EXP 8

```
/*** Definition Section has one variable
which can be accessed inside yylex()
and main() ***/
%{
int count = 0;
%}

/*** Rule Section has three rules, first rule
matches with capital letters, second rule
matches with any character except newline and
third rule does not take input after the enter***/
%%
[A-Z] {printf("%s capital letter\n", yytext);
          count++;}
.          {printf("%s not a capital letter\n", yytext);}
\n {return 0;}
%%

/*** Code Section prints the number of
capital letter present in the given input***/
int yywrap(){}
int main(){

// Explanation:
// yywrap() - wraps the above rule section
/* yyin - takes the file pointer
                  which contains the input*/
/* yylex() - this is the main flex function
                  which runs the Rule Section*/
// yytext is the text in the buffer

// Uncomment the lines below
// to take input from file
// FILE *fp;
// char filename[50];
// printf("Enter the filename: \n");
// scanf("%s",filename);
// fp = fopen(filename,"r");
// yyin = fp;

yylex();
printf("\nNumber of Capital letters "
          "in the given input - %d\n", count);

return 0;
}
```

output

```
C:\Users\Lenovo\Desktop\lex code>flex code.l

C:\Users\Lenovo\Desktop\lex code>lex.yy.c

C:\Users\Lenovo\Desktop\lex code>lex.yy.c

C:\Users\Lenovo\Desktop\lex code>gcc lex.yy.c

C:\Users\Lenovo\Desktop\lex code>a.exe
hhshdewsdks
h not a capital letter
h not a capital letter
s not a capital letter
h not a capital letter
d not a capital letter
e not a capital letter
w not a capital letter
s not a capital letter
d not a capital letter
k not a capital letter
s not a capital letter

Number of Capital letters in the given input - 0

C:\Users\Lenovo\Desktop\lex code>AAAA

C:\Users\Lenovo\Desktop\lex code>

C:\Users\Lenovo\Desktop\lex code>a.exe
This is expt 8  of SPCC
```

```
C:\Users\Lenovo\Desktop\lex code>a.exe
This is expt 8  of SPCC
T capital letter
h not a capital letter
i not a capital letter
s not a capital letter
  not a capital letter
i not a capital letter
s not a capital letter
  not a capital letter
e not a capital letter
x not a capital letter
p not a capital letter
t not a capital letter
  not a capital letter
8 not a capital letter
  not a capital letter
  not a capital letter
o not a capital letter
f not a capital letter
  not a capital letter
S capital letter
P capital letter
C capital letter
C capital letter

Number of Capital letters in the given input - 5
```

```
/*** Definition Section has one variable
which can be accessed inside yylex()
and main() ***/
%{
int count_upper = 0;
int count_lower = 0;
int count_digit = 0;
int count_punct = 0;
int count_space = 0;
int count_special = 0;
%}

/*** Rule Section ***/
%%
[A-Z] {printf("%s is a capital letter\n", yytext); count_upper++;}
[a-z] {printf("%s is a small letter\n", yytext); count_lower++;}
[0-9] {printf("%s is a number\n", yytext); count_digit++;}
[[:punct:]] {printf("%s is a punctuation\n", yytext); count_punct++;}
[ \t] {printf("%s is a space\n", yytext); count_space++;}
[!@#$%^&*()] {printf("%s is a special character\n", yytext); count_special++;}
\n { /* Do nothing for newline characters */ }

.           {printf("%s is an operator or unknown character\n", yytext);}

%%

/*** Code Section ***/
int yywrap() {}

int main() {
   yylex();

   printf("\nSummary:\n");
   printf("Number of capital letters: %d\n", count_upper);
   printf("Number of small letters: %d\n", count_lower);
   printf("Number of numbers: %d\n", count_digit);
   printf("Number of punctuations: %d\n", count_punct);
   printf("Number of spaces: %d\n", count_space);
   printf("Number of special characters: %d\n", count_special);

   return 0;
}
```

OUTPUT:

```
C:\Users\Lenovo\Desktop\lex code>flex Exp_8.l
"Exp_8.l", line 20: warning, rule cannot be matched

C:\Users\Lenovo\Desktop\lex code>gcc lex.yy.c

C:\Users\Lenovo\Desktop\lex code>a.exe
```

```
THIS is the 8th Expirement of the SPCC (Experiment) was perform on 3 feb 2024
T is a capital letter
H is a capital letter
I is a capital letter
S is a capital letter
  is a space
i is a small letter
s is a small letter
  is a space
t is a small letter
h is a small letter
e is a small letter
  is a space
8 is a number
t is a small letter
h is a small letter
  is a space
E is a capital letter
x is a small letter
p is a small letter
i is a small letter
r is a small letter
e is a small letter
m is a small letter
e is a small letter
n is a small letter
t is a small letter
  is a space
o is a small letter
f is a small letter
  is a space
t is a small letter
h is a small letter
e is a small letter
  is a space
S is a capital letter
P is a capital letter
C is a capital letter
C is a capital letter
  is a space
( is a punctuation
E is a capital letter
x is a small letter
p is a small letter
e is a small letter
r is a small letter
i is a small letter
m is a small letter
e is a small letter
n is a small letter
t is a small letter
) is a punctuation
  is a space
w is a small letter
a is a small letter
s is a small letter
  is a space
p is a small letter
e is a small letter
r is a small letter
f is a small letter
o is a small letter
r is a small letter
m is a small letter
  is a space
o is a small letter
n is a small letter
  is a space
3 is a number
  is a space
f is a small letter
e is a small letter
```