

FOTool: Modelling Indigenous Community Cultures in Sarawak

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Abstract

Formal-Object Tool (FOTool) is a software modelling approach that integrates formal specification and object oriented model. FOTool integrates the rigour of formal methods and the ease of use of OO techniques. The idea of FOTool is to provide an easy interface by allowing the application developer to develop the software model by using the object-models, while the verification of the models is carried out by using formal models. Before the verification process, the object static and dynamic models need to be transformed into formal models based on the transformation rules defined in FOTool. This paper presents the FOTool architecture, the transformation rules from object to formal models, and discusses the application of FOTool in our continuous research in modeling, the indigenous communities' knowledge in Sarawak, and also the challenges of modelling the complex cultural, taboos and beliefs of indigenous communities. The knowledge is generated from the heterogeneous cultural, taboos and beliefs of various ethnic groups in Sarawak. The traditional knowledge is then mapped to a logical explanation in relation to modern life style.

Keywords

Software Modelling, Formal Method, Object Model, Model Integration

1. Introduction

Formal-object is one of the approaches in modeling the software models. This approach is expected to encourage the use of formal methods in modeling software via the integration with object models. In 1997, M. Iglewski, *et al.* [1] published a paper in which they described that the integration of object-oriented (OO) methods and formal methods (FM) is seen as a new software engineering technique that attempts to gain the ease of use of OO methods and the rigour of FM during the software development process. Such integration will reap the