Software Product Lines

4. Feature Modeling

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Overview – 4. Feature Modeling

Lecture Overview – 4. Feature Modeling

FEATURE: should be defined in intro chapter
is "feature" already defined/explained at this point?
usually, features are not modeled explicitly (tacit knowledge / lost in code) =¿ pros/cons
better: Excel table of products or features/dependencies
give some experience reports/motivation from practice (Berger et al)
(maybe mention Marlin case study about Feature Location?)
even better: show examples of structured configuration processes (eg. subway, Linux)
then define feature model + configuration and give examples

Summary – Feature Models

Lessons Learned

- ...

Practice

...

Further Reading

- ...

Lecture Overview – 4. Feature Modeling

Feature Models

Representations and Translations
- Feature Diagrams
- Propositional Formulas
- Transforming Diagrams into Formulas
- Other Representations
- Summary

Automated Analyses

show running example as a feature diagram with cross-tree-constraints
explain notation
lego example?
discuss pros/cons
why is this needed? (forward ref?)
show running example as a formula
explain intuition behind elements of formula
formal algorithm for transformation into FOL (and then CNF?)
+ example
list of products, excel sheet, no explicit model (in motivation?), grammars, ...
variations of feature models (e.g. cardinalities, non-boolean)
discuss pros/cons

Summary – Representations and Translations

Lessons Learned

- ...

Practice

...

Further Reading

- ...

Lecture Overview – 4. Feature Modeling

Feature Models

Representations and Translations

Automated Analyses
- Inconsistencies in Feature Models
- Valid Configurations
- Void Feature Model
- Core and Dead Features
- Edits to Feature Models
- Other Analyses
- Tool Support
- Summary

show examples of inconsistencies/anomalies in feature models (interaction?)
slide on SAT solving
maybe omit?
e.g., partial configurations, model counting
other questions about feature models
FeatureIDE configurator
show how FeatureIDE automatically detects the anomalies from the beginning

Summary – Automated Analyses

Lessons Learned

- ...

Further Reading

- ...

Practice

...

Overview – 4. Feature Modeling