

LEX PROGRAMS

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SECTION: C

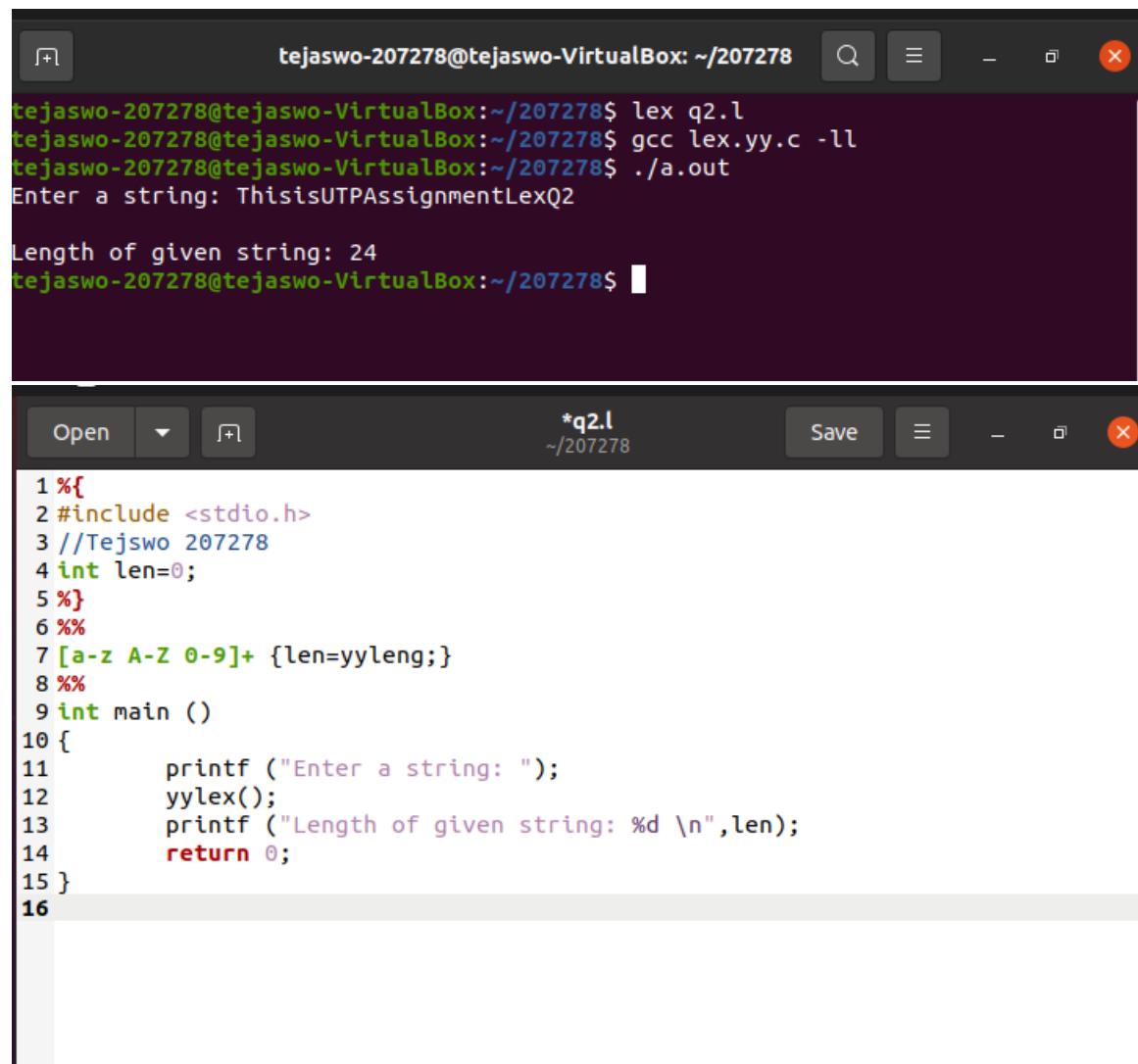
QUESTION 1: To count no of vowels and consonants.

```
tejaswo-207278@tejaswo-VirtualBox: ~/207278
tejaswo-207278@tejaswo-VirtualBox:~$ cd 207278/
tejaswo-207278@tejaswo-VirtualBox:~/207278$ lex q1.l
tejaswo-207278@tejaswo-VirtualBox:~/207278$ gcc lex.yy.c -ll
tejaswo-207278@tejaswo-VirtualBox:~/207278$ ./a.out
Enter a string: TejaswoUTPAssignment

No. of vowels in given string: 7
No. of consonants in given string: 13
tejaswo-207278@tejaswo-VirtualBox:~/207278$
```

```
Open  *q1.l
      ~/207278  Save
1 %{
2 #include <stdio.h>
3 //Tejaswo 207278
4 int vcnt=0,ccnt=0;
5 %}
6 %%
7 [aeiouAEIOU] {vcnt++;}
8 [a-zA-Z] {ccnt++;}
9 %%
10 int yywrap(){}
11 int main ()
12 {
13     printf ("Enter a string: ");
14     yylex();
15     printf ("No. of vowels in given string: %d \n",vcnt);
16     printf ("No. of consonants in given string: %d \n",ccnt);
17     return 0;
18 }
```

QUESTION 2: To count the length of string



The image shows two windows from a virtual machine. The top window is a terminal with the following commands and output:

```
tejaswo-207278@tejaswo-VirtualBox: ~/207278
tejaswo-207278@tejaswo-VirtualBox:~/207278$ lex q2.l
tejaswo-207278@tejaswo-VirtualBox:~/207278$ gcc lex.yy.c -ll
tejaswo-207278@tejaswo-VirtualBox:~/207278$ ./a.out
Enter a string: ThisisUTPAssignmentLexQ2

Length of given string: 24
tejaswo-207278@tejaswo-VirtualBox:~/207278$
```

The bottom window is a code editor showing the source code for `q2.l`:

```
1 %{
2 #include <stdio.h>
3 //Tejaswo 207278
4 int len=0;
5 %}
6 %%
7 [a-z A-Z 0-9]+ {len=yylen;}
8 %%
9 int main ()
10 {
11     printf ("Enter a string: ");
12     yylex();
13     printf ("Length of given string: %d \n",len);
14     return 0;
15 }
16
```

QUESTION 3: To count the type of numbers-- +integer, -ve integer, +ve fraction, -ve fraction

```
tejaswo-207278@tejaswo-VirtualBox: ~/207278
tejaswo-207278@tejaswo-VirtualBox:~/207278$ lex q3.l
tejaswo-207278@tejaswo-VirtualBox:~/207278$ gcc lex.yy.c -ll
tejaswo-207278@tejaswo-VirtualBox:~/207278$ ./a.out
Enter Numbers: 1,2,5,50,20,-100,400,-900,-9,3

Positive numbers : 7
Negative numbers: 3
Positive Fractions: 0
Negative fractions : 0
tejaswo-207278@tejaswo-VirtualBox:~/207278$
```

```
Open  *q3.l  Save
      ~/207278

1 %{
2 #include <stdio.h>
3 //Tejaswo 207278
4 int posi=0, negi=0, posf=0, negf=0;
5 %}
6 DIGIT [0-9]
7 %%
8 \+?{DIGIT}+      posi++;
9 -{DIGIT}+        negi++;
10 \+?{DIGIT}*\. {DIGIT}+ posf++;
11 -{DIGIT}*\. {DIGIT}+ negf++;
12 . ;
13 %%
14 int main ()
15 {
16     printf ("Enter Numbers: ");
17     yylex();
18     printf ("Positive numbers : %d \n",posi);
19     printf ("Negative numbers: %d \n",negi);
20     printf ("Positive Fractions: %d \n",posf);
21     printf ("Negative fractions : %d \n",negf);
22     return 0;
23 }
24
```

QUESTION 4: To count the no of words, character, and lines.

```
tejaswo-207278@tejaswo-VirtualBox: ~/207278
tejaswo-207278@tejaswo-VirtualBox:~/207278$ lex q4.l
tejaswo-207278@tejaswo-VirtualBox:~/207278$ gcc lex.yy.c -ll
tejaswo-207278@tejaswo-VirtualBox:~/207278$ ./a.out
Enter text: This is a paragraph to
count number of
lines
words,
and characters
okay bye
Word count : 12
Character count: 62
Lines count: 6
tejaswo-207278@tejaswo-VirtualBox:~/207278$
```

```
Open *q4.l Save
~/207278
1 %{
2 #include <stdio.h>
3 //Tejswo 207278
4 int wordc=1,charc=0,linec=0;
5 %}
6 %%
7 [ \t] {wordc++;}
8 \n {linec++;}
9 . {charc++;}
10 %%
11 int main ()
12 {
13     printf ("Enter text: ");
14     yylex();
15     printf ("Word count : %d \n",wordc);
16     printf ("Character count: %d \n",charc);
17     printf ("Lines count: %d \n",linec);
18     return 0;
19 }
20
```

QUESTION 5: To find if a character apart from alphabets occurs in a string.

```
tejaswo-207278@tejaswo-VirtualBox: ~/207278
tejaswo-207278@tejaswo-VirtualBox:~/207278$ lex q5.l
tejaswo-207278@tejaswo-VirtualBox:~/207278$ gcc lex.yy.c -ll
tejaswo-207278@tejaswo-VirtualBox:~/207278$ ./a.out
Enter Input: UTPASSIGNMENT
UTPASSIGNMENT
LEADED
LEADED
FSFSFs
FSFSFs
Only Alphabets present!tejaswo-207278@tejaswo-VirtualBox:~/207278$
```

```
*q5.l
~/207278
Open Save
1 %{
2 #include <stdio.h>
3 //Tejswo 207278
4 int flag=0;
5 %}
6 %%
7 [^a-zA-Z\n] {flag=1;}
8 %%
9 int yywrap(){}
10 int main ()
11 {
12     printf ("Enter Input: ");
13     yylex();
14     if (flag==0) printf ("Only Alphabets present!");
15     else printf ("Other characters also present");
16     return 0;
17 }
18
```

QUESTION 6: To identify set of strings having 3 to 5 alphabets.

```
tejaswo-207278@tejaswo-VirtualBox: ~/207278
tejaswo-207278@tejaswo-VirtualBox:~/207278$ ./a.out
Enter the string:UTP course has lex

Set of strings having 3-5 alphabets:
1tejaswo-207278@tejaswo-VirtualBox:~/207278$
```

```
Open  q6.l  Save
~/207278

1 %{
2  #include <stdio.h>
3  //Tejaswo Tiwary 207278
4  int len=0, ctr=0;
5 %}
6
7 %%
8 [a-zA-Z]+ {
9 len=strlen(yytext);
10 | if(len<10 && len>5)
11         {ctr++;} }
12 %%
13
14 int yywrap (void )
15 {
16     return 1;
17 }
18
19 int main()
20 {
21     printf("Enter the string:");
22     yylex();
23     printf("Set of strings having 3-5 alphabets: \n %d", ctr);
24     return 0;
25 }
```

QUESTION 7: To count number of small letter, capital letter, special symbol in string.

```
tejaswo-207278@tejaswo-VirtualBox: ~/207278
tejaswo-207278@tejaswo-VirtualBox:~/207278$ lex q7.l
tejaswo-207278@tejaswo-VirtualBox:~/207278$ gcc lex.yy.c -ll
tejaswo-207278@tejaswo-VirtualBox:~/207278$ ./a.out
MY name is Tej@Swo

    10 small letters
    3 capital letters
    6 special characters
tejaswo-207278@tejaswo-VirtualBox:~/207278$
```

```
Open  q7.l  Save
~/207278

1 %{
2 #include<stdio.h>
3 //Tejaswo Tiwary 207278
4 int sl=0,cl=0, spl=0;
5 %}
6 %%
7 [A-Z] cl++;
8 [a-z] sl++;
9 . spl++;
10 %%
11 int yywrap()
12 {
13 return(1);
14 }
15 int main()
16 {
17 yylex();
18 printf("\n\t%d small letters", sl);
19 printf("\n\t%d capital letters",cl);
20 printf("\n\t%d special characters",spl);
21 return 0;
22 }
23
24
```