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Roll No: 20BCE519 **Semester :- 7** **Subject Code: 2CS701**

Practical 5

Aim: To implement a Calculator in YACC.

PR5_LEX.l:

```
%{
/* Definition section */
#include<stdio.h>
#include "y.tab.h"
extern int yylval;
%}
/* Rule Section */
%%
[0-9]+ {
yylval=atoi(yytext);
return NUMBER;
}
[\t] ;
```

```
[\n] return 0;
. return yytext[0];
%%
int yywrap()
{
return 1;
}
```

YACC.y:

```
%{
#include<stdio.h>
int flag=0;
%}
%token NUMBER
%left '+' '-'
%left '*' '/' '%'
%left '(' ')'
%%
ArithmeticExpression: E{
printf("\nResult=%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')' {$$=$2;}
| NUMBER {$$=$1;}
```

```
;
%%
void main()
{
printf("\nEnter Any Arithmetic Expression which can have operations Addition,
Subtraction, Multiplication, Division, Modulus and Round brackets:\n");
yyparse();
if(flag==0)
printf("\nEntered arithmetic expression is Valid\n\n");
}
int yyerror()
{
printf("\nEntered arithmetic expression is Invalid\n\n");
flag=1;
return 0;
```

Output:

Addition :

```
Enter Any Arithmetic Expression which can have operations Addition, Subtraction,
Multiplication, Divison, Modulus and Round brackets:
20+35

Result=55

Entered arithmetic expression is Valid
```

Subtraction :

```
Enter Any Arithmetic Expression which can have operations Addition, Subtraction,
Multiplication, Division, Modulus and Round brackets:
876-385

Result=491

Entered arithmetic expression is Valid
```

Multiplication:

```
Enter Any Arithmetic Expression which can have operations Addition, Subtraction,
Multiplication, Division, Modulus and Round brackets:
876-385

Result=491

Entered arithmetic expression is Valid
```

Division:

```
Enter Any Arithmetic Expression which can have operations Addition, Subtraction,
Multiplication, Division, Modulus and Round brackets:
999/3
Result=333
Entered arithmetic expression is Valid
```

END