

# Design Observer: A Framework to Monitor Design Evolution

- Maen Hammad

## Abstract

This paper presents a framework, named DesignObserver, to automatically monitor and track design changes during software evolution. The framework helps in preserving code-design consistency during incremental maintenance activities. The design model is automatically updated based on implemented code changes. Preserving design quality is another important feature of the framework. Design changes are analyzed to determine their violations for pre-defined quality and pattern constraints. Any design change that breaks a design pattern or violates a quality metric is identified and highlighted. The framework also measures the cost of some potential design changes to evaluate their impact on other classes. Finally, designers and their contributions are also identified and reported by the framework to support assigning maintenance tasks. A set of tools that we have previously developed are mainly used to build DesignObserver.