

CS335 Assignment 1

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1 Part 1

1.1 Instructions to run the flex file

Go to the directory `problem1` in terminal and run the following commands:

```
flex prob1.l
g++ lex.yy.c -o prob1 -ll
./prob1 < input.knp
```

1.2 More error rules under following conditions

1. Leading zeros in INTEGER

```
0[0-9]+ { cerr << "Error: Leading zeros in INTEGER at line " << yylineno << ": " <<
yytext << "\n"; }
```

2. Leading zeros in FLOATING_POINT

```
0[0-9]+\.[0-9]* { cerr << "Error: Leading zeros in FLOATING_POINT at line " << yylineno
<< ": " << yytext << "\n"; }
```

3. Leading zeros in HEXADECIMAL

```
0[xX]0[0-9a-fA-F]+ { cerr << "Error: Leading zeros in HEXADECIMAL at line " << yylineno
<< ": " << yytext << "\n"; }
```

4. No digits after decimal point in FLOATING_POINT

```
([1-9][0-9]*|0)\. { cerr << "Error: No digits after decimal point in FLOATING_POINT
at line " << yylineno << ": " << yytext << "\n"; }
```

5. No digits before decimal point in FLOATING_POINT

```
\.[0-9]+ { cerr << "Error: No digits before decimal point in FLOATING_POINT at line
" << yylineno << ": " << yytext << "\n"; }
```

6. More than 6 digits after decimal point in FLOATING_POINT

```
([1-9][0-9]*|0)\.[0-9]{7,} { cerr << "Error: More than 6 digits after decimal point
in FLOATING_POINT at line " << yylineno << ": " << yytext << "\n"; }
```

2 Part 2

2.1 Instructions to run the flex file

Go to the directory `problem2` in terminal and run the following commands:

```
flex prob2.l
g++ lex.yy.c -o prob2 -ll
./prob2 < input.f08
```

2.2 More error rules under following conditions

1. NAME with more than 63 characters

```
[a-zA-Z][a-zA-Z0-9_]{63,} { cerr << "Error: More than 63 characters in NAME at line
" << yylineno << ": " << yytext << "\n"; }
```

Note that the above rule should be added before NAME rule to detect this error, if necessary.