

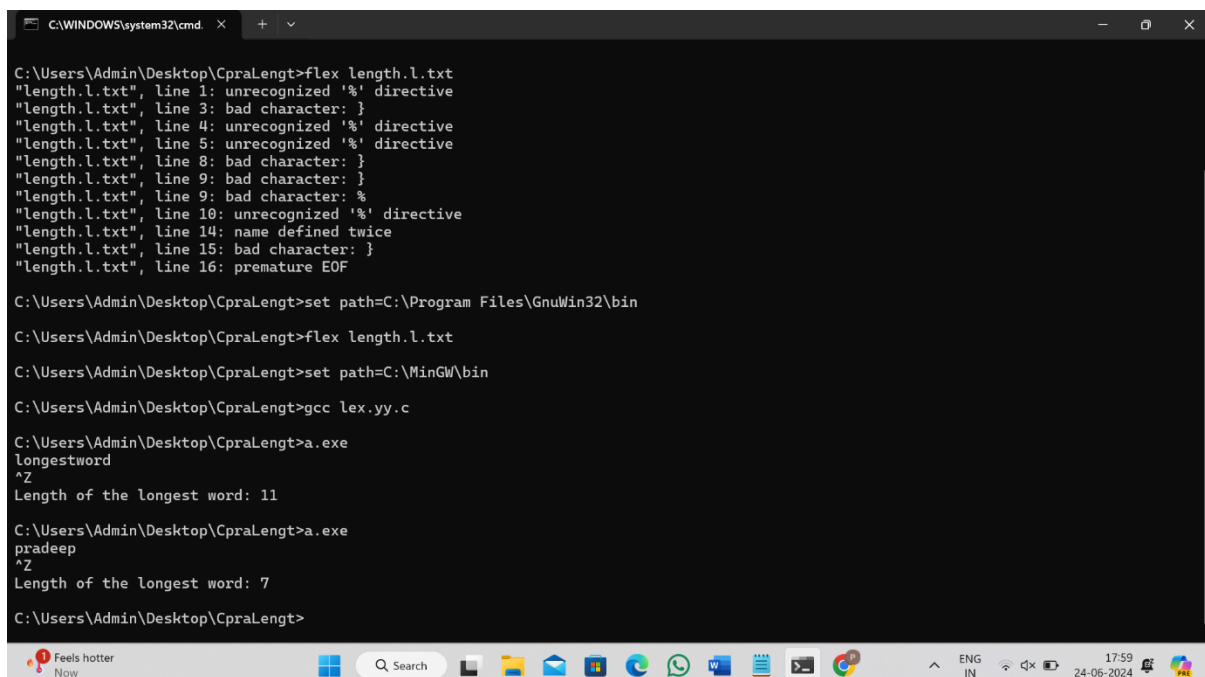
## DAY-2 EXPERIMENTS

9. Write a LEX program to find the length of the longest word.

### PROGRAM:

```
% {  
int counter = 0; %  
}  
%  
% [a - zA - Z] + {  
if (yyleng > counter) {  
counter = yyleng;  
}  
} %  
%  
main() {  
yylex();  
printf("largest: %d", counter);  
printf("\n");  
}
```

### Output:



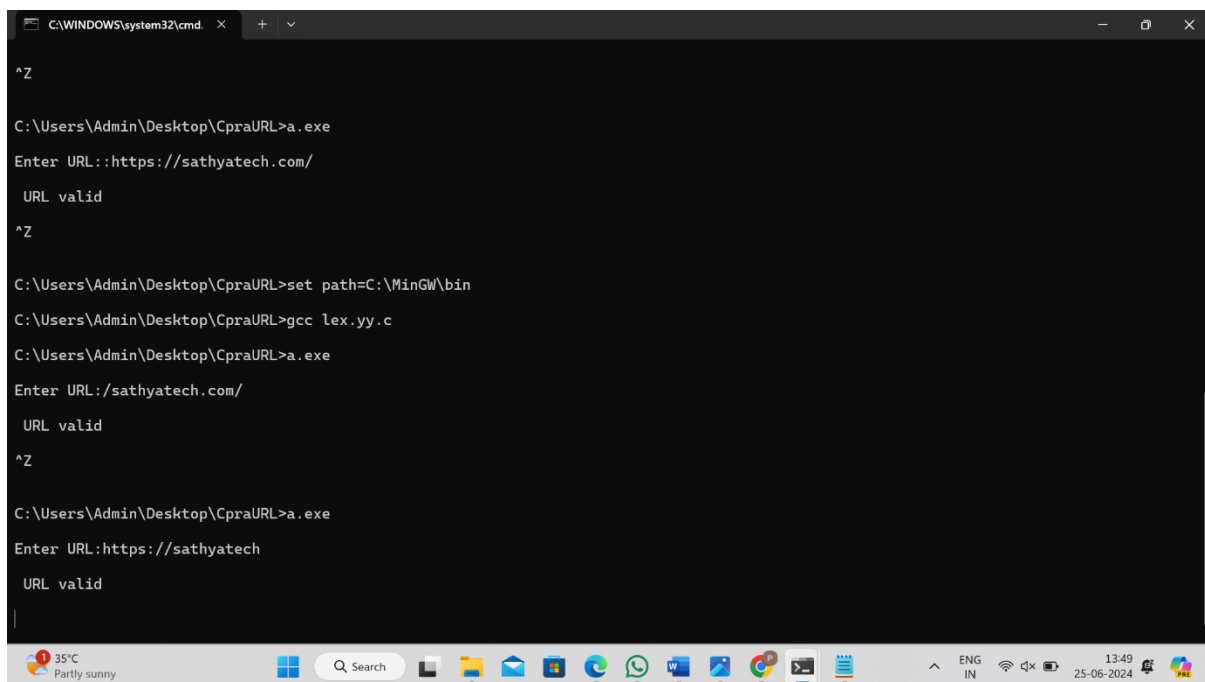
```
C:\WINDOWS\system32\cmd. x + v  
C:\Users\Admin\Desktop\CpraLengt>flex length.l.txt  
"length.l.txt", line 1: unrecognized '%' directive  
"length.l.txt", line 3: bad character: }  
"length.l.txt", line 4: unrecognized '%' directive  
"length.l.txt", line 5: unrecognized '%' directive  
"length.l.txt", line 8: bad character: }  
"length.l.txt", line 9: bad character: }  
"length.l.txt", line 9: bad character: %  
"length.l.txt", line 10: unrecognized '%' directive  
"length.l.txt", line 14: name defined twice  
"length.l.txt", line 15: bad character: }  
"length.l.txt", line 16: premature EOF  
  
C:\Users\Admin\Desktop\CpraLengt>set path=C:\Program Files\GnuWin32\bin  
C:\Users\Admin\Desktop\CpraLengt>flex length.l.txt  
C:\Users\Admin\Desktop\CpraLengt>set path=C:\MinGW\bin  
C:\Users\Admin\Desktop\CpraLengt>gcc lex.yy.c  
C:\Users\Admin\Desktop\CpraLengt>a.exe  
longestword  
^Z  
Length of the longest word: 11  
  
C:\Users\Admin\Desktop\CpraLengt>a.exe  
pradeep  
^Z  
Length of the longest word: 7  
C:\Users\Admin\Desktop\CpraLengt>
```

**10. A networking company wants to validate the URL for their clients. Write a LEX program to implement the same.**

**Program:**

```
%{  
%}  
%%  
[https://]+[www.]+[a-z]+".com" {printf("\n valid url \n");}  
.+ {printf("\n invalid \n");}  
%%  
  
int yywrap()  
{  
return 1;  
}  
  
int main()  
{  
printf("\n enter the url:");  
yylex();  
}
```

**Output:**



```
C:\WINDOWS\system32\cmd. x + v  
^Z  
C:\Users\Admin\Desktop\CpraURL>a.exe  
Enter URL.:https://sathyatech.com/  
URL valid  
^Z  
C:\Users\Admin\Desktop\CpraURL>set path=C:\MinGW\bin  
C:\Users\Admin\Desktop\CpraURL>gcc lex.yy.c  
C:\Users\Admin\Desktop\CpraURL>a.exe  
Enter URL:./sathyatech.com/  
URL valid  
^Z  
C:\Users\Admin\Desktop\CpraURL>a.exe  
Enter URL:https://sathyatech  
URL valid
```

**11.School management wants to validate DOB of all students. Write a LEX program to implement it.**

Program:

```
%{
%}

%%

[0-9][0-9]V[0-1][0-9]V[1-2][0-9]{3} { printf("valid");}
.+ { printf("invalid");}

%%

int yywrap(){}

int main()

{
yylex();

}
```

**Output:**

```
C:\WINDOWS\system32\cmd.exe + v x
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
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"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
"DOB.l.txt", line 6: unrecognized rule
C:\Users\Admin\Desktop\Cpradb>flex DOB.l.txt
C:\Users\Admin\Desktop\Cpradb>set path=C:\MinGW\bin
C:\Users\Admin\Desktop\Cpradb>gcc lex.yy.c
C:\Users\Admin\Desktop\Cpradb>a.exe
12/05/2003
valid
12/05
invalid
```

## 12. Write LEX code to count the frequency of the given word in a file

### Program:

```
%{  
#include<stdio.h>  
#include<string.h>  
char word [] = "kiran";  
int count = 0;  
%}  
%%  
[a-zA-Z]+ { if(strcmp(yytext, word)==0)  
            count++; }  
.  
%%  
int yywrap()  
{  
    return 1;  
}  
int main()  
{  
    extern FILE *yyin, *yyout;  
    yyin=fopen("input.txt", "r");  
    yylex();  
    printf("%d", count);  
}
```

### Ouput:

```
C:\Users\Admin\Desktop\Cprafreq>set path=C:\Program F  
C:\Users\Admin\Desktop\Cprafreq>flex freq.l.txt  
C:\Users\Admin\Desktop\Cprafreq>set path=C:\MinGW\bin  
C:\Users\Admin\Desktop\Cprafreq>gcc lex.yy.c  
C:\Users\Admin\Desktop\Cprafreq>a.exe
```

### 13. Write LEX code to replace a word with another taking input from file.

#### Program:

```
%{
#include<stdio.h>
#include<string.h>
char replace_with [] = "Best";
char replace [] ="a";
}%
%%
[a-zA-Z]+  { if(strcmp(yytext, replace)==0)
                fprintf(yyout, "%s", replace_with);
            else
                fprintf(yyout, "%s", yytext);}
.         fprintf(yyout, "%s", yytext);
%%

int yywrap()
{
    return 1;
}

int main()
{
    extern FILE *yyin, *yyout;
    yyin=fopen("input.txt", "r");
    yyout=fopen("output.txt", "w");
    yylex();
}
```

#### Output:

File Edit View

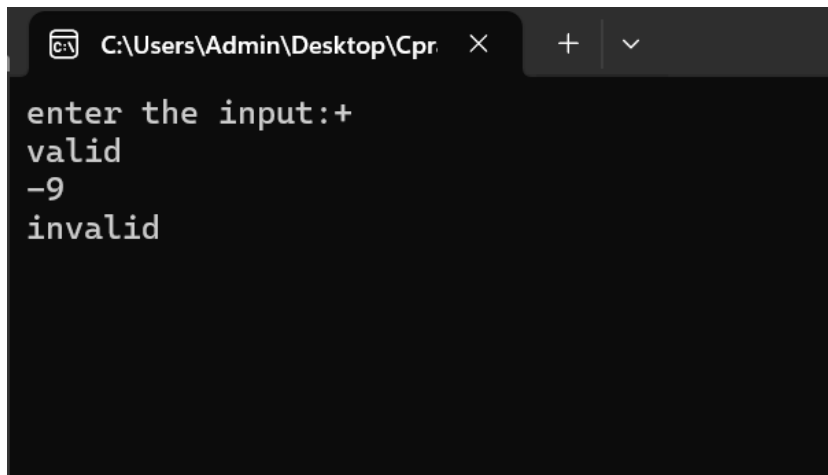
```
|This is Best sample input file.
A quick brown fox jumps over Best lazy dog.
Another sentence with Best single 'Best' character.
This text will show how Best single character 'Best' is replaced.
```

**14. A School student was asked to do basic mathematical operations. Implement a LEX program to implement the same.**

**Program:**

```
%{  
#include<stdio.h>  
float op1=6,op2=7;  
%}  
%%  
"+" {printf("sum =%lf",op1+op2);}  
"-" {printf("diff=%lf",op1-op2);}  
"*" {printf("mul=%lf",op1*op2);}  
"/" {printf("div=%lf",op1/op2);}  
. {printf("enter proper operator.");}  
%%  
int yywrap(){  
int main()  
{  
printf("enter number 1");  
printf("enter number 2");  
printf("Enter the Operator::");  
yylex();  
}
```

**Output:**



```
C:\Users\Admin\Desktop\Cpr. X + v
enter the input:+
valid
-9
invalid
```

**15. Write a LEX Program to check the email address is valid or not.**

**Program:**

```
%{
%}
%%
[a-zA-Z0-9]+@[a-zA-Z]+(.com|.in) {printf("\n valid\n");}
.+ {printf("\n Invalid\n");}
%%
int yywrap()
{}
int main()
{
printf("\nEnter : ");
yylex();
}
```

**Output:**

```
C:\Users\Admin\Desktop\Cpra>gcc lex.yy.c
'gcc' is not recognized as an internal or external command,
operable program or batch file.
```

```
C:\Users\Admin\Desktop\Cpra>gcc lex.yy.c
'gcc' is not recognized as an internal or external command,
operable program or batch file.
```

```
C:\Users\Admin\Desktop\Cpra>set path=C:\MinGW\bin
```

```
C:\Users\Admin\Desktop\Cpra>gcc lex.yy.c
```

```
C:\Users\Admin\Desktop\Cpra>a.exe
Enter the email: pradeepchemirth
It is not valid
It is not valid
It is not valid
```



**16. Write a LEX Program to convert the substring abc to ABC from the given input string.**

**Program:**

```
%{
#include <ctype.h>
%}
%%

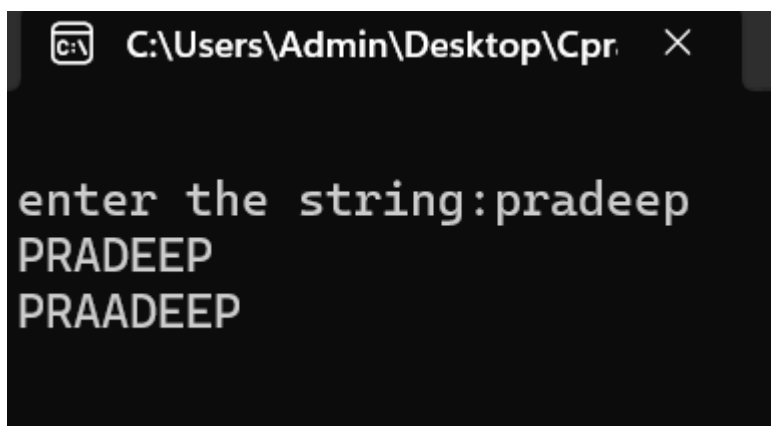
[a-z] { printf("%c", toupper(yytext[0])); }
.\n { printf("%s", yytext); }

%%

int yywrap()
{
}

int main() {
    yylex();
    return 0;
}
```

**Output:**

A screenshot of a Windows command prompt window. The title bar at the top shows the file path "C:\Users\Admin\Desktop\Cpr" and a close button. The command prompt has a black background with white text. It displays the prompt "enter the string:" followed by the input "pradeep". Below the input, the program's output is shown in two lines: "PRADEEP" and "PRAADEEP".

```
C:\Users\Admin\Desktop\Cpr > enter the string:pradeep
PRADEEP
PRAADEEP
```