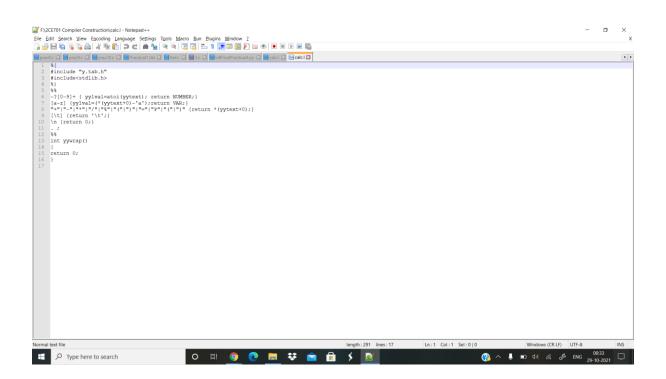Practical 5

Aim: to implement calculator in YACC

Niketkumar Kothari

18bce134


```
%{
#include<stdio.h>
int symbol[26];
%}
%token NUMBER
%token VAR
%left '+' '-'
%left '*' '/' '%'
%%

E:E '+' E {$$ = $1 + $3;}
  |E '-' E {$$ = $1 - $3;}
  |E '*' E {$$ = $1 * $3;}
  |E '/' E {$$ = $1 / $3;}
  |E '%' E {$$ = $1 % $3;}
  |'(' E ')' {$$ = $2;}
  |TERM {$$ = $1;}
  |PRINT
  |VAR '=' E {symbol[$1]=$3;}

TERM: NUMBER {$$=$1;}
    | VAR {$$=symbol[$1];}

PRINT: 'P' E {printf("%d\n",$2);}
%%
int main()
{
    while(1)
    yyparse();
    return 0;
}
int yyerror(char *c)
{
    printf("Invalid Expression\n");
    return 0;
}
```



```
%{
#include "y.tab.h"
#include<stdlib.h>
%}
%%
-?[0-9]+ { yylval=atoi(yytext); return NUMBER;}
[a-z] {yylval=(*(yytext+0)-'a');return VAR;}
"+"|"-"|"*"|"/"|"%"|"("|")"|"="|"P"|"("|")" {return *(yytext+0);}
[\t] {return '\t';}
\n {return 0;}
. ;
%%
int yywrap()
{
return 0;
}
```

```
C:\Dev-Cpp\MinGW64\bin>bison -dy calc.y
conflicts: 10 shift/reduce

C:\Dev-Cpp\MinGW64\bin>flex calc.l

C:\Dev-Cpp\MinGW64\bin>gcc y.tab.c lex.yy.c

C:\Dev-Cpp\MinGW64\bin>a.exe
a=15
b=6
c=10
P a
15
P a*b+c
100
^C
C:\Dev-Cpp\MinGW64\bin>
```