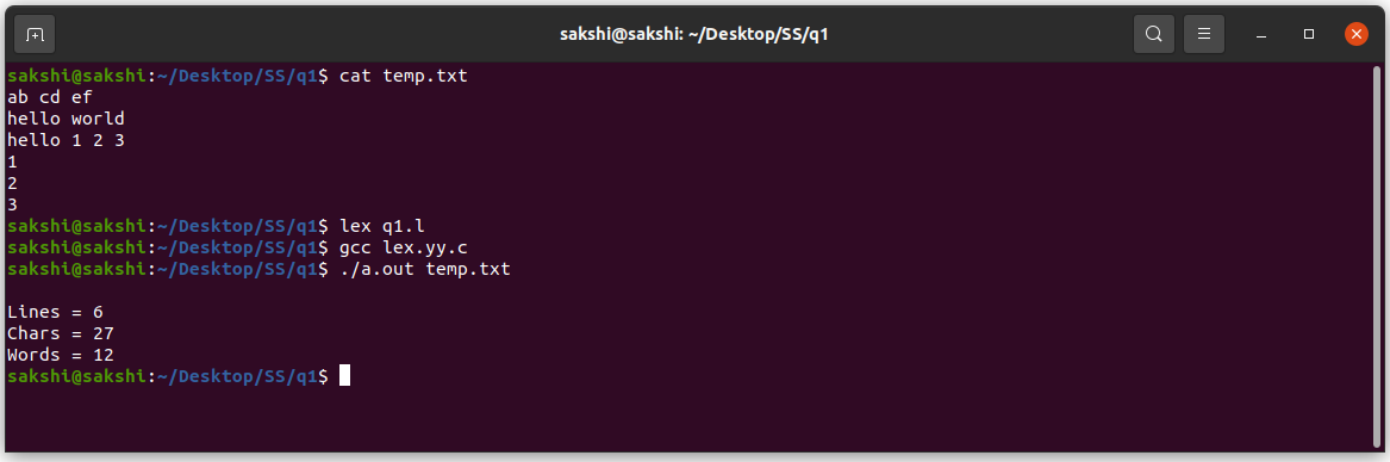
SS ASSIGNMENT – 8

---

1. **Write a Lex program to count the number of lines, characters and words of the given input file.**

Source Code:

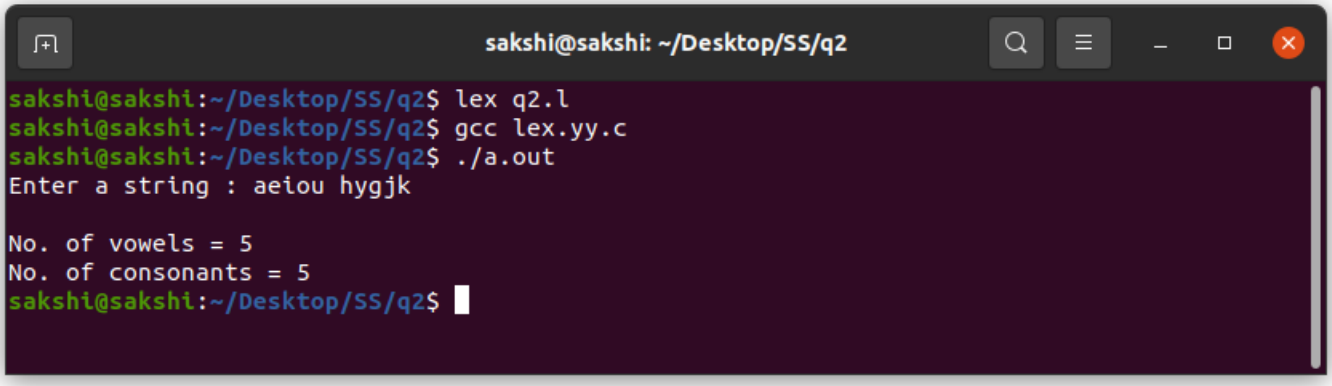
```
%{
    int nlines,nwords,nchars;
%}

%%
\n {
    nlines++;
}

[^ \n\t]+ {nwords++, nchars=nchars+yyleng;}

%%


int yywrap(void)
{
 return 1;
}


int main(int argc, char*argv[])
{
    yyin=fopen(argv[1],"r");
    yylex();
    printf("\nLines = %d\nChars = %d\nWords = %d\n",nlines,nchars,nwords);
    return 0;
}
```



2. **Write a lex program to find out the total number of vowels, and consonants from the given input string.**

Source Code:

```
%{
    #include<stdio.h>
    int vow_count = 0;
    int const_count = 0;
%}

%%
[aeiouAEIOU] {vow_count++;}
[a-zA-Z] {const_count++;}
\n { return 0;}
%%

int yywrap(){return 1;}

int main()
{

    printf("Enter a string : ");
    yylex();
    printf("\nNo. of vowels = %d", vow_count);
    printf("\nNo. of consonants = %d\n", const_count);

    return 0;
}
```

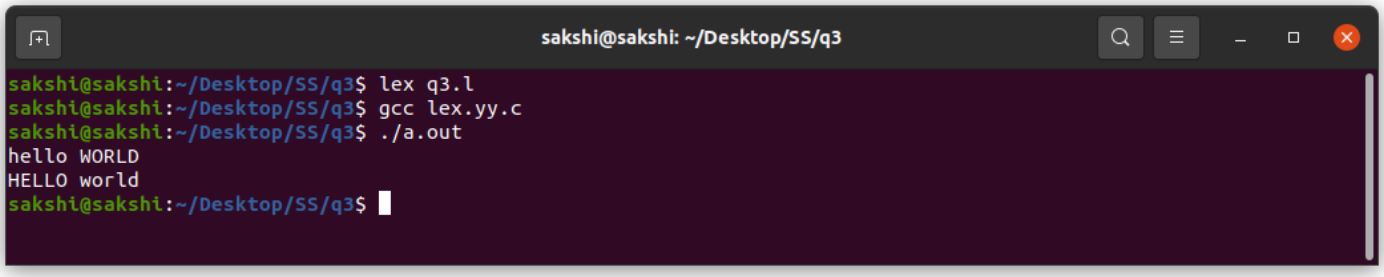


3. Write a Lex Program to convert Lowercase string to Upper case.

Input:abc Output: ABC

Source Code:

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

%%
[a-z] {printf("%c",yytext[0]-32);}
[A-Z] {printf("%c",yytext[0]+32);}
\n {return 0;}
%%

int yywrap(void){}

int main()
{
    yylex();
    printf("\n");
    return 0;
}
```

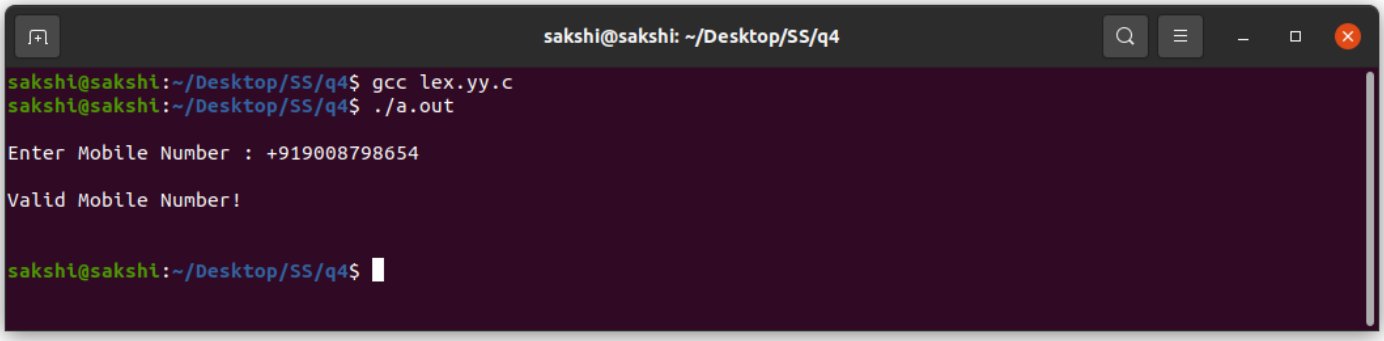


4. Write a Lex program to check valid/invalid

(a) Mobile number (considering 10-digit mobile number followed by country code +91)

Source Code:

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

%%
[+][9][1][1-9][0-9]{9} {printf("\nValid Mobile Number!\n");}
.+ {printf("\nInvalid Mobile Number!\n");}
%%

int yywrap() {}

int main()
{
    printf("\nEnter Mobile Number : ");
    yylex();
    printf("\n");
    return 0;
}
```

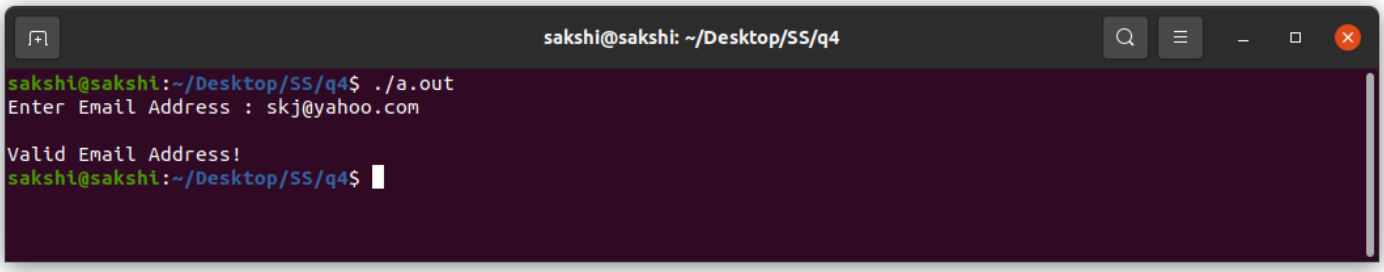


(b) Email address

Source Code:

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

%%
[a-z . 0-9]+@[a-z]+".com"|".in" { flag=1; }
%%
```

```
int yywrap() {}

int main()
{
    printf("Enter Email Address : ");
    yylex();
    if(flag==1)
        printf("Valid Email Address!\n");
    else
        printf("Invalid Email Address!\n");
}
```



5. Write a Lex program to implement a simple Calculator.

Source Code:

```
%{
#include<stdio.h>
#include<string.h>
float p,answer;
int flag;
char cc;
%}

digit[0-9]+
op "+"|"-"|"*"|"/"+
%%
{digit} {
p=atof(yytext);
if(flag==0){
    answer=p;
    flag=1;
}
else{
    switch(cc){
        case '+':answer=answer+p;break;
        case '-':answer=answer-p;break;
        case '*':answer=answer*p;break;
        case '/':answer=answer/p;break;
    }
 }
}
```

```
{op} {
    if(strcmp(yytext,"+")==0) cc='+';
    if(strcmp(yytext,"-")==0) cc='-';
    if(strcmp(yytext,"*")==0) cc='*';
    if(strcmp(yytext,"/")==0) cc='/';
}

"\n" {printf("Answer is %f\n",answer);exit(0);}
%%

int yywrap(void)
{
return 1;
}
int main()
{
    flag=answer=0;
    printf("Enter the string:");
    yylex();
    return 0;
}
```