

# Measurement Quality of Software Modules during Reengineering by Using Pattern Based Quality Model

Anil Kumar

Computer Science & Engineering, Vaish College of Engineering, Rohtak, India  
anilbest2005@gmail.com

## Abstract

The purpose of this paper is to determining the quality of software modules during reengineering of object oriented system.

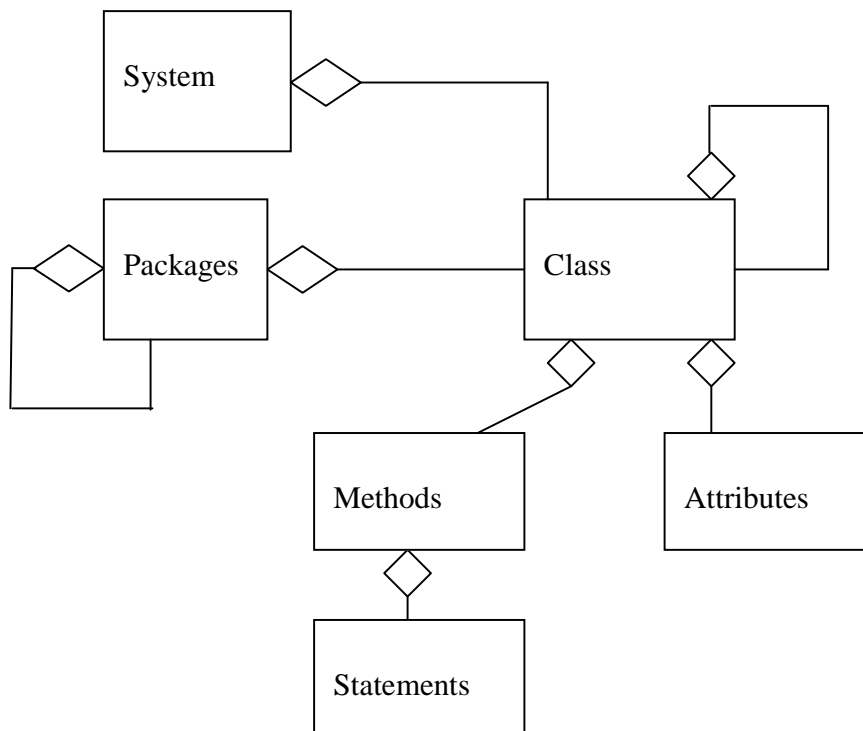
**Keywords** - Package Level metrics, OO design.

## 1. Introduction

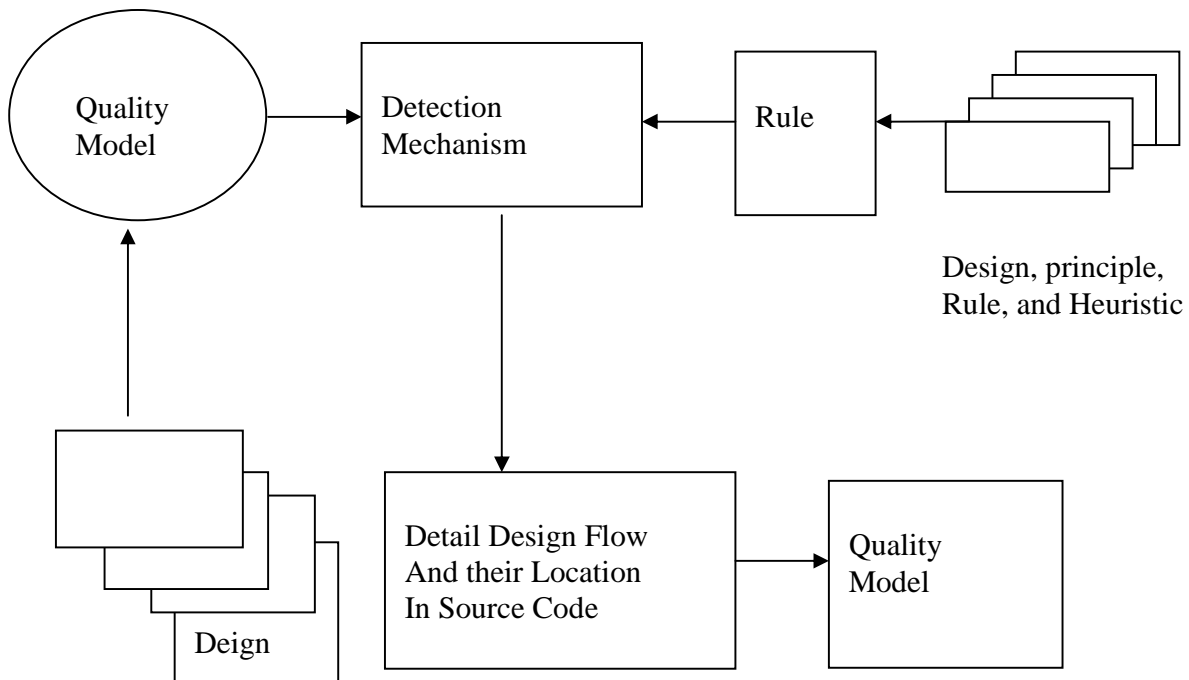
There is no doubt that while reengineering<sup>[1]</sup> is takes place in object oriented system <sup>[2,3,4,5,6,7]</sup> than obviously reusability and specialization ratio will be increases. As these

increases then after specific time/point, it very difficult to understand and test the software modules, due to this quality of software modules continuously reduces.

Pattern based quality model<sup>[8,9]</sup> is used while problem detection model are design during reengineering of object oriented system. While this is used to design the system then keep reusability and specialization ratio minimum. Due to this we can reduces the reusability and specialization ratio during reengineering.



“Pattern Based Quality Model”



“Problem Detection Model during Reengineering of OO System”

**Proposed Metrics:**

**Package Level Metrics:**

**1 Reuse Ratio is calculated as:**

$$\text{Reuse Ratio} = \frac{\text{Number of Super Package above this Package Hierarchy}}{\text{Total Number of Packages in the Package Hierarchy}}$$

## 2. Specialization Ratio is calculated as:

$$\text{Specialization Ratio} = \frac{\text{Number of Sub Package below this Package in the Package Hierarchy}}{\text{Number of Super Package above this Package in the Package Hierarchy}}$$

### Conclusion

The pattern based quality model help to design package level metrics that are very beneficial to measure quality of software modules while reengineering takes place on software projects.

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