ABSTRACT

The Software Supermarket: A Catalyst for Component-Based Development

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Component-Based Software Engineering (CBSE) is an emerging software engineering paradigm. This thesis explores the issues necessary for the success of CBSE and presents the formal model and design for a software supermarket for the housing of reusable software assets. Additionally, this thesis posits a method that uses a component label to provide comprehensive self-description for components stored in a heterogeneous software repository such as the Software Supermarket.

The paper also specifies the essential elements that a CBSE development environment should have in order for the Software Supermarket to be effectively deployed therein. An analysis of current development environments is also presented so as to determine whether or not there is any current environment that complies with the essential elements presented. A position is also forwarded for the efficient instanti-

ation and maintenance of a software application through component replacement.

Keywords : Software Supermarket, Component, Heterogeneous Repository, Development Environment, Component Self-description, Component Replacement, Component-Based Software Engineering