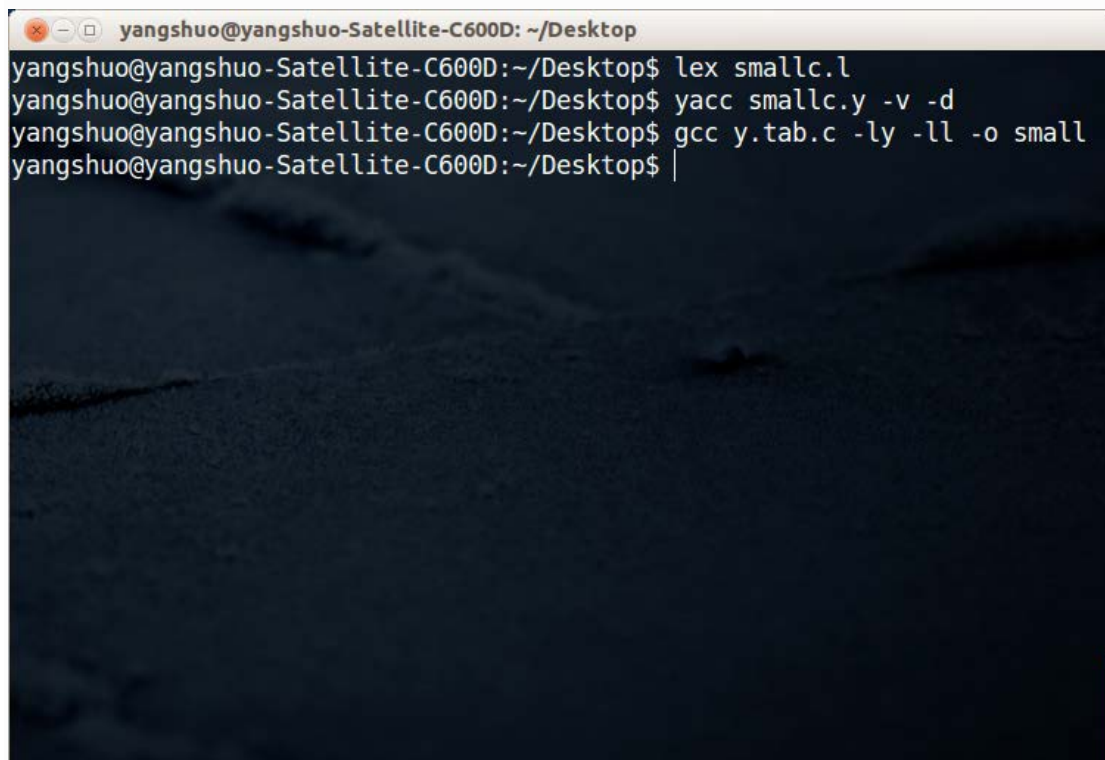


Dear All:

Since the project description does not clearly explain the requirement and tests of project 1, I am going to explain here:

1. Actually, the first project is pretty simple. All you need to do is to write a lex file and a yacc file, then combine them together, so that your project can test if a given source code matches the SmallC grammar.

For example, first, we run the following commands to get an executable file named "small".

A terminal window with a dark background and light text. The window title is "yangshuo@yangshuo-Satellite-C600D: ~/Desktop". The terminal shows four lines of commands and their outputs: 1. "yangshuo@yangshuo-Satellite-C600D:~/Desktop\$ lex smallc.l" followed by a blank line. 2. "yangshuo@yangshuo-Satellite-C600D:~/Desktop\$ yacc smallc.y -v -d" followed by a blank line. 3. "yangshuo@yangshuo-Satellite-C600D:~/Desktop\$ gcc y.tab.c -ly -ll -o small" followed by a blank line. 4. "yangshuo@yangshuo-Satellite-C600D:~/Desktop\$ |" followed by a blank line.

```
yangshuo@yangshuo-Satellite-C600D: ~/Desktop
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ lex smallc.l
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ yacc smallc.y -v -d
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ gcc y.tab.c -ly -ll -o small
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ |
```

Then, for a give source file "test", which is written in SmallC, your project should be able to test if the test file satisfies the given SmallC grammar.

As shown below, the given test case is bug-free, then the output says "Parsing complete". Note that, the output is done by yacc.

```
yangshuo@yangshuo-Satellite-C600D: ~/Desktop
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ cat test
int main()
{
    i=0;
    j=1;
    for(;i<10;++i)
    {
        j=j*i;
    }
    return 0;
}
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ ./small test
```

For a another test case which violates the SmallC grammar, the yacc output the parsing results, as shown below.

```
yangshuo@yangshuo-Satellite-C600D: ~/Desktop
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ cat test
int main()
{
    i=0;
    j=1;
    while {;
    for(;i<10;++i)
    {
        j=j*i;
    }
    return 0;
}
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ ./small test
5 : syntax error {

Parsing complete
yangshuo@yangshuo-Satellite-C600D:~/Desktop$ |
```

2. In the first project, it's not necessary to build a parse tree or perform any kind of semantic analysis.

You will be asked to perform these in the next project.

You may consider the first project as a warm-up and start-up for a upcoming more interesting and challenging project--- the second project.

So, please do not make the first project complicated.

Hope you enjoy it.

-Shuo

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