

## **Exp 7 : YACC – VALID IDENTIFIER**

### LEX

1. Start
2. Rules Section
  1. [0-9]+ : matches one or more digits and returns the token type digit
  2. [a-zA-Z]+ : matches one or more alphabets and returns the token type letter
  3. [ \t\n] : skips whitespaces
  4. . : matches any other character and returns it as a single character token
3. yywrap() indicate the end of input
4. Stop

### YACC

1. Start
2. Token Declarations (%token) : digit & letter
3. Grammar Rules Section
  - The first character would be a letter and it can be followed by any no of letters and digits
  - S : letter A
  - A : letter A | digit A
4. yyerror() to handle
5. main() prompts the user to enter an identifier and calls yyparse() to parse it
6. Stop

### Valid Identifier ( Lex )

```
%{  
    #include "y.tab.h"  
%}  
  
%%  
[0-9]+ { return digit; }  
[a-zA-Z]+ { return letter; }  
[ \t\n] {;}  
. { return yytext[0]; }  
%%  
  
int yywrap(){  
    return 1;  
}
```

## Valid Identifier ( YACC )

```
%{  
    #include<stdio.h>  
    int flag = 0;  
}%  
%token digit letter  
  
%%  
S : letter A;  
A : letter A | digit A | ;  
%%  
  
int yyerror(){  
    flag = 1;  
    printf("invalid identifier\n");  
    return 1;  
}  
int main(){  
    printf("Enter the identifier : ");  
    yyparse();  
    if(flag == 0){  
        printf("valid identifier\n");  
    }  
    return 0;  
}
```

Note : if output is not printed then press ctrl+D

```
● deadpool@daredevil:~/Desktop/s7-CD/03 YACC/1 Valid or Invalid/01 Valid Identifier$ flex validity_id.l  
● deadpool@daredevil:~/Desktop/s7-CD/03 YACC/1 Valid or Invalid/01 Valid Identifier$ yacc -d validity_id.y  
● deadpool@daredevil:~/Desktop/s7-CD/03 YACC/1 Valid or Invalid/01 Valid Identifier$ gcc lex.yy.c y.tab.c -o id  
y.tab.c: In function 'yyparse':  
y.tab.c:1013:16: warning: implicit declaration of function 'yylex' [-Wimplicit-function-declaration]  
1013 |         yychar = yylex ();  
      |                   ^~~~~  
y.tab.c:1148:7: warning: implicit declaration of function 'yyerror'; did you mean 'yyerrok'? [-Wimplicit-function-declaration]  
1148 |         yyerror (YY_("syntax error"));  
      |         ^~~~~~  
      |         yyerrok  
● deadpool@daredevil:~/Desktop/s7-CD/03 YACC/1 Valid or Invalid/01 Valid Identifier$ ./id  
Enter the identifier : num123  
valid identifier  
● deadpool@daredevil:~/Desktop/s7-CD/03 YACC/1 Valid or Invalid/01 Valid Identifier$ ./id  
Enter the identifier : 123num  
invalid identifier  
○ deadpool@daredevil:~/Desktop/s7-CD/03 YACC/1 Valid or Invalid/01 Valid Identifier$ █
```