

## The impact of flyweight and proxy design patterns on software efficiency: an empirical evaluation

### ABSTRACT

In this era of technology, delivering quality software has become a crucial requirement for the developers. Quality software is able to help an organization to success and gain a competitive edge in the market. There are numerous quality attributes introduced by various quality models. Various researches and studies prove that the quality of the object-oriented software can be improved by using design patterns. The main purpose of this research is to identify the relationships between the design patterns and software efficiency quality attribute. This research is focused on the impact of Flyweight and Proxy Design Patterns on the efficiency of software. An example scenario is used to empirically evaluate the effectiveness of applied design refinements on efficiency of a system. The techniques to measure software efficiency and the results obtained for each solution are elaborated in detail. At the end of this research, comparative analysis is provided to show the relative impact of each selected design pattern on software efficiency.

**Keyword :** Software efficiency; Design patterns; Flyweight design pattern; Proxy design pattern; Measuring software efficiency; Empirical evaluation of software