

P.O.Box 8718, Beijing 100080, China	Journal of Software Aug 2003,14(8):1345-1356
E-mail: jos@iscas.ac.cn	ISSN 1000-9825, CODEN RUXUEW, CN 11-2560/TP
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一种面向特征的领域模型及其建模过程

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Received 2002-12-31; Accepted 2003-03-05

Abstract

The feature model has been widely adopted as a domain requirements capturing model by most of the current domain engineering methods. But these methods lack a well formatted framework for the feature models which they use. This has led to the redundancy and confusion in feature model representation between different domain engineering methods, and has made domain analysts difficult to built feature models effectively in practice. In this paper, a uniform framework of feature model is presented from the aspects of basic structure, variability representation and constraint mechanism, and variability binding time. A concrete form of this abstract framework is also given based on the different type of features existing in requirements (service, use case, function, and behavior characteristic), and the relationship among them. Then, combining with a real software domain, the modeling process of the feature model is discussed systematically. This approach will be beneficial to successful domain modeling practices.

Zhang W, Mei H. A feature-oriented domain model and its modeling process. *Journal of Software*, 2003,14(8): 1345~1356.
<http://www.jos.org.cn/1000-9825/14/1345.htm>

摘要

特征模型作为捕获领域需求的重要模型已被现阶段的主流领域工程方法所接受,但这些方法缺乏对特征模型组织框架的细致研究和说明,在一定程度上导致了特征模型在表现形式上的冗余性和混乱性,也使得领域分析人员在实践中很难有效地进行领域建模活动.从特征模型的基本组织结构、变化性的表现方式和限制机制、变化性的绑定时间等方面对特征模型的组织框架及剪裁机制进行了统一、抽象的描述.在考察服务、用例(use case)、功能、行为特点等不同类型的特征及其相互关系的基础上,给出了一种特征模型的具体形式,并结合具体的领域,对其建模过程进行了详细论述.此项研究对于领域建模活动的成功实施具有一定的指导作用.

基金项目: Supported by the Key Project of the National Natural Science Foundation of China under Grant No.60233010 (国家自然科学基金重点项目); the National Grand Fundamental Research 973 Program of China under Grant No.2002CB312003 (国家重点基础研究发展规划(973)); the National Science Foundation for Distinguished Young Scholars of China under Grant No.60125206 (国家杰出青年科学基金); the Major Project of Science and Technology Research of Ministry of Education of China under Grant No.MAJOR0214 (国家教育部重大项目); the National Research Foundation for the Doctoral Program of Higher Education of China under Grant No.20010001001 (国家教育部博士点基金)

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