

Consent Form for Participation in Research

Study Title: A Study of Language Features for Immutability

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Other Investigator(s): Joshua Sunshine, Whitney Nelson

Sponsor(s): National Science Foundation

Purpose of this Study

The purpose of the study is to understand how immutability-related features in programming languages impact programmer productivity.

Procedures

Participants will be asked to complete a questionnaire asking about their programming experience and their understanding of Java. They may also be asked to complete a tutorial regarding one or more programming language or programming environment features. Then, participants will be given programming tasks to complete, with a time limit for each task. The programming work will be recorded and an event logger will log interactions with the programming environment so investigators can analyze them to better understand how participants worked on the tasks. Only investigators that are part of this study will have access to the recordings.

The study will take about 1.5 hours and will take place in Newell-Simon Hall 2613.

Participant Requirements

Participants must be at least 18 years old and have experience programming in Java.

Risks

The risks and discomfort associated with participation in this study are no greater than those ordinarily encountered in daily life or during writing software, such as office-related injuries. There is a risk of breach of confidentiality because we are collecting your name and email address, but we will store your data in an anonymized format (using an ID instead of your name), and keep your identifiable information in a secure location.

Benefits

There may be no personal benefit from your participation in the study but the knowledge received may be of value to humanity. Participants may learn about immutability in software and how immutability might affect productivity.

Compensation & Costs

Participants will be paid \$15 for participating in the study.

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There will be no cost to you if you participate in this study.

Confidentiality

By participating in the study, you understand and agree that Carnegie Mellon may be required to disclose your consent form, data and other personally identifiable information as required by law, regulation, subpoena or court order. Otherwise, your confidentiality will be maintained in the following manner:

Your data and consent form will be kept separate. Your consent form will be stored in a locked location on Carnegie Mellon property and will not be disclosed to third parties. By participating, you understand and agree that the data and information gathered during this study may be used by Carnegie Mellon and published and/or disclosed by Carnegie Mellon to others outside of Carnegie Mellon. However, your name, address, contact information and other direct personal identifiers in your consent form will not be mentioned in any such publication or dissemination of the research data and/or results by Carnegie Mellon.

The researchers will take the following steps to protect participants' identities during this study: (1) Each participant will be assigned a number; (2) The researchers will record any data collected during the study by number, not by name; (3) Any original recordings or data files will be stored in a secured location accessed only by authorized researchers.

Optional Permission

I understand that the researchers may want to use a short portion of any screen recording or event log for illustrative reasons in presentations of this work for scientific or educational purposes. I give my permission to do so provided that my name and face will not appear.

Please initial here: _____ YES _____ NO

Rights

Your participation is voluntary. You are free to stop your participation at any point. Refusal to participate or withdrawal of your consent or discontinued participation in the study will not result in any penalty or loss of benefits or rights to which you might otherwise be entitled. The Principal Investigator may at his/her discretion remove you from the study for any of a number of reasons. In such an event, you will not suffer any penalty or loss of benefits or rights which you might otherwise be entitled.

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Right to Ask Questions & Contact Information

If you have any questions about this study, you should feel free to ask them now. If you have questions later, desire additional information, or wish to withdraw your participation please contact the Principal Investigator by mail, phone or e-mail in accordance with the contact information listed on the first page of this consent.

If you have questions pertaining to your rights as a research participant; or to report concerns to this study, you should contact the Office of Research Integrity and Compliance at Carnegie Mellon University. Email: irb-review@andrew.cmu.edu . Phone: 412-268-1901 or 412-268-5460.

Voluntary Consent

By signing below, you agree that the above information has been explained to you and all your current questions have been answered. You are encouraged ask questions about any aspect of this research study during the course of the study and in the future. By signing this form, you agree to participate in this research study.

PARTICIPANT SIGNATURE

DATE