### Parsing and Middle Code Generation

Every programming language has a syntax, that describes the form of the code. In this book, the syntax is defined a <k>grammar</k>, described in Appendix A.3.9. The parser checks whether the source code is correct with <k>regard</k> to the grammar by requesting tokens from the scanner when needed. When the declarations are parsed the <k>symbol table</k> is generated, which holds information of variables, types, and functions. The <k>type system</k> is also used to perform type checking and type castings. The output of the parser is a sequence of <k>middle code</k>. As the name implies, the middle code is a simple notation holding the code between the parsing and the final target code generation. More specifically, each instruction can refer to three values at most; therefore, the middle code notation is called <k>three-address-code</k>.

X = new Stack<int>();

/\* Hello \*/

/\* Hello \*/

/\* Hi \*/

/\* Hi \*/

// Hello World