Challenge 2: Tea House exercise

The article “The Unfolding of a Japanese Tea Garden” [1] is a very interesting read for the understanding of patterns. More so for the course of MDCS, where patterns are the backbone of the course. The article is very lucid and easy to read. But what really steals the show is the understanding it brings about the subject “A Japanese Tea House”. The article details out the description of a Japanese Tea House; the way it is constructed as well as used.

The article is about how to write a pattern. A pattern is a number of detailed steps, where each step is a build up the idea required for the next step. All the steps combined together give a holistic idea of carrying out the objective for which a pattern was written. The steps have a unique property that it can be used standalone to modify the idea that step represents and hence can be modified within the confines input and the output parameters of that step. This has a very useful implication: a pattern can not only be used to repeat a process but also modified and tweaked to fulfil the needs of the given problem domain.

A well written pattern can hence also be adapted to form mutations and hence give rise to new patterns. Similarly multiple patterns can be moulded together to form interesting new pattern.

In the diagrams below I have tried to justify how patterns interact within themselves.

# Evolution of a pattern

A pattern does not come into being by itself. Patterns exist for one purpose to make problem solving easier by providing steps of approaching a problem. This makes sure that similar problems that were encountered in the history do not need solving form the ground up. Rather a number of steps can be followed to get the desired result. Since the pattern is tried and tested a desired result is almost guaranteed. This removes the element of uncertainty.

Pattern

Fig 1: A Pattern

The above figure gives the holistic view of a pattern. Every pattern has a problem statement or a metaphor which describes what is the pattern aims to solve.

The steps

Fig 2: Steps

A pattern is nothing but an organization of steps. Each step represents an idea. As shown in figure 2, the output of a step in a pattern becomes the input for the next step in the pattern. Steps can be thought of as the building blocks of a pattern. Each step also builds an idea which can be used later in the pattern to build a new idea.

# Mutation of pattern

A pattern is a mere idea broken down into a number of conceivable and easy to repeat steps. This however gives room to adapt a pattern to a new problem which probably differs in some of the input and output parameters but has the same skeleton.

Fig 3: Mutation

The above figure shows mutation in an existing pattern. In this type of mutation one step can be either completely replaced (removed) or its output is modified to suit the need of new problem.

3 - Combination of patterns

Patterns are additive by nature. Which means two or more patterns can be combined to form a new pattern. This can be used to solve problems that are interdisciplinary, where one can use a patterns from various disciplines and piece them together to solve a problem.

Fig 4: combination

The above figure represents combination of multiple patterns. The above pattern can have multiple outputs depicting multiple stages. As well as one pattern can become input for another pattwer.

References

[1] <http://www.ollswang.com/home/tea/the-unfolding-of-a-japanese-tea-garden>