# report

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#### 实验过程

1. 在 lexer/lexer.1 模板的基础上完成更多的 token:

注:实验模板欠缺一下 token:

```
1 token name
2
3 float float
4 ... ellipsis
```

2. 在 lexer/lexer.1 中增加 genflag() 函数,处理无关字符 [StartOfLine] [LeadingSpace]:

思路:增加全局变量 yynewline 、 yynewspace 用于标记新行、新空格,分情况设置 flag:

```
1
     if(yynewline && yynewspace){
2
       flag = " [StartOfLine] [LeadingSpace]";
3
4
    else if(yynewline){
5
      flag = " [StartOfLine]";
6
7
    else if(yynewspace){
8
      flag = " [LeadingSpace]";
9
    else{
10
      flag = "";
11
12
```

- 3. 挑战方向:扩展更多 C 语言的 token
  - 。 踩过的坑:
    - 不支持数据类型 bool , Clang 将其识别为 identifier ;
    - 不需要写 long long 类型对应的规则,Clang 将其识别为两个 long。
  - o 更多 token:

```
token
             name
2
           colon
3
  :
4 auto
           auto
  double
5
           double
6 long
           long
7
   enum
             enum
8 register register
9 short
           short
   signed
             signed
10
```

```
11 unsigned unsigned
12
   static
             static
13
   struct
             struct
14 union
            union
15 typedef typedef
            do
16
   do
17
   switch
            switch
            case
18
   case
19 default default
            for
20 for
21 goto
            goto
            sizeof
extern
22 sizeof
23 extern
24 ++
            plusplus
25
             plusequal
            minusminus
26
   --
27 -=
            minusequal
28
  *=
             starequal
29 /=
             slashequal
30 %=
             percentequal
```

4. 根据新扩展的 token,编写新的测例 tester/mytest.c 和评测脚本 lexer/mytest.sh。

## 难点

#### 设计字符串的正则表达式

1. 初始版本 \"[^"]\":

。 思路: 不允许字符串中单独出现"

。 缺点: 出现\"不被允许

2. 最终版本 \"([^\"\\]|\\.)\*\"

○ 思路: | 左边规定: 不允许单独出现 "和\; 右边规定: \ 的后面需要带任意字符 ( \n 除

外)

## 设计小数的正则表达式

总共有三种表示:

- 1. 十进制小数点计数法
- 2. e-计数法
- 3. p-计数法

# 自动评测结果

```
■ □ □ □ □ −
                                                                              ··· $ lexertest.sh ×
C
                      ✓ WORKSPACE [CONTAINER ... SYsU-lang > $ lex
                                $ test2.sh
                                > librarian
                                                                                                                       PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
                                                                                                                        [626/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/hoist-3.sysu.c
[627/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/instruction-combining-1.sysu.c
[628/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/instruction-combining-2.sysu.c
[629/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/instruction-combining-3.sysu.c
[639/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/intruction-combining-3.sysu.c
[631/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/intruction-combining-3.sysu.c
[631/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/integer-divide-optimization-1.sysu.c
[631/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/integer-divide-optimization-2.sysu.c
[631/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/integer-divide-optimization-3.sysu.c
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[631/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/shufflee.sysu.c
[641/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/slufsels-sysu.c
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[641/647] tester/third_party/SysU-lang-tester-perfermance/performance_test2022-public/slufsels-sysu.c
[641/647] tester/third_party/SysU
                                > parser
> preprocessor
> tester

    bash.

                                 > translator
                               dansiator

dockerignore

gitattributes

gitignore

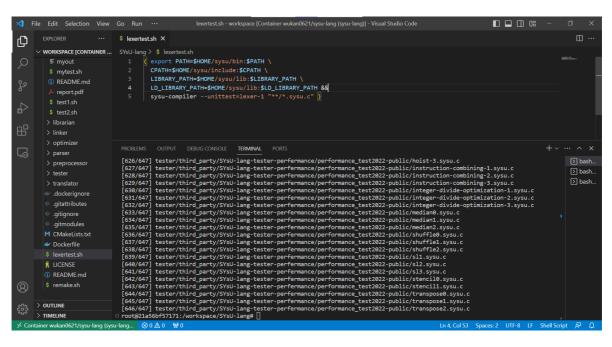
gitmodules

M CMakeListstyt
                                R LICENSE

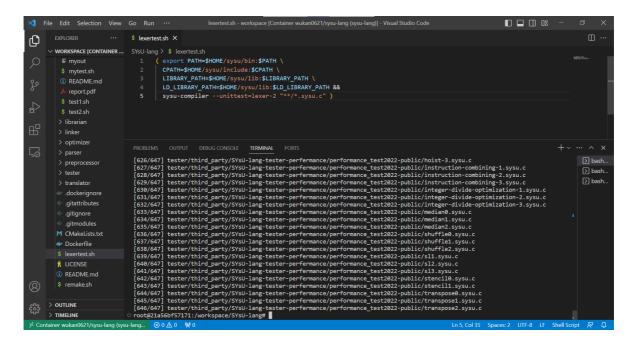
    README.md

> OUTLINE > TIMELINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ln 4, Col 53 Spaces: 2 UTF-8 LF Shell Script ₽ Q
```

1



2



#### 汇总

```
刘 File Edit Selection View Go Run …
                                                                                                                                                                                                                                                                                                                                                                                                                                                   lexertest.sh - workspace [Container wukan0621/sysu-lang (sysu-lang)] - Visual Studio Code
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ### Sysu-compiler --unittest-lexer-2 ***/*.sysu.c" & sysu-compiler --unittest-lexer-2 ***/*.sysu.c" & sysuser & sall)

| Compiler --unittest-lexer-3 ***/*.sysu.c" & sysu-compiler --unittest-lexer-1 ***/*.sysu.c" & sysu-compiler --unittest-lexer-3 ***/*.sysu.c" & sysu-compiler --unittest-lexer-3 ***/*.sysu.c" & sysu-compiler --unittest-lexer-3 ***/*.sysu.c" & sysu-compiler --unittest-lexer-3 ***/*.sysu.c" & sysu-compiler --unittest-lexer-1 ***/*.sysu.c" & sysu-compiler --uni
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C
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                                                                 > parser
> preprocessor
> tester
> translator
• dockerignore
• gitattributes
• gitignore
• gitmodules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   > bash.

    bash.

                                                                 Dockerfile
                                                                      $ lexertest.sh
                                                                      ③ README.md
                                                                 $ remake.sh
  > OUTLINE
                                              > TIMELINE
```

## 新的测例评测结果