Abstract

Many systems are designed to support development and maintenance of source code documents. They are all based on formal structure of the programming language. Language-based editing systems exploit information derived via linguistic analysis to offer services beyond the scope of traditional text editors. To be effective, language-based editing systems should offer a wide set of editing services, high quality visualization, and customizability.

Design choice should find balance between two desires: desire to maintain a linguistically accurate program representation; and desire to offer user friendly, advanced, linguistically-driven editing services, to increase user productivity. Specialized enhancements of the editing services are important, but it is absolutely essential that they don't make things worse. Any intrusion on text editing must be balanced between user and tool, which can be very delicate.

Although the research history shows that structure editors are a subject of interest, there is no structure editor at the moment that is widely spread and practically applied. We believe that there is practical need for such systems and we have decided to try intuitive approach, attacking the problem pragmatically.

Program Composing Assistant (PROCOMPASS) is an interactive editing system that tried to strike a balance between user and tool. It is aimed to apprehend the features from the traditional structure editing systems that are certainly of benefit to the programmer. PROCOMPASS editor offers unified user interface aimed to support structured but still flexible syntax-oriented editing of program text with the equal treatment of all programming language elements (e.g. expressions and statements). Main features of PROCOMPASS editor are: (1) guiding a user, so a user does not need to be fully familiar with the syntax of the programming language (2) opportunity of serious reduction of syntactic and static semantic errors (3) account for documentary
structure of source code (all extra-lingual information added by programmers for the sole purpose of aiding the human reader: comments, white space, and choice of names) and (4) increase of programmer's productivity. Probably the first three points are more important for beginner and unprofessional programmers, but the fourth is of concern for professional programmers too. PROCOMPASS is completely language-independent which means that the user can simultaneously manage documents written in different programming languages.

PROCOMPASS is designed to offer readily assessable everyday tool for the ordinary user. For the beginning the PROCOMPASS is targeted to novice and unprofessional programmers. Therefore, PROCOMPASS editor offers easy to learn and intuitive user interface.

Key words: language-based systems, structure editor, programming environment