Graphical Microcontroller Software Development System

Abstract

An integrated software development system is proposed which advances the creation, editing, and debugging of assembly language codes for microcontrollers to the next plane. The text editor features colour syntax highlighting to differentiate between various assembly mnemonics and program segments. Intelligent methods are used to convert assembly codes into a hierarchical flow chart. This flow chart is editable and can consist of multiple logical layers. Each succeeding layer reveals the functional module concerned in even greater detail. The hierarchical method of presenting codes leads to a more modular and structured approach to assembly programming. After editing has been done in the flow chart domain, the system will then proceed to convert the flow chart information back into assembly codes. External assemblers are coupled to the system, thereby allowing the original or generated assembly codes to be channelled to them for compilation. The assembler output messages are directed to the status window. The system contains a collection of assembly languages for different microcontroller families that the programmer can select. An assembly language translator is provided to convert code from one language to another. The system manager synchronises the data among the various windows and supervises the communication between them.

Fig. 3

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