

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

PROGRAM:

```
% {
#include <stdio.h>
#include <string.h>

int max_word_length = 0;

% }

%%

[A-Za-z]+      {
                int len = strlen(yytext);
                if (len > max_word_length) {
                    max_word_length = len;
                }
            }
[ \t\n]+      { /* ignore whitespace */ }
.             { /* ignore other characters */ }
-
%%

int yywrap() {
    return 1;
}

int main() {
    yylex();
    printf("Length of the longest word: %d\n", max_word_length);
    return 0;
}
```

OUTPUT:

```
Microsoft Windows [Version 10.0.22631.3737]
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C:\Users\bteja>cd downloads

C:\Users\bteja\Downloads>cd p14

C:\Users\bteja\Downloads\P14>set path=C:\Program Files\GnuWin32\bin
C:\Users\bteja\Downloads\P14>flex lenlongword.l.txt
C:\Users\bteja\Downloads\P14>set path=C:\MinGW\bin
C:\Users\bteja\Downloads\P14>gcc lex.yy.c
C:\Users\bteja\Downloads\P14>a.exe
he will learn python programming
^Z
Length of the longest word: 11

C:\Users\bteja\Downloads\P14>|
```

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

```
%{
%}
%%
((http)|(ftp))s?:\\[a-zA-Z0-9](.[a-z])+([a-zA-Z0-9+=?]*)* {printf("\nURL
Valid\n");}
.+ {printf("\n URL Invalid\n");}
%%
int yywrap() {}
void main()
{
printf("\nEnter URL:");
yylex();
printf("\n");
}
```

OUTPUT:

```
Command Prompt - a.exe
Microsoft Windows [Version 10.0.22631.3672]
(c) Microsoft Corporation. All rights reserved.

C:\Users\bteja>cd downloads
C:\Users\bteja\Downloads>cd p1
C:\Users\bteja\Downloads\p1>set path=C:\Program Files\GnuWin32\bin
C:\Users\bteja\Downloads\p1>flex url.l.txt
C:\Users\bteja\Downloads\p1>set path=C:\MinGW\bin
C:\Users\bteja\Downloads\p1>gcc lex.yy.c
C:\Users\bteja\Downloads\p1>a.exe

Enter URL:https://github.com/rajeshwarareddy2127/csa1463compiler-design/blob/main/32.url.l.txt
URL Valid
google.com
URL Invalid
```

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

PROGRAM:

```
%{
#include<stdio.h>
%}
%%
[0-9][0-9]\|[0-1][0-9]\|[1-2][0-9]{3} {printf("valid");}
.+ {printf("invalid");}
%%
int yywrap(){ }
int main()
{
yylex();
}
```

OUTPUT:

```
Command Prompt - a.exe
Microsoft Windows [Version 10.0.22631.3672]
(c) Microsoft Corporation. All rights reserved.

C:\Users\bteja>cd downloads
C:\Users\bteja\Downloads>cd cd7
C:\Users\bteja\Downloads\cd7>set path=C:\Program Files\GnuWin32\bin
C:\Users\bteja\Downloads\cd7>flex dob.l.txt
C:\Users\bteja\Downloads\cd7>set path=C:\MinGW\bin
C:\Users\bteja\Downloads\cd7>gcc lex.yy.c
C:\Users\bteja\Downloads\cd7>a.exe
22092004
invalid
22\09\2004
invalid
22/09/2004
invalid
22/09/2004
valid
```

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

PROGRAM:

```
% {
#include<stdio.h>
% }
%%
"="|"+"| "-"| "/"| "*" {printf("valid");}
.+ {printf("invalid");}
%%
int yywrap(){ }
int main()
{
printf("enter the input:");
yylex();
return 0;
}
```

OUTPUT:

```
Command Prompt - a.exe
Microsoft Windows [Version 10.0.22631.3672]
(c) Microsoft Corporation. All rights reserved.

C:\Users\bteja>cd downloads

C:\Users\bteja\Downloads>cd cd6

C:\Users\bteja\Downloads\cd6>set path=C:\Program Files\GnuWin32\bin

C:\Users\bteja\Downloads\cd6>flex mathematicaloperations.l.txt

C:\Users\bteja\Downloads\cd6>set path=C:\MinGW\bin

C:\Users\bteja\Downloads\cd6>gcc lex.yy.c

C:\Users\bteja\Downloads\cd6>a.exe
enter the input:2=3*4
invalid
2+3*4
invalid
2+3
invalid
2
invalid
+
valid
|
```

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

PROGRAM:

```
%{
%}
%%
[a-z.0-9_]+@[a-z]+".com"|"in" {printf("it is valid");}
.+ {printf("it is not valid");}
%%
int yywrap(void)
{}
int main()
{
printf("enter the mail:");
yylex();
}
```

OUTPUT:

```
Command Prompt - a.exe
Microsoft Windows [Version 10.0.22631.3672]
(c) Microsoft Corporation. All rights reserved.

C:\Users\bteja>cd downloads
C:\Users\bteja\Downloads>cd cd2
C:\Users\bteja\Downloads\cd2>set path=C:\Program Files\GnuWin32\bin
C:\Users\bteja\Downloads\cd2>flex email.l.txt
C:\Users\bteja\Downloads\cd2>set path=C:\MinGW\bin
C:\Users\bteja\Downloads\cd2>gcc lex.yy.c
C:\Users\bteja\Downloads\cd2>a.exe
enter the mail:bteja@gmail.com
it is valid
btejagmail.com
it is not valid
```

13. Write a LEX program to recognize a word and relational operator?

PROGRAM:

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

%%

[A-Za-z]+    { printf("Word: %s\n", yytext); }

"=="        { printf("Relational Operator: %s\n", yytext); }

"!="        { printf("Relational Operator: %s\n", yytext); }

"<="        { printf("Relational Operator: %s\n", yytext); }

">="        { printf("Relational Operator: %s\n", yytext); }

"<"         { printf("Relational Operator: %s\n", yytext); }

">"         { printf("Relational Operator: %s\n", yytext); }
```

```

[ \t\n]+    { /* ignore whitespace */ }

.           { /* ignore other characters */ }

%%

int yywrap() {

    return 1;

}

int main() {

    yylex();

    return 0;

}

```

OUTPUT:

```

C:\Users\bteja\Downloads\p15>set path=C:\Program Files\GnuWin32\bin
C:\Users\bteja\Downloads\p15>flex wordrelop.l.txt
C:\Users\bteja\Downloads\p15>set path=C:\MinGW\bin
C:\Users\bteja\Downloads\p15>gcc lex.yy.c
C:\Users\bteja\Downloads\p15>a.exe
bhanu
Word: bhanu
==
Relational Operator: ==
<=
Relational Operator: <=
>=
Relational Operator: >=
teja
Word: teja

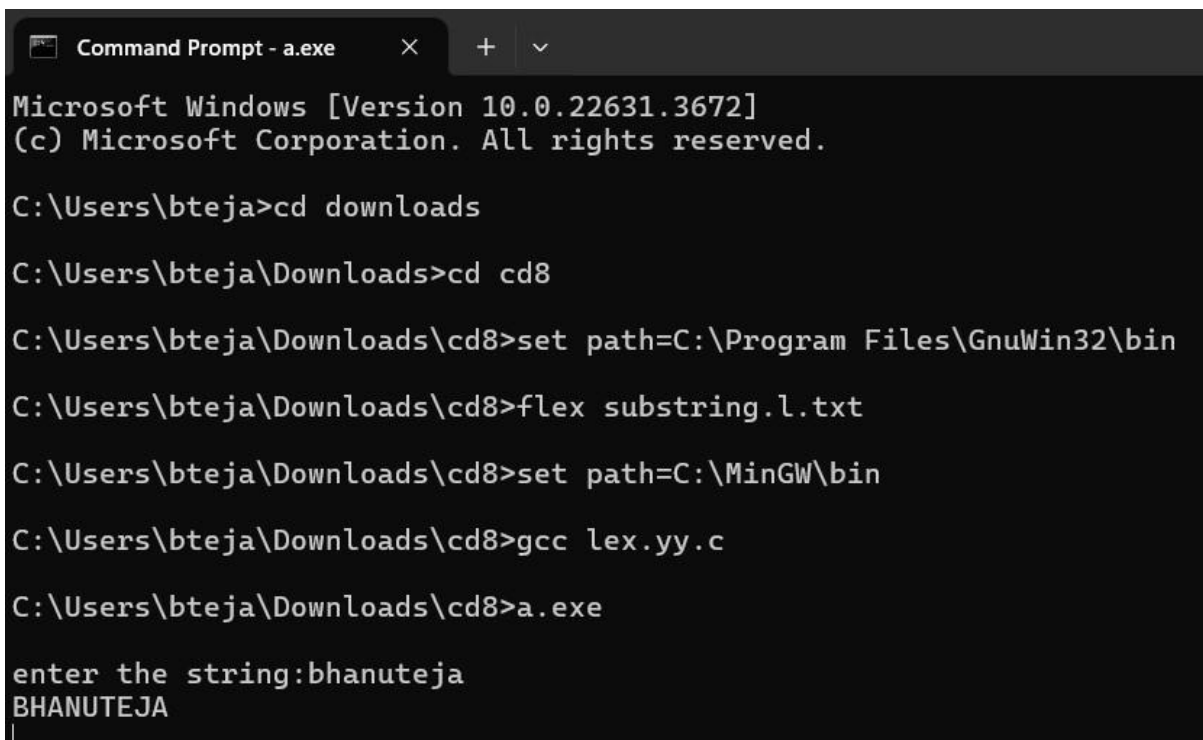
```

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

PROGRAM:

```
% {  
% }  
%%  
[a-z] {printf("%c",yytext[0]-32);}  
. {}  
%%  
int yywrap(void){}  
int main()  
{  
printf("\nEnter the string:");  
yylex();  
}
```

OUTPUT:



```
Command Prompt - a.exe  X  +  v  
Microsoft Windows [Version 10.0.22631.3672]  
(c) Microsoft Corporation. All rights reserved.  
C:\Users\bteja>cd downloads  
C:\Users\bteja\Downloads>cd cd8  
C:\Users\bteja\Downloads\cd8>set path=C:\Program Files\GnuWin32\bin  
C:\Users\bteja\Downloads\cd8>flex substring.l.txt  
C:\Users\bteja\Downloads\cd8>set path=C:\MinGW\bin  
C:\Users\bteja\Downloads\cd8>gcc lex.yy.c  
C:\Users\bteja\Downloads\cd8>a.exe  
enter the string:bhanuteja  
BHANUTEJA
```

15. Write a lex program for addline number?

PROGRAM:


```

%{
int ln = 0;

%}

%%

.* { ln++; fprintf(yyout, "\n%d:%s", ln, yytext); }

%%

int yywrap() {

}

int main() {

yyin = fopen("simple.txt.txt", "r");

yyout = fopen("out.txt", "w");

yylex();

}

```

OUTPUT:

```

1:#include<stdio.h>
2:int main()
3:{
4:printf("hello world");
5:}

```