20BCE057

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Practical 5:
To implement a calculator in YACC:
Syntax Directed
Translation

p5.l file:

```
%{
/* 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;
}
```

P5.y file:

```
%{
```

```
  /* Definition section */
  #include<stdio.h>
  int flag=0;
%}

%token NUMBER

%left '+' '-'

%left '*' '/' '%'

%left '(' ')'

/* Rule Section */
%%

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;}

 ;

%%

//driver code
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");
}

void yyerror()
{
    printf("\nEntered arithmetic expression is Invalid\n\n");
    flag=1;
}
```

Output: