

[2CEIT701 COMPILER DESIGN]

Practical:7

Aim: Write a program to implement a calculator using Lex and YACC.

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Practical-7

Aim: Write a program to implement a calculator using Lex and YACC.

Code:

practical7.y

```
% {
#include<stdio.h>
int flag=0;
% }
%name parse
%token NUMBER

%left '+' '-'

%left '*' '/' '%'

%left '(' ')'

%%

ArithmeticExpression: E{
    printf("\nResult of the expression= %d\n", $$);
    return 0;
};

E:E'+E {$$=$1+$3;}

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

|E'*E {$$=$1*$3;}

|E'/E {$$=$1/$3;}

|E'%E {$$=$1%$3;}

|'('E')' {$$=$2;}
```

Practical: 7

```
| NUMBER {$$=$1;};
```

```
%%
```

```
void main()
```

```
{  
printf("\nEnter Any Arithmetic Expression which can have operations Addition,Subtraction, Multiplication,  
Division Modulus and Round brackets:\n");
```

```
yyvsparse();  
if(flag==0)  
printf("\n Arithmetic expression is Valid!!!\n\n");  
}
```

```
void yyerror()
```

```
{  
printf("\n Arithmetic expression is Invalid!!!\n\n");  
flag=1;  
}
```

practical7.1

```
% {  
#include<stdio.h>  
#include "y.tab.h"  
extern int yylval;  
% }
```

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

```
[\t] ;
```

```
[\n] return 0;
```

```
. return yytext[0];
```

```
%%
```

```
int yywrap()
```

```
{  
return 1;  
}
```

Output:

```
19012531016@telnetserver:~$ lex p7.l
19012531016@telnetserver:~$ yacc -d p7.y
19012531016@telnetserver:~$ gcc lex.yy.c y.tab.c -w
19012531016@telnetserver:~$ ./a.out

Enter Any Arithmetic Expression which can have operations Addition,Subtraction, Multiplication, Division Modulus and Round brackets:
2-3+5*12/4

Result of the expression= 14

    Arithmetic expression is Valid!!!

19012531016@telnetserver:~$ ./a.out

Enter Any Arithmetic Expression which can have operations Addition,Subtraction, Multiplication, Division Modulus and Round brackets:
(21=45-2/7

    Arithmetic expression is Invalid!!!

19012531016@telnetserver:~$
```