Abstract

Readers-Writers problem is a classical synchronization problem in the field of computer
Implementation of Readers-Writers Problem using Aspect Oriented Programming

science. It can easily be implemented using any object oriented language. However, the implementation of object oriented programming often leads code to be tangled between functional codes and synchronization codes, which are easy to lead code-scattering and code-tangling. Aspect-oriented programming (AOP) is a programming paradigm which isolates secondary or supporting functions from the main program's business logic. It aims to increase modularity by allowing the separation of cross-cutting concerns. All AOP implementations have some crosscutting expressions that encapsulate each concern in one place. With this there is minimal or no code scattering and tangling. This paper aims to resolve concrete aspect and implement the synchronization of the readers-writers problem based on AOP. The execution time of AOP and OOP based solutions are measured which shows that AOP can almost get the same execution time as of object-oriented programming, but with better modularization than OOP.

References


Index Terms

Computer Science

Information Sciences
Keywords

Readers-writers Problem  Object Oriented Programming (oop)  Aspect Oriented Programming (aop)
Synchronization