Abstract

Software component reuse is the use of existing software components to build a new software system. Effective storage and retrieval of software components is much essential in software components reuse process. The researchers have developed a number of software components reuse techniques for storage and retrieval of software components. No one technique is complete in its own; every technique has its own merits and demerits. This paper presents a meta-data model and faceted classification for storage and retrieval of software components that considers domain semantic information based on ontologies and taxonomies. In contrast to most existing repositories, which only retrieve a limited set of components, the proposed meta-data model makes possible the recommendation of interrelated components, as ontology and taxonomies characteristics were incorporated. The software component retrieval based on facet classification is a method which has been widely applied in software component retrieval, but the precision of software component retrieval is poor as a result of subjective factor in faceted classification retrieval. The architecture of software component retrieval system and the model of software component retrieval system were designed, the corresponding match algorithm was provided. According to the relation of facet and term space, meta-data repository was established and abstracted from domain knowledge which formed coherent retrieval in the domain and was applied to software component retrieval process. These terms in the meta-data repository were then used to match software components which described in the software component description repository with facet classification, related software
components were retrieved from the software component repository. The results of application show that the new software component retrieval method can evidently improve the component retrieval precision and take care of the full-scale of the searching results.

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