Three Way Merge for Feature Model Evolution Plans

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Thesis submitted for the degree of
Master in Informatics: Programming and Systems Architecture
60 credits

Department of Informatics
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UNIVERSITY OF OSLO

Spring 2021

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http://www.duo.uio.no/

Printed: Reprosentralen, University of Oslo

Acknowledgements

Thanks to Ida
Thanks to Ingrid and Crystal
Thanks to Germans, everyone on the LTEP project for input etc.

Abstract

[[TODO: write abstract]]

Feature Model Evolution Plans is intended to help ease the development of software product lines (SPLs). Feature Models allow software engineers to explicitly encode the similarities and differences of an SPL. However, due to the changing nature of an SPL, Evolution Plans allows for representing the *evolution* of a feature model, not just the feature model as a single point in time.

Evolution planning of an SPL is often a dynamic, changing process, due to changing demands of the focus of development. The evolution planning is often not just done by a single engineer, but multiple engineers, working separately and independent of each other. Due to these factors, the need to unify and synchronize the changes the evolution plan emerges.

In this thesis, we develop a merge tool for Feature Model Evolution Plans. The core of the tool is a three-way merge algorithm. Given two different versions of an evolution plan, together with the common evolution plan they were derived from, the merge algorithm will attempt to merge all the different changes from both versions. If the merges are unifiable, the algorithm will succeed and yield the merged result containing the changes from both versions. However, if the changes are conflicting in any way, breaking the structure or semantics of evolution plans, the algorithm will stop, telling the user the reason of failure.

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[[TODO: write better and more]] something about the LTEP project
something about summer project?

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Conclusion and Future Work