**CC Lab Assignment 11**

**Aim:** Write a program in LEX and YACC to implement Simple Calculator for the operators (+,-,\*,/,^).

All operators are with same precedence, executed from left to right.

Example: 5+3\*2 will result in 16

3\*2^2/18-1 will result in 1

**Code:**

**Lex File:**

%{

#include "y.tab.h"

%}

%%

[0-9]+ { yylval.num = atoi(yytext); return NUMBER; }

[ \t] /\* ignore whitespace \*/

\n { return '\n'; }

. { return yytext[0]; }

%%

int yywrap() {

return 1;

}

**Yacc File:**

%{

#include <stdio.h>

#include <stdlib.h>

#include <math.h>

void yyerror(const char \*s);

int yylex(void);

%}

%union {

int num;

}

%token <num> NUMBER

%type <num> expr

%%

input:

/\* empty \*/

| input line

;

line:

expr '\n' { printf("Result: %d\n", $1); }

| '\n' { /\* ignore blank line \*/ }

;

expr:

NUMBER { $$ = $1; }

| expr '+' NUMBER { $$ = $1 + $3; }

| expr '-' NUMBER { $$ = $1 - $3; }

| expr '\*' NUMBER { $$ = $1 \* $3; }

| expr '/' NUMBER { if ($3 != 0) $$ = $1 / $3; else { yyerror("Division by zero"); $$ = 0; } }

| expr '^' NUMBER { $$ = (int)pow($1, $3); }

;

%%

void yyerror(const char \*s) {

fprintf(stderr, "Error: %s\n", s);

}

int main() {

printf("Enter expressions. Press Ctrl+D to exit.\n");

yyparse();

return 0;

}

**Output:**

