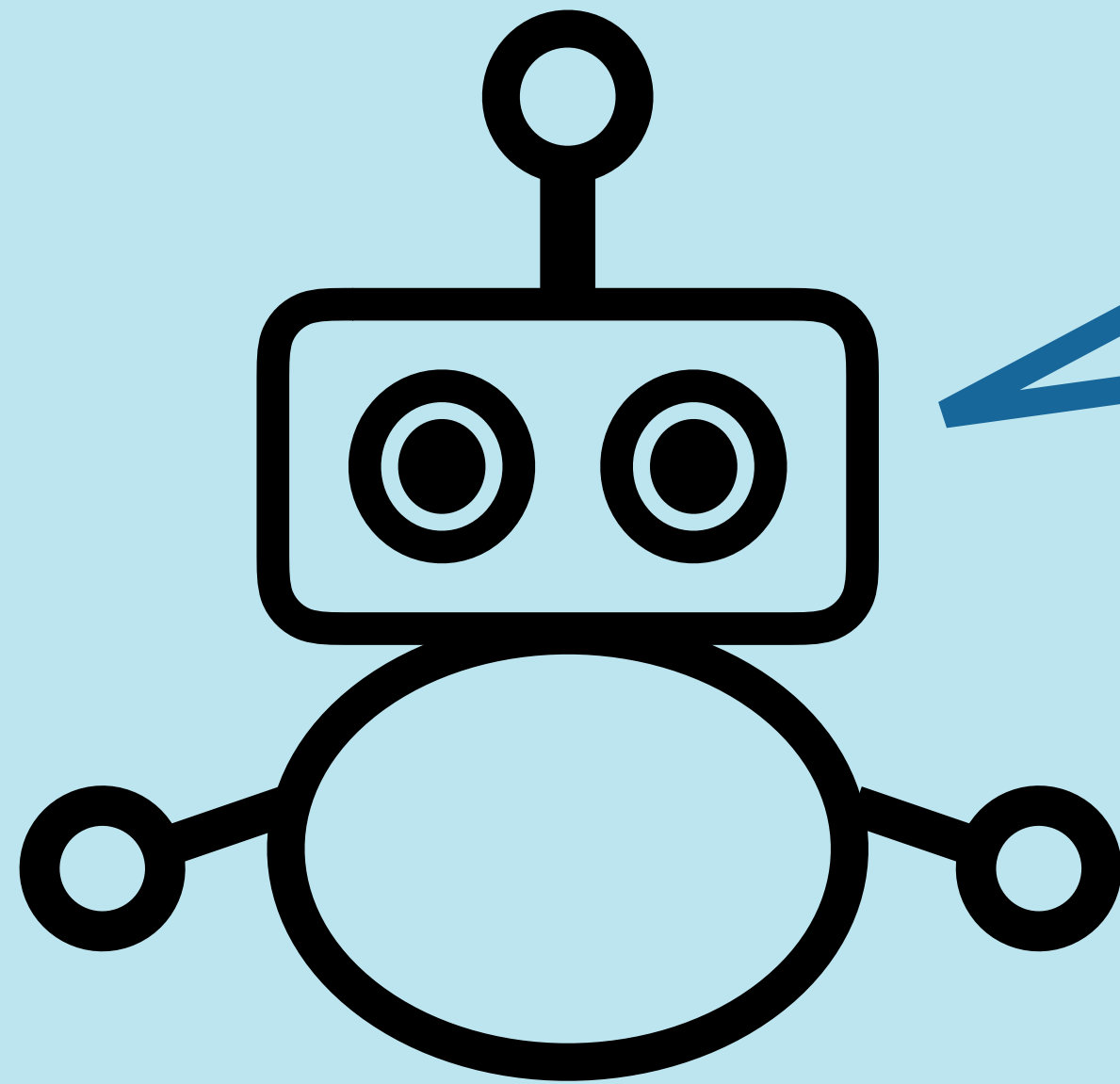


**Keeping them as up-to-date
as possible lets us give you
the best Electron we can!**

The Problem



- 1. Endless rat race**
- 2. High Entry Barrier**
- 3. Hard to keep pace**
- 4. Complex system**



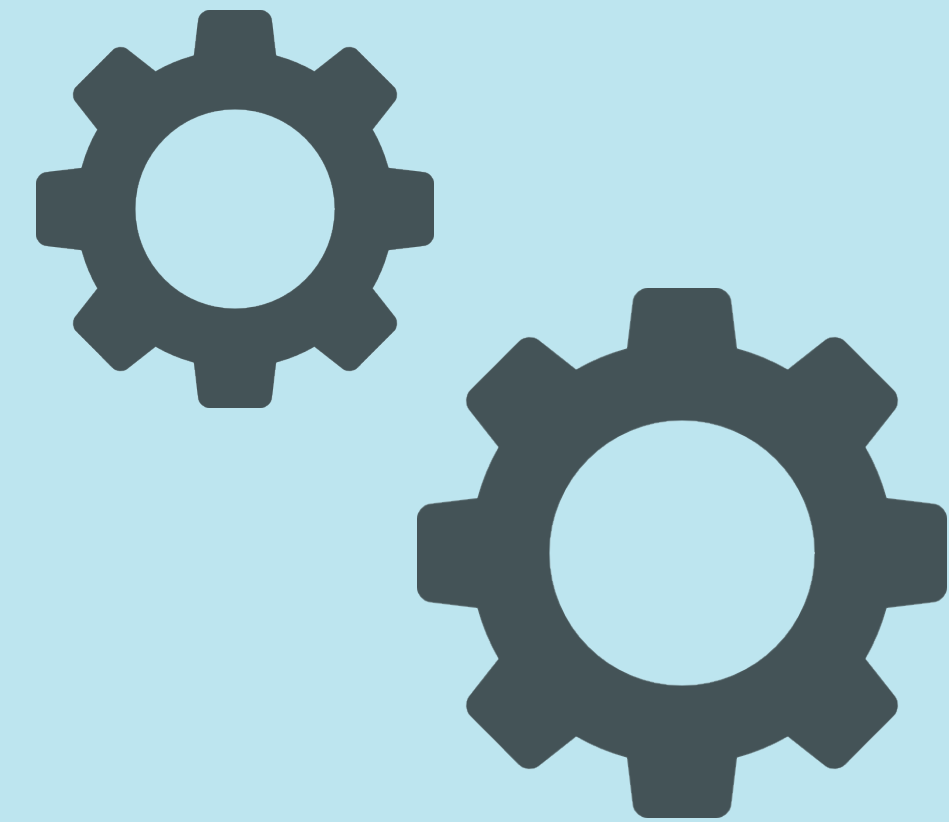
Enter Roller



- 1) Monitor for new releases of Chromium or Node.js
- 2) Update DEPS file with new version number or hash
- 3) Open a PR against master or a branch
- 4) Fix CI until all builds are passing & merge
- 5) Celebrate 🎉



How Much Human Is There?



electron-bot requested your review on this pull request. [Add your review](#)

chore: bump chromium to e049d59 (master) #20314

[Open](#) electron-bot wants to merge 31 commits into `master` from `roller/chromium/master` [Edit](#)

Conversation 0 Commits 31 Checks 5 Files changed 63 +375 -826

electron-bot commented 15 days ago • edited Member +😊 ...

Updating Chromium to e049d599a8332b9b2785b0178be74 (lkgr).

See [all changes in 09f4353bc693623bf58820adf3918..e049d599a8332b9b2785b0178be74](#)

Notes: no-notes

chore: bump chromium in DEPS to 3ef4a88a9aab895e678bc276ec0574cc294a61a7 ✖ 756c3fb

Reviewers ⚙️

[wg-upgrades](#) 🛡️ ●

At least 1 approving review is required to merge this pull request.

Assignees ⚙️

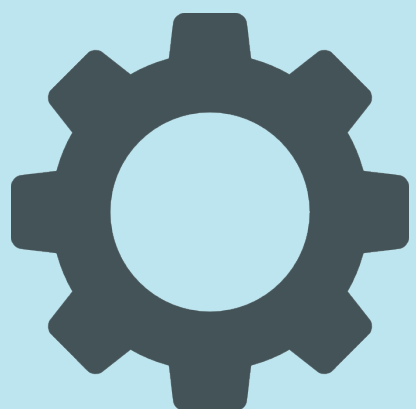
No one—assign yourself

Labels ⚙️

Humans must **fix**

Humans must **approve**

Humans must **merge**



Roller IRL



chore: bump chromium to e049d59 (master) #20314

Open

electron-bot wants to merge 31 commits into master from roller/chromium/master

Conversation0

Commits31

Checks5

Files changed63



electron-bot commented 14 days ago • edited

Member+😊...

Updating Chromium to e049d599a8332b9b2785b0178be74 (lkgr).
See [all changes in 09f4353bc693623bf58820adf3918..e049d599a8332b9b2785b0178be74](#)
Notes: no-notes

chore: bump chromium in DEPS to 3ef4a88a9aab895e678bc276ec0574cc294a61a7

756c3fb

chore: bump node to v12.10.0 (master) #20129

Open


electron-bot wants to merge 9 commits into master from roller/node/master

Conversation5

Commits9

Checks8

Files changed46



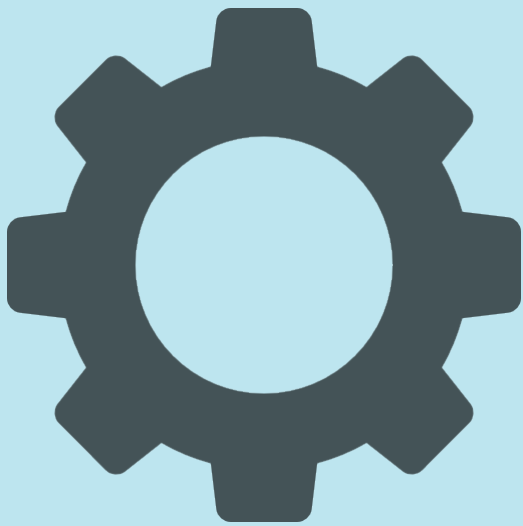
electron-bot commented on Sep 5

Member+😊...

Updating Node.js to v12.10.0.
See [all changes in v12.9.1..v12.10.0](#)
Notes: Updated Node.js to v12.10.0.

electron-bot requested a review from electron/wg-upgrades as a code owner on Sep 5

codebytere self-assigned this on Sep 5



Case Study #3 - Sudowoodo



RELEASE AUTOMATION PIPELINE



“ A wild Sudowoodo appeared!
What do you do?”

What Does Releasing Entail?

There's **no one kind** of release process!

Some steps may include:

Spawning different release builds (sometimes across many providers!)

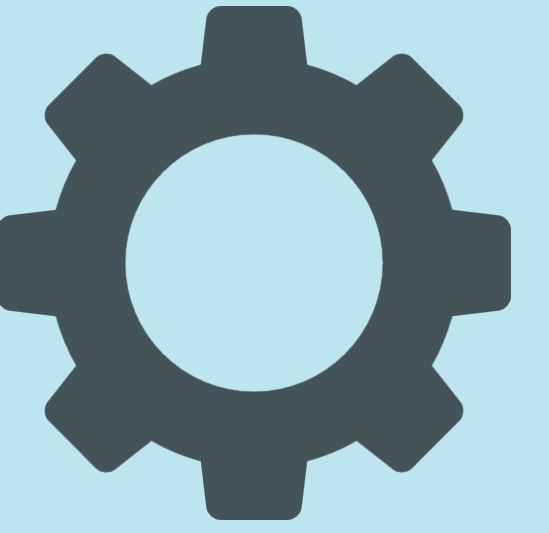
Uploading assets to GitHub

Monitoring builds/assets

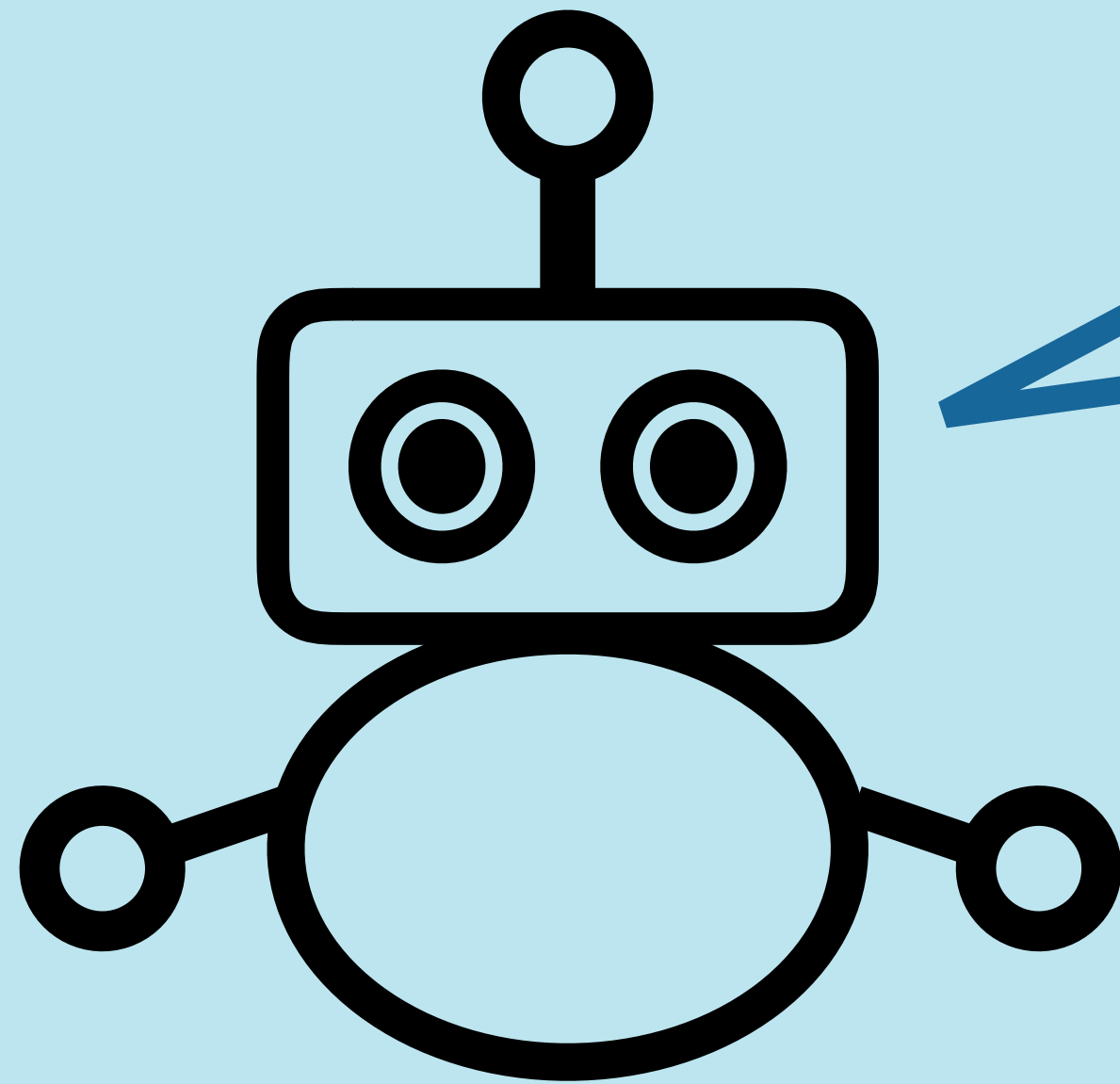
Uploading assets to a package registry

Validating/signing a release

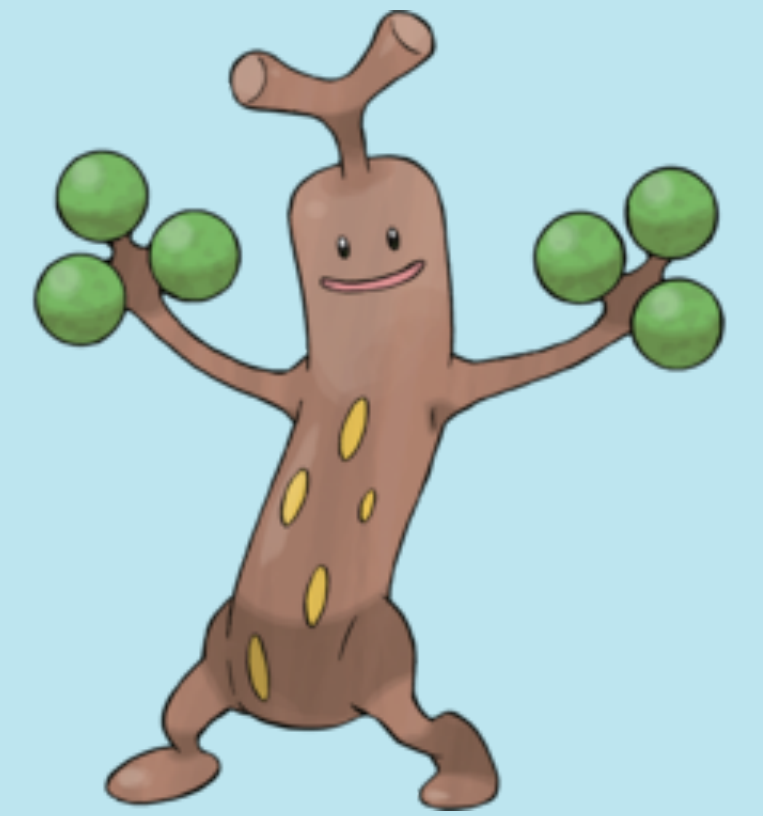
The Problem



- 1. No nightlies**
- 2. Only one release at a time**
- 3. Hard to monitor**
- 4. Blocks engineers**



Enter Sudowoodo

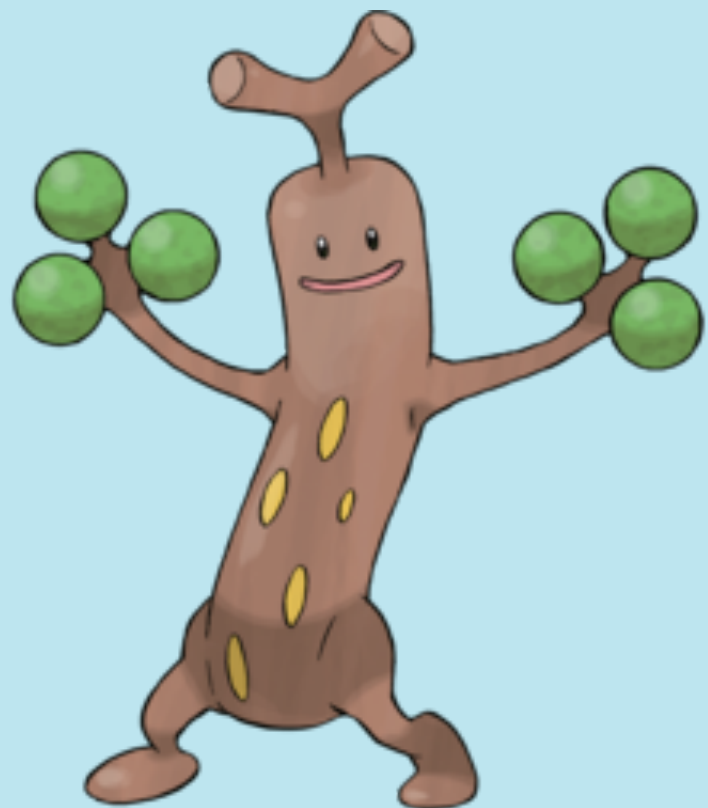


1. Trigger a build with **TYPE** and **BRANCH** via Slack

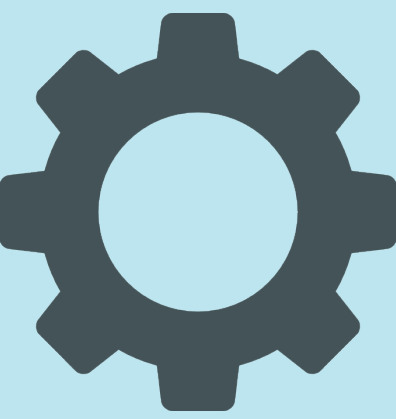
2. **Wait** for all **builds & assets** to complete and upload

3. **Enter OTP** from authenticator app in Slack

4. Celebrate 🎉



How Much Human Is There?



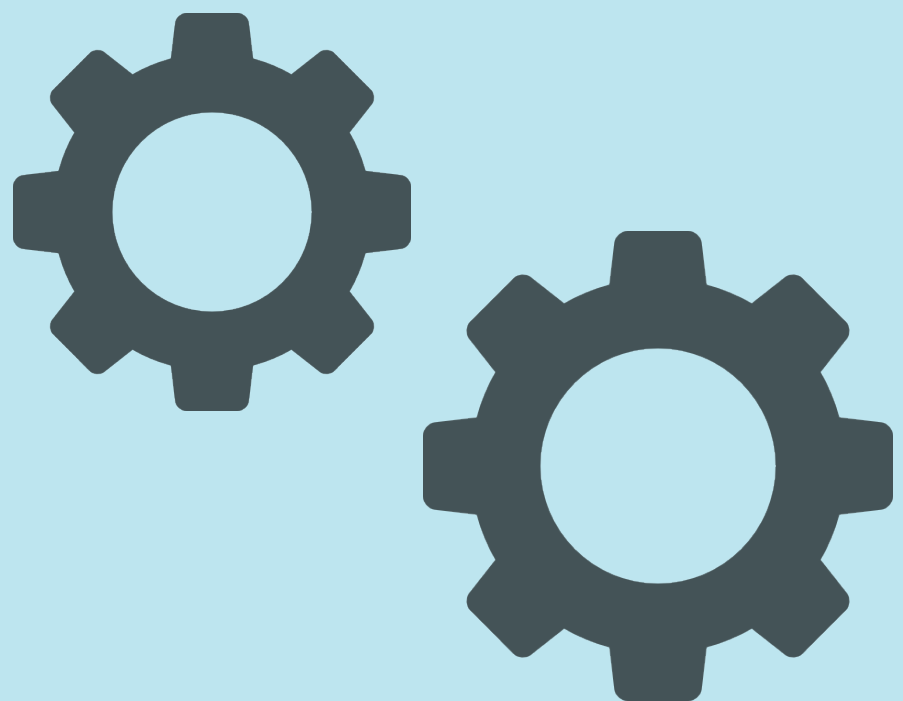
Sudowoodo Release Bot APP 1:34 AM

⚠ Attention on deck, @releasers! Sudowoodo, the release bot, needs a 2FA OTP token to publish a build (id: eCSP4HAuG) to npm.

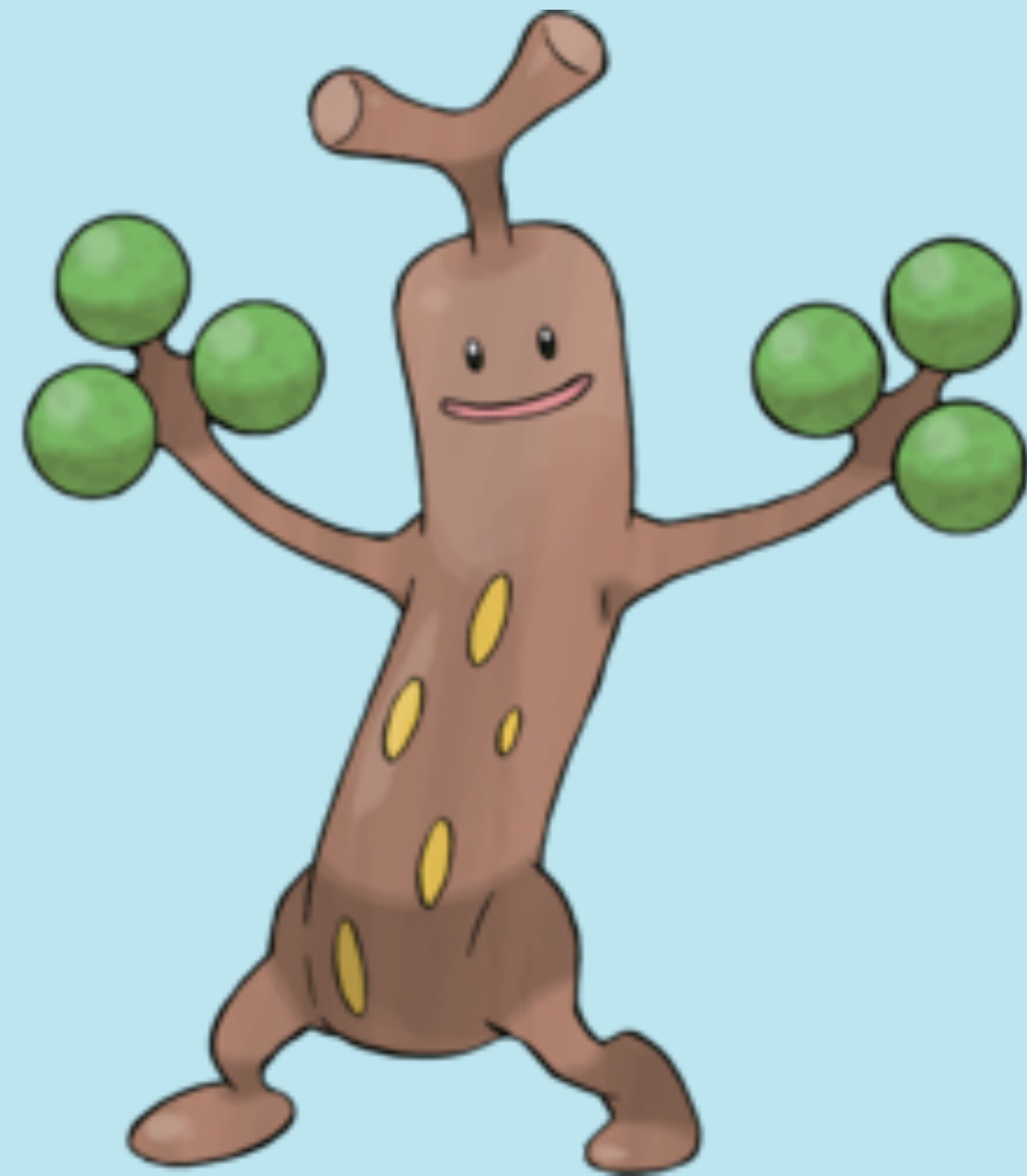
We've received an OTP and have kicked off submitting the build.


Build approved by: @ckerr

Humans must **trigger**
Humans must **approve**




Sudowoodo IRL



 **Sudowoodo Release Bot** APP 10:38 PM
Sudowoodo was captured by [@marshallsofsound](#)!

Sudowoodo Release Scheduled
A "stable" release has been queued for the "5-0-x" branch

10:38 PM We've started a release build with id `eCSP4HAuG`. Below is its log:

 **Last Log Output (Updating Live)**

```
on/339832
Waiter Pinging: https://circleci.com/gh/electron/electron/339832
Waiter Pinging: https://circleci.com/gh/electron/electron/339832
Waiter Pinging: https://circleci.com/gh/electron/electron/339832
Waiter Pinging: https://circleci.com/gh/electron/electron/339832
Waiter Pinging: https://circleci.com/gh/electron/electron/339832
Waiter Pinging: https://circleci.com/gh/electron/electron/339832
Waiter Pinging: https://circleci.com/gh/electron/electron/339832
Waiter Pinging: https://circleci.com/gh/electron/electron/339832
Waiter Success: https://circleci.com/gh/electron/electron/339832
🌈 ✨ 🌈
Builds Completed
🌈 ✨ 🌈
runPublishRelease(): Publishing the release
runPublishRelease(): Release has been published to GitHub
createNpmrc(): Writing .npmrc to disk
createNpmrc(): Successfully create .npmrc
runNpmPublish(): Running npm publish
runNpmPublish(): Asking Slack for an OTP token
cleanDebris(): Cleaning current host
cleanDebris(): Host successfully cleaned

Release process is complete
```

How Much Human Should There Be?

**Automation is not an
all-or nothing
developer proposition.**

**Automation reduces
cognitive overhead**

**Humans can make
contextual decisions
that bots cannot**

**Extremes on either
end will slow you
down**

Strive for Just Enough™

