

**CS 280  
Fall 2021**

**Recitation Assignment 5  
October 13, 2021**

**Due Date: Sunday October 17, 2021, 23:59  
Total Points: 5**

You are given a copy of “lex.h” from Programming Assignment 1, and a file called “ListTokens.cpp” as a driver program.

DO NOT CHANGE neither “lex.h” nor “tokensListing.cpp”.

Your implementation should include the following in another file, called “RA5.cpp”:

- The function

```
LexItem id_or_kw(const string& lexeme, int linenum);
```

Id\_or\_kw function accepts a reference to a string of a lexeme and a line number and returns a LexItem object. It searches for the lexeme in a directory that maps a string value of a keyword to its corresponding Token value, and it returns a LexItem object containing either the keyword Token if it is found, or the identifier token IDENT if not.

- The overloaded operator function operator<< for LexItem.

```
ostream& operator<<(ostream& out, const LexItem& tok);
```

The operator<< function accepts a reference to an ostream object and a reference to a LexItem object, and returns a reference to the ostream object. The operator<< function should print out the string value of the Token in the tok object, followed by its line number. If the Token is either an IDENT, ICONST, RCONST, or SCONST, it will print out its token followed by its lexeme between parentheses, and its line number.

**Note that the implementation of operator<< function in RA5 differ from its implementation in PA1. See the examples below for the output format.**

Use the given driver program in “tokensListing.cpp” for testing your implementations. The driver program accepts two command line arguments, “-othertok” and “-idsonly”.

The “-othertok” flag is used to test your implementation of the overloaded operator<< function only, and the “-idsonly” is used to test your implementation of both functions. See the details of the outputs for the examples in the slides,

### **Submission Guidelines**

- 1.1. Please upload your RA5.cpp file to Vocareum. The "lex.h" header file and "tokensListing.cpp" driver program will be propagated to your Work Directory.
- 1.2. Submissions after the due date are accepted with a fixed penalty of 25%. No submission is accepted after Tuesday 11:59 pm, October 19, 2021.

### **Grading Table**

Item	Points
Compiles Successfully	1
Implementation of <code>id_or_kw</code> Function	2
Implementation of <code>operator&lt;&lt;</code> Function	2
<b>Total</b>	<b>5</b>