VUMC Institutional Review Board
Informed Consent Document for Research

Principal Investigator: Dr. Yu Huang **Revision Date: 12/10/2022**
Study Title: Investigating Software Developer Productivity
Institution/Hospital: Vanderbilt University

Name of participant: _____ Age: _____

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you will be given a copy of this consent form.

Key Information:
The first section of this document contains some key points that the research team thought you would find important. The study is described in more detail after this section. If you do not understand something, please ask someone.

Key information about this study:
This study aims to evaluate visual behavior of programmers doing software engineering tasks (e.g. debugging, code comprehension). You can benefit from participating in this study by gaining experience with software engineering activities you would experience in the real world. There are minimal potential risks to this study. You should not take part in the study if they have a history of epileptic seizures or any allergies. The time commitment for this study is one visit lasting approximately 90 minutes. There are no limitations on your daily activities and no restrictions on certain medicines/foods during the study. There are also no potential costs to the participant for this study. Additionally, you will not be asked to participate in sub-studies.

Detailed Information:
The rest of this document includes detailed information about this study (in addition to the information listed above).

You are being asked to take part in this research study because you have taken CS 2201 at Vanderbilt University or have equivalent knowledge of and experience with fundamental computer science data structures and the C++ programming language.

You do not have to be in this research study. You may choose not to be in this study and get other treatments without changing your healthcare, services, or other rights. You can stop being in this study at any time. If we learn something new that may affect the risks or benefits of this study, you will be told so that you can decide whether or not you still want to be in this study.

Procedures to be followed and approximate duration of the study:

Calming video: ~ 3 minutes
Pre-task Survey: ~5 minutes
Pre-task Mood Assessment: ~5 minutes
Code Comprehension: ~15-20 minutes
Code Writing: ~15-20 minutes
Reading Comprehension: ~15-20 minutes
Post-task Mood Assessment: ~5 minutes

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Digit Span: ~3 minutes
Circle Drawing: 2 minutes
Short writing task: ~5 minutes
Post-task survey: ~ 5 minutes

During this study, you will will complete two tasks related to software engineering (code comprehension, code writing), one task related to natural language comprehension, a pre and post survey, some short mood assessments before, during, and after the session, and three short behavioral assessments after the tasks. Each survey may take around 5 minutes to complete. During the study, you will wear an Empatica EmbracePlus smart band to collect biometric data while also having your visual behavior recorded by an eye-tracker. Each task should take between 15-20 minutes to complete. You will complete a short Digit Span task, a free response writing task, and a drawing task after the eye-tracking portion of the study. In total, the study should take approximately 90 minutes.

Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:

By taking part in this study, you may experience some discomfort due to extended periods of sitting in a fixed position for the eye-tracker.

Good effects that might result from this study:

a) Informative results human behavior while completing software tasks.
b) Practice with software engineering tasks

Study Results:

By default, your results from the software development tasks and surveys will not be shared with you. You may ask for your results if you would like.

Compensation for participation:

You will be compensated $30.00 for your participation after the study's completion.

You are not allowed to accept any money for taking part in this study if you are not eligible to receive money from a U.S. person or company or the U.S. government because of U.S. national security and/or foreign policy laws. You can still take part in the study however, you will not be paid if you are a resident of a country restricted by the U.S. government's comprehensive territorial sanctions or if you are listed on the U.S. Treasury Department's Office of Foreign Assets Control's Specially Designated Nationals (SDN) list of prohibited individuals. You do not have to say why you choose not to be paid.

Circumstances under which the Principal Investigator may withdraw you from study participation:

The Principal Investigator may withdraw you from study participation if you do not possess the necessary knowledge and experience with fundamental computer science data structures and the C++ programming language to complete the tasks in this study, or if you have a history of epileptic seizures or allergies.

What happens if you choose to withdraw from study participation?

If you choose to withdraw from study participation, your survey responses, software development task results, and biometric data will not be included in the study's data collection, analyses, and results. You will only be paid for participation if you come in for your scheduled experimental session. If you end the study early, you will be paid a partial amount of $10.

Contact Information. If you should have any questions about this research study or possibly injury, please feel free to contact **Zach at z.karas@vanderbilt.edu, Danielle at danielle.m.page@vanderbilt.com** or our Faculty Advisor**, Dr. Yu Huang** at yu.huang@vanderbilt.edu.

For additional information about giving consent or your rights as a participant in this study, to discuss problems, concerns, and questions, or to offer input, please feel free to contact the Institutional Review Board Office at (615) 322-2918 or toll free at (866) 224-8273.

Confidentiality:

All efforts, within reason, will be made to keep your personal information in your research record confidential but total confidentiality cannot be guaranteed. Biometric data, survey data, and task data will be anonymized once collected using randomized ID numbers. The data will be stored in a private, password-protected server. Only the researchers involved in this study will have access to this data.

If you decide not to take part in this research study, it will not affect your treatment, payment or enrollment in any health plans or affect your ability to get benefits. You will get a copy of this form after it is signed.

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Would you like to be contacted for future studies?_____

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I have read this informed consent document and the material contained in it has been explained to me verbally. All my questions have been answered, and I freely and voluntarily choose to participate.

_____ _____
Date Signature of patient/volunteer

Consent obtained by:

_____ _____
Date Signature

_____
Printed Name and Title