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DESIGN AND DEVELOPMENT OF A PROCEDURE TO TEST THE EFFECTIVENESS OF THE OBJECT- ORIENTED DESIGN

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Abstract

With the increasing use of object-orientation in software development, there is a growing need to measure efficiency and effectiveness of the design process. In response to this need, a number of researchers have developed various metrics for object-oriented systems. An approach has been introduced for evaluating the effectiveness of the object-oriented design of a system for the improvement of the software process instead of using individual design metrics. In this research, a procedure has been designed and developed to test the effectiveness of design based on a set of seven metrics, which have been formulated by selecting appropriate metrics from the set proposed by the three main groups in this research field, namely, Chidamber and Kemerer, Brito e Abreu, and Lorenz and Kidd and suitably redefining them. This paper discusses in detailed about the new procedural approach and also introduces Total Metric value of the System (TMS) to represent the quality of overall system design.

Keywords: Class metrics, Measurement Procedure, Object-Oriented Software Metrics, Software Measurement, System Metrics.