WEEK 1

LAB PRACTICE SESSION

1. Write a lex program to count the number of character and lines.

```
%option noyywrap
%{
        int line_no = 0;
        int char_no = 0;
%}

%%
\n ++line_no;
. ++char_no;
end return 0;
%%

int main()
{
        yylex();
        printf("number of lines = %d, number of chars = %d\n",line_no, char_no );
        return 0;
}
```

```
D:\STUDIES\SEM 5\CD\LAB\LAB 1>lex count.l

D:\STUDIES\SEM 5\CD\LAB\LAB 1>gcc lex.yy.c

D:\STUDIES\SEM 5\CD\LAB\LAB 1>a.exe
computer
science
and
engineering
end
number of lines = 4, number of chars = 29
```

2. Write a lex program to recognize the valid Integer / Float.

```
%option noyywrap
%{
        int valid_int=0, valid_float=0;
%}

%%
^[-+]?[0-9]* valid_int++;
^[-+]?[0-9]*[.][0-9]+$ valid_float++;
.;
%%

int main()
{
        yylex();
        if(valid_int!=0) printf("Valid Integer number\n");
        else if(valid_float!=0) printf("Valid Float number\n");
        else printf("Not valid Integer/Float number\n");
        return 0;
}
```

```
D:\STUDIES\SEM 5\CD\LAB\LAB 1>lex recognise.l

D:\STUDIES\SEM 5\CD\LAB\LAB 1>gcc lex.yy.c

D:\STUDIES\SEM 5\CD\LAB\LAB 1>a.exe
2021

^Z
Valid Integer number

D:\STUDIES\SEM 5\CD\LAB\LAB 1>a.exe
19.886

^Z
Valid Float number

D:\STUDIES\SEM 5\CD\LAB\LAB 1>a.exe
ab100
ab100
^Z
Not valid Integer/Float number
```

3. Write a lex program to recognize identifier, keyword, number and unsigned number.

```
%option noyywrap

%%
if|else|while|int|switch|for|char {printf("keyword");}
[a-z]([a-z]|0-9])* {printf("identifier");}
[0-9]* {printf("number");}
[0-9]+(.[0-9]+)?(E[+|-]?[0-9])? {printf("unsigned number");}
.* { printf ("invalid"); }
%%

int main()
{
        yylex();
        return 0;
}
```

```
D:\STUDIES\SEM 5\CD\LAB\LAB 1>lex recognise2.l

D:\STUDIES\SEM 5\CD\LAB\LAB 1>gcc lex.yy.c

D:\STUDIES\SEM 5\CD\LAB\LAB 1>a.exe
2019
number
num1
invalid
num
identifier
if
keyword
^Z
```

4. Write a lex program to determine whether the input is “C Identifier or not”.

```
%option noyywrap

%%
^[a-zA-Z_][a-zA-Z0-9_]* { printf("Valid Identifier"); }
^[^a-zA-Z_] { printf("Invalid Identifier"); }
.;
%%

int main()
{
        yylex();
        return 0;
}
```

```
D:\STUDIES\SEM 5\CD\LAB\LAB 1>lex c_identifier.l

D:\STUDIES\SEM 5\CD\LAB\LAB 1>gcc lex.yy.c

D:\STUDIES\SEM 5\CD\LAB\LAB 1>a.exe
var
Valid Identifier
a1
Valid Identifier
1num
Invalid Identifiernum
number
Valid Identifier
^Z
```