

Rationale for Code Commits Interview

Please answer the questions in your own words and provide as much detail as you feel is relevant to address each question. Some questions have choices. I will instruct you to choose the answer for the ones with choices.

Commented [1]: I will hand you your version of every interview question

Modern software is modified in packaged changes called **code commits** in revision control systems. In many occasions, software developers need to **examine code commits** for various purposes. Some of the main motivations for examining code commits are¹:

- Debugging
- Reverse engineering requirements
- **Understanding rationale (Why is the code this way?)**
- ...

In this study, we will discuss your **experience in understanding the rationale for code commits**. Please answer each question based on your experience and provide as much information as you feel is relevant to your answer.

1. Tell me about one time in which you **investigated a code commit** to understand its **rationale**.
 - a. **Why** did you **need to find** the rationale for that code commit?
 - b. **What was the rationale** for that code commit?

Commented []: I want you to take your time and think about one example or one situation where you needed to investigate a code commit to understand its rationale. Tell me...

Commented []: Can you elaborate?

Commented []: Can you elaborate?

Commented []: Thank you, now think again about my question and your answer. Remember that rationale is informally defined as "Why the code is this way?"

c. Can you tell me another example in which you investigated a code commit to understand its rationale?

¹ Mihai Codoban, Sruti Srinivasa Ragavan, Danny Dig, and Brian Bailey. 2015. Software history under the lens: a study on why and how developers examine it. In Software Maintenance and Evolution (ICSME), 2015 IEEE International Conference on. IEEE, 1–10.

2. If you had to **divide rationale into components**, what are the components of rationale for code commits? Take as much time as you need.

Commented []: Now, talking about the rationale of code commits in general.

Commented []: Let me give you an example, if you are to answer a similar question. Let's say "**How did this code change?**". This is not the question I am asking you about. I am asking a different question. This question is just to clarify.

The answer could be of many components and the way you unpack the answer to "How did the code change?" could include many parts. The answer may include "who changed the code?", "what parts of the code changed", "what editor was used", "what transformations happened", etc.

"How" can mean different things to different people. The answer to all the questions (the person, parts, editor, transformations,...) is the ultimate answer to "How did the code change?"

Now, think of the answer to "**Why the code is this way?**"

- what are the parts of the answer?
- what are the components of your answer to the informal definition of rationale "why the code is this way?".
- what are the components of rationale for code commits?

Model of Rationale for Code Commits

For the next 5 minutes, please review, understand, and think about this model of rationale for code commits. Feel free to ask me for clarifications. You may take longer than 5 minutes if you need to.

3. What do you think of this model?

4. In this model, is there something that you don't think it should be part of rationale for code commits? Take as much time as you need.

5. Are there any components of rationale for code commits that should be added to this model? Take as much time as you need.

6. Would you like to change your answer for the way you divide rationale of code commits into components? Take as much time as you need.

Commented []: This is a model of rationale for code commits that we are studying.

This model consists of rationale components. Every component is described by a question and an example of an answer to the question.

These questions are not for you to answer, it is an explanation of what each component is and the answers are example of a possible answer to the question.

Commented []: a.What is it?
b.Why?

Commented []: a.What are these components?

Commented []: Considering these new components [X, Y, Z], Why didn't you include these components the first time?

Commented []: Given your changes for the way you divide rationale of code commits

a.Would you like to update the model?
b.Is there something that you don't think it should be part of rationale for code commits?
c.What are the components lacking in this model?

Finding and Recording Rationale for Code Commits

- 7. What are your **strategies for finding** the rationale of code commits? Please include:
 - a. Your **steps** for finding rationale of code commits.
 - b. The **location** of which you find the rationale for code commits.
 - c. The **tools** you use to find the rationale for code commits.
 - d. The **rationale components** that fit every strategy.

Commented []: In this part of the interview, I want to know about your strategy for finding and recording rationale of code commits.

Commented []: What **steps** do you follow to find the rationale for code commits?

Commented []: **Where** do you find the rationale for code commits? What is the location of which you find the rationale for code commits?

Commented []: What **tools** do you use to find the rationale for code commits?

Commented []: Considering the components of rationale for code commits that you look for, which **components fit this strategy**?

8. When your strategy does not lead you to the rationale of code commits, what do you do?

9. In what **order** do you follow your **strategies**?

10. What would make your life easier in this process?

Commented []: (improvements)

11. As a developer, what are your strategies for **keeping a record** of the rationale for your code commits? Please include:

- a. Your **steps** for recording rationale of code commits.
- b. The **location** of which you record the rationale for code commits.
- c. The **tools** you use to record the rationale for code commits.
- d. The **rationale components** that fit every strategy.

Commented []: Let's talk about your strategy for keeping a record of rationale for code commits

12. During your software engineering activities, how **often** do you **record** ...

Commented []: Please choose your answers.

	Frequency of Recording					
	Almost Never	Rarely	Sometimes	Often	Almost Always	N/A
Rationale	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Component						
Goal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modifications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alternatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selected alternative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Validation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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13. During your software engineering activities, which **frequency** best reflects how often you **sought**

	Frequency of Need					
	few times a year	multiple times a year	multiple times a month	multiple times a week	multiple times a day	N/A
Rationale	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Component						
Goal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modifications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alternatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selected alternative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Validation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Commented []: For the rest of this interview, let's talk about the rationale for code commits and the model in more details.
Please answer the questions based on your experience.

Commented []: Please choose your answers.

Commented []: common frequency

14. During your software engineering activities (at any point in time), what is the **maximum frequency** with which you **sought** ...

	Max. Frequency of Need					N/A
	few times a year	multiple times a year	multiple times a month	multiple times a week	multiple times a day	
Rationale	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Component						
Goal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modifications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alternatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selected alternative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Validation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Costs	<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"/>
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Commented []: I asked you about the common frequency and now asking about the maximum frequency.

Commented []: Please choose your answers.

15. For the components of rationale for code commits that you seek, how **often** do you usually find...

	Frequency of Finding					
	Almost Never	Rarely	Sometimes	Often	Almost Always	N/A
Rationale	0	0	0	0	0	0
Component						
Goal	0	0	0	0	0	0
Need	0	0	0	0	0	0
Location	0	0	0	0	0	0
Modifications	0	0	0	0	0	0
Alternatives	0	0	0	0	0	0
Selected alternative	0	0	0	0	0	0
Validation	0	0	0	0	0	0
Benefits	0	0	0	0	0	0
Costs	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0

Commented []: Here asking about the common frequency too.
Please choose your answers.

16. For the components of rationale for code commits that you seek, how **difficult** is it to find ...

Commented []: Here asking about the common difficulty.
Please choose your answers.

	Difficulty of Finding					
	Very easy	Easy	Neutral	Difficult	Very difficult	N/A
Rationale	<input type="radio"/>					
Component						
Goal	<input type="radio"/>					
Need	<input type="radio"/>					
Location	<input type="radio"/>					
Modifications	<input type="radio"/>					
Alternatives	<input type="radio"/>					
Selected alternative	<input type="radio"/>					
Validation	<input type="radio"/>					
Benefits	<input type="radio"/>					
Costs	<input type="radio"/>					
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17. How **important** is finding each **component** (for understanding the rationale for code commits)?

Commented []: Please choose your answers.

Component	Importance				
	I would easily know the rationale for code commits without finding this component	I would know the rationale for code commits without finding this component	I would better know the rationale for code commits when finding this component	It's hard to know the rationale for code commits without finding this component	I can't know the rationale for code commits without finding this component
Goal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modifications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alternatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selected alternative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Validation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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18. How important is understanding the rationale of code commits for the completion of your work?

- I **don't need** the rationale of code commits and I **can complete** my work without it
- I **don't need** the rationale of code commits but **it helps me complete** my work
- I **need** the rationale of code commits but I **can complete** my work without it
- I **really need** the rationale of code commits and I **struggle to complete** my work without it
- I **really need** the rationale of code commits and I **can not complete** my work without it

Commented []: Please choose your answer.

19. How much **time** do you **usually spend** when searching for the rationale of code commits?

- Less than 5 minutes
- 5-10 minutes
- 10-20 minutes
- 20-30 minutes
- More than 30 minutes
- I don't search for rationale

Commented []: Please choose your answer.

20. In the cases where it is hard to find the rationale of code commits, how much **time** do you **usually spend** searching for the rationale of code commits?

- Less than 5 minutes
- 5-10 minutes
- 10-20 minutes
- 20-30 minutes
- More than 30 minutes
- N/A

Commented []: Please choose your answer.

When do you give up?

21. Is there anything else you want to tell me about the rationale for code commits?

Commented []: This is an open question for you if you wish to add anything.

22. Is there anyone you know who would participate in this study?

23. Will you be interested in disseminating a related survey to people who would participate?