Characteristics of Object Evolution Processes

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Abstract
Classes evolve to address new user requirements and enhance reusability. The evolution processes can be analyzed statistically by tracing characteristics of object-oriented software development cases by four layers: system, class tree, class, and method. Interesting phenomena have been observed in our case studies.

The value of mean lines of code per method over classes belonging to the same inheritance tree may be considered to represent a characteristic of the inheritance tree over evolution and affect class evolution as a constraint. The distribution pattern of size data at the system layer fitted to the negative binomial distribution model and its parameters can be interpreted to disclose some development intentions. This paper reports the results of empirical case studies and discusses evolution patterns and laws of objects.

Salvaging an Ancient Legacy System at the German Foreign Office

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Abstract
This paper describes a software salvaging project at the German Foreign Office. Software salvaging combines a number of reverse- and re-engineering techniques to revive a system which is either already dead or close to death. The system in question is a COBOL-74 application for making the payroll of all Foreign Office employees and civil servants. The paper defines the characteristics of a dying system and goes on to explain what measures are required to restore such a system to life. As time goes on, there are more and more ancient software systems on the verge of death, especially in the public sector, so this contribution could be of interest to all those responsible for such systems.

Keywords: Legacy Software Systems, Software System Aging, Software-Auditing, Software Reverse Engineering, Software Reengineering, Software-Recycling, Software Geriatrics.