

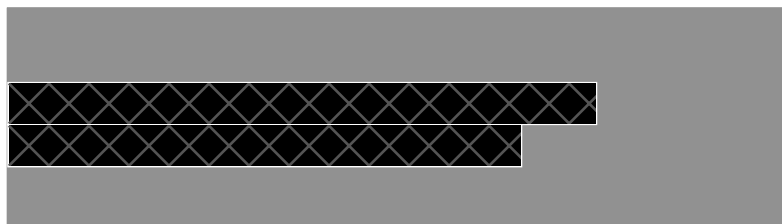
Skills for Code Review

Dear expert,

Thanks to your feedback in the first stage of our study, we have proposed a list of skills for code reviews. Now we are coming back to you to confirm that we treated your feedback in a useful and appropriate way.

The list of skills is going to be used in a study about what skills developers consider important for code reviews and which skills they lack.

We would like to ask you to review the list and leave comments on their relevance and readability. You can use comments as well as the *suggestions mode*. At the end of the list, you find several closing-up questions.



The skills are organized in the following structure:

Technical skills

- Change Understanding
- System and Codebase Navigation
- Software Quality and Its Assessment

Social skills

- Discussing Informatics Topics
- Relating to Colleagues

Personal skills

Technical Skills

Change understanding

To write a clear change description

Explaining what is the goal and behavior of the change, linking to issue management systems (if it is a bug fix) etc.

To develop a mental model of the change

Developing a mental model of the change and how it relates to the requirements and application domain.

System and codebase navigation

To systematically navigate codebase

Systematically exploring the codebase, applying correctly in the change the functions and libraries used in the system.

To find relevant information beyond the codebase

in the documentation, requirements, language documentation, online resources, literature etc.

To identify patterns in the code

Identifying patterns in the code and its structural properties, evaluating design patterns implementation, identifying what parts of the code are or can be reused.

To proficiently use the tools used in the team

Code review tools, IDEs, versioning software, issue management systems, etc.

Software Quality and Its Assessment

To evaluate if the implementation fulfills the requirements

To evaluate architectural implications of the change

To evaluate the code change quality with respect to its effects on the *correctness* of the software system

To evaluate the code change quality with respect to its effects on the *user-affecting properties* of the software system

Usability, performance, security.

To evaluate the code change quality with respect to its effects on the *evolvability* of the software system

Structuredness, maintainability, compatibility, etc.

To estimate complexity of the problem and solution

Distinguishing complex and simple problems, estimating relevant complexity measures.

To know and correctly use programming languages

Effectively using programming languages applied in the system with respect to the related programming paradigms (object-oriented programming, functional, procedural programming, etc.)

Social Skills

Discussing Informatics Topics

To communicate in an understandable way

To give constructive feedback

Able and willing to criticize constructively, ask important and relevant questions, suggesting adjustments and alternative solutions, helping others realize new ideas.

To understand the dynamics of the discussion and its conclusions

Being able to follow how a discussion is developing over time, how the participants react to each other, and what conclusions can be taken out of the discussion.

Relating to Colleagues

To adjust communication style to different individuals

To pick up and act on ideas of others

To be willing to compromise

To convince others about your ideas

To mentor other developers

Guiding less experienced developers to develop their code reviewing and programming skills and their understanding of the team/project/company processes.

To effectively manage own emotions

Dealing with negative emotions and distressing circumstances, accepting negative feedback, dealing with external stress.

To handle conflicts

Enhancing productive outcomes of a conflict while minimizing its escalation or harm done.

To be aware of the capacity of co-workers in terms of time, experience and knowledge

Personal Skills

To have effective review time-management

Assigning appropriate time resources for the reviews, balance review response time with other responsibilities.

To set, express, and manage priorities

related to software requirements, release planning, bug severity, product backlog in agile development etc.

To understand the purpose of the code review and the level of detail needed for it

To be willing to learn and improve

Being open to new ideas, able to learn from past mistakes for future reviews.

Closing-Up Questions

We would like to ask you to let us know about your overall evaluation of the skillset for code reviews.

Please rate (mark with X) the following statements:

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
The skill set contains relevant skills for code reviews.					
The list of skills for code review is comprehensive .					
The items/skills are well understandable and readable.					

Do you have any additional remarks on the skillset?

What skills are missing? What did improve/worsen from the first version?

Please comment here:

Thank you! We appreciate your help with setting up our study about skills needed for code reviews. If you have any further comments or questions on the study, do not hesitate to contact us.

