SCC by KREG - Usage

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1 Usage

The basic usage format for the SCC compiler is as follows:

```
[options] SOURCEFILE.[c|ir] [OUTPUTFILE]
```

The compiler takes input from a .c file and can output user-specified results to the terminal. Those results include:

- -t Print tokens
- -p Print parse tree
- -a Print abstract syntax tree
- -s Print symbol table
- -i Print intermediate representation
- -w Write the IR to OUTPUTFILE (will fail if no OUTPUTFILE given)
- -r Read in a given IR from SOURCEFILE.ir instead of C code. This file MUST have a ".ir" file extension.
- -O Perform optimizations
- -S Generate assembly code and save it in SOURCEFILE.s

Only one dash is required. Multiple options can be entered as "-xyz".

It should be noted that options t, p, a, and s cannot be used with the "-r" option because they require C source code. If any of these options are used with "-r", they will be ignored.

1.1 Run instructions:

Ensure that the repository is cloned and unzipped then navigate into the folder. **Be wary of copy and pasting the commands below. The unicode quotations may cause them to not work correctly.**

- Windows

  Compile .g4: java -jar antlr-4.8-complete.jar kregGrammar.g4 -o out

  Compile java: javac -cp ".;antlr-4.8-complete.jar;out" *.java

  Run Example: java -cp ".;antlr-4.8-complete.jar;out" SCC tests\ex1.c

  Print tokens: java -cp ".;antlr-4.8-complete.jar;out" SCC -t tests\ex1.c

- Mac / Linux

  Compile .g4: java -jar antlr-4.8-complete.jar kregGrammar.g4 -o out

  Compile java: javac -cp ".:antlr-4.8-complete.jar:out" *.java

  Run Example: java -cp ".:antlr-4.8-complete.jar:out" SCC tests/ex1.c

  Print tokens: java -cp ".:antlr-4.8-complete.jar:out" SCC -t tests/ex1.c

1.2 Further Run examples

- Windows
  Save IR to file: java -cp ".;antlr-4.8-complete.jar;out" SCC -w tests\ex1.c ex1.ir

  Output asm file: java -cp ".;antlr-4.8-complete.jar;out" SCC -S tests\ex1.c

  Output asm with optimizations: java -cp ".;antlr-4.8-complete.jar;out" SCC -SO tests\ex1.c

  Read in IR, output ASM: java -cp ".;antlr-4.8-complete.jar;out" SCC -r tests\ex1.ir

- Mac / Linux
  Save IR to file: java -cp ".:antlr-4.8-complete.jar:out" SCC -w tests/ex1.c ex1.ir

  Output asm file: java -cp ".:antlr-4.8-complete.jar:out" SCC -S tests/ex1.c

  Output asm with optimizations: java -cp ".:antlr-4.8-complete.jar:out" SCC -SO tests/ex1.c

  Read in IR, output ASM: java -cp ".:antlr-4.8-complete.jar:out" SCC -r tests/ex1.ir

All examples in the src/tests folder work for all options, and have their generated .ir and .s files to accompany them.