

Homework 1

(10 points)

Lexical analysis

Consider the `sample.pas` program is attached to this exercise sheet and do the following tasks using the lexical analysis tool `lex`:

1. Identify and enumerate all the tokens in the program; **(1 point)**
2. Write a lexical analyser that recognises all the tokens; **(3 points)**
3. Report lexical errors and the line numbers where they occur; **(1 point)**
4. Generate a new source program that:
 - a. capitalises all keywords; **(1 point)**
 - b. writes all identifiers in lower case letters; **(1 point)**
 - c. eliminates all redundant whitespaces (multiple empty lines, space- and tab- characters) ; **(1 point)**
 - d. transform all comments into old style Pascal comments; **(1 point)**
 - i. *Example:* (* This is an old style Pascal comment *)
5. Write a new program of at least 100 lines of code that implements a well-known algorithm. Modify it to contain at least five lexical errors reported by the lexical analyser. **(1 point)**