

Lab4: Implement scanner phase of compiler using flex

Project Number: **5**

Project Members:

Aanandi Pankhania - IT088

Dhrumil Nakrani - IT082

Project Details:

Following is a valid sentence in a layman friendly “comparison” program. Generate its appropriate language description and compiler-

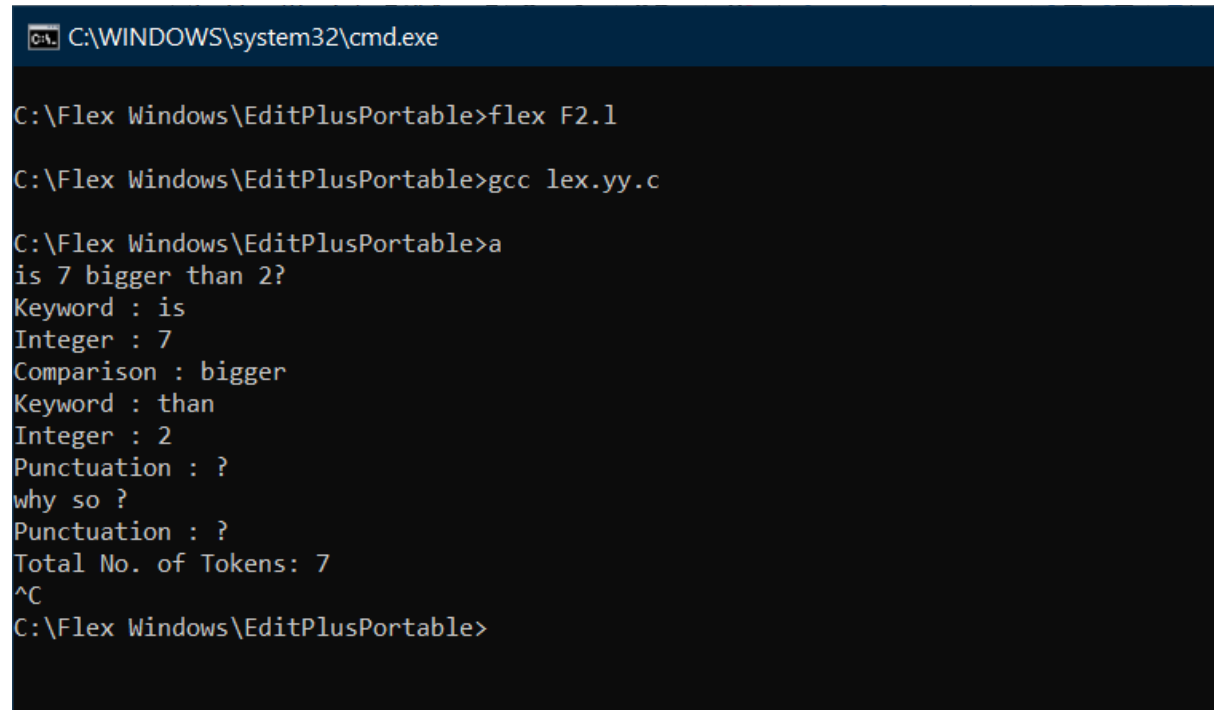
- Valid sentences in language:
 1. Which is bigger number 7 or 2?
 2. From 7 and 2 which is larger?
 3. Is 7 bigger than 2?
 4. Is 2 smaller than 4?
 5. Which is smaller between 4 and 9?
 6. Which is smaller number 4 or 2?

Flex Code:

```
%{
    #include<stdio.h>
    int x=0;
}%
Keyword
    "Which"|"which"|"Is"|"is"|"From"|"from"|"number"|"or"|"a
nd"|"between"|"than"
Cmp      "bigger"|"greater"|"larger"|"smaller"|"less"
Digit    [0-9]
Qm       "?"
Dm       [\t\n]
Int       {Digit}+
Float     {Digit}+(\.{Digit}+)?(E[+\-]?{Digit}+)?
Space     {Dm}+
%%
```

```
{Keyword} {printf("Keyword : %s\n",yytext);x++;}
{Cmp}      {printf("Comparison : %s\n",yytext);x++;}
{Int}      {printf("Integer : %s\n",yytext);x++;}
{Float}    {printf("Float No : %s\n",yytext);x++;}
{Qm}       {printf("Punctuation : %s\n",yytext);x++;}
{Space}    {}
.          {}
%%
int yywrap(){return 1;}
int main()
{
    yylex();
    printf("Total No. of Tokens: %d\n",x);
    return 0;
}
```

Output Screenshots:



```
C:\WINDOWS\system32\cmd.exe

C:\Flex Windows\EditPlusPortable>flex F2.1

C:\Flex Windows\EditPlusPortable>gcc lex.yy.c

C:\Flex Windows\EditPlusPortable>a
is 7 bigger than 2?
Keyword : is
Integer : 7
Comparison : bigger
Keyword : than
Integer : 2
Punctuation : ?
why so ?
Punctuation : ?
Total No. of Tokens: 7
^C
C:\Flex Windows\EditPlusPortable>
```