

# ***Compiler Construction***

Roll No :18bce144

## **Practical-4**

### **Objective**

- To implement a calculator in yacc

### **Introduction**

- Yacc (for “yet another compiler compiler.”) is the standard parser generator for the Unix operating system. An open source program, yacc generates code for the parser in the C programming language. The acronym is usually rendered in lowercase but is occasionally seen as YACC or Yacc.

- Here i have created lex file and parser file.

Run program as given in the figure

Bison -d p5\_y.y

-->It will generate y.tab.h and y.tab.c

Lex p5\_l.l

-->It will generate lex.yy.c

Now gcc lex.yy.c y.tab.c

## Output file:

```
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ bison p5_y.y
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ls
p5_l.l  p5_y.tab.c  p5_y.y
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ yacc
/usr/bin/bison: -y: missing operand
Try '/usr/bin/bison --help' for more information.
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ yacc p5_y.y
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ls
p5_l.l  p5_y.tab.c  p5_y.y  y.tab.c
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ rm y.tab.c
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ls
p5_l.l  p5_y.tab.c  p5_y.y
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ bison -d p5_y.y
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ls
p5_l.l  p5_y.tab.c  p5_y.tab.h  p5_y.y
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ lex p5_l.l
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ls
lex.yy.c  p5_l.l  p5_y.tab.c  p5_y.tab.h  p5_y.y
```

```
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ gcc lex.yy.c p5_y.tab.c
p5_y.tab.c: In function 'yyparse':
p5_y.tab.c:1119:16: warning: implicit declaration of function 'yylex' [-Wimplicit-function-declaration]
    yychar = yylex ();
                  ^
p5_y.tab.c:1300:7: warning: implicit declaration of function 'yyerror'; did you mean 'yyerrok'? [-Wimplicit-function-declaration]
    yyerror (YY_("syntax error"));
    ^
yyerrok
p5_y.y: At top level:
p5_y.y:44:6: warning: conflicting types for 'yyerror'
void yyerror();//function to handle error
     ^
p5_y.tab.c:1300:7: note: previous implicit declaration of 'yyerror' was here
    yyerror (YY_("syntax error"));
    ^
```

```
vedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ./a.out
Enter any Arithmetic Expression: 3+4
Result=7
Entered Arithmetic Expression is Validvedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ./a.out
Enter any Arithmetic Expression: 8*9
Result=72
Entered Arithmetic Expression is Validvedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ./a.out
Enter any Arithmetic Expression: 4/4
Result=1
Entered Arithmetic Expression is Validvedant@vedant-Inspiron-7572:~/Desktop/Compiler_construction/prac5$ ./a.out
Enter any Arithmetic Expression: 7-90
Result=-83
```

## Conclusion

In this program I have created the basic calculator with different with help of 'yacc' and newly named as 'bison'. Thus this will parse grammar and performs calculations.