Practical-2

Aim: Introduction to metacharacter for lex programming.

1. **Write a separate Lex programs for following.**

   a. **Write RE that accept zero or one(at most one) occurrence of 'a'.**
   b. **Write RE that accept either 'a' or 'b'.**
   c. **Write RE that accept either 'a' or 'b' or 'c' without using |.**
   d. **Write RE that accept that accept zero or more occurrences of 'a' and single occurrences of 'b'.**
   e. **Write RE that accepts all the strings which ends with 'b'.**
   f. **Write RE for new line.**
   g. **Write RE that accepts '\n'.**
   h. **Write a string that accepted by the given lex program and justify the output.**

1.

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

%%
[\n] printf("valid");
.* printf("invalid");
%%
int yywrap()
{
        return 1;
}
int main()
{
        yylex();
        return 0;
}
```

2.

```
%{
#include<stdio.h>
%}
%%
[\\n]  printf("valid");
.* printf("invalid");
%%
int yywrap(void)
{
return 1;
}
int main()
{
yylex();
return 0;
}
```

   i. **Write a RE that accepts any character except '\' and 'n'.**
   j. **Write all the strings which are accepted by [a|b|c*].**
   k. **Write a RE that accept any character except 'a' and 'b'.**
   l. **Write more than one RE that accepts string 'abc'.**
   m. **Is there any difference between 'abc' and "abc"? Justify your answer.**
   n. **Which are the strings accepted by ("abc")*.**
   o. **Write the RE that accepts zero or more occurrences of digit and capital letters.**

p. **Write valid and invalid strings accepted by following regular expressions.**

I. `(a-b)?[0-9 A-Z]*`
II. `[^ab][0-9]*`
III. `^[ab][0-9 A-Z]+`
IV. `[0-9][A-Z]$`
V. `[A-Z a-z]{6}`
VI. `[a+b]{6}`
VII. `[a+b]`

2. **Demonstrate the use of lex predefined variables (yytext, yyleng, yyin) with the help of program.**

3. **Write a lex program to recognize character, string and special symbols from given input.**

4. **Write a lex program to validate mobile number. (i.e Number having length of 10 is valid)**

5. **Write a lex program to differentiate mobile number and land line number.**

   (Note : Both mobile and land line numbers have 10 digits but land line number starts with digit 0 to 6 and mobile number has starting digit 7 to 9.)