Post object-oriented paradigms in software development: a comparative analysis

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Abstract. The object-oriented (OO) paradigm has been popularised as a solution to the problems encountered with the structured paradigm. It facilitates the understandability, extensibility, reusability and maintainability of systems. However, years of experience and analytical studies have shown that this is only partially true, and that there are still issues which have never been successfully resolved in the OO paradigm. These issues arise whenever programmers need to deal with peripheral requirements which spread over a system. A simple modification of these requirements typically involves intensive changes in code. Over the last decade interesting and worthwhile work has been done on the subject of implementing peripheral requirements. Perhaps the most successful outcomes have been obtained by aspect-oriented programming and composition filters. The main goals of the paper are: (1) to present open problems for the OO paradigm; (2) to analyse two post-OO paradigms involved in confronting these problems; (3) to indicate a possible application of these paradigms.