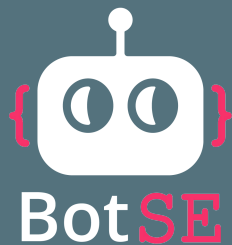


# Should I Stale or Should I Close?

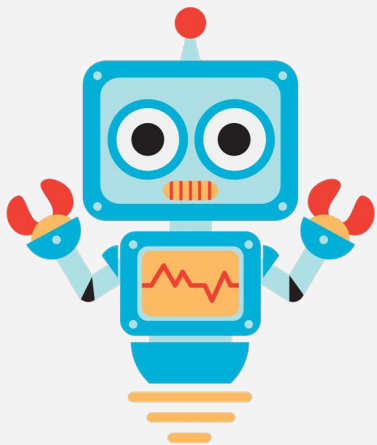


An Analysis of a Bot that Closes Abandoned  
Issues and Pull Requests

Mairieli Wessel  
Igor Steinmacher  
Igor Wiese  
Marco Aurélio Gerosa



Research funded by CNPq, FAPESP and NAU



**Stale Bot** helps triaging abandoned issues and pull requests on **GitHub**.

How does  
the **Stale bot**  
work?



# How does **Stale bot** work?

- 1 After a period of inactivity, a **label is added** to mark the issue as stale




# How does **Stale bot** work?

1

 Eyesonly88 referenced this issue on 2 Oct 2018

Added groupCollapsed polyfill #21457

 Closed



stale bot commented on 31 Dec 2018

Hey there, it looks like there has been no activity on this issue recently. Has the issue been fixed, or does it still require the community's attention? This issue may be closed if no further activity occurs. You may also label this issue as "For Discussion" or "Good first issue" and I will leave it open. Thank you for your contributions.

 stale bot added the **Stale** label on 31 Dec 2018



# How does **Stale bot** work?

**1** After a period of inactivity, a **label is added** to mark the issue as stale

**2** Has any activity occurred?

..... If the issue is updated, then the stale **label is removed**

..... If no more activity occurs, the **issue is closed**



# How does **Stale bot** work?

1

 stale bot added the **Stale** label on 31 Dec 2018

2



stale bot commented on 20 Jan

Closing this issue after a prolonged period of inactivity. If this issue is still present in the latest release, please feel free to create a new issue with up-to-date information.



 stale bot closed this on 20 Jan

If no more activity occurs, the issue is closed



# How to set up



.github/stale.yml

```
daysUntilStale: 60
```

```
daysUntilClose: 7
```

```
exemptLabels:
```

- "pinned"
- "security"

```
staleLabel: "wontfix"
```

```
markComment: >
```

```
This issue has been automatically marked as stale because it has not had recent activity. It will be closed if no further activity occurs. Thank you for your contributions.
```

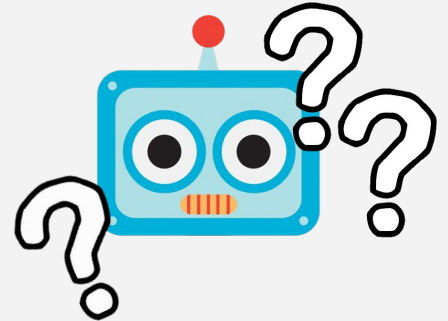
```
only: "issues"
```



# Research Questions

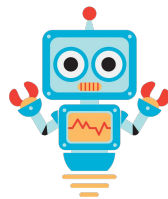
**RQ1.** What are the **characteristics** of stale issues and pull requests?

**RQ2.** How **stable** is the **bot configuration** for a project?





**GitHub**



**Stale bot**

**765**

Open Source Software Projects  
in our sample

# Analyzing the “**only**” setting

**87.7%** adopted the bot for **both** issues and pull requests

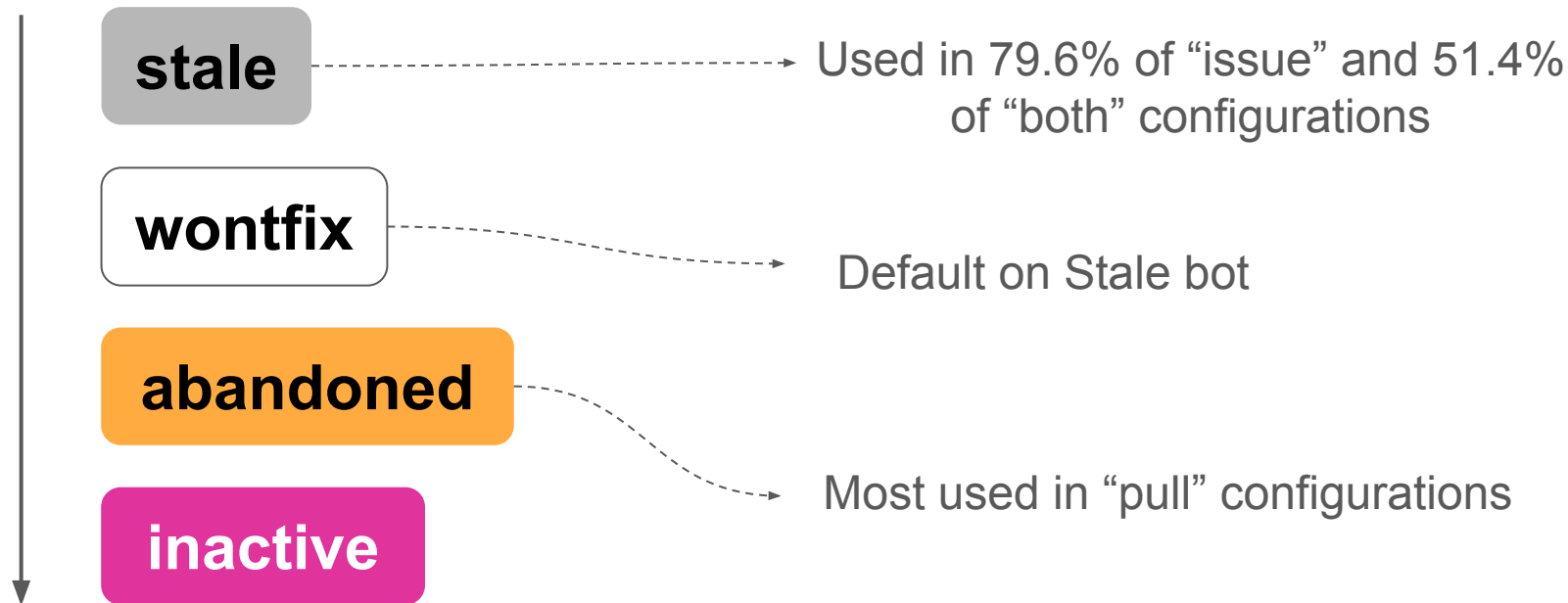
**9.8%** adopted the bot only for **issues**

**2.5%** adopted the bot only for **pull requests**

# The “**daysUntilStale**” and “**daysUntilClose**”

- Pull requests have been set to become stale in fewer days than issues
- Eight projects defined the **daysUntilStale** as more than 36,000 days
- 10% disabled the feature that makes the bot automatically close the issues and pull requests

# Analyzing the “**staleLabel**” setting



# Analyzing the “**exemptLabels**” setting

**security**

**pinned**

**bug**

**enhancement**

**on hold**

**newcomer**

**needs review**

**waiting for CLA pass**

# How **stable** is the **bot configuration** for a project?

We considered the **number of modifications** as a proxy to the effort required to use the bot in a project.

- **59.2%** of projects only added the `.github/stale.yml` file
- **83%** of projects that changed the configuration file at least once made no more than three modifications

# The extreme case: SaltStack

The configuration file was modified by **59 commits** from May 12, 2017, to November 16, 2018.

Commits on Jul 14, 2017

Reduce the number of days an issue is stale by 15 ...  
[Profile] committed on 14 Jul 2017 ✖

Commits on Jul 5, 2017

Reduce the number of days an issue is stale by 25 ...  
[Profile] committed on 5 Jul 2017 ✖

Commits on Jun 19, 2017

Reduce the number of days an issue is stale by 25 ...  
[Profile] committed on 19 Jun 2017 ✔

Commits on Jun 9, 2017

Reduce the number of days an issue is stale by 25 ...  
[Profile] committed on 9 Jun 2017 ✔

Commits on Jun 2, 2017

Reduce the number of days an issue is stale by 25 ...  
[Profile] committed on 2 Jun 2017 ✖

Commits on May 12, 2017

Add probot-stale config file for the salt repo ...  
[Profile] committed on 12 May 2017 ✔

16



# What we found...

- Most of the projects that adopted the stale bot use it for both issues and pull requests
- Stale issues tagged as bug are generally exempt from staling
- Stale pull requests that need some input to be processed are generally exempt from staling
- Adopting stale bot does not require too much effort from maintainers

# Thank you!

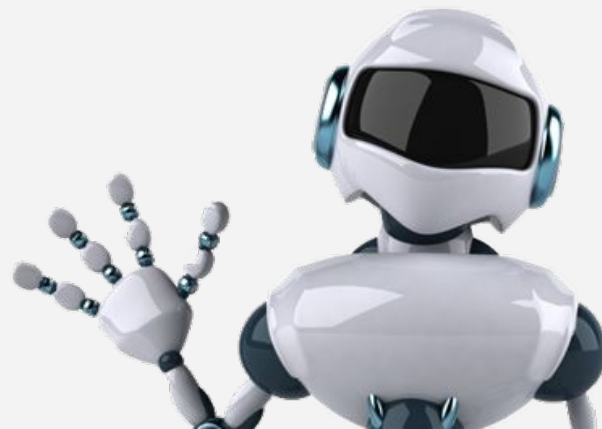
You can find me at:

[mairieli.github.io](https://mairieli.github.io)

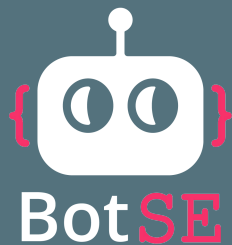
 [mairieli@ime.usp.br](mailto:mairieli@ime.usp.br)

 [@mairieli](https://twitter.com/mairieli)

Credits to **Freepik** for the images used in this presentation!



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