CS 4280 Program Translation Techniques Spring 2016

Part 1:
Your first project is to build a scanner for a subset of Ada. You are to use `lex` (or write equivalent code) for the scanner. The productions for the constructs that I will have you work with are on the attached sheet. The tokens are:

- The class of Identifiers: a case-sensitive sequence of letters, digits and underscores that start with a letter (not an underscore).
- The class of Integer Constants (without leading signs)
- The 4 predeclared identifiers: "BOOLEAN", "INTEGER", "TRUE", and "FALSE"
- The 22 reserved words, all of which must be in all lower case: "and", "array", "begin", "declare", "else", "elsif", "end", "exit", "for", "if", "in", "is", "loop", "mod", "not", "of", "or", "procedure", "then", "when", "while", and "xor"
- The 19 operators: ";", ";","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<","\!<", and ","

You will also need to write a tester program that reads stdin, separates out the tokens, and writes the token number and the string representing the token to stdout. Name the executable `scantest`.

Part 2:
Your second project is to build a parser for the subset of Ada. You are to use `yacc` (or write recursive descent code) for the parser. The productions are on the class web page. I want your code to build an AST (Abstract Syntax Tree) for the Ada input, and to print out a representation of the AST at the end. Name the executable `ada`. The program is to take 1 command line argument: the input file.
Description of Mini-Ada