

CPSCI 323
Programming Languages and Translation
Fall 2014

Project #2 - Parser
Due Wed 10/15

Full Grammar

Program	=>	program OptDeclList OptFuncList begin OptStmtList end .
OptDeclList	=>	null Decl OptDeclList
Decl	=>	Type VarList ;
OptFuncList	=>	null Func OptFuncList
Func	=>	function ident (OptParamList) : Type ; OptDeclList begin OptStmtList end
OptParamList	=>	null Param OptParams
OptParams	=>	null , Param OptParams
Param	=>	Type ident
Type	=>	int real bool
VarList	=>	ident OptVars
OptVars	=>	null , ident OptVars
OptStmtList	=>	null Stmt OptStmtList
Stmt	=>	Assign Read Write If While
Assign	=>	ident <- Expr ;
Read	=>	read (VarList) ;
Write	=>	write (Expr) ;
If	=>	if (Condition) begin OptStmtList end OptElseIf OptElse
OptElseIf	=>	null elseif (Condition) begin OptStmtList end OptElseIf
OptElse	=>	null else begin OptStmtList end
While	=>	while (Condition) begin OptStmtList end
Condition	=>	Expr RelOp Expr
RelOp	=>	> < >= <= = <>
Expr	=>	Term EPrime
EPrime	=>	null + Term EPrime - Term EPrime
Term	=>	Factor TPrime
TPrime	=>	null * Factor TPrime / Factor TPrime
Factor	=>	ident intConst realConst true false (Expr) FuncCall
FuncCall	=>	ident (OptArgList)
OptArgList	=>	null Expr OptArgs
OptArgs	=>	null , Expr OptArgs