

COMP360 Snowflake Parser

Write a recursive descent parser for the Snowflake language. The program should use the lexical scanner you wrote for an earlier assignment.ⁱ When combined with the lexical scanner, your parser should be able to read the source code for a Snowflake program and indicate if the syntax is correct. If there is a syntax error, the parser must identify (as best as possible) the row and column where the error occurs and the nature of the syntax error. Your parser need only display an error message for the first error detected.

The Snowflake language can be defined by the following BNF:

SF	→	parmstmt code ret	
parmstmt	→	parm varlist ;	
varlist	→	var	
		var varlist	
varclist	→	varconst	
		varconst varclist	
ret	→	return var ;	
pattern	→	varconst	
		varconst pattern	<i>note: vertical bar is part of snowflake</i>
code	→	line	
		line code	
line	→	assign	
		loop	
assign	→	var = varlist ;	
		var pattern = varlist ;	
loop	→	while varconst pattern { code }	

You may modify the BNF, as you need, as long as you parse an equivalent language.

ⁱ If your Snowflake lexical scanner does not work perfectly, you may use the Snowflake scanner provided by your instructor.