

Name: Gokulnath M Prabhu

Class: CS7B

Roll No: 21

Lab Cycle 2 - Experiment 8

Implementation of Calculator using LEX and YACC

Code:

calc.l :

```
%{
    #include<stdio.h>
    #include "y.tab.h"
    extern int yylval;
}%
%%
[0-9]+ {
    yylval = atoi(yytext);
    return digit;
}
[\\t ]+ ;
. return yytext[0];
\\n return 0;
%%
int yywrap() {
    return 1;
}
```

calc.y :

```
%{
    #include<stdio.h>
    int yylex();
    int yyerror();
}%
%token digit
%%
start: E { printf("%d\\n", $1); }
;
E: E '+' T { $$ = $1 + $3; }
| E '-' T { $$ = $1 - $3; }
| T
;
T: T '*' F { $$ = $1 * $3; }
| T '/' F { if($3) $$ = $1 / $3;
            else return yyerror("Divide by zero"); }
| F
;
```

```

F: '(' E ')' { $$ = $2; }
| digit { $$ = $1; }
;
%%
int yyerror(char* s) {
fprintf(stderr, "%s\n", s);
return 0;
}
int main() {
printf("Input the expression: ");
yyparse();
}

```

Output:

```

● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Calculator$ lex calc.l
● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Calculator$ bison -dy calc.y
● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Calculator$ gcc lex.yy.c y.tab.c
● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Calculator$ ./a.out
Input the expression: 5+3/2
6
● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Calculator$ ./a.out
Input the expression: (5+3)/2
4
● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Calculator$ ./a.out
Input the expression: 5+3/0
Divide by zero
○ gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Calculator$ _

```