

Table 1: Developers’ Questions and the Operators and Domains for Desired Answers (*: *question explicitly stated by a developer*, *id*: *identifier matching*, *t*: *text matching*).

(For a description of the interview process, see T. Fritz and G. C. Murphy, Using Information Fragments to Answer the Questions Developers Ask, in *Proc. of ICSE’10*, pages 175–184, 2010.)

Question	Operator	Source Code	Change Sets	Teams	Work Items	Comments	Web/Wiki	Stack Traces	Test Cases
<i>Who is working on what (people specific)</i>									
1. Who is working on what?*	<i>id</i>	X	X	X	X				
2. What are they [coworkers] working on right now?*	<i>id</i>	X	X	X	X				
3. What have other people been working on?*	<i>id</i>	X	X	X	X				
4. How much work [have] people done?*	<i>id</i>	X	X	X	X				
5. Who changed this [code], focused on person?*	<i>id</i>	X	X	X	X				
6. Who to assign a code review to? / Who has the knowledge to do the code review?	<i>id</i>	X	X	X	X				
7. What [have] people done lately?*	<i>id</i>	X	X	X	X				
8. Who is working on what at the moment?*	<i>id</i>	X	X	X	X				
9. What has [a particular team member] been doing?*	<i>id</i>	X	X	X					
10. What have people been working on?*	<i>id</i>			X	X				
11. Which code reviews have been assigned to which person?*	<i>id</i>			X	X				
12. Who to assign a code review to? / Who has time for a code review?	<i>id</i>			X	X				
<i>Changes to the code (code specific)</i>									
13. What is the evolution of the code?	<i>id</i>	X	X	X	X				
14. Why were they [these changes] introduced?*	<i>id</i>	X	X	X	X				
15. Who made a particular change and why?	<i>id</i>	X	X	X	X				
16. What classes has my team been working on?*	<i>id</i>	X	X	X	X				
17. What are the changes on newly resolved work items related to me?	<i>id</i>	X	X	X	X				
18. Who is working on the same classes as I am and for which work item?	<i>id</i>	X	X	X	X				
19. Who changed this [code], focused on code?*	<i>id</i>	X	X	X	X				
20. What is the whole history of this file?	<i>id</i>	X	X	X	X				
21. What has been happening on [this] class?*	<i>id</i>	X	X	X	X				
22. What [have] people changed lately?*	<i>id</i>	X	X	X	X				
23. What changes have been made and why?*	<i>id</i>	X	X		X				
24. What has changed between two builds [and] who has changed it?*	<i>id</i>	X	X	X					
25. Who has made changes to my classes?	<i>id</i>	X	X	X					
26. Who is using that API [that I am about to change]?*	<i>id</i>	X	X	X					
27. Who created the API [that I am about to change]?*	<i>id</i>	X	X	X					
28. Who owns this piece of code? / Who modified it the latest?*	<i>id</i>	X	X	X					
29. Who owns this piece of code? / Who modified it most?*	<i>id</i>	X	X	X					
30. Who to talk to if you have to work with packages you haven’t worked with?	<i>id</i>	X	X	X					
31. How much has changed [in the project code]?*	<i>id</i>	X	X	X					
32. [Is anyone] intending to commit anything to that class?*	<i>id</i>	X	X	X					
33. Where have changes been made related to you?*	<i>id</i>	X	X	X					
34. Who is responsible for this code? (Who made the latest change?)	<i>id</i>	X	X	X					
35. Which team is responsible for this code? (Who [has] made most changes to the code?)	<i>id</i>	X	X	X					
36. What classes have been changed?*	<i>id</i>	X	X						
37. [Which] API has changed (to see which methods are not supported any more)?*	<i>id</i>	X	X						
38. What’s the most popular class? [Which class has been changed most]?*	<i>id</i>	X	X						
39. Which other code that I worked on uses this code pattern / utility function?	<i>id</i>	X	X						

Question	Operator	Source Code	Change Sets	Teams	Work Items	Comments	Web/Wiki	Stack Traces	Test Cases
40. Which code has recently changed that is related to me?	<i>id</i>	X	X						
41. How do recently delivered changes affect changes that I am working on?*	<i>id</i>	X	X						
42. What code is related to a change?	<i>id</i>	X	X						
43. Where has code been changing [this week]?*	<i>id</i>	X	X						
44. Which classes have been changed between two builds?	<i>id</i>	X	X						
45. What is going on [in a package]?*	<i>id</i>	X	X						
46. [Which] changes [have been made] between these days or after this day?*	<i>id</i>	X	X						
47. What classes in this component were modified since version [...]?*	<i>id</i>	X	X						
<i>Work item progress</i>									
48. What is the recent activity on a plan item?	<i>id</i>				X	X			
49. Which features and functions have been changing?*	<i>id</i>				X	X			
50. Has progress been made on blockers (blocking work items) in your milestone?	<i>id</i>				X	X			
51. Which work items/plan items are most active?	<i>id</i>				X	X			
52. How active is the [plan item]? [How many comments were made on related work items]?*	<i>id</i>				X	X			
53. Are there any new comments on interesting work items?	<i>id</i>				X	X			
54. What work item has recently changed that is related to me?	<i>id</i>				X	X			
55. [What are the] emails related to line items and defects that are features?*	<i>id</i>				X	X			
56. What are the comments on newly resolved work items that are related to me?	<i>id</i>				X	X			
57. Is progress (changes) being made on plan items?	<i>id</i>		X		X				
58. What is the activity on a line item (feature)?	<i>id</i>		X		X				
<i>Broken builds</i>									
59. What caused this build to break? (Which change caused the stack trace?)	<i>id</i>	X	X					X	
60. What has caused this built to break? (look at stack trace and intersect with change sets)	<i>id</i>	X	X					X	
61. Who caused this build to break? (Who owns the broken tests?)	<i>id</i>	X	X	X					X
62. Who changed the test case most recently that caused the build to fail?	<i>id</i>	X	X	X					X
63. Which changes caused the tests to fail and thus the build to break?	<i>id</i>	X	X					X	X
<i>Test cases</i>									
64. Who owns a test case? (Who resolved the last work item that fixed the test case?)	<i>id</i>	X	X	X	X				X
65. Who is responsible for a failing test case? (stack trace)	<i>id</i>	X	X	X				X	X
66. How do test cases relate to work items?	<i>id</i>	X	X		X				X
67. How do test cases relate to packages/classes?	<i>id</i>	X							X
<i>References on the web</i>									
68. Which API has changed (check on web site)?	<i>t</i>	X					X		
69. [Is an entry] in newsgroup forum addressed to me because of the class mentioned?*	<i>t</i>	X					X		
70. What is coming up next week [for my team]? [What is my team doing]?*	<i>t</i>			X			X		
71. What am I supposed to work on [plan on wiki]?*	<i>t</i>			X			X		
72. Who has to do what? (team activity)*	<i>t</i>			X			X		
<i>Other Questions</i>									
73. How is the team organized?*	<i>id</i>	X	X	X					
74. Who has made changes to [a] defect?*	<i>id</i>		X	X	X				
75. Who has made comments in defect?*	<i>id</i>			X	X	X			
76. [What is] the collaboration tree around a feature?*	<i>id</i>			X	X	X			
77. Which conversations in work items have I been mentioned?*	<i>t,id</i>			X	X	X			
78. What are people commenting [on] all work items I am involved with?*	<i>id</i>			X	X	X			