

Exercise Variability Modeling

Objectives:

- Understand product lines.
- Understand feature vectors.
- Be able to model variability.

You are a software product manager that is responsible for a product that may be enhanced to a product line. The product is developed incrementally.

- Your real-world product
- A tentative product that is interesting enough for you to bring it to the market

Tasks:

1. Market segmentation: identify major customer and/or user groups. Which of their key interests are the same, which key interests differ?
2. Variability analysis:
 - Define the commonality of your product, which includes its architecture and any necessary base functionality and parts.
 - Define the key features of your product that you provide to all of the customers (respectively users).
 - Define features that you provide only to some of the customers (respectively users) and not to others.
3. Variability modeling (work incrementally):
 - Draw the feature tree of your product according to the studied FODA notation (Feature-Oriented Domain Analysis).
 - Enhance the FODA feature tree to an Integrated Variability and Requirements Specification. For each feature: define the requirements that belong to the feature. You can draw them graphically or provide a list of requirements for each feature.
 - Enhance the feature specifications to implementation proposals: enhance each feature specification with the key ideas of how you will implement the feature and provide effort estimates.
4. Try to reduce cost by working with feature vectors:
 - For each feature: identify the minimally required scope of the feature and extract enhancements by defining them as extending sub-features. Adjust the specification and effort estimation of these features accordingly.
5. Reflect on:
 - Lessons-learned: what are the advantages and disadvantages for feature modeling?
 - Recommendations: How would you apply feature modeling in practice?