A Prototype of a Reengineering Tool for Transforming Imperative Programs into Object-Oriented Specifications

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ABSTRACT

Software reengineering from legacy systems has become a growing concern as more and more organizations perceive their legacy systems as valuable assets and the competitive edge in business process reengineering. The purpose of software reengineering is to transform legacy systems into counterparts based on a new technology so that the software would gain an improvement in reusability and maintainability. Compared with structured techniques, the object technology can produce more flexible software and reduce the cost of maintainance. This paper presents the design of a software reengineering tool that supports the transformation from logical imperative programs with database schema into object-oriented specifications and attempts to promote reusability and maintainability of the software by applying object-oriented methodology and object-oriented design patterns. Moreover, from the perspective of input-process-output(IPO) information processing model including data flow diagrams we invented the IPO design pattern and adopted it in the design of architecture of this tool. We expect that in the future this reengineering tool would be combined with other research results in different abstraction levels to form a complete CASE environment which will benefit business organizations in process reengineering and strategic planning.

Keywords : software reengineering ; legacy systems ; object technology ; object-oriented design patterns

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