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/*
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Sem: VII
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*/
/* Write a yacc specification to check the syntax of arithmetic expression
involving operators (+,-,*,/)
    and also evaluate the expression. */

/* E-> E+E| E*E|E-E|E/E|(E)|id|num
    */
// LEX
%{
        #include "y.tab.h"
%}

%%
[A-Za-z][A-Za-z0-9] {return id;}
[+] {return '+';}
[-] {return '-';}
[*] {return '*';}
[/] {return '/';}
[(] {return '(';}
[)] {return ')';}
[ \t] ;
[0-9]+ {yylval=atoi(yytext);return num;}
%%

int yywrap() {
    return 1;
}

//YACC Program

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

%token num id '+' '-' '*' '/'
%left '+' '-'
%left '*' '/'
%left '(' ')'

%%

EXPR : E  {printf("Result= %d\n",$$); exit(0);}
E:E '+' E    {$$=$1+$3 ;}
 |E '-' E    {$$=$1-$3 ;}
 |E '*' E    {$$=$1*$3 ;}
 |E '/' E    {$$=$1/$3 ;}
 |'(' E ')' {$$=$2 ;}
 | id        {$$=$1 ;}
 | num       {$$=$1 ;}

%%

int main() {
    printf("Enter Arithmetic Expression:\t");
    yyparse();
}

int yyerror() {
    printf("Error\n");
```

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    exit(0);
}

/*
cse@cse-Veriton-M200-H81:~/Desktop/paddi$ yacc -d prac2.y
prac2.y: warning: 16 shift/reduce conflicts [-Wconflicts-sr]
cse@cse-Veriton-M200-H81:~/Desktop/paddi$ lex prac2.l
cse@cse-Veriton-M200-H81:~/Desktop/paddi$ gcc lex.yy.c y.tab.c -o a.out
cse@cse-Veriton-M200-H81:~/Desktop/paddi$ ./a.out
Enter Arithmetic Expression:    5+3*2

Result= 11
*/
```