

Github 与 开源

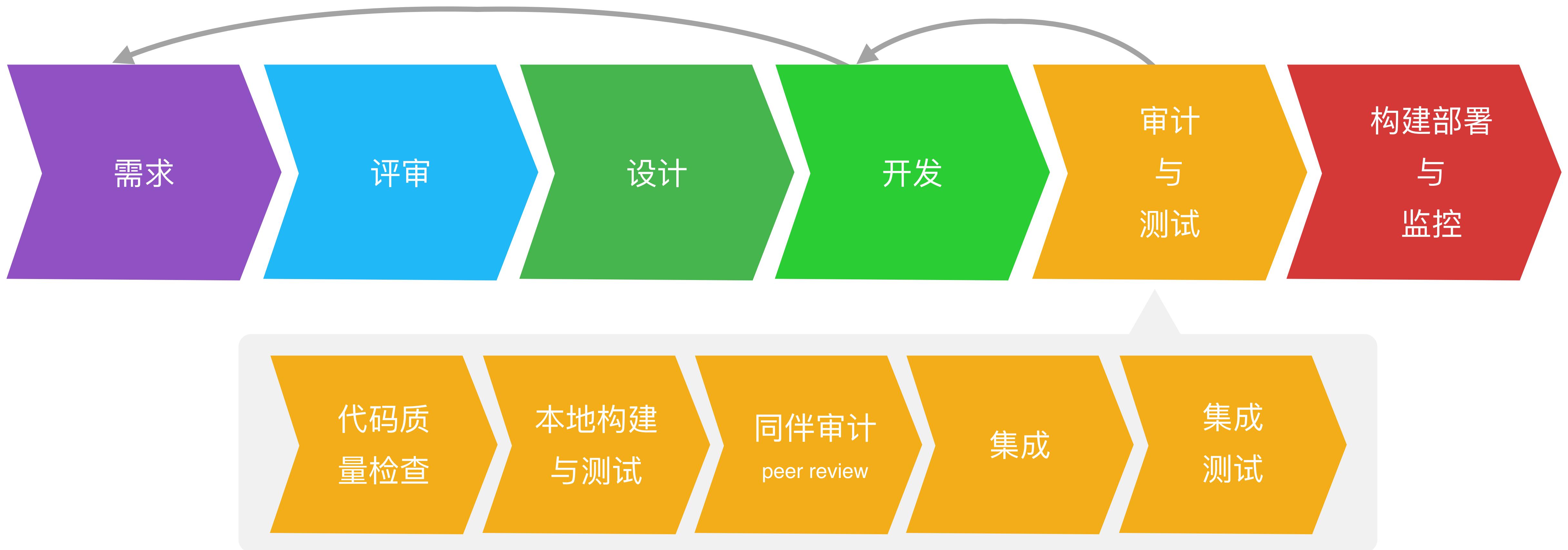
调研与选型的目的与价值

几个小问题

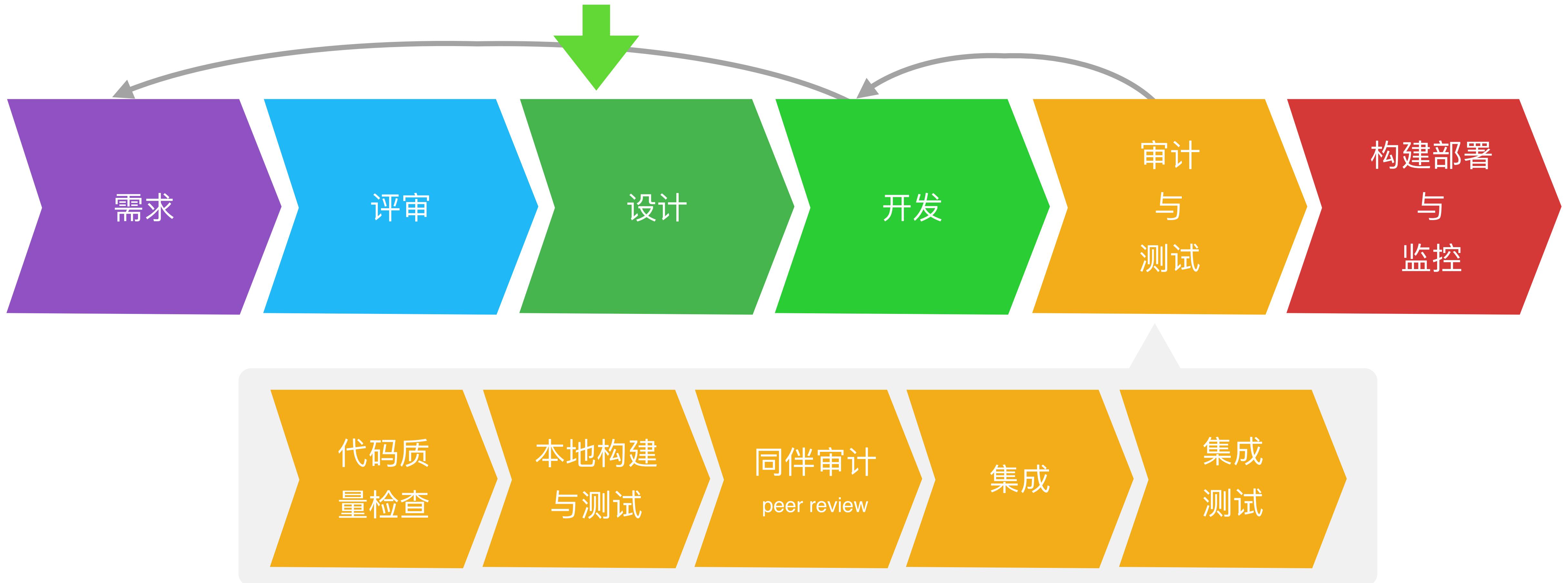
- 什么是调研与选型?
- 为什么要做调研?
- 为什么要选型?



软件生命周期模型



调研与选型位于哪里



目的	进行开发前的规划、为设计提供支撑、降低不必要的成本、提高工程的效率
调研	有限时间、优先调研高度相关的部分、尽可能大的广度、尽可能面向“最优方案”
选型	资源以及能力契合度优先、确保可靠性、追求性价比

我们要追求极致吗

- 调研是不是越广越好?
- 选型是不是越新越好?
- 选型是不是越稳定越好?
- 是不是有些技术自己实现不了，工程一定就没法做了呢?



调研

限制因素主要是时间，其次是相关性。

选型

不能盲目求新，不能盲目求稳，重在性价比。

开源

自己实现不了的技术可以借助开源。

从传统工业的装配到引入开源的软件

传统工业

- 现在的汽车制造厂自己造轮子吗?
- 轮子是谁去造呢?
- 软件工业是否从传统工业有所借鉴?



C919 大飞机不是一个厂就能生产出来的



从自己造到分层级组装

手艺人 → 工程

Craftsman

Engineering

轮子



与开源相关的问题

- 你听说过开源吗？
- 你知道什么是“轮子”吗？
- 你知道什么知名的开源项目吗？他们避免了什么样的“轮子”？
- 为什么开源是有意义的？



开源



开源 vs 闭源

Open Source

Closed source

知名的开源项目

Atom Firefox

Notepad++ 7-Zip Ubuntu

知名的开源项目

PostgreSQL WordPress Django
npm git MariaDB
webpack gulp Vue.js
jQuery cocos2d Hadoop OpenCV

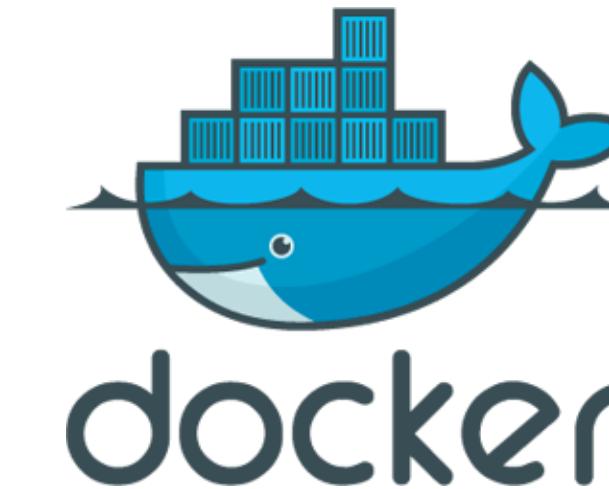
开源的意义

- 01 | 降低造轮子的情况
- 02 | 集中“力量”造大轮子
- 03 | 减少不必要的重复性工作，避免浪费生产力

计蒜客依赖于的项目



kubernetes



HOWLER.js

HAMMER.js

python

xterm.js



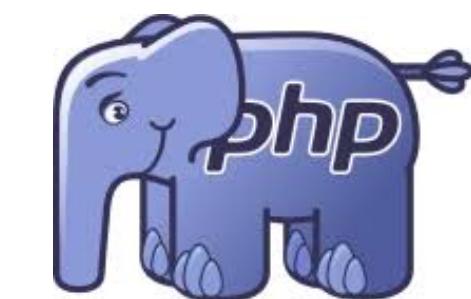
socket.io



CoffeeScript



Simditor



KATEX



django

NGINX

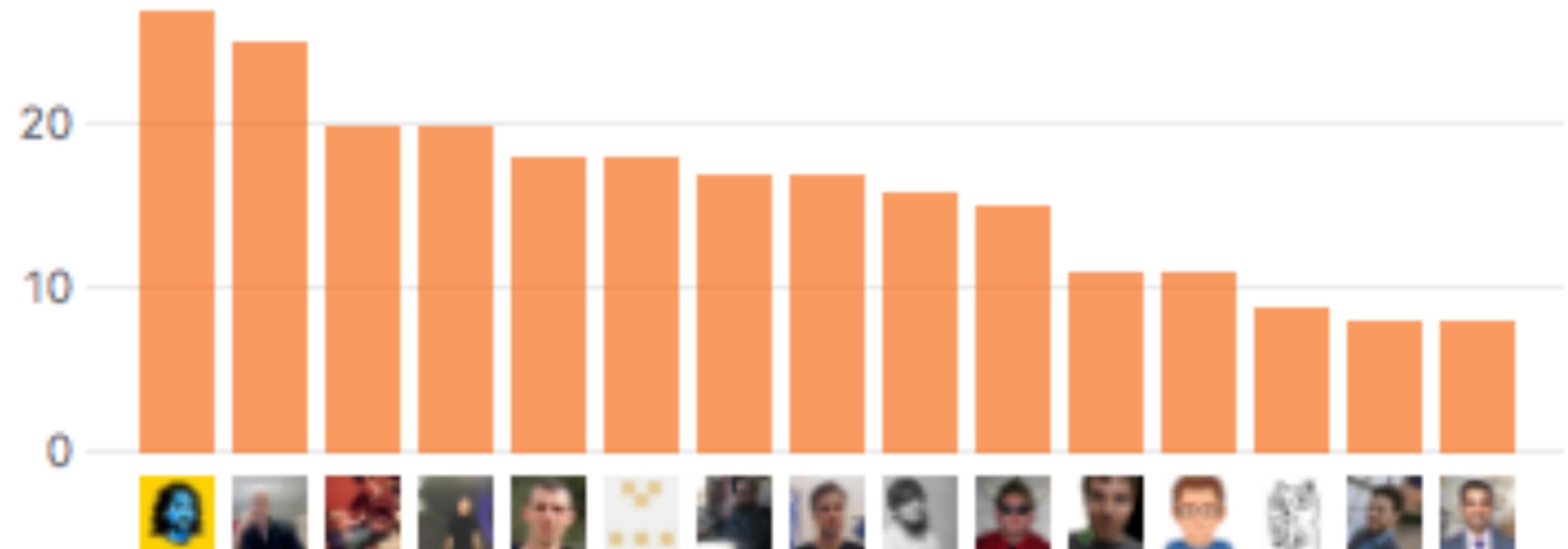
许多人一起造出的大轮子



Node.js

一周的贡献量

Excluding merges, **120 authors** have pushed **129 commits** to master and **422 commits** to all branches. On master, **2,116 files** have changed and there have been **114,104 additions** and **36,989 deletions**.



对于生产的价值

01

让我们更快做出可应用的软件

02

打破企业、国别界限，避免重复的工作

03

减少依赖于少数开发者可能难以发现缺陷的问题

开源的日常使用与大型软件中的实践

公司中的开源使用

- 你知道哪些公司会使用开源技术吗？
- 这些公司为什么会用开源技术？
- 使用这些开源技术有哪些问题吗？



使用开源的公司

几乎所有科技公司

Linux Git Docker

Hadoop Spark MySQL MongoDB

React Angular Vue.js Nodejs

Nginx ApacheHTTPServer

以 Twitter 为例

MySQL
Cassandra Hadoop Lucene Pig
Iago Zipkin Scalding

开源的问题

01

稳定性

02

兼容性

03

开源协议带来的法律风险

4

按需调研——以 Github 上的轮子发掘为例

技术选型要想什么

- 在哪找开源项目
- 怎么判断一个开源项目的好坏
- Github 你用过吗

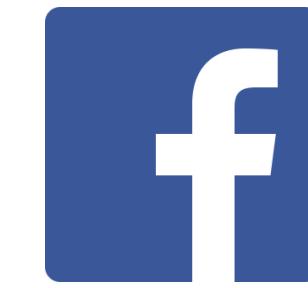


开源项目的发掘地

01



02



Open Source
code.facebook.com/projects/

03



以 Github 为例

The screenshot shows the GitHub repository page for `ElemeFE / element`. The page includes the following details:

- Used by: 86,104
- Watch: 1,327
- Star: 38,163
- Fork: 7,847

Navigation tabs include Code, Issues (678), Pull requests (166), Projects (2), Wiki, Security, and Insights.

A red box highlights the following text:
A Vue.js 2.0 UI Toolkit for Web <https://element.eleme.io/>

Tags listed below the repository name are: vue, components, javascript, vue-components, ui-kit, and element-ui.

Key statistics displayed below the repository summary are:

- 4,177 commits
- 6 branches
- 122 releases
- 462 contributors
- MIT license

Action buttons at the top right include: Branch: dev, New pull request, Create new file, Upload files, Find File, and Clone or download.

Recent commit activity is listed:

- yyjjqq94 and ziyoung Tree: not highlight tree node when currentKey is null (#15668) - Latest commit a71a5e5 17 minutes ago
- .github Doc: French translation update (#14643) - 3 months ago
- build Chore: update build script (#15779) - 5 days ago
- examples Docs: fix spelling mistakes in fr (#15837) - 18 hours ago

以 Github 为例

The screenshot shows the GitHub repository page for `ElemeFE / element`. At the top, there's a red box highlighting the statistics bar which includes "Used by 86,104", "Watch 1,327", "Star 38,163", and "Fork 7,847". Below this, there are tabs for "Code", "Issues 678", "Pull requests 166", "Projects 2", "Wiki", "Security", and "Insights".

A Vue.js 2.0 UI Toolkit for Web <https://element.eleme.io/>

Tags: vue components javascript vue-components ui-kit element-ui

Key metrics: 4,177 commits, 6 branches, 122 releases, 462 contributors, MIT license.

Action buttons: Branch: dev, New pull request, Create new file, Upload files, Find File, Clone or download.

Recent commits:

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Action buttons at the top right include: Branch: dev, New pull request, Create new file, Upload files, Find File, and Clone or download (highlighted with a green box).

Recent commit details:

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以 Github 为例

A screenshot of the GitHub repository page for ElemeFE/element. The page shows various metrics and a timeline of recent commits.

ElemeFE / element

Used by 86,104 | Watch 1,327 | Star 38,163 | Fork 7,847

Code Issues 678 Pull requests 166 Projects 2 Wiki Security Insights

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vue components javascript vue-components ui-kit element-ui

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5

选型与选型依据

技术选型要想什么

- 哪些问题是需要考虑选型的
- 用别人的“轮子”是不是最优选择
- 如何与自己“造轮子”做比较
- 怎么用开源项目



选型过程三步走

01

选型问题（环境、语言、框架、插件……）

02

可行方案（自主开发、开源选型……）

03

选择与理由（需求一致性、协议、技术一致性……）

怎么选择是用开源还是造轮子

- 01 | 开源项目成熟度
- 02 | 项目的资源丰富度
- 03 | 成员的二次开发能力

怎么用开源

01

直接拿来用

02

Fork 后二次开发用（继承上游）

03

Fork 后二次开发用（抛弃上游）

怎么用开源：直接拿来用

- 01 | 直接适用，无需做二次修改
- 02 | 或需求的新特性是普适、可贡献的
- 03 | 用包管理工具引入、不要直接复制代码

怎么用开源: Fork 后二次开发用 (继承上游)

01

需要做一定的修改，主体部分持续可以继承原项目

02

需求的新特性是专用的

03

用包管理工具引入 Fork 并二次开发的项目

04

每当原项目发生较大更新时，及时将原项目合并至二次开发项目

怎么用开源: Fork 后二次开发用 (抛弃上游)

- 01 需要做较大的修改, 主体部分可使用原项目
- 02 需求的新特性是专用的
- 03 用包管理工具引入 Fork 并二次开发的项目
- 04 原项目发生任何更新, 不予理会

理解应用开源的风险

Ant Design 团队脑子进水了吧，怕是对彩蛋有误解吧



↑ 收起 | 🔍 查看大图 | ⌂ 向左旋转 | ⌂ 向右旋转

Primary Normal Dashed Danger

⬇️ Download

wsdqr001 commented 3 hours ago + ⏺ ...

这个“彩蛋”真的是让我无语。请问开发组有想过用户的感受吗？作为一个有影响力的企业级开源应用，真的可以随便玩吗？

1 2

jin5354 commented 3 hours ago + ⏺ ...

已经被迫主动离职了，这锅背的很冤，怎么解释都没有用，公司是事业单位项目，国家刚发文禁止洋节，就搞出这出。老板也很着急的给事业单位的领导解释

同情兄弟

1 9

① 没有开源精神是最大的issue Invalid #13846 by mrold was closed 9 minutes ago

② 请在每年的 显示彩蛋 #13845 by 64646464 was closed 16 minutes ago 0 of 1

③ 请在每年的 显示彩蛋 Invalid #13844 by 64646464 was closed 18 minutes ago

④ Plz add the Spring Festival egg... #13843 by Yangzhedi was closed 7 minutes ago 1 of 1

⑤ Button's Style changed suddenly on Christmas Day Duplicate #13842 by jeezliu was closed 31 minutes ago 0 of 1

⑥ 严重谴责阿里巴巴集团此次不负责任的入侵行为 #13841 by ect0 was closed 39 minutes ago 1 of 1

⑦ 你们对得起党和人民吗？对得起国家吗？ Invalid #13840 by dean5277 was closed 43 minutes ago

⑧ 按钮被狗啃了一点 Invalid

中国共产党思想理论
· 数字传播中心 ·

账户密码登录

用户名

密码

请输入图形验证码

0293

登录

开源的日常使用与大型软件中的实例

开源生态

- 开源世界难进入吗？
- 日常生活中如何使用开源呢？
- 有大公司完全做开源软件的吗？



40 m+

developers on GitHub, including 10M new users in 2019.*

44 m+

repositories created in the last year—and 44% more developers created their first repository in 2019 than in 2018.*

87 m+

pull requests merged in the last year—and 28% more developers opened their first pull request in 2019 than in 2018.*

20 m+

issues closed in the last year. That's a lot of decisions made, bugs fixed, and boxes checked.*

如何使用

Installing

Prerequisites

- [Git](#)

macOS

Download the latest [Atom release](#).

Atom will automatically update when a new release is available.

Windows

Download the latest [Atom installer](#). `AtomSetup.exe` is 32-bit. For 64-bit systems, download `AtomSetup-x64.exe`.

Atom will automatically update when a new release is available.

You can also download `atom-windows.zip` (32-bit) or `atom-x64-windows.zip` (64-bit) from the [releases page](#). The `.zip` version will not automatically update.

Using [Chocolatey](#)? Run `cinst Atom` to install the latest version of Atom.

Linux

Atom is only available for 64-bit Linux systems.

Configure your distribution's package manager to install and update Atom by following the [Linux installation instructions](#) in the Flight Manual. You will also find instructions on how to install Atom's official Linux packages without using a package repository, though you will not get automatic updates after installing Atom this way.

Getting Started

1. Install Rails at the command prompt if you haven't yet:

```
$ gem install rails
```

2. At the command prompt, create a new Rails application:

```
$ rails new myapp
```

where "myapp" is the application name.

3. Change directory to `myapp` and start the web server:

```
$ cd myapp  
$ bin/rails server
```

Run with `--help` or `-h` for options.

4. Go to `http://localhost:3000` and you'll see: "Yay! You're on Rails!"

5. Follow the guidelines to start developing your application. You may find the following resources handy:

- [Getting Started with Rails](#)
- [Ruby on Rails Guides](#)
- [The API Documentation](#)

如何贡献

Contributing to Atom

👉🎉 First off, thanks for taking the time to contribute! 🎉👈

The following is a set of guidelines for contributing to Atom and its packages, which are hosted in the [Atom Organization](#) on GitHub. These are mostly guidelines, not rules. Use your best judgment, and feel free to propose changes to this document in a pull request.

Table Of Contents

[Code of Conduct](#)

[I don't want to read this whole thing, I just have a question!!!](#)

[What should I know before I get started?](#)

- [Atom and Packages](#)
- [Atom Design Decisions](#)

How Can I Contribute?

- [Reporting Bugs](#)
- [Suggesting Enhancements](#)
- [Your First Code Contribution](#)
- [Pull Requests](#)

Styleguides

- [Git Commit Messages](#)
- [JavaScript Styleguide](#)
- [CoffeeScript Styleguide](#)
- [Specs Styleguide](#)
- [Documentation Styleguide](#)

Additional Notes

- [Issue and Pull Request Labels](#)

How to contribute to Ruby on Rails

Did you find a bug?

- Do not open up a GitHub issue if the bug is a security vulnerability in Rails, and instead refer to our [security policy](#).
- Ensure the bug was not already reported by searching on GitHub under [Issues](#).
- If you're unable to find an open issue addressing the problem, [open a new one](#). Be sure to include a [title](#) and [clear description](#), as much relevant information as possible, and a [code sample](#) or an [executable test case](#) demonstrating the expected behavior that is not occurring.
- If possible, use the relevant bug report templates to create the issue. Simply copy the content of the appropriate template into a .rb file, make the necessary changes to demonstrate the issue, and [paste the content into the issue description](#):
 - [Active Record \(models, database\) issues](#)
 - [Action Pack \(controllers, routing\) issues](#)
 - [Generic template for other issues](#)
- For more detailed information on submitting a bug report and creating an issue, visit our [reporting guidelines](#).

Did you write a patch that fixes a bug?

- Open a new GitHub pull request with the patch.
- Ensure the PR description clearly describes the problem and solution. Include the relevant issue number if applicable.
- Before submitting, please read the [Contributing to Ruby on Rails](#) guide to know more about coding conventions and benchmarks.

Did you fix whitespace, format code, or make a purely cosmetic patch?

Changes that are cosmetic in nature and do not add anything substantial to the stability, functionality, or testability of Rails will generally not be accepted (read more about [our rationales behind this decision](#)).

Do you intend to add a new feature or change an existing one?

- Suggest your change in the [rubyonrails-core mailing list](#) and start writing code.
- Do not open an issue on GitHub until you have collected positive feedback about the change. GitHub issues are primarily intended for bug reports and fixes.

Do you have questions about the source code?

- Ask any question about how to use Ruby on Rails in the [rubyonrails-talk mailing list](#).

Do you want to contribute to the Rails documentation?

- Please read [Contributing to the Rails Documentation](#).

Ruby on Rails is a volunteer effort. We encourage you to pitch in and [join the team!](#)

Thanks! ❤️ ❤️ ❤️

大型开源项目 - Rust



- 01 | 由 Firefox 员工 Graydon Hoare 设计并发起
- 02 | 2015年推出1.0版本，被广泛用于各大公司及诸多领域
- 03 | 真正的开源社区开发的编程语言

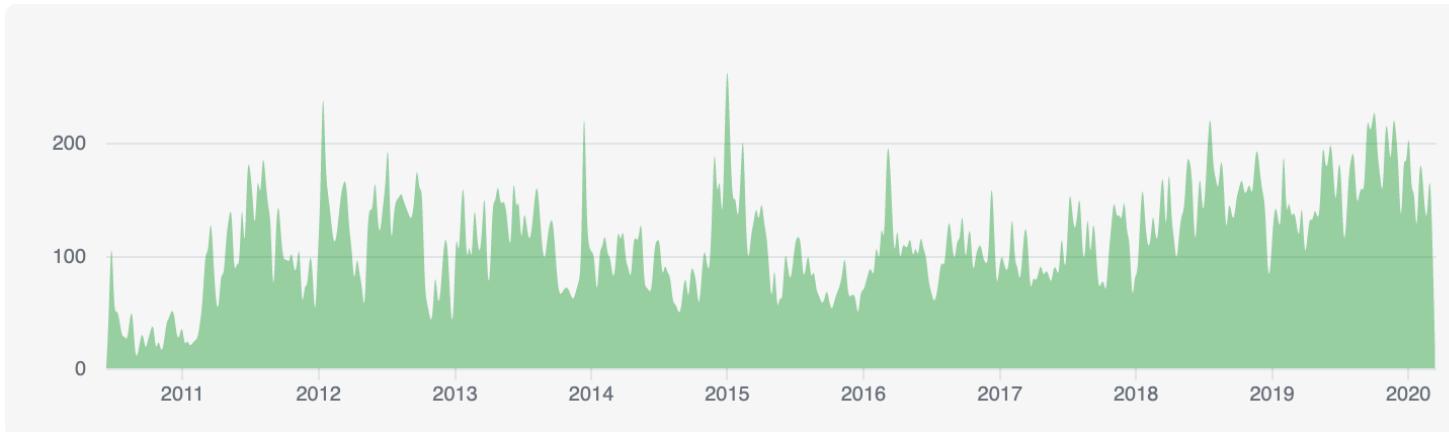
Rust 的开源社区



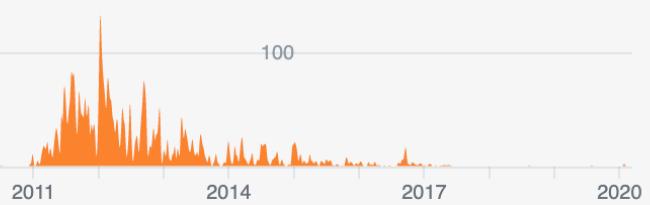
The Rust
Programming
Language

- 01 | 面向开发者友好
- 02 | 所有开发都向社区完全透明，所有人都可以参与评审
- 03 | 项目总贡献者已经超过2600位，来自于世界各地

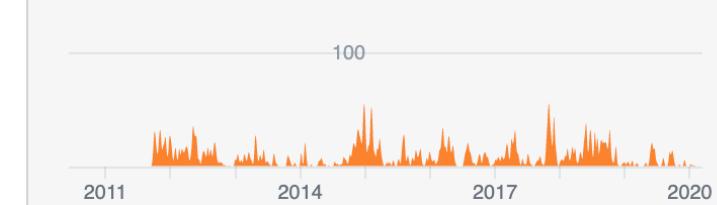
Rust 项目贡献量



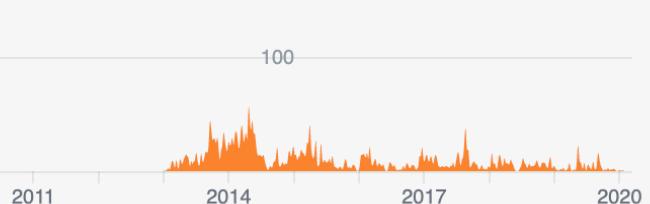
 **brson** #1
5,258 commits 505,309 ++ 473,729 --



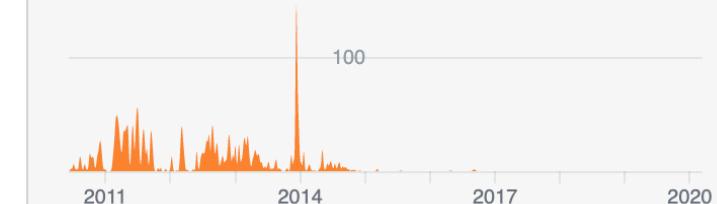
 **nikomatsakis** #2
4,011 commits 592,379 ++ 414,474 --



 **alexcrichton** #3
3,546 commits 700,623 ++ 747,907 --



 **pcwalton** #4
2,795 commits 382,019 ++ 289,825 --



 **graydon** #5
2,135 commits 297,707 ++ 228,146 --



 **oli-obk** #6
1,951 commits 234,302 ++ 179,457 --



 **rust-lang / rust** Watch ▾ 1.4k Unstar 43.3k Fork 6.6k

Code Issues 5,000+ Pull requests 222 Projects 0 Security Insights

Empowering everyone to build reliable and efficient software. <https://www.rust-lang.org>

rust compiler

108,460 commits 7 branches 0 packages 81 releases 2,646 contributors View license

使用 Rust 的公司及项目

NPM Atlassian Dropbox

字节跳动 LINE PingCAP Mozilla

Amazon Facebook Google Microsoft

Figma 飞书 Coursera Parity

RedHat Reddit Twitter

大型开源项目 - PingCAP



PingCAP

01

一家中国的开源的分布式数据库公司

02

秉承开源原则，在社区中有极高的影响力与公信力

03

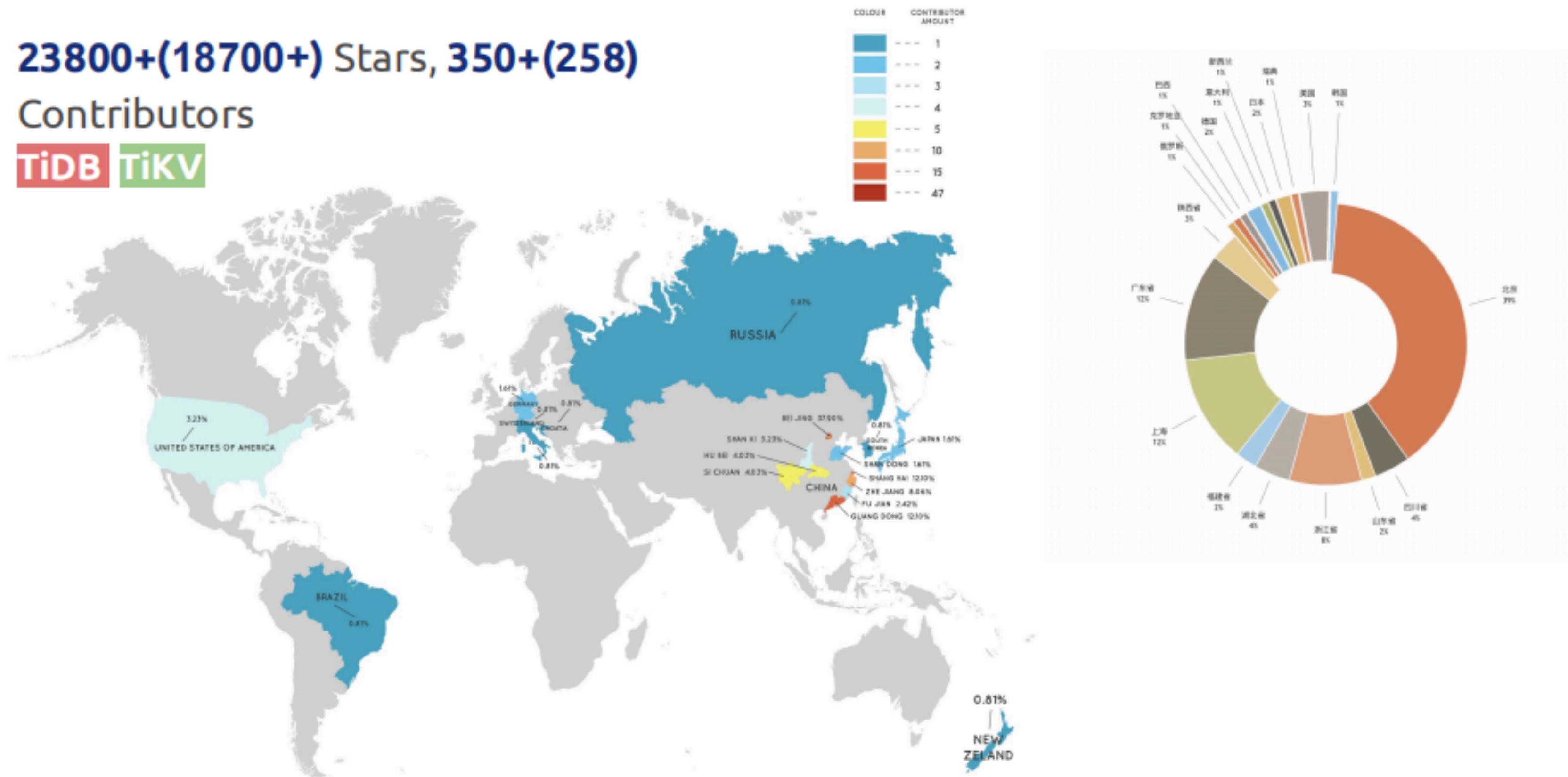
被用在了200余家不同行业的公司的实际生产环境中

PingCAP 贡献者的分布

23800+(18700+) Stars, 350+(258)

Contributors

TiDB TiKV



124 contributors excluding PingCAPers 



相关资料

C Code Style Guide: <https://www.cs.umd.edu/~nelson/classes/resources/cstyleguide/>

Linux: <https://github.com/torvalds/linux>

Git: <https://github.com/git/git>

PowerShell: <https://github.com/PowerShell/PowerShell>

Awesome C Open Source Project: <https://notabug.org/koz.ross/awesome-c>

Git SCM: <https://git-scm.com/>

VSCode: <https://code.visualstudio.com/>

SIM: https://dickgrune.com/Programs/similarity_tester/

廖雪峰的 Git 教程: <https://www.liaoxuefeng.com/wiki/896043488029600>