INFORMED CONSENT

PURPOSE

You are being asked to take part in a research study. The purpose of this study is to explore factors that developers use to determine the complexity of a task that has been assigned to them. Knowing these factors can provide useful indications to help improve the effectiveness of expertise recommendation tools

ACTIVITIES

The study activities include participating in a short online survey with a potential follow-up interview that it is optional for you to accept or not. The survey is about factors that you use to determine the complexity of a task. The interview will further ask about details regarding the answers to the online survey. The interview will be audio recorded.

You can agree or not to the interview at the end of the survey

TIME

The survey should at most 15 minutes to complete. The interview can take around 30 minutes.

PAYMENT

You will be enrolled in a raffle for a $25 Amazon gift card for your participation in the survey. Also, you will enter in an additional raffle if you decide to participate in the interview as well. There will be one gift card for every 30 participants in each raffle.

CONFIDENTIALITY

It is possible that others could learn that you participated in this study, but the information you provide will be kept confidential to the extent permitted by law. Your answers will not be shared with IBM and, if published, they will be anonymous and aggregated to prevent it being traced back to you.

Your email address will be asked only to participate in the raffle and for a follow-up interview should you accept to it (and the additional raffle).

VOLUNTARY

Participation in this study is voluntary. You are free to decide not to participate or to withdraw at any time without adversely affecting your relationship with the investigators, Oregon State University, or IBM.

STUDY CONTACTS

If you have any questions about this research project, please contact: 'anita.sarma@oregonstate.edu'. If you have questions about your rights or welfare as a participant, please contact the Oregon State University Institutional Review Board (IRB) Office, at (541) 737-8008 or by email at IRB@oregonstate.edu.

Please type your email address to confirm that you have read the informed consent and that you agree to participate.

[   ]

Demographics

Which role best describes you in your primary project?

○ Developer

○ Tester

○ Manager

○ Other (please specify):

[   ]

What is your software development experience?

○ 0-5 years

○ 6-10 years

○ more than 10 years

Complexity

High Complexity Tasks

To answer the following questions, please recall a **high complexity** software development task (i.e. a difficult issue) you recently had in your job

What made the task complex?

Process Metrics
Please select the usefulness of the following *process metrics* to describe a difficult task? (and explain why)

(Hover on a metric for a brief explanation)

	Usefulness				Explanation
	Essential	Worthwhile	Unwise	Unimportant	Why?
Number of times the task has been reopened	○	○	○	○	[ ]
Number of developers previously associated with the task	○	○	○	○	[ ]
Number of comments in the task description	○	○	○	○	[ ]
Number of files that need to be modified	○	○	○	○	[ ]
Other (please specify): N/A	○	○	○	●	[ ]

Code Metrics

Please select the usefulness of the following *code metrics* to describe a difficult task? (and explain why)
These metrics refer to files that are relevant for the task (i.e. files that need to be modified to solve the task)

(Hover on a metric for a brief explanation)

	Usefulness				Explanation
	Essential	Worthwhile	Unwise	Unimportant	Why?
Number of developers who have worked on the files that are going to be edited for the task	○	○	○	○	[ ]
Number of times that the files have been edited in the past	○	○	○	○	[ ]
Centrality of the files	○	○	○	○	[ ]
Number of lines of code (LOC) of the files	○	○	○	○	[ ]
Maximum cyclomatic complexity of the files	○	○	○	○	[ ]
Comment to code ratio (Lines of comments / Lines of code) in the files	○	○	○	○	[ ]
Other (please specify): [N/A]	○	○	○	◉	[ ]

Low Complexity Tasks

To answer the following questions, please recall a **low complexity** software development task (i.e. an easy issue) you recently had in your job

What made the task simple?

Process Metrics
Please select the usefulness of the following *process metrics* to describe an easy task? (and explain why)

(Hover on a metric for a brief explanation)

	Usefulness				Explanation
	Essential	Worthwhile	Unwise	Unimportant	Why?
Number of times the task has been reopened	○	○	○	○	[ ]
Number of developers previously associated with the task	○	○	○	○	[ ]
Number of comments in the task description	○	○	○	○	[ ]
Number of files that need to be modified	○	○	○	○	[ ]
Other (please specify): [N/A]	○	○	○	◉	[ ]

Code Metrics
Please select the usefulness of the following *code metrics* to describe an easy task? (and explain why)

These metrics refer to files that are relevant for the task (i.e. files that need to be modified to solve the task)

(Hover on a metric for a brief explanation)

	Usefulness				Explanation
	Essential	Worthwhile	Unwise	Unimportant	Why?
Number of developers who have worked on the files that are going to be edited for the task	○	○	○	○	[ ]
Number of times that the files have been edited in the past	○	○	○	○	[ ]
Centrality of the files	○	○	○	○	[ ]
Number of lines of code (LOC) of the files	○	○	○	○	[ ]
Maximum cyclomatic complexity of the files	○	○	○	○	[ ]
Comment to code ratio (Lines of comments / Lines of code) in the files	○	○	○	○	[ ]
Other (please specify): N/A	○	○	○	◉	[ ]

Are there any other metrics that you use to determine complexity of a task? Please specify how the metric is associated with the complexity.

[   ]

Developer

How frequently do you feel you have been miss-assigned a task?
(e.g. you are asked to work with an API you have not used or unfamiliar code)

Never	Rarely	Sometimes	Often	All the Time
○	○	○	○	○

How do you do when you have been miss-assigned a task?

[   ]

Manager

What strategy do you use to find an appropriate developer to work on a task?

How often does a task need to be re-assigned?

Never	Rarely	Sometimes	Often	All the time
○	○	○	○	○

What are the reasons for reassigning a task?

	Never	Rarely	Sometimes	Often	All the time
Developer is too busy	○	○	○	○	○
Developer is struggling with the task	○	○	○	○	○
Another developers is idle	○	○	○	○	○
Task requires more work than anticipated	○	○	○	○	○
Other (please specify)	○	○	○	○	○

Follow-up Interview

Thank you for taking the survey!
You have been enrolled for a $25 Amazon gift card raffle!

If you choose to participate in a potential follow-up interview, you can enter an additional raffle for a second $25 Amazon gift card.

○ Yes, I'd like to be participate in the potential follow-up survey

○ No, I'd rather not participate in any follow-up survey