Merge Conflict Survey

Thank you for participating in the survey. We expect that this survey will take 7-10 minutes of your time.

Who we are:
Researchers at Oregon State University

Our Goal:
This survey is part of a research study to examine difficulties that developers encounter when resolving merge conflicts. Our goal is that by understanding these difficulties, we can ultimately help improve research and tool support in this area.

Please proceed to the next page to begin.

Gender:
❍ Male
❍ Female
❍ Other: _____
❍ Do not wish to provide

Professional software development experience:
❍ 1-5 years
❍ 6-10 years
❍ 11-15 years
❍ 16-20 years
❍ 21-25 years
❍ 26+ years

What kind of projects do you spend most of your time on?
❍ Open-Source Projects
❍ Closed-Source Projects
❍ I split my time evenly

What size of project do you usually work on?
- ⭘ 1 developer
- ⭘ 2-5 developers
- ⭘ 6-10 developers
- ⭘ 11-50 developers
- ⭘ 51+ developers

Which roles have you held in collaborative software projects?
- ❑ Software Engineer/Developer
- ❑ Systems Engineer
- ❑ System Architect
- ❑ Systems Administrator
- ❑ DevOps
- ❑ Project Maintainer
- ❑ Project Manager
- ❑ Other(s): _____

A merge conflict is a scenario in which two different branches of code cannot be automatically merged together into a single version, requiring human intervention to resolve. How often do you encounter merge conflicts?
- ⭘ Every day
- ⭘ A few times a week
- ⭘ Once a week
- ⭘ A few times a month
- ⭘ Once a month
- ⭘ A few times a year
- ⭘ Once a year or less
- ⭘ Never

The following questions concern factors of merge conflict difficulty. These factors are characteristics that affect your ability to understand WHAT is happening during a merge conflict.

Please rate how much each of these factor into the difficulty of a merge conflict:

	Not at all	A little	A moderate amount	A lot	A great deal
Time to resolve a conflict	○	○	○	○	○
Number of conflicting lines of code	○	○	○	○	○
Complexity of conflicting lines of code	○	○	○	○	○
Number of files in the conflict	○	○	○	○	○
Complexity of the files with conflicts	○	○	○	○	○
Non-functional changes (whitespace, renaming, etc)	○	○	○	○	○
Dependencies of conflicting code on other components	○	○	○	○	○
Atomicity of changesets in the conflict *Hover icon:* "An atomic changeset will include all relevant code to make a specific fix/change but no more than that."	○	○	○	○	○
Your knowledge/expertise in area of conflicting code	○	○	○	○	○

How do you measure the size of a merge conflict?

❑ Lines of code involved in the conflict

❑ Number of files in the conflict

❑ The amount of time that it takes to resolve it

❑ Other(s): _____

In your experience, does the size of a merge conflict (defining size as you did above) seem to be related to the difficulty of the merge conflict resolution?

○ Yes

○ Sometimes

○ No

Please rate the average difficulty level for each size of merge conflict

	Trivial	Mostly Trivial	Somewhat Difficult	Difficult	Not Worth Solving
Small Size	○	○	○	○	○
Medium Size	○	○	○	○	○
Large Size	○	○	○	○	○

When there is a relationship between difficulty and size of the merge conflict, what is the average difficulty level for each size?

	Trivial	Mostly Trivia	Somewhat Difficult	Difficult	Not Worth Solving
Small conflict	○	○	○	○	○
Medium-sized conflict	○	○	○	○	○
Large conflict	○	○	○	○	○

Do you ever feel that other people are making so many code changes that following your usual development practices becomes significantly more difficult?
○ Yes
○ Maybe
○ No

What were the reasons for these problems?
❑ Deadlines
❑ Team awareness issues
❑ Project size/scale
❑ Project structure issues
❑ Project rules
❑ Other(s): _____

The following questions concern factors of conflict resolution difficulty. These factors are characteristics that affect HOW a merge conflict is resolved.

Please rate how much each of these factor into the difficulty of resolving merge conflicts:

	Not at all	A little	A moderate amount	A lot	A great deal
The amount of information you have about the conflicting code	○	○	○	○	○
Your expertise in the area of code with the merge conflict	○	○	○	○	○
How easy it is to understand the code involved in the merge conflict	○	○	○	○	○
How well tools present information in an understandable way	○	○	○	○	○
Trustworthiness of tools	○	○	○	○	○
Tool support for examining development history	○	○	○	○	○
Complexity of the project structure	○	○	○	○	○
Informativiness of commit messages	○	○	○	○	○
Changing assumptions within the code *Hover icon:* "When the code logic was based on certain assumptions that are no longer true."	○	○	○	○	○
Project culture	○	○	○	○	○

Backporting is the action of taking parts from a newer version of a software system or software component and porting them to an older version of the same software. [Wikipedia] Have you ever been unable to backport something because of its dependencies?

❍ Yes

❍ No

Could you describe a situation where you were unable to backport something because of its dependencies?

The following questions relate to the tools you use for merge conflict resolution:

What tools do you use in your conflict resolution process? These tools can be for anything that you need to do between the time you pull and the time you commit.

How often do you find that having multiple tools has been a problem in your development workflow?

❍ Never

❍ Rarely

❍ Sometimes

❍ Often

❍ Always

How effectively does your current toolset support each of the following scenarios?

	Not effective at all	Slightly effective	Moderately effective	Very effective	Extremely Effective
Simple, small merge conflict resolutions	○	○	○	○	○
Simple, large merge conflict resolutions	○	○	○	○	○
Complex, small merge conflict resolutions	○	○	○	○	○
Complex, large merge conflict resolutions	○	○	○	○	○
Merge conflict resolutions that require exploring code history	○	○	○	○	○
Merge conflict resolutions that require little or no code history exploration	○	○	○	○	○
Other(s):	○	○	○	○	○

How much do you trust your merging, history exploration, and/or conflict resolution tools?

- ❍ Not at all
- ❍ A little
- ❍ A moderate amount
- ❍ A lot
- ❍ Completely

How useful would the following changes be in your merge conflict resolution tools?

	Not Useful	Slightly Useful	Moderately Useful	Very Useful	Essential
Better transparency in tool functionality/operations	❍	❍	❍	❍	❍
Better usability	❍	❍	❍	❍	❍
Better ways of filtering out less relevant information	❍	❍	❍	❍	❍
Better graphical presentation of information	❍	❍	❍	❍	❍
Better ways of exploring project history	❍	❍	❍	❍	❍
Better terminology that is more consistent with my other tools	❍	❍	❍	❍	❍