

# Design of an Assistance Tool/Framework for Code-Evolution Experiments

## Task

In this thesis, you will have to create a tool that allows the analysis of source code in the course of software-development of embedded systems. In doing so, a copy of the source code shall be created in a directory when the compile button is being pressed. These copies are supposed to be searched through for data automatically whereas the following emphases should be considered:

- General framework for the process analysis of source code
- Testing of the resulting code against a testing environment having been developed in advance, including error logging
- Evaluation of structural changes of the code
- Optional: gathering of semantical changes of the code in the course of time with a known development task
- Optional: in known semantical change and respectively of the modularization, the determination of the information hiding aspect (enclosure) and respectively the factorization and its adherence
- Optional: other metrics to be chosen

Basic tools of the procedure are script-languages (Python, Perl, Ruby,...). The aim is to create a data format that preferably can be read directly by SPSS or similar tools. An exemplary, light-weight evaluation is premised.

## Prerequisites

- Programming with script languages
- Advantages are the habitual exposure to SPSS, development of embedded systems and an emphasis on software engineering.

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