LAB8: Yacc for sample language.

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Code:

calc.y

```
%{
        #include<stdio.h>
        #include<math.h>
        int yyerror();
%}

%union{
        float f;
}
%token<f> NUM NEWLINE
%type<f> expr
%type<f> start

%left '+' '-'
%left '*' '/' '%'

%%

start: expr NEWLINE{
                int answer=$1;
                printf("Answer of given Expression: %d\n",answer);
                return 0;
        }
```

```
                        ;
expr: expr '+' expr {$$=$1+$3;}
        | expr '-' expr{$$=$1-$3;}
        | expr '*' expr{$$=$1*$3;}
        | expr '/' expr {$$=$1/$3;}
        | NUM                {$$=$1;}
        ;
%%
int yyerror(char *message)
{
        printf("YACC error: %s\n",message);
        exit(1);
}
int main()
{
        while(1){
        printf("Enter the Expression: ");
        yyparse();
        }
}
```

calc.l

```
%{
    #include<stdio.h>
    #include"y.tab.h"
%}
integer [0-9]+
float ([0-9]+)[.][0-9]+
%%
```

```
{integer} {    yylval.f=atof(yytext);

                    return NUM;

            }
{float} { yylval.f=atof(yytext);

                return NUM;

            }


.           return *yytext;
[\n]    return NEWLINE;


%%


int yywrap()
{
        return 1;
}
```

Output:

```
D:\00 Study\SEM 6\0LAB\LT\LAB 8>calc.exe
Enter the Expression: 5+7
Answer of given Expression: 12
Enter the Expression: 5-7
Answer of given Expression: -2
Enter the Expression: 5*7
Answer of given Expression: 35
Enter the Expression: 5/7
Answer of given Expression: 0
Enter the Expression: 5^
YACC error: syntax error

D:\00 Study\SEM 6\0LAB\LT\LAB 8>
```