Comprehending Multilanguage and Multiparadigm Software

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Abstract

Multiple programming languages and/or multiple paradigms are often used to implement a single software system. In this paper we first outline key issues relating to the comprehension of multilanguage multiparadigm software and then propose a research plan for addressing such issues.

Visualising Software - A Key Research Area

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Abstract

The visualisation of software systems has long been investigated, primarily through the use of graph structures representing at most two aspects of the system under consideration. It has been claimed that such visualisation cannot be successful because of the size and complexity of software; this is true of purely graph displays. There are many auxiliary discussions, including areas such as Intelligence Amplification and Metaphors that are discussed in detail elsewhere. For more information the reader is referred to http://www.dur.ac.uk/~dcskrk/workfiles/documents/tech-report-5-99.ps.gz. This position paper makes the case for three-dimensional visualisations that try to overcome these problems, from a starting point of Brooks’ comments about software as unvisualisable and going via (unsuccessful) 2D attempts to visualise graphs. It then poses the question that if these 3D visualisations are successful is it not then true to say that software visualisation has the ability to be both successful and a useful tool.

Keywords: Software Visualisation, Metaphors, Program Comprehension, Software Maintenance