

Software Product Lines

Lecture Topics

Thomas Thüm, Timo Kehrer, Elias Kuiter

November 25, 2021

Overview – Lecture Topics

Classic Approaches for Variability

1. Introduction
2. Runtime Variability and Clone-and-Own
3. Modularity and Design Patterns

Modeling and Implementing Features

4. Feature Modeling
5. Techniques for Embedded Software

6. Techniques for Application Software

7. Language-Based Techniques
8. Development Process

Quality Assurance and Maintenance

9. Feature Interactions
10. Product-Line Analyses
11. Product-Line Testing
12. Evolution and Maintenance

Overview – 1. Introduction

Topic 1

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Topic 2

- Slide Title 1

- Slide Title 2
- Slide Title 3
- Summary

Topic 3

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Overview – 2. Runtime Variability and Clone-and-Own

Runtime Variability

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Clone-and-Own

- Slide Title 1

- Slide Title 2
- Slide Title 3
- Summary

Managed Clone-and-Own

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Overview – 3. Modularity and Design Patterns

Topic 1

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Topic 2

- Slide Title 1

- Slide Title 2
- Slide Title 3
- Summary

Topic 3

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Overview – 2. Feature Modeling

Feature Models

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Representations and Translations

- Slide Title 1

- Slide Title 2
- Slide Title 3
- Summary

Automated Analyses

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Overview – 5. Techniques for Embedded Software

Build Systems

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Preprocessors

- Slide Title 1

- Slide Title 2

- Slide Title 3

- Summary

Feature Traceability

- Slide Title 1

- Slide Title 2

- Slide Title 3

- Summary

Overview – 6. Techniques for Application Software

Components

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Services and Microservices

- Slide Title 1

- Slide Title 2

- Slide Title 3

- Summary

White-Box and Black-Box Frameworks

- Slide Title 1

- Slide Title 2

- Slide Title 3

- Summary

Overview – 7. Language-Based Techniques

Mixins

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

FOP

- Slide Title 1

- Slide Title 2
- Slide Title 3
- Summary

AOP

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Overview – 8. Development Process

Domain and Application Engineering

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Overview on Implementation Techniques

- Slide Title 1

- Slide Title 2

- Slide Title 3

- Summary

Adoption of Product Lines

- Slide Title 1

- Slide Title 2

- Slide Title 3

- Summary

Overview – 9. Feature Interactions

Topic 1

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Topic 2

- Slide Title 1

Slide Title 2

Slide Title 3

Summary

Topic 3

Slide Title 1

Slide Title 2

Slide Title 3

Summary

Overview – 10. Product-Line Analyses

Analysis Strategies

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Analysis of Feature Mappings

- Slide Title 1

- Slide Title 2
- Slide Title 3
- Summary

Analysis of Variable Code

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Overview – 11. Product-Line Testing

Topic 1

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Topic 2

- Slide Title 1

- Slide Title 2
- Slide Title 3
- Summary

Topic 3

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Overview – 12. Evolution and Maintenance

Topic 1

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary

Topic 2

- Slide Title 1

- Slide Title 2
- Slide Title 3
- Summary

Topic 3

- Slide Title 1
- Slide Title 2
- Slide Title 3
- Summary