Implementing Quality Assurance Features in Component-based Software System

Abstract

The increasing demand of component-based development approach (CBDA) gives opportunity to the software developers to increase the speed of the software development process and lower its production cost. The software developers have to face many challenges while developing the software and one of the major challenges is to develop the software with an appropriate level of quality. Quality assurance is considered as the most important element as without an appropriate level of quality, the software product will produce ruinous results and it will be of no use. Considering quality in case of CBDA, it is very important to use those components in the development process which will provide us with questionable quality.

CBDA offers various advantages including, reducing the complexity of the software by simplifying its design, reducing the production cost and time, as there is no need to start the development process from the scratch, it provides us with the feature of reusability. Important issues which should be properly handled while developing the software are: assuring the quality of each item which is being used, using that component which best suits our requirements. The
main concern of this paper is to develop an application with an appropriate level of quality. In order to fulfill this demand, the concept of functional and extra-functional properties and validation of quality metrics is being used. Security and integrity, these two quality metrics are being implemented and experimental results are explained.

References


Index Terms

Computer Science Information Sciences

Keywords

Component-based development approach, quality assurance, quality metrics, security, integrity