

Consent

Dear participants,

We are researchers from <<Double Blind>>. We have recently built a dashboard that shows insights and statistics about the quality assurance of open-source projects on GitHub.

Our study aims to assess this tool by conducting interviews with you, open-source software engineers, collecting your feedback to determine if and how the tool can enhance your awareness of quality assurance practices in software development, ultimately contributing to its improvement.

Our interview with you is expected to last between 45 to 60 minutes. We encourage you to actively interact with the dashboard, thinking aloud as you navigate through it. The interview is guided by a set of close-ended questions aimed at evaluating dashboard. Also, we will record and transcribe the interview for data analysis purposes. It's worth noting that the video recording will be deleted once transcription is finalized. The findings from the transcription analysis will contribute to scientific publications, and further research in the field of software engineering.

As with any online activity, the risk of a breach is always possible. To the best of our ability, any personal information or recordings you voluntarily share in this study will remain confidential. We will minimize any risks by deleting the recordings and anonymizing transcriptions. Additionally, we will not store your IP address or any personal information that can identify you. The data we collect is only for research and will not be sold or privately shared with third parties.

Any following scientific papers or datasets published from this work will contain anonymized data, ensuring that your identity cannot be traced or identified.

Participation in this study is voluntary, and you can withdraw anytime during the interview. If you wish for your data to be removed before the completion of our research study (Target: End of March 2024), please contact us.

Responsible and corresponding researcher: <<Double Blind>>

Thank you for your participation in our study!

Will you participate in this survey based on the consent agreement you've read?

- ☐ Yes
- ☐ No

Background / Demographic

How many years have you been involved in software development?

- ☐ Less than 1 year
- ☐ 1 to 3 years
- ☐ 3 to 7 years
- ☐ 7 to 10 years
- ☐ 10 years or more

When did you first contribute to an open-source software project on GitHub?

- ☐ Less than 1 year ago
- ☐ 1 to 3 years ago
- ☐ 3 to 7 years ago
- ☐ 7 to 10 years ago
- ☐ 10 years ago or more

You work for:

- ☐ Academia
- ☐ Industry
- ☐ Open Source Software
- ☐ Other

Which of the following best describes your role in OSS project(s)?

- ☐ Source Code Contributor
- ☐ Maintainer / Integrator / Project (co-)owner / Tech lead

Please sketch your educational background.

Could you please provide a brief overview of your primary software development stack?

What is your age?

- ☐ 18-24 years old
- ☐ 25-34 years old
- ☐ 35-44 years old
- ☐ 45-54 years old
- ☐ 55-64 years old
- ☐ 65 years old or more
- ☐ Prefer not to say

What is your sex?

- ☐ Male
- ☐ Female
- ☐ Non-binary
- ☐ Other
- ☐ Prefer not to say

Initial Questions

Quality assurance (QA) practices in software engineering encompass processes and methodologies aimed at ensuring that software products meet specified quality standards and requirements. Examples include **testing** (unit, integration, system), **code reviews** to maintain coding standards and identify bugs, **continuous integration** for early detection of integration issues, and monitoring quality metrics (defect density, code coverage).

Attitude towards quality assurance practices

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree
Before this interview, I had never heard of QA practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Testing is a crucial part of software development.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Code review is not always necessary in software development.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Automated workflows are an essential part of software development to ensure the quality of software.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I strongly believe that neglecting QA results in more defects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Investing more in QA equals lower maintenance cost in future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Software analytics (SA) involves the utilization of tools and methodologies to gather, analyze, and interpret data related to software development processes, performance, and user interactions. These practices are essential for gaining insights into software quality, identifying areas for improvement, and making data-driven decisions throughout the development lifecycle. Examples include gathering data on code commits, build success rates, and user engagement metrics, analyzing this data to identify patterns and trends, and using the insights gained to optimize development processes, prioritize features, and enhance user experience.

Do you use any software analytics tools in your project?

- ☐ Yes
☐ No

Can you name the software analytics tools you use in your project?

How often do you use these software analytics tools?

- ☐ Daily
☐ Weekly
☐ Bi-weekly
☐ Monthly
☐ Other
☐ Not applicable

Attitude towards software analytics

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree
Before this interview, I had never heard of SA.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using analytics is a crucial for informed decision-making in software development.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SA can save a lot of time in software development.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not see any added value in using SA.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree
SA tools are essential for ensuring data-driven insights and improving software quality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Current state

Think back to a software project on GitHub that you are most familiar with that preferably follows some QA practices.
Then answer the questions that the interviewer is going to ask you.

The Concept

Imagine a **software QA analytics tool** that gives software engineers a **global overview** view of QA activities in their project on GitHub. By collecting and analyzing QA data, it provides insights into various QA-related activities. This information can help engineers make informed, data-driven decisions to optimize their QA strategies and prioritize actions to improve software quality assurance. Additionally, the tool offers a **comparative aspect**, by providing aggregate statistics on the state of QA over other software projects on GitHub.

Please rate each of the following statements after reading the description above.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree
Such a tool will help me decide which QA activity to focus on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Such a tool will help me judge the level of QA taking place in the project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree
Such a tool will improve my awareness about QA in a project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Such a tool will help me improve QAs in a project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't see the added value of such a tool.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I expect to be making use of such a tool quite extensively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Assignment

Now, using the provided tool, answer the following:

Using the provided tool, assess projects A and B for each of the QA-related practices. Also, please think aloud as you rate them.

	Project A							Project B						
	Extremely bad	Moderately bad	Somewhat bad	Neither good or bad	Somewhat good	Moderately good	Extremely good	Extremely bad	Moderately bad	Somewhat bad	Neither good or bad	Somewhat good	Moderately good	Extremely good
Testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Code Reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Automated Workflows	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guidelines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Perception

Considering your experience with the tool you just used, rate each of the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
This tool helps me decide which QA activity to focus on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This tool helps me judge the level of QA taking place in the project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This tool helps me improve my awareness about QA in a project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This tool helps me improve QAs in a project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't see the added value of this tool.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I expect to be making use of this tool quite extensively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate your satisfaction level based on your experience using the tool.

	Extremely dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither satisfied nor dissatisfied	Slightly satisfied	Moderately satisfied	Extremely satisfied
Provided information and statistics	○	○	○	○	○	○	○
The global overview	○	○	○	○	○	○	○
The comparative aspect	○	○	○	○	○	○	○
Actionable insights	○	○	○	○	○	○	○

	Extremely dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither satisfied nor dissatisfied	Slightly satisfied	Moderately satisfied	Extremely satisfied
User interface	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If the tool is freely available, would you use it? why?

Consent

I give permission for the anonymized answers I've provided in this interview to be archived in a data repository for future research and educational purposes.

- ☐ Yes
- ☐ No

Feedback

Please rate the followings based on your interview experience.

	Extremely dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Extremely satisfied
Clearness of questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suitability of the selected projects for the use case study.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty of the case study questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Extremely dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Extremely satisfied
Opportunity to give feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall impression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Is there any other question that you would like to ask me?