Abstract

Reusing of software is found to have escalate the software engineers work output and also the craftsmanship of the final software product. Component based software engineering (CBSE) is a unique area in software engineering wherein software components i.e a chunk of software that contains a set of related functions and data are searched for and pieced together to form a software system.This method promotes re usability and efficiency in development of software systems. CBSE's purpose is to compose software applications using plug and play software components on the framework.There are several strategies for software component identification in a system among which most widely used is object oriented based clustering.We have proposed an approach which is based on clustering and formal methods to solve the problem of software component selection for a software system.The approach is based on describing a software component using various attributes like Domain, Type, Visibility and Language then using clustering algorithms that groups the components in an hierarchy.When components are arranged in an hierarchical manner it provides a means to store ,browse and retrieve reusable software components.Using the help of hierarchical tree generated software components are identified and selected software components based on the requirements from user, extracting the keywords by the removal of stop words and punctuation.The keywords are searched using the hierarchy and then string based searching is used to compare functionality of the subset of components and requirements keywords.The comparison is done using a similarity score which is used to select the software component.Composition of the software components selected is done to show proof of correctness of our work.