A5-Implementation of Desk Calculator using Yacc Tool

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1 Code

calc.l

```
%{
    #include "y.tab.h"
    #include <stdio.h>
    #include <stdlib.h>
    void yyerror(char* str);
    extern YYSTYPE yylval;
%}
%%
[0-9]+ {yylval=atoi(yytext);return NUM;}
[+\-*/\^()] {return *yytext;}
"\n" { return EOL; }
\t  ;

.   yyerror("inavlid");
%%
int yywrap(void)
{return 1;}
```

calc.l

```
%{
#include <stdio.h>
#include<math.h>
void yyerror(char *);
%}
%left '+' '-'
%left '*' '/'
```

```
%right '^'
%left '(' ')'
%token NUM
%token EOL
%%

S:E EOL{printf("%d\n",$$);return;}
;
E:E'+'E     {$$=$1+$3;}
| E'-'E      {$$=$1-$3;}
| E'*'E      {$$=$1*$3;}
| E'/'E      {$$=$1/$3;}
| E'^'E  {$$=pow($1,$3);}
|'('E')' {$$=$2;}
;
E:NUM {$$=$1;}
;


%%
int main(){
    yyparse();
    return(1);
}
void yyerror(char* str)
{
    printf("%s",str);
}
```

2 Output Screenshots

```
snehakannan@pop-os:~/Sneha/Semester 6/Compiler Design/Lab/A5$ ./a.out
3+9
12
snehakannan@pop-os:~/Sneha/Semester 6/Compiler Design/Lab/A5$ ./a.out
3+9*6
57
snehakannan@pop-os:~/Sneha/Semester 6/Compiler Design/Lab/A5$ ./a.out
(3+4)*7
49
snehakannan@pop-os:~/Sneha/Semester 6/Compiler Design/Lab/A5$ ./a.out
(3-4)+(7*6)
41
snehakannan@pop-os:~/Sneha/Semester 6/Compiler Design/Lab/A5$ ./a.out
5/7+2
2
snehakannan@pop-os:~/Sneha/Semester 6/Compiler Design/Lab/A5$ ./a.out
4^2^1
16
snehakannan@pop-os:~/Sneha/Semester 6/Compiler Design/Lab/A5$ ./a.out
(2^3)^2
64
snehakannan@pop-os:~/Sneha/Semester 6/Compiler Design/Lab/A5$
```

Figure 1: Output