CIIC 4030/ICOM 4036 Programming Languages
Assignment #1

Using PLY, design a Lexical Analyzer that recognizes the following valid tokens:

- **IDENTIFIER**: a string beginning with at least one or more consecutive letters (a to z or A to Z) or underscores in a given string followed by letters (a to z or A to Z) or underscores or digits (0 to 9)
- **NUMBER**: a string consisting of one or more consecutive digits in the range 0-9
- **Keywords**
    - **IF**: the string (keyword) if
    - **ELSE**: the string (keyword) else
    - **WHILE**: the string (keyword) while
    - **LET**: the string (keyword) let
    - **LOOP**: the string (keyword) loop
    - **FN**: the string (keyword) fn
    - **MUT**: the string (keyword) mut
    - **PUB**: the string (keyword) pub
    - **REF**: the string (keyword) ref
    - **IN**: the string (keyword) in
    - **STRUCT**: the string (keyword) struct
    - **TYPE**: the string (keyword) type
    - **RETURN**: the string (keyword) return
    - **TRUE**: the string (keyword) true
    - **FALSE**: the string (keyword) false
    - **WHERE**: the string (keyword) where
    - **WRITE**: the string (keyword) write
- **Delimiters**
    - **LPAREN**: the string (
    - **RPAREN**: the string)
    - **LCURLY**: the string {
    - **RCURLY**: the string }
    - **LSQR**: the string [
    - **RSQR**: the string]
    - **SEMICOLON**: the string ;
    - **COMMA**: the string ,
- **Operators**
    - **EQUALS**: the string =
    - **NEQ**: the string !=
    - **LEQ**: the string <=
    - **GEQ**: the string >=
    - **LT**: the string <
    - **GT**: the string >
    - **PLUS**: the string +
    - **MINUS**: the string -
    - **STAR**: the string *
    - **SLASH**: the string /
    - **MOD: the string** %

- In this assignment, whitespace and comments are irrelevant to the syntactic specification of the programming language. Therefore, they should be removed (ignored)
- A comment is a string // followed by any characters and the newline character at the end.
- A whitespace is one of the following characters: tab (ASCII 9, \t), newline (ASCII 10, \n), carriage return (ASCII 13, \r), space (ASCII 32)
- Your lexical analyzer must print each token and the row where the token appears in the test program (provided).
- You must submit only your Python code via Moodle.