

5b. Program to evaluate an arithmetic expression involving operators +, -, * and /

5b.l

```
%{  
#include "y.tab.h"  
}  
%%  
[0-9]+ {yyval=atoi(yytext);return NUM;}  
[\t] ;  
\n return 0;  
. return yytext[0];  
%%  
int yywrap() { }  
}
```

5b.y

```
%{#include <stdio.h>}  
%token NUM  
%left '+'-'  
%left '/**'  
%%  
expr:e {printf("Valid expression\n"); printf("Result : %d\n",$1); return 0;}  
e:e'+e      {$$=$1+$3;}  
| e'-e      {$$=$1-$3;}  
| e'*e      {$$=$1*$3;}  
| e'/e      {$$=$1/$3;}  
| '('e')'  {$$=$2;}  
| NUM       {$$=$1;}  
%%  
int main()  
{  
printf("\nEnter an arithmetic expression\n");  
yyparse();  
return 0;
```

```

}

int yyerror()
{
    printf("\nInvalid expression\n");

    return 0;
}

```

Command for execution

lex 5b.l

yacc 5b.y

yacc -y -d 5b.y

gcc lex.yy.c y.tab.c -o 5b.exe

5b.exe

```

C:\Windows\system32\cmd.exe
C:\Users\Prameetha\Desktop\SS\ss>lex 5b.l
C:\Users\Prameetha\Desktop\SS\ss>yacc 5b.y
C:\Users\Prameetha\Desktop\SS\ss>yacc -y -d 5b.y
C:\Users\Prameetha\Desktop\SS\ss>gcc lex.yy.c y.tab.c -o 5b.exe
y.tab.c: In function 'yparse':
y.tab.c:583:16: warning: implicit declaration of function 'yylex' [-Wimplicit-function-declaration]
  583 | # define YYLEX yylex ()
          ^~~~~~
y.tab.c:1243:16: note: in expansion of macro 'YYLEX'
  1243 |     yychar = YYLEX;
          ^~~~~~
y.tab.c:1415:7: warning: implicit declaration of function 'yyerror'; did you mean 'yyerrok'?
=ation]
ex 1415 |     yyerror (YY_("syntax error"));
| ^~~~~~
l.b |     yyerrok
t
y
y.b C:\Users\Prameetha\Desktop\SS\ss>5b.exe
t
le Enter an arithmetic expression
1.5+3
1.Valid expression
1bResult : 8
1b

```