Project 3
A Simple C Interpreter

In this project, you should implement a C interpreter. The supported input file should at least contain the following features:

(1) integer and floating-point data types: `int`, `float`.
(2) Statements for arithmetic computation. (ex: a = b+2*(100-1))
(3) Comparison expression. (ex: a > b)
(4) if-then-else program construct.
(5) `printf()` function with one/two parameters. (support types: `%d`, `%f`)
(6) `scanf()` function. (support types: `%d`, `%f`)

The following is a sample C program (input file):

```
1. void main()
2. {
3.    int num;
4.    float s;
5.
6.    printf("Please enter a number:");
7.    scanf("%d", &num);
8.
9.    if (num > 10) {
10.      s = 3 * (num + 3.14);
11.   } else {
12.      s = num * (num – 3.14);
13.   }
14.
15.   printf("The result is %f\n", s);
16. }
```

In your hand-in report, you need to have the followings:

- **Describe the C subset supported by your interpreter.**
- Give a set of testing programs which can illustrate the features of your interpreter. (at least 3 test programs)
- Use the "**ANTLR**" to help you develop your interpreter.
- You can use **Java** or **other programming languages** to write your interpreter. (Java is recommended)
- Please ensure your program can be executed under the **mcore8** or

linux.cs.ccu.edu.tw workstation.

Please turn in the following:

- A file describes your C subset supported by your interpreter. (MS-WORD file)
- The source codes:
  - ANTLR grammar file, `myInterp.g`.
  - A program to call ANTLR-generated files, `myInterp_test.java`.
  - Testing programs. (at least 3 programs)
- A readme file (pure text file) describes how to compile and execute your interpreter, and the features of your interpreter.
- A "Makefile".

Due Date: ~~**May 24 (Friday)**~~ **May 26 (Sunday), 24:00pm, 2019.**