# ASSIGNMENT 5: Implementation of Desk Calculator using Yacc Tool

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Code:

## Calculator.l

```
%{
#include<stdio.h>
#include<stdlib.h>
#include<string.h>
#include "y.tab.h"
extern int yylval;
%}
%%
[0-9]+ {
  yylval = atoi(yytext);
  return INTEGER;
}
(" "|"\t") { }
("+"|"-"|"*"|"/"|"^"|"("|")"|"\n") { return *yytext; }
. {
  char err[25];
  sprintf(err, "Invalid character: %s\n", yytext);
  yyerror(err);
}
```
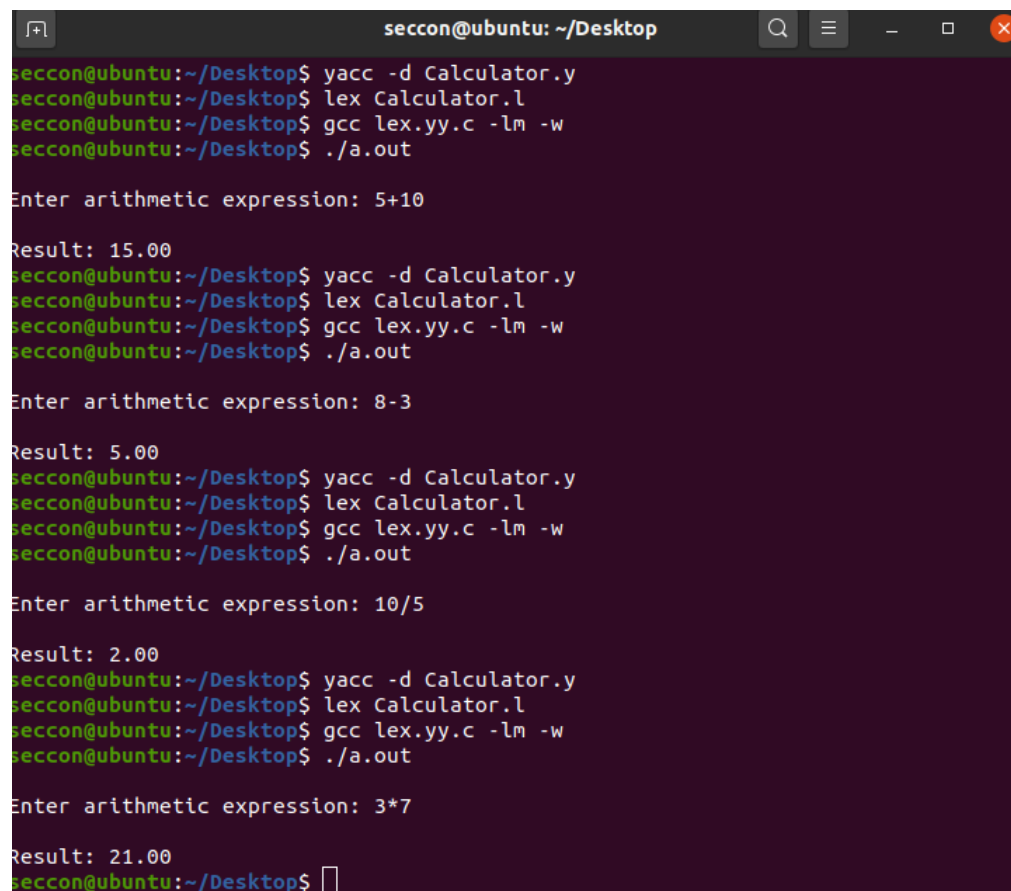
## Calculator.y

```
%{
#include<stdio.h>
#include<stdlib.h>
#include<math.h>
int yylex(void);
#include "y.tab.h"
%}
%token INTEGER
%%
program: line program
       | line
line: expr '\n' { printf("%d\n", $1); }
expr: expr '+' mulex { $$ = $1 + $3; }
    | expr '-' mulex { $$ = $1 - $3; }
    | mulex { $$ = $1; }
mulex: mulex '*' powex { $$ = $1 * $3; }
     | mulex '/' powex { $$ = $1 / $3; }
```

```
       | powex { $$ = $1; }
powex: powex '^' term { $$ = pow($1, $3); }
       | term { $$ = $1; }
term: '(' expr ')' { $$ = $2; }
      | INTEGER { $$ = $1; }
%%
int yyerror(char* s)
{
   fprintf(stderr, "%s\n", s);
   return 0;
}
int yywrap()
{
   return 1;
}
int main()
{
   yyparse();
   return 0;
}
```

**OUTPUT:**

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