

Git OSS-um Design Review III



Team Members

- Gary Baker (Team Lead)
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- Van Steinbrenner
- Stephen White

Mentor: Ana Steinmacher

Sponsor: Igor Steinmacher

What is Open Source Software?

- Principles:
 - Transparency
 - Open exchange
 - Collaborative participation
 - Community-oriented development
- Contribution Process



825,000 commits

1 branch

597 releases

∞ contributors

View license

Branch: master ▾

New pull request

Find File

Clone or download ▾

 torvalds Merge tag 'nfs-for-5.1-3' of git://git.linux-nfs.org/projects/trondmy...

Latest commit 14c741d 23 hours ago

Failed to load latest commit information.

Documentation	Merge tag 'irqchip-5.1-2' of git://git.kernel.org/pub/scm/linux/kerne...	6 days ago
LICENSES	LICENSES: Add GCC runtime library exception text	2 months ago
arch	Merge branch 'x86-urgent-for-linus' of git://git.kernel.org/pub/scm/l...	3 days ago
block	Merge tag 'io_uring-20190323' of git://git.kernel.dk/linux-block	4 days ago
certs	kexec, KEYS: Make use of platform keyring for signature verify	2 months ago
crypto	lib/lzo: separate lzo-rlc from lzo	20 days ago
drivers	Revert "parport: daisy: use new parport device model"	2 days ago
fs	Merge tag 'nfs-for-5.1-3' of git://git.linux-nfs.org/projects/trondmy...	23 hours ago
include	Revert "parport: daisy: use new parport device model"	2 days ago
init	init/main: add checks for the return value of memblock_alloc*()	15 days ago
ipc	Merge branch 'work.mount' of git://git.kernel.org/pub/scm/linux/kerne...	15 days ago
kernel	ftrace: Fix warning using plain integer as NULL & spelling corrections	a day ago
lib	Merge tag 'kbuild-v5.1-2' of git://git.kernel.org/pub/scm/linux/kerne...	10 days ago

README

Linux kernel

=====

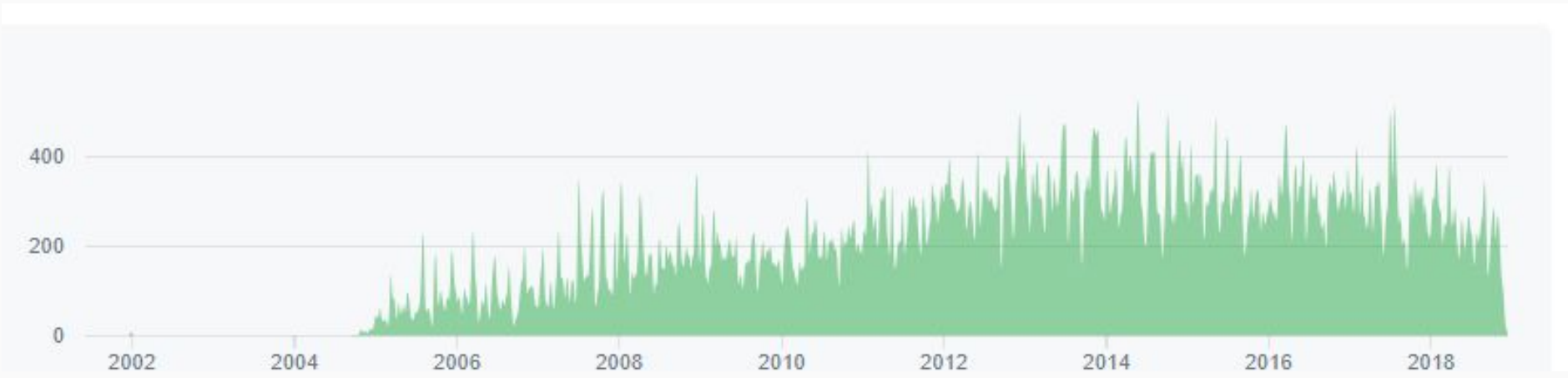
There are several guides for kernel developers and users. These guides can be rendered in a number of formats, like HTML and PDF. Please read `Documentation/admin-guide/README.rst` first.

In order to build the documentation, use ```make htmldocs``` or ```make pdfdocs```. The formatted documentation can also be read online at:

<https://www.kernel.org/doc/html/latest/>

There are various text files in the `Documentation/` subdirectory, several of them using the Restructured Text markup notation.

Please read the `Documentation/process/changes.rst` file, as it contains the requirements for building and running the kernel, and information about the problems which may result by upgrading your kernel.



jacob-and-nathan commented 19 days ago

...

There was a double space.



1



2



Fixed typo: extra space. ...

Verified

ee9ca9c

KernelPRBot commented 19 days ago

...

Hi @jacob-and-nathan!

Thanks for your contribution to the Linux kernel!

Linux kernel development happens on mailing lists, rather than on GitHub - this GitHub repository is a read-only mirror that isn't used for accepting contributions. So that your change can become part of Linux, please email it to us as a patch.

Sending patches isn't quite as simple as sending a pull request, but fortunately it is a well documented process.

Here's what to do:

- Format your contribution according to kernel requirements
- Decide who to send your contribution to
- Set up your system to send your contribution as an email
- Send your contribution and wait for feedback

How do I format my contribution?

The Linux kernel community is notoriously picky about how contributions are formatted and sent. Fortunately, they have documented their expectations.

Firstly, all contributions need to be formatted as patches. A patch is a plain text document showing the change you want to make to the code, and documenting why it is a good idea.

You can create patches with `git format-patch`.

Secondly, patches need 'commit messages', which is the human-friendly documentation explaining what the change is and why it's necessary.

Thirdly, changes have some technical requirements. There is a Linux kernel coding style, and there are licensing requirements you need to comply with.

Both of these are documented in the [Submitting Patches](#) documentation that is part of the kernel.

Note that you will almost certainly have to modify your existing git commits to satisfy these requirements. Don't worry: there are many guides on the internet for doing this.

Who do I send my contribution to?

What does the future look like?

- 1.1 Billion total contributions
- 31 Million People
- 96 Million Repositories
- 200 Million Pull Requests
- The impact of 10%



Our Client

- Dr. Igor Steinmacher, professor at NAU
- Research includes:
 - Support for newcomers in OSS
 - Contributor behavior in OSS
 - Crowdsourcing software engineering



Newcomer Points of Concern

- **Finding a candidate project**
 - Finding your first project to submit a contribution to can be daunting and difficult.
- **Information Overload**
 - Repositories can be very confusing because of the amount of information they give at the start.
- **Unable to Gauge Activity**
 - Finding statistics of activity for repositories is difficult for newcomers not knowing where to look.
- **Unaccepting of New Contributions**
 - Newcomers don't want to look foolish when making their first attempt at contributing.

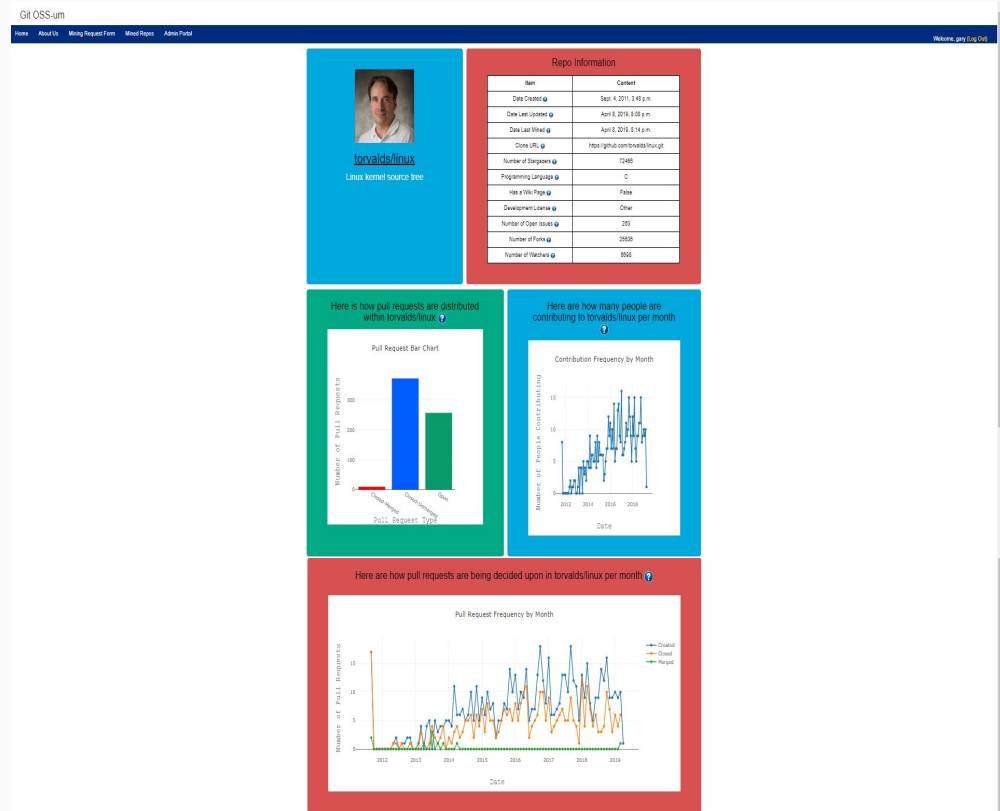


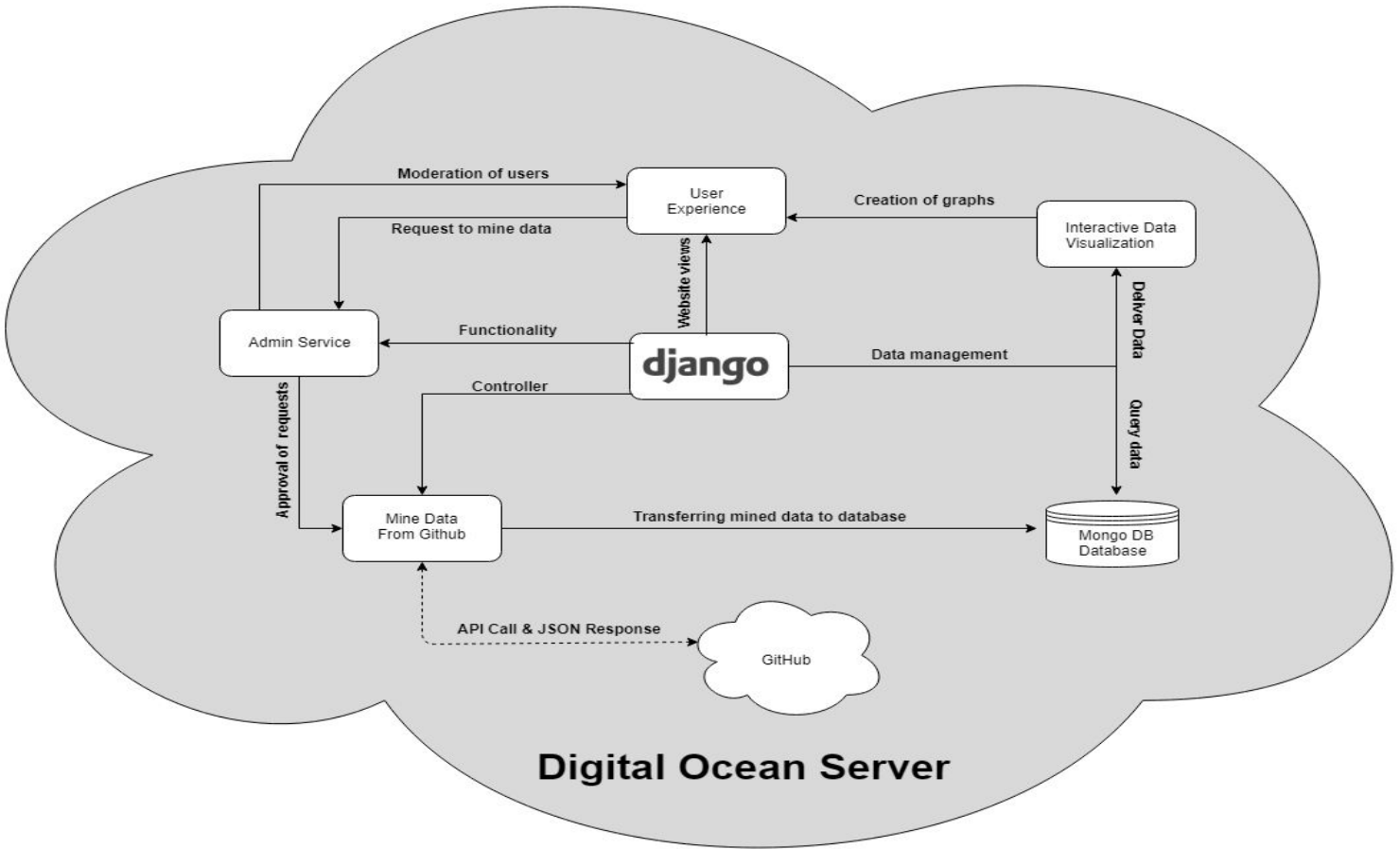
High-Level Requirements

- Login Services
- Mining Data From GitHub
- Data Storage
- Analyze and Visualize Data
- Hosted Web Application

Product: A web application that helps a newcomer to Open Source find a project to contribute to by:

- Displaying simple and easy to read statistics that don't overload the newcomer with information.
- Helping gauge the activity of a repository.
- Showing the acceptance rate of submitted contributions.





How the app works

- **Use Case:**
 - As a user, I would like to be able to view easily readable data about a repository I am interested in to submit my first Open Source contribution.
- **User Flow:**
 - A user would start at our homepage, go to mined repos page, click on repo and view data on repo page.
















Welcome to Git OSS-um!
You want to contribute, we want to help!

Product Description
Git OSS-um is a tool to help newcomers to open source software find the best project to make their first contribution.

Enjoy and Happy Coding!
We hope our product helps you make a successful first contribution!

Application by Stephen White, Gary Baker, and Van Steinbrenner.
Contact Us! gitossum@gmail.com.
Visit Us! [Our Team Website](#).

Mined Repos

-  torvalds/linux
-  google/gumbo-parser
-  microsoft/calculator
-  swhite9478/opensourcev
-  jabref/jabref
-  qime2/qime2
-  sindresorhus/awesome
-  blockchain/blockchain-wallet-v4-frontend
-  tidyverse/dplyr
-  trekhleb/javascript-algorithms
-  tuvtran/project-based-learning
-  valloric/youcompleteme
-  kriadmin/30-seconds-of-python-code
-  dj/django
-  rails/rails

[Compare Repos](#)

Search

Languages

- C (1)
- C++ (1)
- HTML (1)
- Java (1)
- JavaScript (2)
- Python (4)
- R (1)
- Ruby (1)

Min pull requests

Max pull requests

Has wiki

- True

[Filter](#)

Git OSS-um

Home About Us Mining Request Form Mined Repos Admin Portal

Welcome, gary (Log Out)



[torvalds/linux](#)
Linux kernel source tree

Repo Information

Item	Content
Date Created	Sept. 4, 2011, 3:43 p.m.
Date Last Updated	April 8, 2019, 8:28 p.m.
Date Last Mined	April 8, 2019, 8:14 p.m.
Clone URL	https://github.com/torvalds/linux.git
Number of Stars	72465
Programming Language	C
Has a Wiki Page	False
Development License	Other
Number of Open Issues	283
Number of Forks	25505
Number of Watchers	8096

Here is how pull requests are distributed within torvalds/linux

Pull Request Bar Chart

Pull Request Type	Number of Pull Requests
Closed	~10
Closed (merged)	~350
Open	~250

Here are how many people are contributing to torvalds/linux per month

Contribution Frequency by Month


This chart shows a steady increase in the number of contributors over time, with a notable peak in 2018.

Here are how pull requests are being decided upon in torvalds/linux per month

Pull Request Frequency by Month

This chart tracks the monthly frequency of pull requests in three states: Created (blue), Closed (orange), and Merged (green). The 'Created' line shows the highest volume, fluctuating between 5 and 15 requests per month. 'Closed' and 'Merged' requests are much less frequent, generally staying below 5 per month.

Open Source Newcomer Issues:

- Finding a Project 

Git OSS-um

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Contribution Frequency by Month

This chart shows a fluctuating but generally increasing number of contributors over time, with peaks around 2014 and 2018.

Here are how pull requests are being decided upon in torvalds/linux per month

Pull Request Frequency by Month

This chart tracks the monthly flow of pull requests. The 'Created' series (blue) shows a steady increase in activity. The 'Closed' (orange) and 'Merged' (green) series show that a significant portion of created pull requests are eventually resolved.

Open Source Newcomer Issues:

- Finding a Project ✓
- Information Overload ✓

Git OSS-um

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Open Source Newcomer Issues:

- Finding a Project ✓
- Information Overload ✓
- Inability to Gauge Activity ✓



Open Source Newcomer Issues:

- Finding a Project ✓
- Information Overload ✓
- Inability to Gauge Activity ✓
- Unaccepting of New Contributions ✓

Testing

- Unit Testing
 - 100 Unit Tests
 - 7 Test Suites
- Integration Testing
 - Combining unit tests as well as front-end testing.
- User Testing
 - Recruiting students and faculty to perform tasks using our app.

User Testing

- User Test Plan
 - Simple User Testing
 - Research Study



Risks & Obstacles

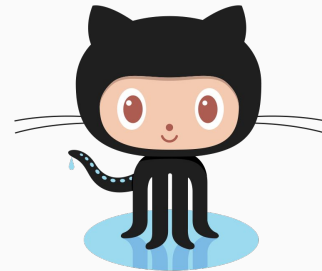
Risks

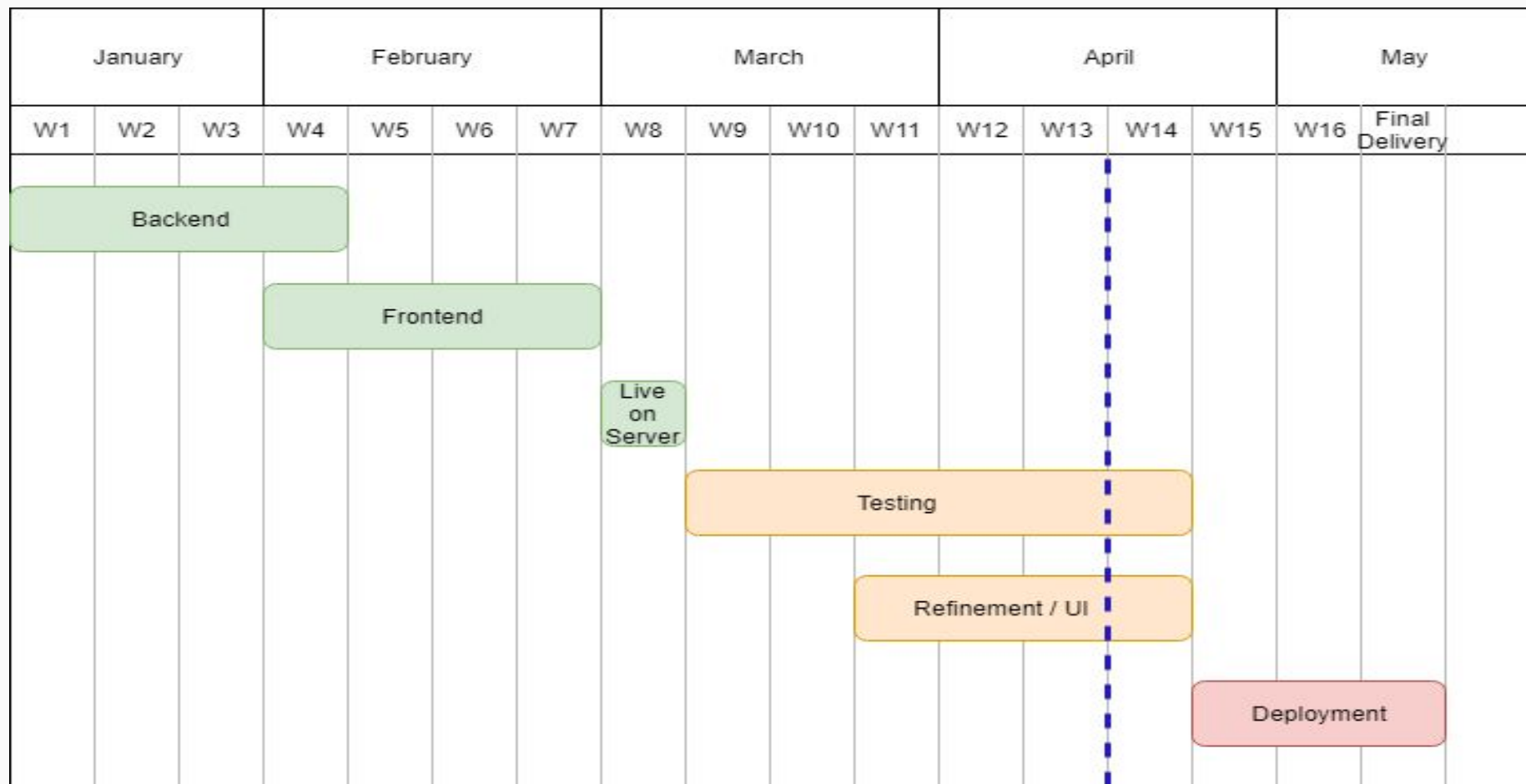
- We provide facts, not opinions
- Repository name changes
- Microsoft changing API
- Errors during data collection



Obstacles

- Speed of data delivery to the user.
 - Increased mining time, decreased display time.
- Mining Data Asynchronously
 - Scheduling and automation





Conclusion

- OSS importance
- Problems
 - Finding a First Project
 - Information Overload
 - Inactivity/No Feedback
 - Unaccepting of New Contributions
- Solution: Redesign OSS interface
- Impact: Make that 10% difference.



Git OSS-um Design Review II



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- Visit Us: gitossum.com