Name : Lakhan Kumawat

Roll No : 1906055

Branch : CSE

Course : CSL5404

LAB – Assignment 1

1.Given an input sentence, write a Lex Program to count the number of words whose length is greater than 2.

```
%{
    #include<string.h>
    int counter=0,len=0;
%}

%%
[a-zA-Z0-9]+ {len=strlen(yytext);
            if(len>2)
            {counter++;} }
%%

int yywrap(void ){
    return 1;
}

int main(){
  printf("Enter the string:");
  yylex();
  printf("\n %d", counter);
  return 0;
}
```

Output :

```
F:\Compiler Design\Lab\LakhanKumawat>"f:\Compiler Design\Lab\LakhanKumawat\a.exe"
Enter the string:My name is Lakhan Kumawat


 3
F:\Compiler Design\Lab\LakhanKumawat>
```

2.Given a paragraph in English, write a lex program which count the number of words, number of special characters, number of lines, spaces and tabs in the paragraph.

```
%{
    #include<stdio.h>
    int lines=0,tabs=0,space=0,spChar=0,words=0;
%}

%%
[a-zA-Z] {words++;}
\n {spChar++; lines++;}
([ ])+ space++;
\t tabs++;
[^a-zA-Z0-9] {spChar++;}
%%

int yywrap(void ){
    return 1;
}

int main(){
  printf("Enter the string:");
  yylex();
  printf("\nNo. of lines=%d", lines);
  printf("\nNo. of spaces=%d", space);
  printf("\nNo. of tabs=%d", tabs);
  printf("\nNo. of words=%d", words);
```

```
  printf("\nNo. of special characters=%d", spChar);
  return 0;
}
```

OutPut :

```
F:\Compiler Design\Lab\LakhanKumawat>a.exe
Enter the string:this is @special char
new line
Lakhan
^Z

No. of lines=3
No. of spaces=5
No. of tabs=1
No. of words=30
No. of special characters=4
```

3.Write a Lex program to check weather given number is odd or even and if it is odd also check whether it is prime or not.

```
%{
    #include<stdio.h>
    #include<stdlib.h>
    int num=0,flag,j;
%}

%%
[0-9]+      {num=atoi(yytext);
          if(num%2==0)
               printf("Even");
          else
```

```
        printf("Odd");


        }
%%

int yywrap(void ){
    return 1;
}

int main(){
  printf("Enter the number :");
  yylex();
  if(num==2)
      {
      printf("\n Prime number");
      }
      else if(num==0 || num==1)
      {
      printf("\n Not a prime number");
      }
      else
      {
      for(j=2;j<num;j++)
      {
      if(num%j==0)
      flag=1;
      }
      if(flag==1)
      printf("\n Not a prime number");
      else if(flag==0)
      printf("\n Prime number");
      }
  return 0;
}
```

Output :

```
F:\Compiler Design\Lab\LakhanKumawat>flex main.lex

F:\Compiler Design\Lab\LakhanKumawat>gcc lex.yy.c

F:\Compiler Design\Lab\LakhanKumawat>a.exe
Enter the number :55
Odd
^Z

 Not a prime number
F:\Compiler Design\Lab\LakhanKumawat>a.exe
Enter the number :7
Odd
^Z

 Prime number
F:\Compiler Design\Lab\LakhanKumawat>
```

4.Given an input sentence, write a Lex Program to find the maximum number of characters present in the longest word.

```
%{
    #include<string.h>
    int maxlen=0,len=0;
%}

%%
[a-zA-Z0-9]+ {len=strlen(yytext);
            if(len>maxlen)
            {maxlen=len;} }
%%
```

```c
int yywrap(void ){
    return 1;
}

int main(){
  printf("Enter the string:");
  yylex();
  printf("\nMaximum number of characters present in the longest word %d", maxlen);
  return 0;
}
```

Output :

```
F:\Compiler Design\Lab\LakhanKumawat>flex main.lex

F:\Compiler Design\Lab\LakhanKumawat>gcc lex.yy.c

F:\Compiler Design\Lab\LakhanKumawat>a.exe
Enter the string:This program is to find string with max characters

my name is lakhankumawat and this is compiler design lab

^Z

Maximum number of characters present in the longest word 13
F:\Compiler Design\Lab\LakhanKumawat>
```

End Of Assignment