

Introduction

Thank you so much for your participation in our study! We are studying developers' experience in analyzing logs and their expectations on what factors a log message should have, or what practices developers should follow in order to have good readability.

Software logs are widely used in practice to assist in many tasks (e.g., debugging, testing, software quality assurance). Such logs are generated by logging statements written by the developers. Below is an example logging statement from Apache HBase. In this interview, we focus on studying log messages in the logging statement (i.e., the sentence in green in the example below).

```
LOG.warn("WAL {} does not exist anymore", filename)
```

Given the importance of logs, how to write log messages that can clearly and sufficiently record system runtime behaviors is still challenging. Hence, we are investigating what are the factors of log messages with good readability (e.g., easy to read and can provide useful information) and exploring the potential of helping developers compose better log messages.

We will ask you some questions regarding your experience and expectations on log messages. All the questions are open-ended. Please feel free to share with us any experience or comments related to or even not directly related to the question.

Please note that we will keep the record of this interview for further analysis. Please be careful not to discuss any information that might be sensitive to you and your company/organization. If anything sensitive is mentioned, we will remove such information from the record. All of the information provided in the interview will be treated strictly as confidential and for research purposes only. We will not reveal your identity in any form of the research outcomes.

Part 1: Background Information

1. How many years of experience do you have in software development or maintenance?
2. What is your main role of responsibility when working in the company? (e.g., Project Manager, Developer, Researcher, Data Analyst, Quality Assurance, etc)
3. What programming languages do you usually use?

Part 2: Experience with Log Messages

1. In what scenarios do you use or read logs?
2. Do you think log messages are important in the process of software development and maintenance?
3. What kind of information provided by the log messages is important to you?
4. Based on your experience, do you think the log messages that you have ever seen are mostly helpful, or not always? If not always, what kind of messages is helpful and what is not helpful?
5. Have you ever seen some log messages that are confusing or not helpful?
6. What do those unhelpful log messages look like?

7. What's your perspective on the length of log messages?

Part 3: Expectations on Log Messages' Readability

1. Do you know any systematic guidelines/standards for how to write more readable log messages?
2. Do you think composing log messages is difficult? If so, why it's difficult?
3. How do you consider the differences between writing general code and composing log messages?
4. How do you consider the similarities between writing general code and composing log messages?
5. How do you consider the difference between the text in natural languages and in log messages?
6. How do you consider the similarities between the text in natural languages and in log messages?
7. From a high level, what is your expectation on log messages with good readability?
8. A bit more in detail, what factors do you think a log message with good readability should have?
9. In your opinion, what practices can people do to improve/enhance the readability of log messages?