**ASSIGNMENT:-5**

**Problem Statement:**

Write a program in C/C++ for implementation of Calculator using LEX and YACC

**//cal.y**

%{

#include<stdio.h>

#include<stdlib.h>

void yyerror(char \*);

int pw=1,i;

%}

%token NUM

%left '+''-'

%left '\*''/'

%left '^'

%left '('')'

%%

op:expn{

printf("Answer:%d\n",$1);

};

expn:'-'expn{$$=-$2;}

|expn'+'expn{$$=$1+$3;}

|expn'-'expn{$$=$1-$3;}

|expn'\*'expn{$$=$1\*$3;}

|expn'/'expn

{

if($3==0)

{

printf("Divide by zero Error!!");

exit(0);

}

else

{

$$=$1/$3;

}

}

|'('expn')'{$$=$2;}

|expn'^'expn

{

for(i=0;i<$3;i++)

{

pw=pw\*$1;

}

$$=pw;

}

|NUM{$$=$1;}

;

%%

main()

{

printf("Enter Expression:");

yyparse();

}

void yyerror(char \*str)

{

printf("%s",str);

exit(0);

}

yywrap()

{

return(1);

}

**//cal.l**

%{

#include <stdio.h>

#include "y.tab.h"

extern int yylval;

void yyerror(char \*);

%}

%%

[0-9]+ {yylval=atoi(yytext);

return NUM;}

[\t] ;

[-+\*/()^] return yytext[0];

\n return 0;

. {ECHO;yyerror("Unexpected Char");}

%%

**output-**

lab7@ubuntu:~/Desktop$ lex cal.l

lab7@ubuntu:~/Desktop$ yacc -d cal.y

lab7@ubuntu:~/Desktop$ ./a.out

Enter Expression:2+3\*5

Answer:25