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# Configuration-Related Topics

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# Contents

- Design
- Planning
- Recommender Systems
- Software Configuration and Version Management
- Product Data Management

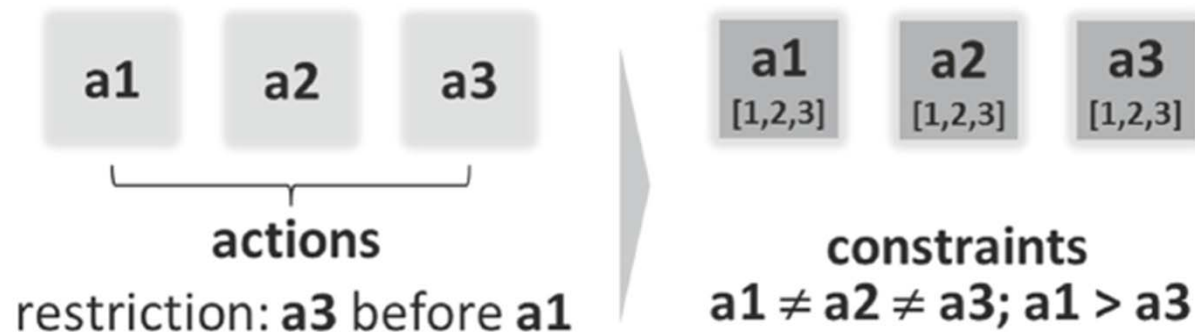


# Design

- Synthesis tasks [Brown and Chandrasekaran, 1989]
  - routine design (design class 3)
  - innovative design (design class 2)
  - creative design (design class 1)
- Routine design: specifications of objects, their properties, and compositional structures are given ( $\approx$  Configuration)
- Innovative design: e.g., creation of an upgrade version of a basic mobile phone type ( $\approx$  Open Configuration)
- Creative design: e.g., artistic design of a new furniture line

# Planning

- Process of sequencing a set of activities in such a way that a defined goal can be accomplished
- Planning deals with the composition of actions whereas configuration deals with the composition of components



# Recommender Systems (1)

- Recommender systems (Jannach et al., 2010) support users in the process of finding and selecting products (items) from a given assortment
- One major difference between product configurators and recommender systems is the way in which product knowledge is represented
- Recommender systems typically operate on a table of explicitly defined solution alternatives
- In configuration the large space of possible solutions makes an explicit representation impossible



## Recommender Systems (2)

- **Collaborative filtering** [Konstan et al., 1997] determines recommendations by identifying nearest neighbors with a similar rating behavior compared to the current user
- **Content-based filtering** [Pazzani and Billsus, 1997] recommends items on the basis of the similarity between the preferences of the current user properties extracted from item descriptions
- **Knowledge-based recommendation** [Felfernig and Burke, 2008] recommends items on the basis of a predefined set of constraints and/or similarity metrics



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# Software Configuration & Version Management

- Software configuration: in software-intensive domains such as Car Periphery Supervision require the combination of hardware and software systems [Thiel et al., 2001]
- Software Configuration Management (SCM) handles dependencies of software artifacts in the context of software development projects [Ylinen et al., 2002]
- Functionalities: creation of a new version of a software artifact, restoration of versions, merging of versions, and notification services that keep developers informed
- Difference to configuration: lack of an abstract, declarative model of the source code



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# Product Data Management

- Product Data Management (PDM) supports the management of information required to design, manufacture, and maintain products
- Example information: process specifications, product data, material specifications
- PDM systems support the storing for configurations, related documents, and configurator-created BOMs
- PDM systems increasingly also provide functionalities for configuring products





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# Thank You!

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