An Approach to Support the Modeling and Usage of Analysis Patterns

He Fei (10030)
School of Information Systems,
Japan Advanced Institute of Science and Technology

Jun, 2002

Keywords: analysis patterns, support patterns.

Abstract

Typically, there are two respects in works around analysis patterns:

One is on pattern itself, which describes the elements of patterns, such as the actual structure of solution, the intent or problem behind.

The other is on the surrounding of patterns, that means things supporting the modeling, usage of patterns, the relationship with other patterns, and so on.

As to the two respects, Martin Fowler offers a set of analysis patterns and support patterns, respectively. But those support patterns mainly address problems in building an actual software system with analysis patterns, just like:

How to fit those analysis patterns into system architecture

How to transform the model in analysis pattern into an explicit specification model in design or an implementation.

And the only support pattern used to examine modeling techniques and to advance modeling constructs on analysis patterns is the association pattern, I see my works as a complement or extension to that part of Martin Fowler's support patterns.

My works offers some other support patterns, aiming to originated from an insight on

a small number of necessary and sufficient basic building blocks that are ubiquitous in the works around analysis patterns, in order to capture a set of common infrastructures that describes how to construct and apply analysis patterns independent of a specific domain rather than modeling actual analysis patterns themselves.

Those support patterns are organized within the following categorization:

Structure Patterns, could help modelers have a clear idea about what the system structure looks like right now and abstract this information into a more generic model not only applicable today but flexible for future changes and extensions:

Actor-Role Pattern;

Title-Thing-Information Pattern;

Generalization-Specialization Pattern;

Association Pattern;

Definition Pattern;

Document Pattern;

Collaboration Patterns, describe the relationships between patterns and help to organize them into certain hierarchy structures to support the pattern application:

Layer Supply Pattern;

Layer Control Pattern;

Composition Pattern;