**INFORMATION SHEET FOR RESEARCH PARTICIPANTS, FOR MINORS (aged <18 years old) SEE PAGE 6**

*Dear Sir or Madam,*

*We would like to invite you to participate in our research study. Before you decide, it is important that you understand why this research is being carried out and what it means for you.*

*Your participation is completely voluntary.*

*In this information sheet you will find important and detailed information about participating in the research project.*

*All data collected in this project is subject to strict data protection rules.*

*Please take the time to read this information. If you have any questions or require further information, please do not hesitate to contact us.*

|  |
| --- |
| **Information sheet for research participants**  **A copy of this information sheet should be given to you**  Name of the project: Development of Debugging Tasks & Conducting a Pilot Study to Evaluate Educational Activities  This research project has been approved by the EPFL Human Research Ethics Committee (HREC No.......).  The research project is conducted by: prof Francesco Mondada, Jérôme Brender, Ludovic Pujol, prof Engin Bumbacher  Institution / Professional address: EPFL STI IEM SCI-STI-FMO1 ME B3 426, Station N° 9, CH - 1015 Lausanne |

**1. General information about the project**

*Computational Problem-Solving (CPS) is crucial in our digital age. It involves understanding and fixing issues in computer programs, a process known as debugging. Debugging is a key part of what we call Computational Thinking (CT). Without being able to find and fix mistakes in computer code, or "bugs," it's hard to make computer programs work, no matter what programming tools or languages are used. By investigating debugging strategies in different computing environments, creating validated assessment tools, and developing effective pedagogical approaches, this project aims to make a multi-faceted contribution to computer science in education.*

**2. Objectives of the research project (Why this research project?)**

*The overarching objective of this research project is to delve into the mechanisms and strategies employed by individuals, particularly students, to identify and resolve bugs in computer programs. We aim to scrutinize the specific processes and techniques adopted to troubleshoot and debug code, focusing on both the cognitive and technical aspects of this problem-solving endeavor.*

**3. Selection of potential participants (Who has been invited to participate in this study?)**

*Participation is open to all people who have general cognitive and communication skills.*

*We are carrying out this project in accordance with the requirements of Swiss law.*

**4. Procedure for participants (What do I have to do / what is expected of me if I decide to participate?)**

*The activity will take place on EPFL campus in the MEB building. Participants will solve a programming activity with Thymio. All the materials and tools will be provided. Facilitators will always be available during the activity to ensure your safety. Participants will have to answer a pre-test questionnaire. The full activity will last for approximately 90 minutes.*

**5. Benefits for participants (What are the possible benefits of my participation?)**

*If you participate in the project, it may advance your knowledge in programming concept and understand better how you can deal with “bug” in computer science.*

**6. Risks (What are the possible risks and constraints of my participation?)**

*No video/photos will be made of you during this study. Only recordings of your interactions with the learning platform.*

**7. Participants' rights (What are my rights?)**

*Your participation is entirely voluntary. You are free to accept or refuse to participate in the project. If you choose not to participate, or if you choose to change your mind during the course of the project, you will not have to justify your decision. This will not put you at a disadvantage in any way. You can ask any questions about the study at any time. Please contact the person listed at the end of this information sheet.*

*Finally, you can exercise the following rights with the Principal Investigator:*

* ***Right to withdraw your consent****: (see section 11 for more information)*
* ***Right to be informed****: you may at any time request further information about the project, about the use of your personal data, and about any future project that uses your personal data (Please adapt the last part of this sentence as appropriate to the project);*
* ***Right of access****: you have the right to know what personal data we hold about you;*
* ***Right to object****: in certain circumstances you can also object to the processing of personal data at any time;*
* ***Right to modify or delete****: your personal data may be modified or deleted, unless otherwise provided by law;*
* ***Right to portability****: in certain circumstances, you can ask us to provide you with your personal data in a suitable format for transfer to another data controller;*
* ***Right to lodge a complaint****: if you consider that we have made improper use of your personal data, you have the right to lodge a complaint with the Swiss Federal Data Protection and Information Commissioner or with the supervisory authority in your country or residence.*

**8. Information about the results of the research (Will I be informed about the results of the research?)**

*You will not normally be informed of the results of research projects using your personal data, unless you specifically request this from the principal investigator at the following emails:* [jerome.brender@epfl.ch](mailto:jerome.brender@epfl.ch), [ludovic.pujol@epfl.ch](mailto:ludovic.pujol@epfl.ch)

**9. Protection of personal data (How is my data protected?)**

*Personal data collected. For the purposes of the study, we will record the following personal data: gender, age and educational background.*

*Purpose of the data processing. By law, EPFL may collect and use personal data for research purposes (art. 36c of the Federal Law on the Federal Institutes of Technology of 4 October 1991) and we rely on this legal basis to legitimise our processing of personal data.*

*Security measures. Your personal data will be anonymised after collection. It will be encrypted when used by researchers and will in principle be anonymised in any scientific publication (unless you have consented to publication of your personal data).*

*The term "anonymised" means that your personal information has been sufficiently aggregated and protected, preventing anyone from re-identifying you. This means that no one can re-identify you unless they go to great lengths to do so. It should be noted, however, that absolute anonymity cannot be guaranteed.*

*Finally, we take appropriate technical and organisational measures to protect your personal data as much as possible. Your personal data will be stored until the end of the project before being deleted or anonymised.*

*Publication. In the case of publication, personal data is anonymised and it is not possible for third parties to re-identify you. Your name will never appear on the Internet or in a publication.*

*Communication and transfer. We may transfer your personal data to the following recipients for the purposes of this project only:*

* *Other research partners located in Switzerland or abroad; and*
* *Subcontractors; and*
* *Scientific journals; and*
* *Authorities responsible for monitoring research projects (such as Swiss or foreign ethics committees or Swiss or foreign authorities responsible for protecting your personal data).*

*If raw data is to be transmitted, it will always be coded and will therefore not identify you as an individual. If data is sent abroad, the foreign institution receiving the data must comply with standards or clauses that are at least equivalent to those in Switzerland. If necessary, a contract will be drawn up with the partner or subcontractor.*

**10. Re-use of your personal data in future projects**

*Your personal data may be re-used in scientific research projects, not yet defined, in Switzerland and abroad. The recipient of your data will, however, have to comply with the same standards and requirements as those required for the present project, in particular with regard to the period of retention. The research projects will be carried out by researchers at EPFL, as well as at other research institutions (e.g. other hospitals, universities, research institutes, start-ups or research companies) in Switzerland and abroad. Your personal data will only be transmitted in coded or anonymised form and a contract will be concluded with the institutions concerned.*

*You can always contact us to receive information about the further use of your personal data by sending an email to the following address:* Jerome.brender@epfl.ch

**11. Withdrawal from the project (What if I want to stop participating? What will be the consequences?)**

*Your participation is entirely voluntary. You can withdraw from the study at any time if you wish. If you choose not to participate, or if you choose to participate and withdraw during the course of the study, you do not have to explain your decision.*

*If you withdraw, we will not collect any further personal data about you, but we will retain and use the personal data already collected (at the time of your withdrawal) until the end of the project. If applicable, your data will therefore not be used in any further research projects - it will be deleted at the end of the project. However, if you specifically request it, we will delete (or anonymise) all your personal data.*

**12. Compensation for participants (Will I be reimbursed for my participation?)**

*If you participate in this project, you will receive 25 CHF. You will be contacted by the HEP so they can transfer you the amount.*

**13. Compensation for damage**

*Damages caused as a result of this study will be covered if EPFL is held responsible for the occurrence of such damages. If you have suffered any damage, please contact the principal investigator immediately.*

*You are nevertheless required to obtain accident and health insurance (in general, compulsory in Switzerland).*

**14. Contact person(s)**

*If you have any doubts, concerns or emergencies during or after the study, you can contact one of the following people at any time:*

*Pofesseur: Francesco Mondada* [*francesco.mondada@epfl.ch*](mailto:francesco.mondada@epfl.ch) *EPFL STI IEM SCI-STI-FMO1 ME B3 426, Station N° 9, CH - 1015 Lausanne*

*Doctoral assistant: Jerome Brender jerome.brender@epfl.ch MEB3 434 Station 9, CH 1015 Lausanne*

*Student in charge: Ludovic Pujol* [*ludovic.pujol@epfl.ch*](mailto:ludovic.pujol@epfl.ch) *Rue de la Gare 22, 1110, Morges, Switzerland*

*Pofesseur: Engin Bumbacher* [*engin.bumbacher@hepl.ch*](mailto:engin.bumbacher@hepl.ch) *Avenue de Cour 33, 1014, Lausanne, Switzerland*