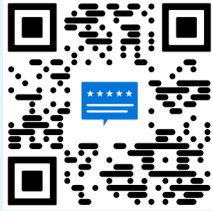# The Next Step on Code Review

Research Methods behind HubReview

We have done extensive literary research on review problems and case studies done at Microsoft and Google. Scan the code for the full list of articles we have used.

We have done wide market research to pinpoint the missing but desired features in the available platforms and tools.

We have sent an online survey about our initial features to engineers at *MathWorks*, *Qualcomm*, *TechNarts*, *Arçelik*, *Aselsan*, *Dream Games*, and *Carbon Health* to assess which were more desirable.

HubReview was developed and completed as a result of these three steps.
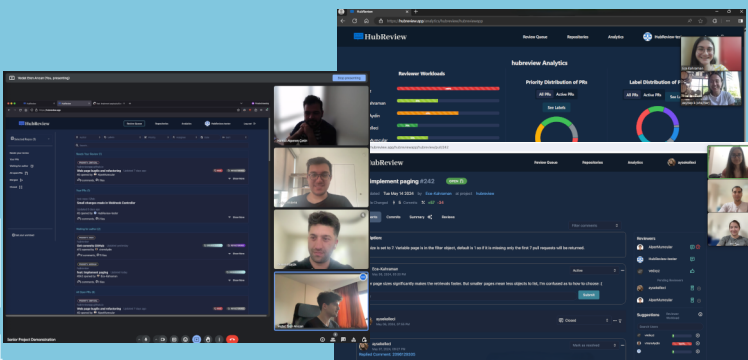
User Feedback

After our product was completed, we sent a final survey to these people. 10 of them participated.

⭐⭐⭐⭐⭐ *(4.6/5)*

"I feel the urge to review everything. Reviewer workload is the feature I liked the most. Analytics are good both for assessing one's own level of contribution and for easily blaming others. The UI is mostly neat."

-Abdullah Akalın, Team Lead, TechNarts

Common Review Problems Found on GitHub

- Pull requests waiting for review cannot be located easily in one place.

- GitHub does not provide any analytics specifically on the pull requests and reviews.

- The number of tasks assigned to a reviewer can not be seen when requesting a review.

- Even though other GitHub apps are providing generated summarizations, they rely on the descriptions provided by the authors.

- There is lack a of labels, statuses, and decorations on any comment types.

Review Prioritization & Review Queue

With a priority assigned, more important pull requests are always seen at the top of the review queue. This assignment can be done either by everyone or by the repository/organization owners.

PRIORITY: CRITICAL
PRIORITY: HIGH
PRIORITY: MEDIUM
PRIORITY: LOW

New categories to easily find your pull requests

Needs Your Review	**All Open PRs**
Your PRs	**Closed**
Waiting for Author	**Merged**

Review Workload & PR Summary

Assign your maximum workload as the maximum number of PR reviews you can manage. It will help to communicate that you are busy.

If you ever get confused about what a pull request represents, you can now generate and regenerate a summary using OpenAI's LLMs instead of gathering an idea from individual commit descriptions.

Improved Review System

Each review comment now carries a `label` and a `decoration` that sets the comment's tone. Both of these are implemented to avoid communicational issues between the authors and reviewers in the comments.

Self Notes

Create a note in your review without sending it. Never lose track of your thoughts while reviewing.

Improved Comment System

General comments and review comments are now separated for a less cluttered PR page.

All comments have a status:
**ACTIVE PENDING CLOSED
OUTDATED RESOLVED DUPLICATED**

Ece-Kahraman
May 5, 2024, 04:17 PM

Replied Comment: 2435
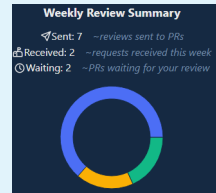
Write a reply...

AyseKelleci
May 3, 2024, 11:24 PM

... and easily find the replied via highlights.

Review Analytics
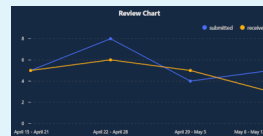
New plots and graphs are added to improve a user's or a project's productivity.

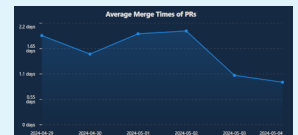### User-based

Your weekly review summary

Weekly Review Summary
Sent: 7 ~reviews sent to PRs
Received: 2 ~requests received this week
Waiting: 2 ~PRs waiting for your review

Monthly submitted/Received reviews

Review Chart
submitted received
April 15 - April 21 April 22 - April 28 April 29 - May 5 May 6 - May 12

Monthly review response time

Reviewer Response Time
April 15 - April 21 April 22 - April 28 April 29 - May 5 May 6 - May 12

Repository-wide

Average PR merge times for six previous days

Average Merge Times of PRs
2024-04-29 2024-04-30 2024-05-01 2024-05-02 2024-05-03 2024-05-04

Workloads of all contributors

Reviewer Workloads
vedxyz
Ece-Kahraman
utkansAydin
aysekelleci
AlperMumcular
HubReview-tester

Review status for three weeks

Review Status of PRs
22 April - 28 April Pending Approved Change Requested
Commented
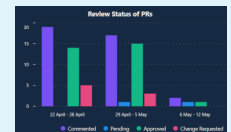
Priority & label distributions

Priority Distribution of PRs
All PRs Active PRs
See Labels

Label Distribution of PRs
All PRs Active PRs
See Labels