Applying data mining techniques for measuring software quality

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ABSTRACT

Software is playing a crucial role in modern societies. The demand for software quality is increasing and is setting it as a differentiator which can determine the success or failure of a software product. Moreover delivering high quality products is becoming not just a competitive advantage but a necessary factor for companies to be successful [1]. There are many quality measures but a thorough evaluation of quality can arise from the use of an ISO standard [2]. On the other hand data mining and its ability to deal with large volumes of data and to uncover hidden patterns has been proposed as a means to support some quality parameters such us the evaluation and assessment of the maintainability of industrial scale software systems [3]. Data mining is employed to support semi-automated software maintenance [4] and comprehension and provide practical insights into systems specifics, assuming limited prior familiarity. Since software engineering repositories consist of text documents (e.g. mailing lists, bug reports, execution logs), the mining of textual artifacts is requisite for many important activities in software engineering: tracing of requirements, retrieval of components from a repository, identification and prediction of software failures, etc. Finally by applying mining techniques we can extract useful information and predict individual actions about users and calculate aggregate measures regarding the software quality.

References


