SOFTWARE DEPENDENCY ESTIMATION IN THE CODE REPOSITORIES FOR THE REQUIREMENT EVOLUTION

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ABSTRACT
Dependency is the only means to ensure that the source code of a system is consistent with its requirements. During software maintenance and evolution, requirement dependency links become obsolete because dependency model is been not trained properly to updating them. Yet, recovering these dependency links later is a daunting and costly task for building the model for unsupervised enhancements. Consequently, the literature has proposed methods, techniques, and tools to recover these dependency links semi-automatically or automatically. Among the proposed techniques, the literature showed that information retrieval (IR) techniques can automatically recover traceability links between free-text requirements and source code through classification techniques to the Software repositories. However, IR techniques lack accuracy (precision and recall) in terms of Text and concept based mining also leads to code sense disambiguation. In this paper, we show that Semantic mining of software repositories and combining mined results with IR can improve the accuracy (precision and recall) of IR techniques. We apply Dependency Estimation on to compare the accuracy of its dependency links with those recovered using state-of-the-art IR techniques from Vector Space model and Concept based mining. We thus show that mining software repositories and combining the mined data with existing results from IR techniques improves the precision and recall of requirement dependency links.

KEY WORDS: Dependency, Source Code, Repository, Code mining, Requirement Traceability

References:


