Collaborative code editing tool: Design and Evaluation

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Place: LCI Lab: https://lci.idi.ntnu.no/
Suitable for: One or Two students

Introduction

The focus of the thesis is to develop a collaborative code editing tool and evaluate the tool using multimodal data (e.g., EEG, eye-tracking, heart rate, emotions).

Thesis Description

In a first step, the student needs will design and implement the collaborative coding interface. Afterwards, the candidate will conduct a small user study in order to test the functionalities and usability of the system in remote and collocated collaborative scenarios. Then the candidate will conduct a proper user study . Finally, the candidate will analyse the collected data and write up his/her thesis.

Requirements

The ideal candidate will have a background in system design. Solid programming skills and an interest in hands-on development and experimentation is also a requirement.

Programming skills: Java or python.

Expected Project Work Packages

1. **WP:** Finalize the requirements for a collaborative code editing tool in both remote and collocated situations.
2. **WP:** Iteratively develop and test the collaborative code editing tool.
3. **WP:** Conduct a user study to test the usability of the system.
4. **WP:** Conduct another user study using multimodal data, collect empirical data and analyze them.
5. **WP:** Write-up the thesis.

Thesis grading scheme

Grade	Description of the evaluation criteria
A	The candidate demonstrates excellent judgement and a high degree of independent thinking. **Significantly exceeded expectations** with original contribution.
B	The candidate demonstrates sound judgement and a very good degree of independent thinking. A very good performance, **the candidate has exceeded expectations.**

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C	A good performance in most areas. The candidate demonstrates a reasonable degree of judgement and independent thinking in the most important areas, **the expectations are met but not surpassed.**
D	A satisfactory performance, but with significant shortcomings. The candidate demonstrates a limited degree of judgement and independent thinking.
E	A performance that meets the minimum criteria, but no more. The candidate demonstrates a very limited degree of judgement and independent thinking.
F	A performance that does not meet the minimum academic criteria. The candidate demonstrates an absence of both judgement and independent thinking.