Q1. A story writer wishes to recheck his story. In order to recheck he needs to find all those words which are followed by '?' and Write a lex program that can solve his problem.

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

%%
[a-zA-Z0-9]*(\?|!) {printf("%s \n",yytext);count++;}
.       { continue;}
<<EOF>> { return 0; }
%%

int yywrap(void)
{
return 1;
}

int main(){
    extern FILE *yyin;
    yyin=fopen("input.txt", "r");
    yylex();
    printf("Total Words Ending with ! or ? are : %d",count);
}
```

Input.txt : Hello Lakhan! hope you are doing well?

```
F:\Compiler Design\Lab\LakhanKumawat>"f:\Compiler Design\Lab\LakhanKumawat\a.exe"
Lakhan!
well?
Total Words Ending with ! or ? are : 2
F:\Compiler Design\Lab\LakhanKumawat>
```

Q2. Write a lex program to design a DFA over input {0, 1}, which accept odd no. of Os or even no. of Is but not both together.

Soln.

```
%option noyywrap

%{
 #include<stdio.h>
 int zero=0,one=0;

%}

%%
0 zero++;
1 one++;
[\n] {if(zero%2==1 && one%2==1){ printf("Accepted");}
else if(one%2==0 && zero%2==0){ printf("Accepted");}
else printf(" Not Accepted");
one=0,zero=0; printf("\nlnput your string:"); }
%%


int main(){
  printf("lnput your string:");
  yylex();
  return 0;
}
```

```
F:\Compiler Design\Lab\LakhanKumawat>"f:\Compiler Design\Lab\LakhanKumawat\a.exe"
lnput your string:0011
Accepted
lnput your string:011
 Not Accepted
lnput your string:0000
Accepted
lnput your string:0
 Not Accepted
lnput your string:
```

Q3. Write a lex program to design a DFA over input {a, b}, which accepts all the words containing odd number of 'b'.

```
%option noyywrap

%{
 #include<stdio.h>
 int count=0,otherChar=0;

%}

%%
[Bb] count++;
a {}
. otherChar++;

[\n] {if(count%2==1 && otherChar==0) { printf("Accepted");}
  else printf("Not Accepted");
  count=0;otherChar=0; printf("\nlnput your string:"); }
%%

int main(){
  printf("lnput your string:");
  yylex();
  return 0;
```

```
}


  PS F:\Compiler Design\Lab\LakhanKumawat> .\a.exe
  lnput your string:abbc
  Not Accepted
  lnput your string:aabbb
  Accepted
  lnput your string:abbbb
  Not Accepted
  lnput your string:sdhj
  Not Accepted
  lnput your string:
```

Q4. Given a text file, write a lex program to search an input word in the file. If the word is present then count the total number of its occurrences, and replace every odd occurrence of the word with your roll number.

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

char replace_with [10];
char replace [10];
int z =1;

%}


%%
[a-zA-Z]+ { if(strcmp(yytext, replace)==0){
                                    if(z%2==1){
        fprintf(yyout, "%s", replace_with);
                                      }
                                    z++;
```

```
                                    }
      else
                fprintf(yyout, "%s", yytext);
           }
.     fprintf(yyout, "%s", yytext);
%%


int yywrap()
{
  return 1;
}
int main()
{
  printf("Enter the word to find : ");
        scanf("%[^\n]%*c", replace);
         printf("Enter the word to replace with : ");
         scanf("%[^\n]%*c", replace_with);
        extern FILE *yyin, *yyout;
  yyin=fopen("input.txt", "r");
  yyout=fopen("output.txt", "w");
  yylex();


}
```

```
F:\Compiler Design\Lab\LakhanKumawat>more input.txt
Hello Lakhan!  hope you are doing well?

F:\Compiler Design\Lab\LakhanKumawat>"f:\Compiler Design\Lab\LakhanKumawat\a.exe"
Enter the word to find : Lakhan
Enter the word to replace with : Lakhan Kumawat

F:\Compiler Design\Lab\LakhanKumawat>more output.txt
Hello Lakhan Kumawat!  hope you are doing well?

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

Input.txt : Hello Lakhan! hope you are doing well?

```
Output.txt : Hello Lakhan Kumawat!  hope you are doing
well?
```