Math Monster user manual

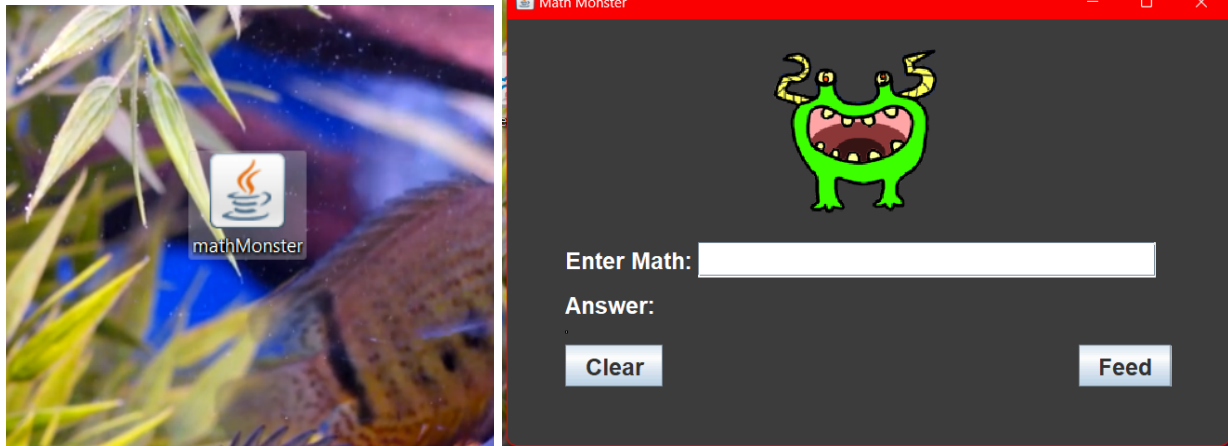## Installing Math Monster

To install math monster, navigate to https://github.com/RhettSmithgall/MathMonster/tree/main
and download the mathMonster.jar file.
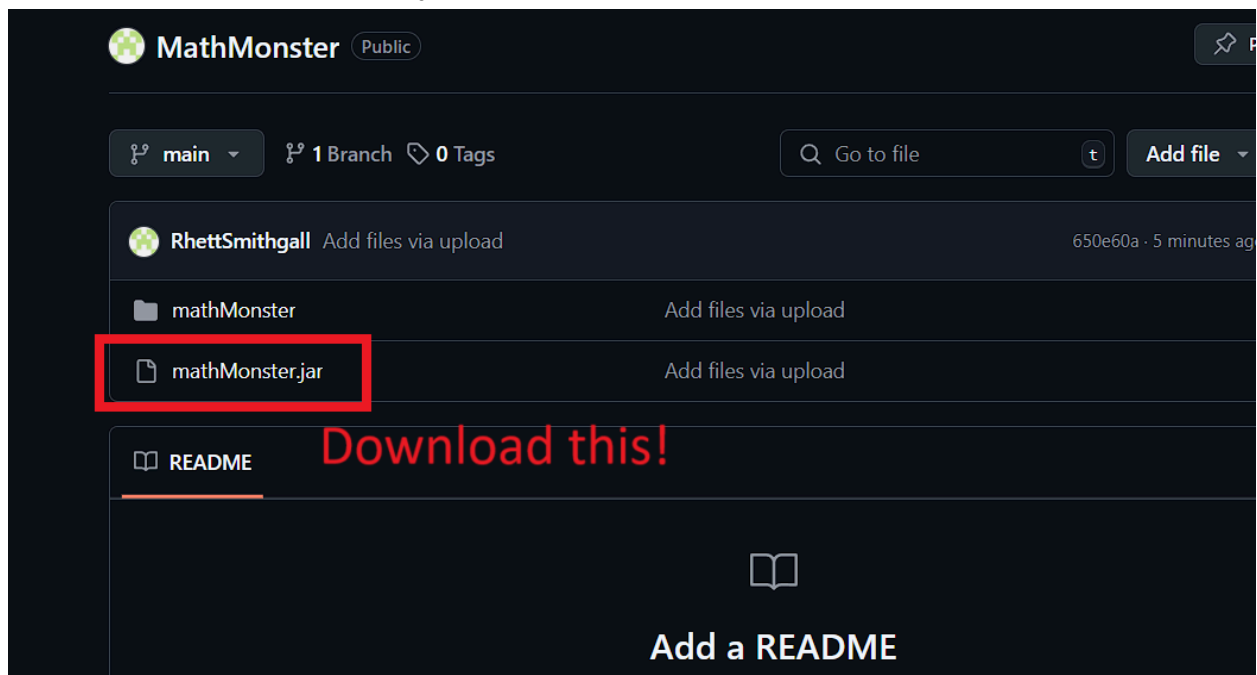
Starting Math Monster

To start math monster, click the executable jar file. This will bring up the user interface of math monster

Using Math Monster

Simply enter math problems you want solved into the white box labeled "enter Math," When ready, press the "Feed" button to solve the problem. Math Monster will eat your expression and produce an answer in the box labeled "Answer." If you want to erase an expression you've entered or an answer math monster has produced, simply press the "clear" button which will reset both the enter math and answer fields. If you want to see a tree of your expression check the "tree?" box, and if you don't make sure the box is unchecked.

Supported Functions and operators

Currently math monster supports the following math

Addition

        1 + 1   3 + 5 + 6

Subtraction

        1 - 1   3 - 5 - 6

Negation

        -1 + 1   -(5+5)

Multiplication

1 * 1   5 * 3 * 7

Division

By default the division symbol '/' will only apply to the immediate number before and after, however, using parentheses allows you to make larger and more complicated fractions.

1/1   (5+5)/(1+2+3)

Modulo

10%5   100%200%5

Exponent

Similar to division parentheses can be used to put more math into an exponent

1^5   (5+5)^(10+5*6)

Trigonometric functions

Math monster supports the following trigonometric functions:
- Sin
- Cos
- Tan
- Arcsin
- Arccos
- arctan

All trig functions must be used with parentheses.

sin(1+1)   acos(5)   sin(cos(tan(5)))

Log and natural log

Like trig functions log and ln must be used with parentheses
Log is base 10, math monster currently does not support changing log base

log(5)   ln(10)   log(5+5)

Square root

Sqrt must be used with parentheses

sqrt(10)   Sqrt(10+10)   1 + sqrt(5)

Pi and Euler's number

Math monster will recognize 'pi' and 'e' as their respective irrational counterparts. They can be used the same way you use numbers

Pi + e   pi + 2 + 3   e*5+10^pi