INF

FAKULTÄT FÜR
INFORMATIK

How to Use FeatureIDE

Thomas Thüm

July 13, 2010

Content

- What is Feature-Oriented Software Development?
- What functionality does FeatureIDE provide?
- How to start working with FeatureIDE?

Content

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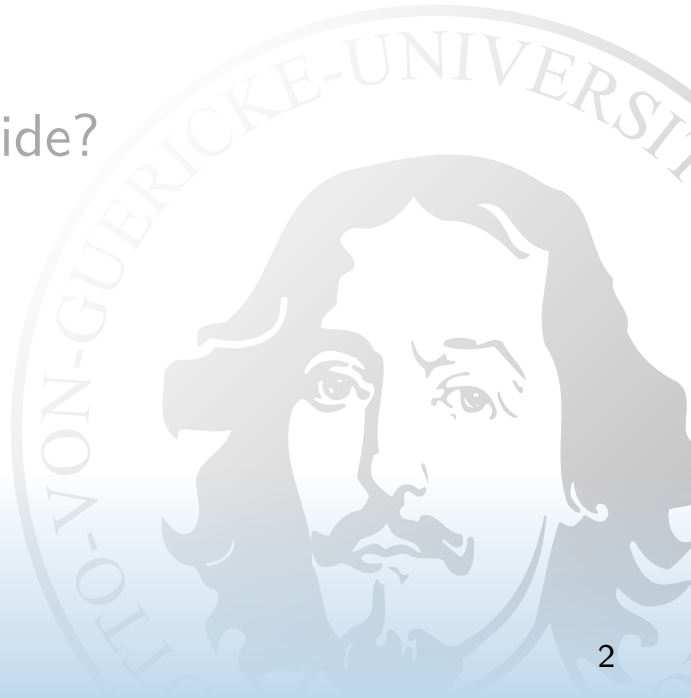
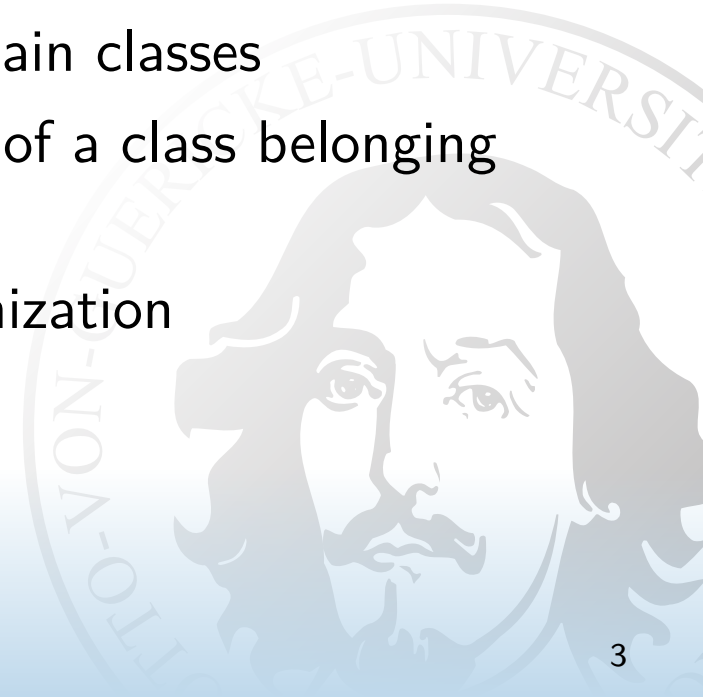
- How to start working with FeatureIDE?

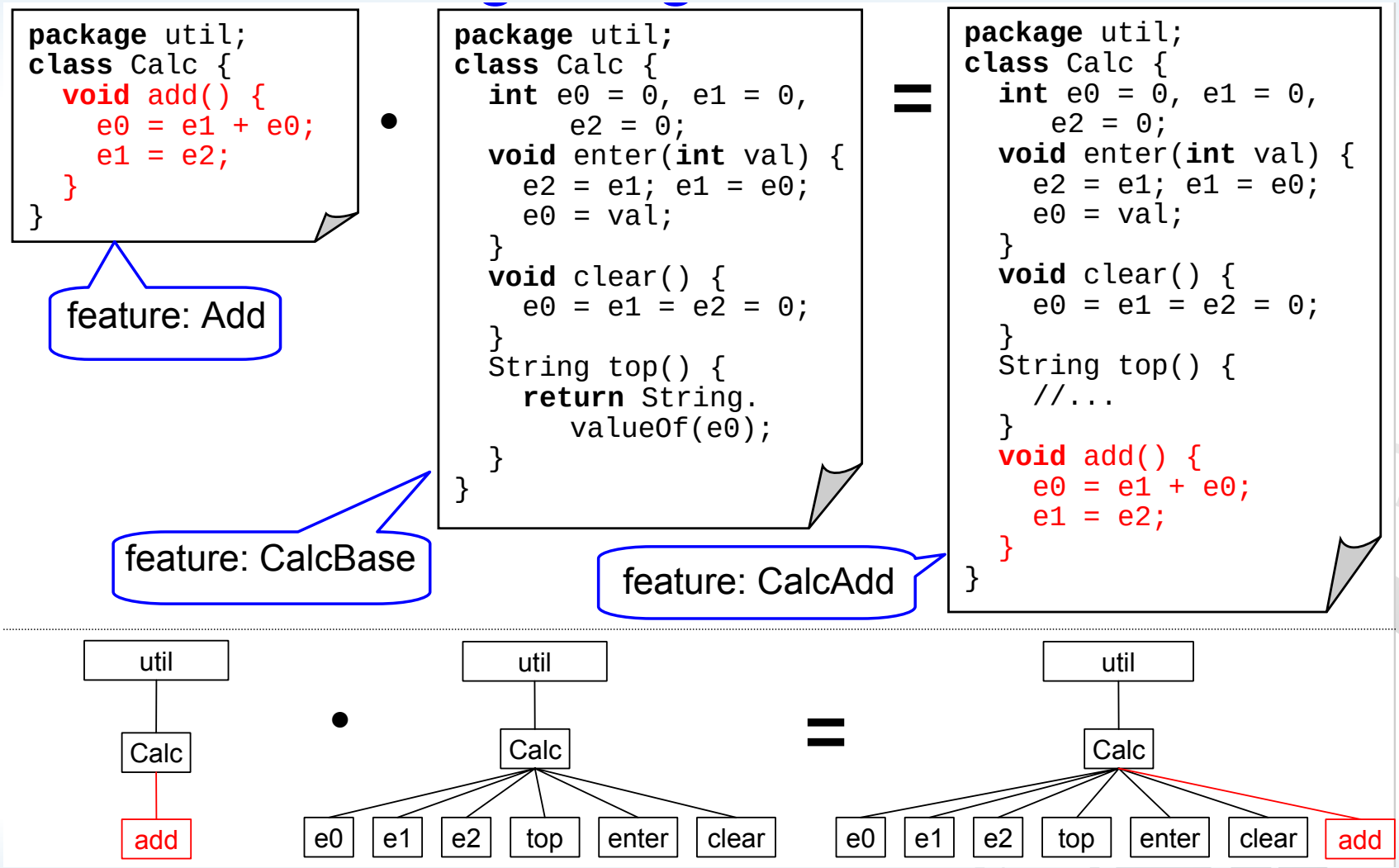


Feature-Oriented Programming (FOP)

- Introduced 1997 by Christian Prehofer
- Based on Object-Oriented Programming
- Features realize functionalities
- Features are cross-cutting to objects
- Features modularize fragments from certain classes
- Fragment contains some methods/fields of a class belonging to one functionality
- Goals: code traceability, software customization

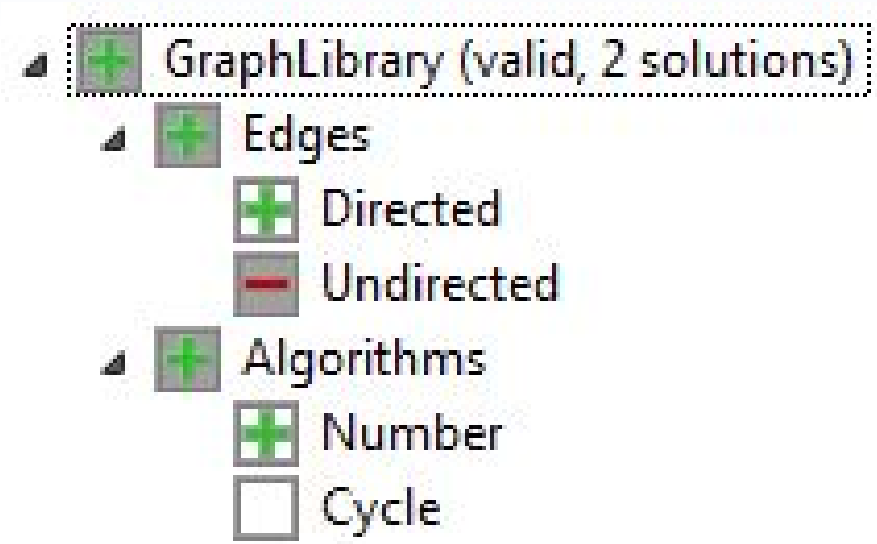


FOP Example



http://wwwiti.cs.uni-magdeburg.de/iti_db/lehre/epmd/2009/slides/06_FOP.pdf

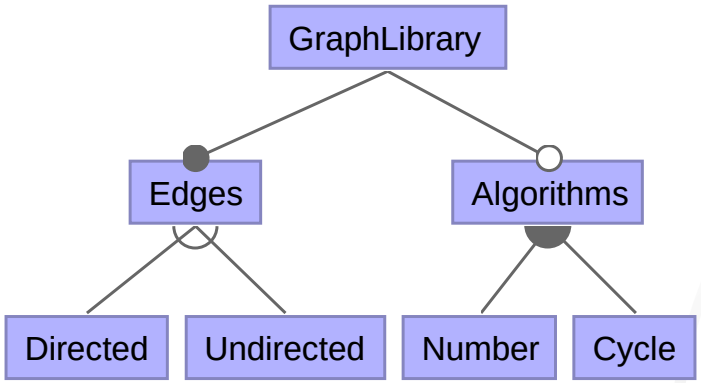
Configuration

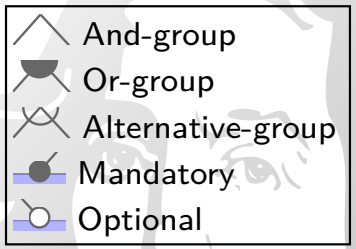


- Selection of features
- Composition of features results in a program variant
- Not all combinations are useful

Feature Model

- Specifies valid combinations of features
- Graphically represented by a feature diagram
- Created for a particular domain
- Describes a software product line (SPL)





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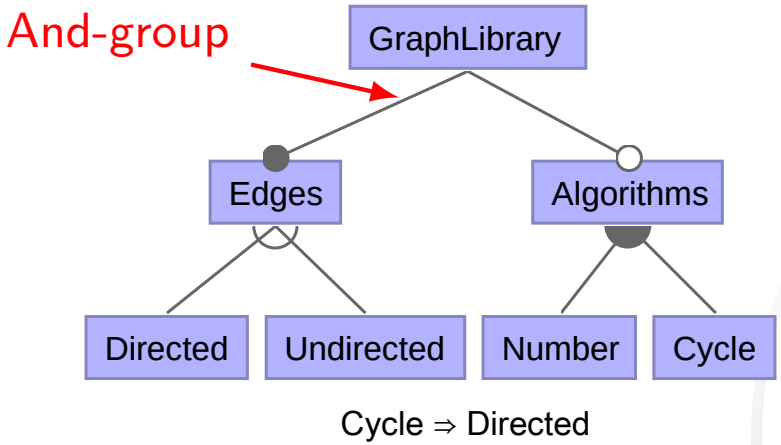

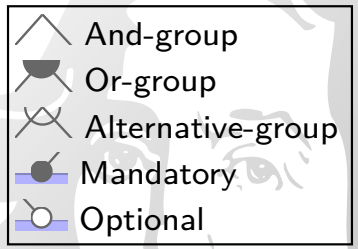

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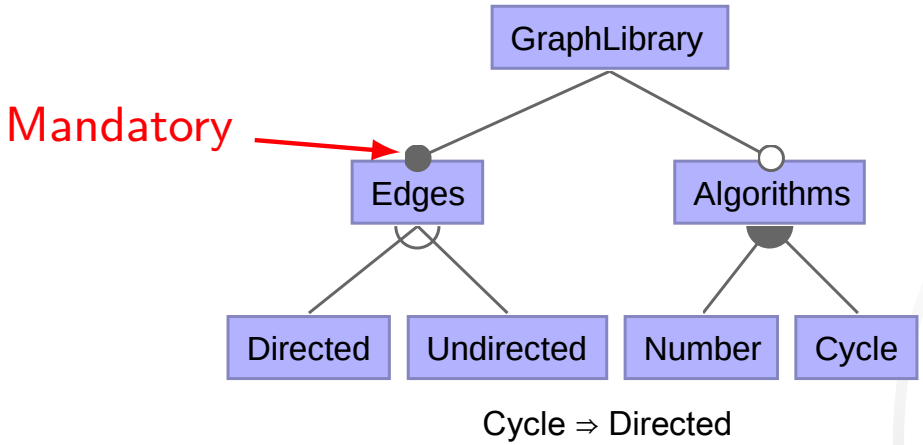

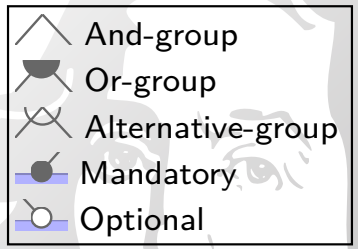

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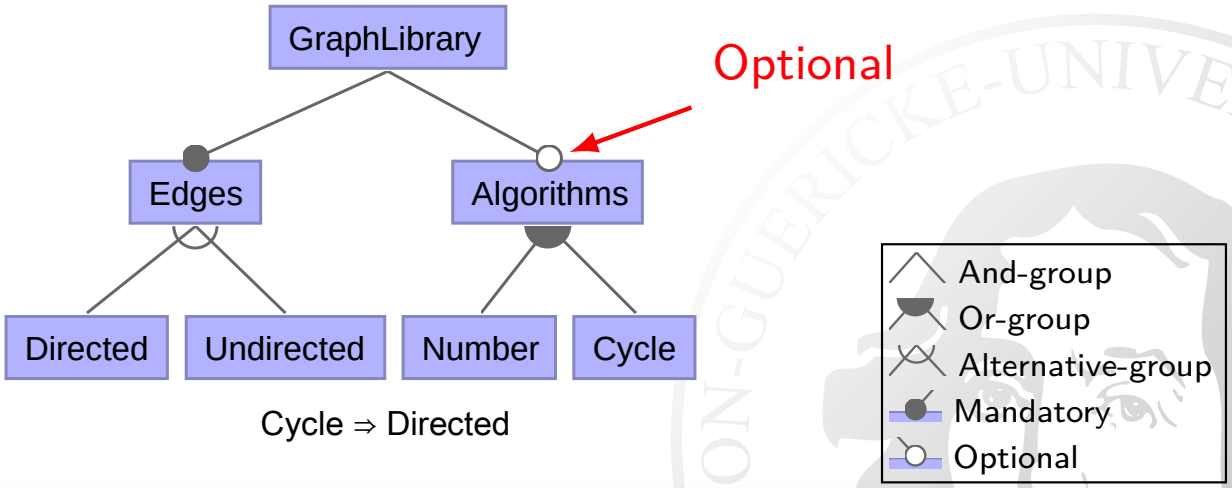

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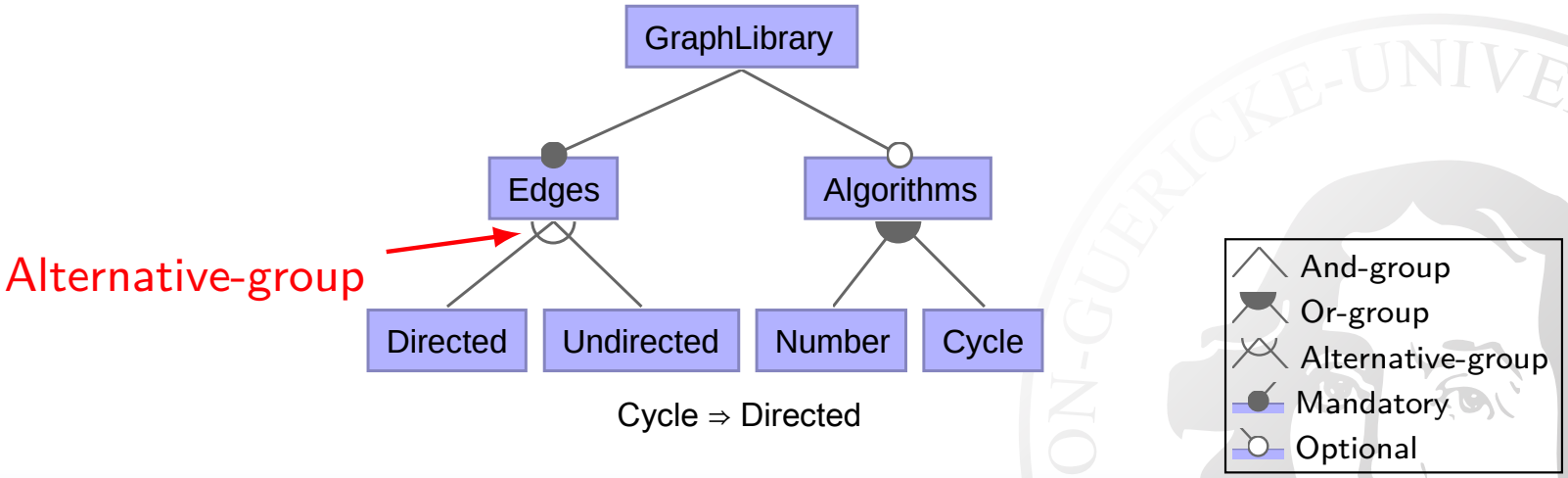

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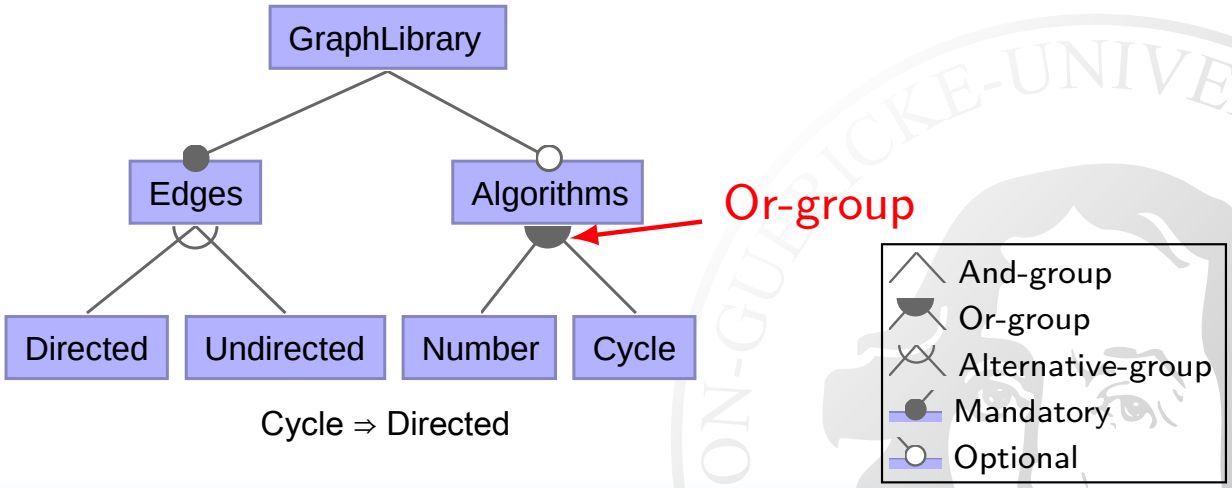

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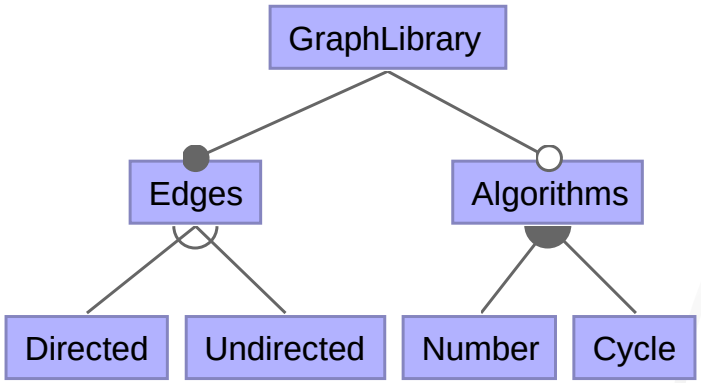

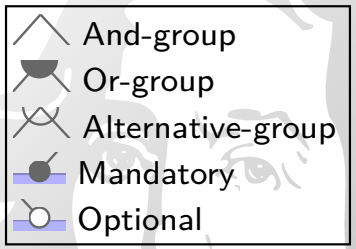

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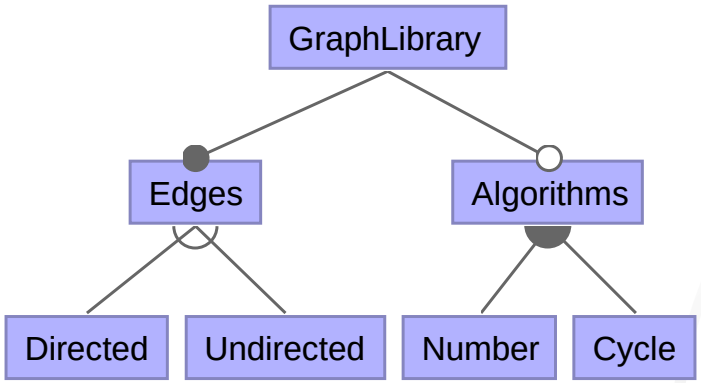
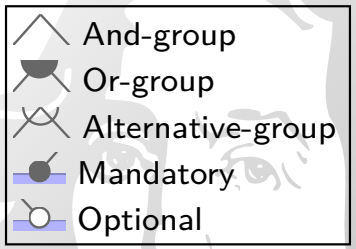
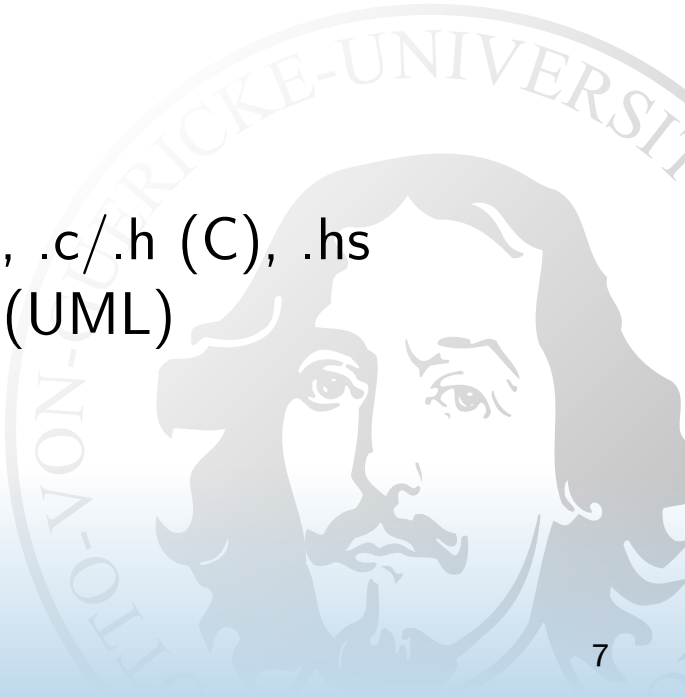




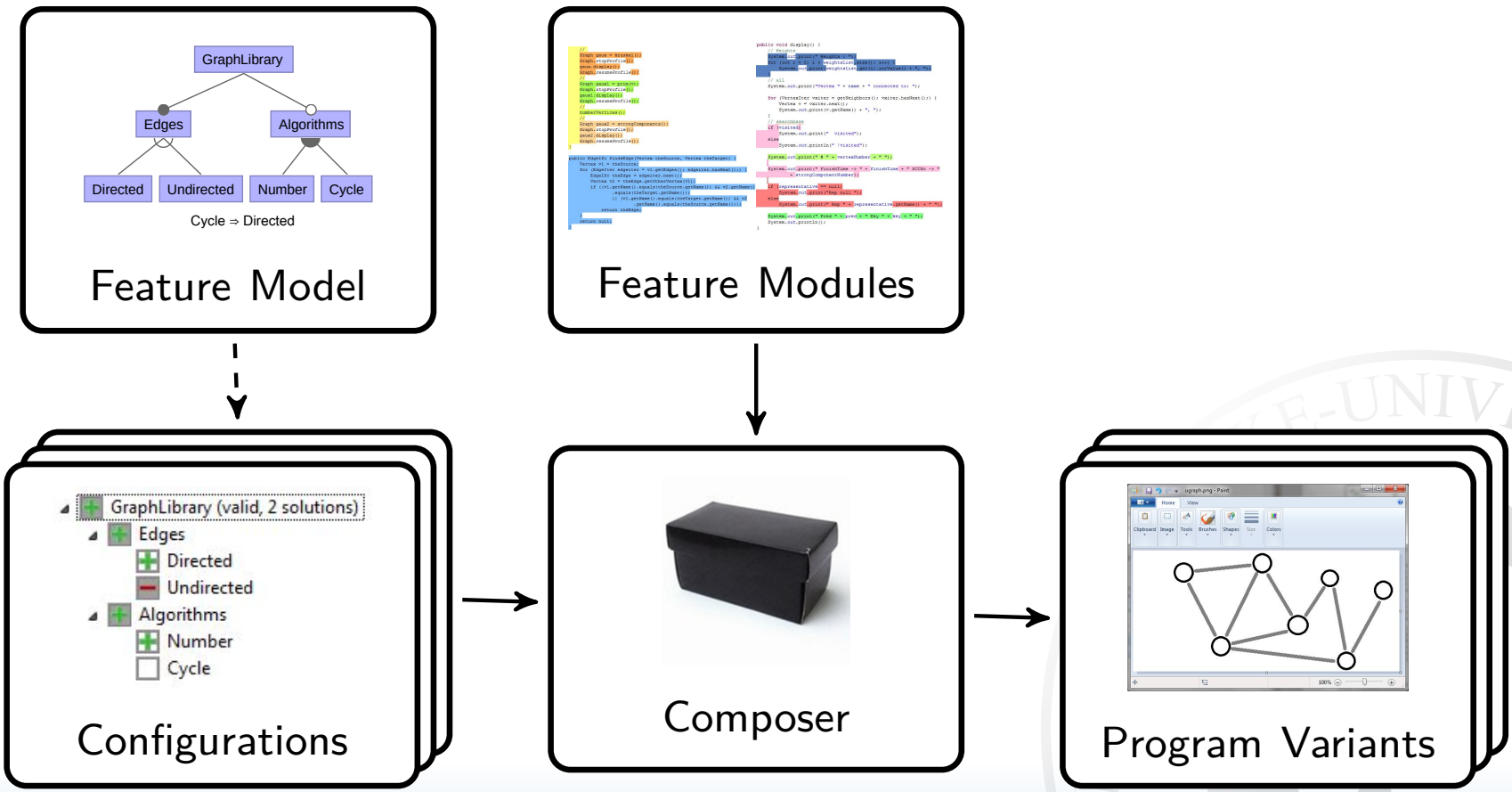
Composition Engines

Command-line tools used to compose files within FeatureIDE:

- AHEAD (jampack): .jak (Java 1.4)
  `http://userweb.cs.utexas.edu/~schwartz/ATS.html`
- FeatureC++: .cpp (C++)
  `http://www.fosd.de/fcpp`
- FeatureHouse: .java (Java 1.5), .cs (C#), .c/.h (C), .hs (Haskell), .jj (JavaCC), .als (Alloy), .xmi (UML)
  `http://www.fosd.de/fh`



Feature-Oriented Software Development



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- What functionality does FeatureIDE provide?
  - Feature Model Editor + Edit View
  - Configuration Editor
  - Jak Editor
  - Collaboration Diagram
  - Feature Project Builder
  - Run Configurations
  - Creation Wizards
- How to start working with FeatureIDE?

Feature Model Editor 1/4

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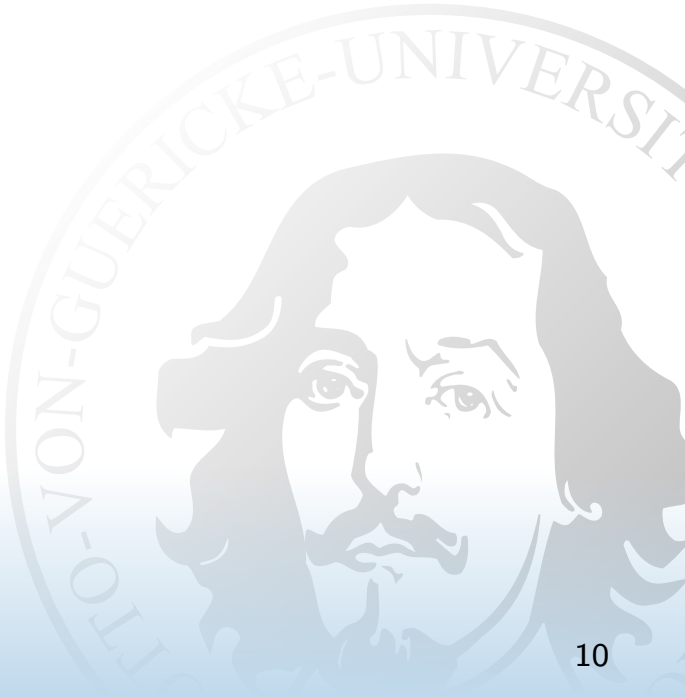

Feature Model Editor 2/4

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Feature Model Editor 3/4

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Feature Model Editor 4/4

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Feature Model Edit View

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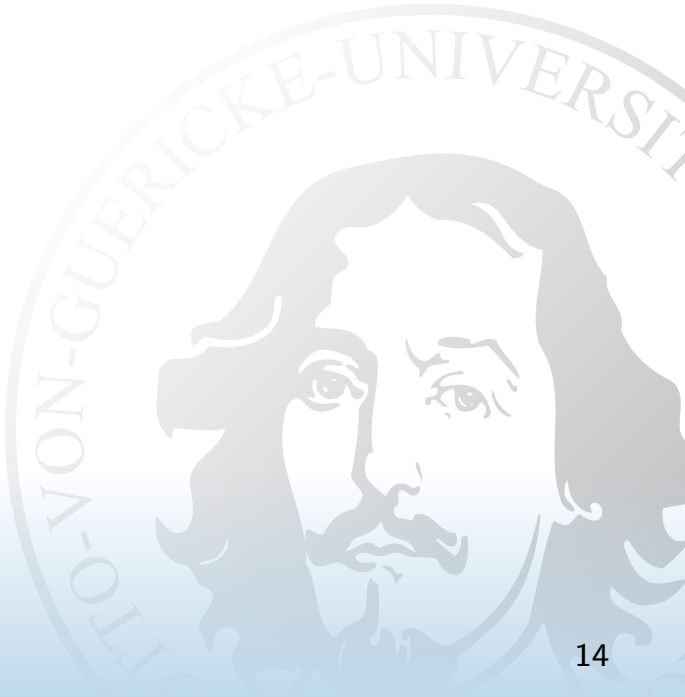

Configuration Editor

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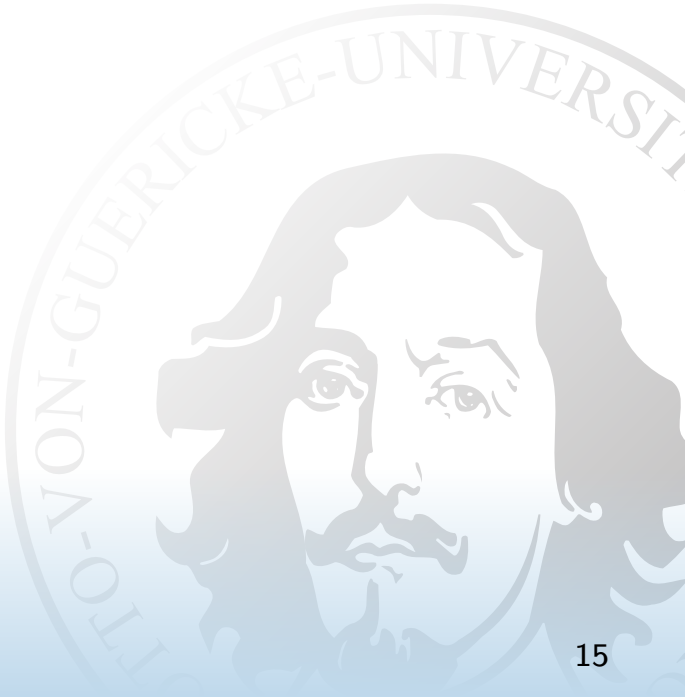

Jak Editor

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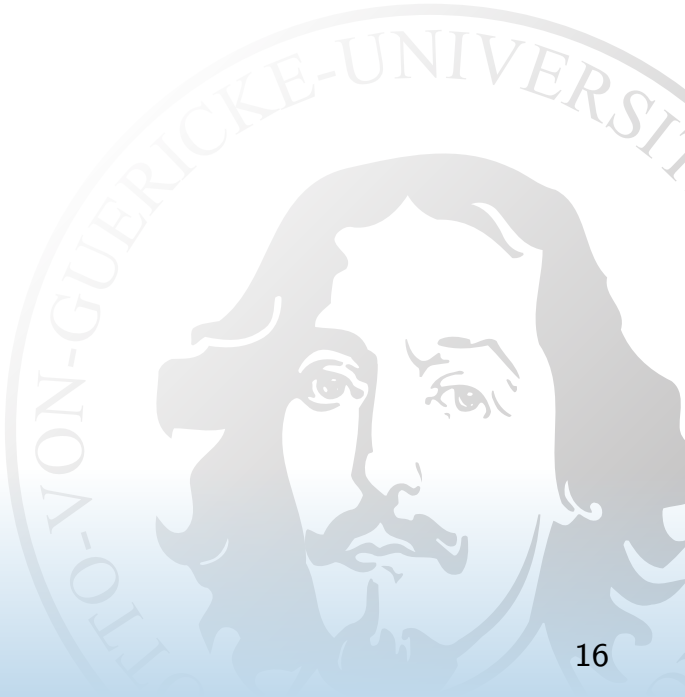

Collaboration Diagram

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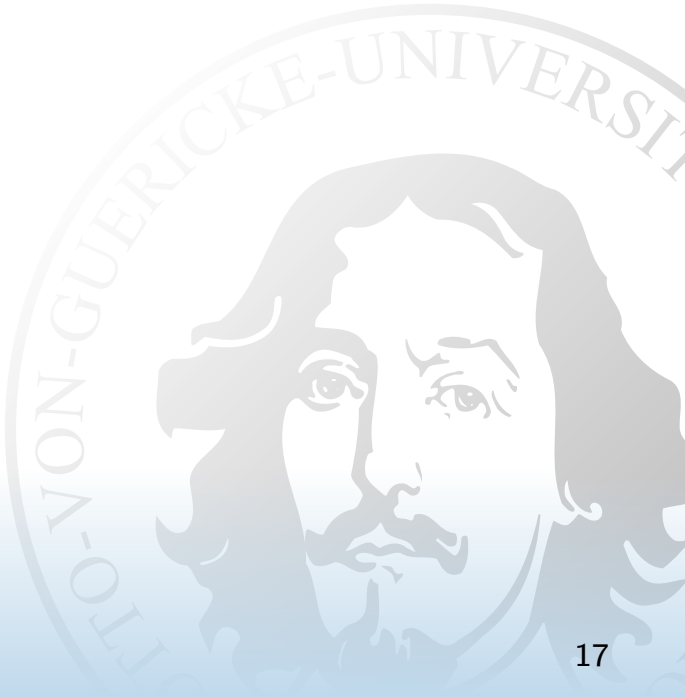

Feature Project Builder

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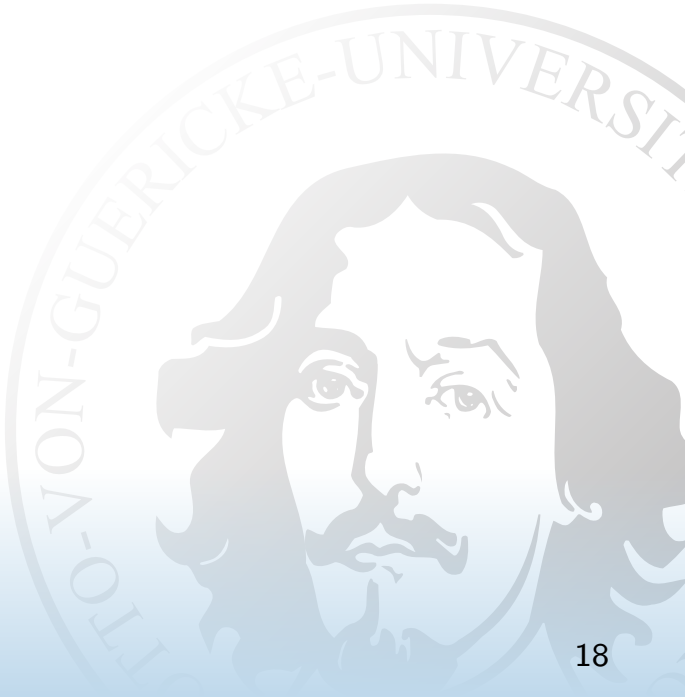

Run Configurations

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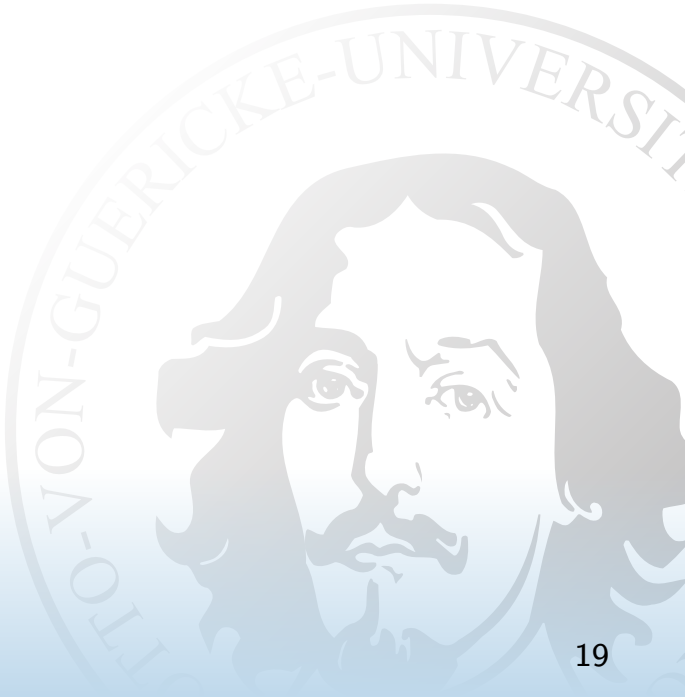

Creation Wizards

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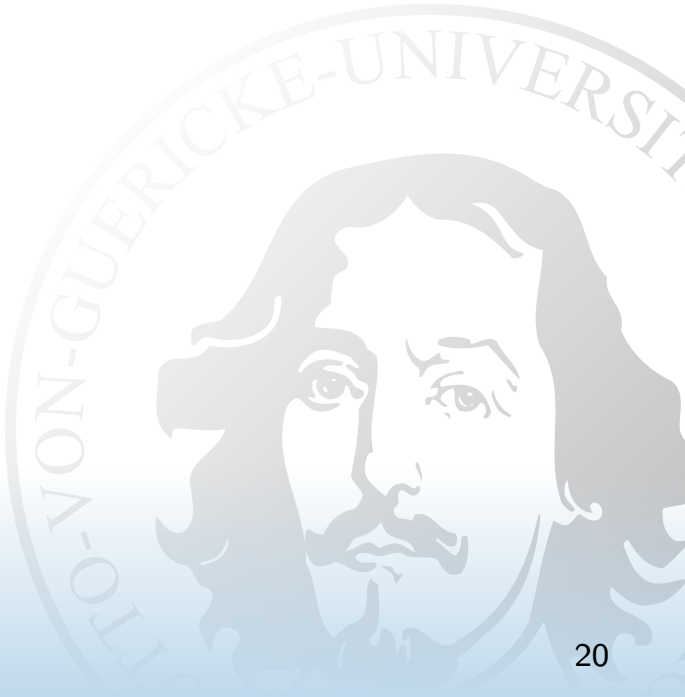

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  - FeatureIDE Installation
  - Feature Project Structure
  - Cheat Sheet

Installation of FeatureIDE

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Feature Project Structure

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Cheat Sheet

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