Static code analysis

Write a program to check a C program for rudimentary syntax errors like unmatched parentheses, brackets and braces. Don't forget about quotes, both single and double, escape sequences, and comments. (This program is hard if you do it in full generality.)

Search

Write the function `int strindex(char s[], char t[])` which returns the position of the rightmost occurrence of `t` in `s`, or -1 if there is none. The length of s is always greater that that of t. Implement all required functions by yourself.

atof

Extend atof (see Section 4.2) to handle scientific notation of the form `123.45e-6` where a floating-point number may be followed by e or E and an optionally signed exponent.

Calculator

Write a calculator program that provides the operators +, -, * and / operators as well as sine and cosine functions.

Example

1 + 2 * sin(30)