# CPT-281 Project 2A: Infix Expression Parser

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## Summary:

This C++ program is designed to evaluate infix expressions read in from a .txt file. It supports basic arithmetic operations (+,-,\*,/,%,^), comparison operators (<,>,<=,>=,==,!=), and logical operators (||, &&). The program utilizes basic object-oriented programming to organize functionality into separate files.

## Structure:

**main.cpp**: contains the main function to read equations in from a file, trigger all the other functions, and print out the solutions.

**InfixParser.h**: Header file for the InfixParser class. Declares the class and its member functions.

**InfixParser.cpp**: Implementation for the InfixParser class. Defines member functions of the class.

**Operator.cpp**: Contains additional functions to handle comparison and logical operators. These functions utilize the InfixParser class to evaluate expressions and determine results.

## Credits:

Unfortunately, I had to do this all on my own, so all credit goes to Tyler Blackmore

## Test Cases:

Test 1: A screenshot of a computer

Description automatically generated Result 1: A black background with white numbers

Description automatically generated Expected Outputs: 7,0,1,9,-43

Test 2: A screenshot of a black background with white numbers

Description automatically generated Result 2: A screenshot of a computer

Description automatically generated Expected Outputs: 16, 1, 160002, 12, 20, 16

Test 3:  Result 2: A screenshot of a computer error

Description automatically generated Intended output: -2

## UWD Diagram:

A screenshot of a computer

Description automatically generated

## What could be improved:

The program is unfinished as-is, so of course there is much that could be improved.

* Separate functions into more classes.
* Move the 2 operator detecting functions into something more comprehensive and robust, more capable of dealing with more complex equations.
* Add support for comparison operators inside parentheses.
* General clean-up.