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Application Security
Assignment 1

Turing Complete Sandbox Manual

Output Operations

- prt <text>
  Prints text onto screen, the text you enter may not contain any spaces
- dsp <variable name>
  Displays the specified variable onto screen

Variables

- var <variable name> <integer>
  Sets a variable name equal to the specified integer
- var <variable name> <operation> <op 1/var name > <op 2/ var name >
  Sets variable name equal to an operation conducted

Arithmetic Functions

All arithmetic functions will print the result of its operation onto the screen.

- add <operand1/variable name> <operand2/variable name>
  Adds two numbers, two variables, or one number and one variable.
- sub <operand1/variable name> <operand2/variable name>
  Subtracts two numbers, two variables, or one number and one variable.
- mul <operand1/variable name> <operand2/variable name>
  Multiplies two numbers, two variables, or one number and one variable.
- div <operand1/variable name> <operand2/variable name>
  Divides two numbers, two variables, or one number and one variable.

File support

The sandbox accepts any file that contains text. A text file is preferred.

The sandbox is Turing complete because it is able to run all basic mathematical functions, any additional complex mathematical functions can be derived from the basic mathematical functions.

Hello.txt

The sample program contains a counter that counts from 10 to 1 and a Fibonacci calculation to the 10^{th} number. The counter simply starts a variable and subtracts at with each operation. The Fibonacci does the same, while at the same time storing the nth number in a variable. Both programs run iteratively as the sandbox does not support loops, or recursion.