

# INFORMATION TRACEABILITY BETWEEN VARIABILITY ARTIFACTS AND THEIR RELATED VARIANTS

## Current Situation

Many artifacts (such as Feature Models and Delta Models) are used to express software variability. Each artifact uses a particular variability modeling approach. Additionally, the relation between each artifact is defined using a textual configuration file. Such a configuration file is difficult to create and understand. A better representation (such as a Graph-based representation) can solve this issue.

## Background

Software Product Lines (SPLs) have been proposed as a methodology to manage software variability through systematic reuse. In SPL, software variability must be explicitly documented using variability modeling approaches. For instance, we can use variability modeling to express software variability from the perspective of requirement, design, or implementation (e.g., source code).

### Betreuung:



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## Content of the Thesis

The goal of this thesis is to develop a Graph-based visualization to display the relation between each artifact used for managing software variability.

- (Bachelor scope) Read a configuration file and display the relation between each artifact.
- (Master scope) Additionally, provide a propositional logic checker to: (1) evaluate each condition defined in the configuration file, (2) display possible dependency based on the conditions, and (3) display possible software variants that can be derived and which artifacts are related to these variants.

## Requirements

- Java programming skill is required
- Fluent English communication skill is required
- Having knowledge in Object-Oriented Design Pattern and Eclipse RCP development is a plus

## Learning Outcomes

- Learn how to develop plugins for Eclipse IDE
- Learn how to develop Graph-based Visualization
- Learn about existing concept and tooling in Software Product Line
- Applying versioning systems in practice (Git)
- Scientific methods and structured

