Abstract

Although numbers of software pattern catalogues and languages have been published, little is known about quality of patterns, quality by patterns and quality aspects of pattern activities. This workshop seeks to gain an improved understanding on the theoretical, social, technological and practical issues related to quality aspects of patterns including security and safety.

1. Motivation

A software pattern is an abstracted repeatable solution to a commonly occurring problem under a certain context with forces that derive the solution in software development. Following the success of applying ideas of Alexander’s pattern language in architectural buildings[1] to object-oriented programming[2], currently there are a number of patterns for various aspects of the software development, such as analysis patterns, architecture patterns, design patterns, implementation patterns (idioms), testing patterns, maintenance patterns and refactorings, anti patterns, security and safety patterns, and, organization and process patterns. These patterns help people involved in software share experience-based proven solutions and develop products, manage processes, projects and organizations, and communicate each other more efficiently and effectively.

As requirements for software products and processes have become larger and more complex, and have begun to include higher reliability, increasing is demand for a system of technologies to capture, share, enhance, apply and evaluate software patterns. Especially, although numbers of pattern catalogues have been published, little is known about how to specify, measure and evaluate quality of those patterns and/or their application results. For example, there are a limited number of researches[3, 4, 5] and findings on what kind of quality each pattern affects. It might be able to say that software patterns bring "Quality Without A Name” (QWAN) as architectural ones do; however its nature in the context of software development is still unclear.

Such conditions seem to be summarized in the following words by a pioneer in software patterns.

When we say we would like to hire somebody with experience, what do we really think they have that they get when they have got experience. That is what we are trying to get at with patterns – the stuff that is beyond theory but just what works.

– Ward Cunningham[6]

Therefore it is difficult to see the nature of software patterns and pattern-oriented developments.

2. Discussion

To overcome the above-mentioned conditions, this workshop seeks to gain an improved understanding on the theoretical, social, technological and practical issues related to quality aspects of patterns including security and safety.

Topic areas of interest include, but are not limited to:

- Quality by software patterns: management, assurance, measurement, rating, testing, review and evaluation of quality in software products, processes, people and projects with software patterns (e.g. how high does maintainability of software become by applying design patterns?)
- Quality of software patterns: management, assurance, measurement, rating, testing, review and evaluation of quality of software patterns
- Quality-specific patterns: e.g., security patterns, safety patterns and performance patterns
- Quality aspects of activities related to software patterns
• Quality in pattern system and languages: how to build quality systems of patterns, pattern compositions, and stable/testable pattern languages

• Patterns and pattern languages pitfalls and how to avoid them

• Nature of "Quality Without A Name (QWAN)" in software development

• Methods and tools: modeling tools, measurement tools, testing tools and management tools related to software patterns quality

• Case studies and lessons learned from the viewpoint of quality

• Relationships among software patterns and related technologies from the viewpoint of quality

3. Format

The workshop will be co-sponsored by IPSJ/SIGSE Patterns Working Group[7] and SSE Project of National Institute of Informatics[8]. The session will be a mixture of paper presentations and interactive discussion, with much emphasis placed on the latter.

Results of the workshop will be available on the workshop website[9]. Based on the results, we will continue to hold the workshop in the future.

References


[9] International Workshop on Software Patterns and Quality (SPAQu), http://patterns-wg.fuka.info.waseda.ac.jp/SPAQU/