

# Hello, World!

- Pseudocode

# What is pseudocode?

- First:
  - What is code?
  - What is a programming language?

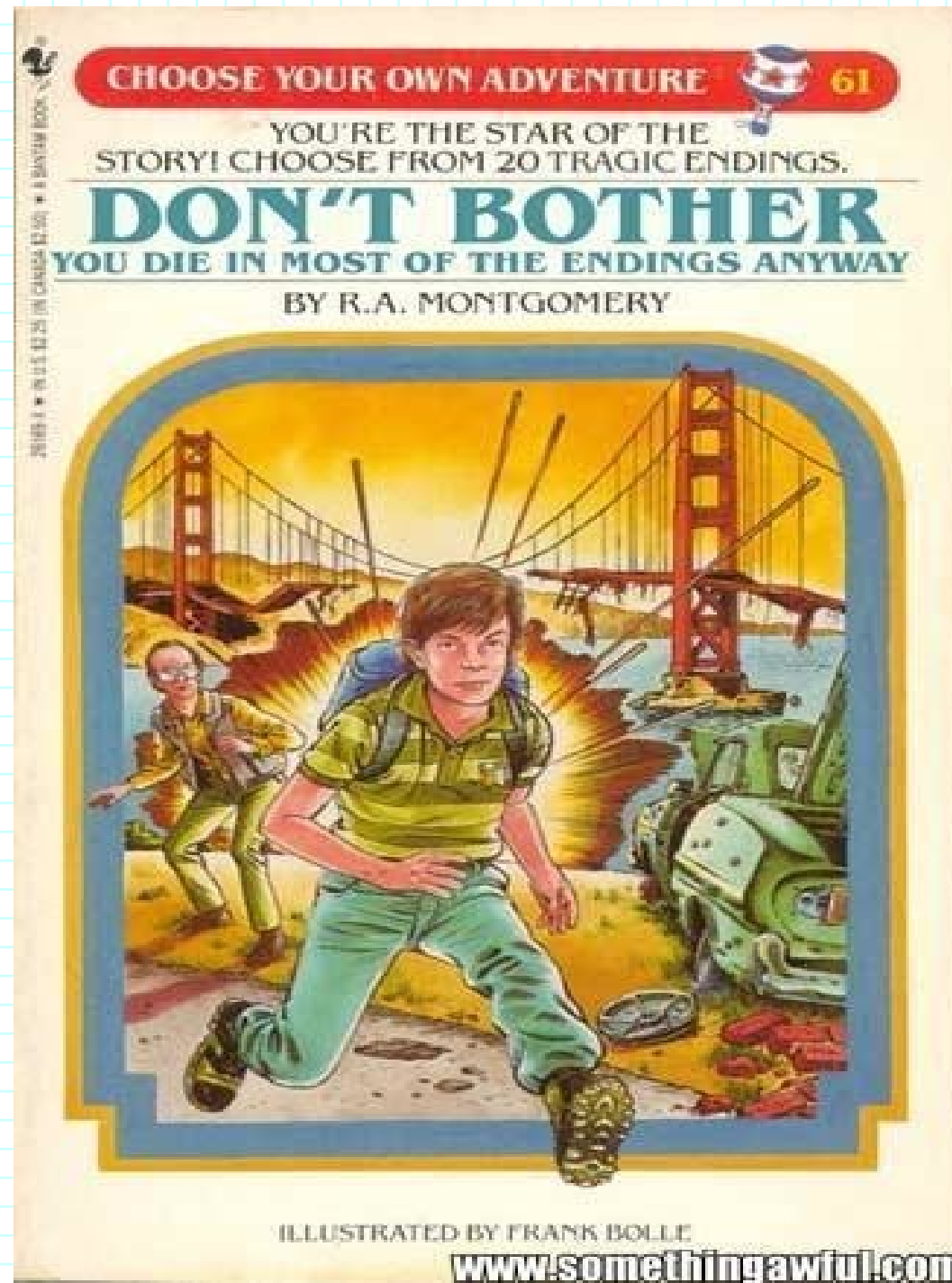
# Variables

- Variables can be used to tell stories
  - Let me tell you a story using variables!

# Exercise

- Tell the following story using variables:
  - Michael is 30 years old
  - Sally is twice Michael's age
  - Sally is  $\frac{3}{4}$ ths as old as Bill
  - Rachel is 52 years younger than Bill
  - The average age of the group is....?

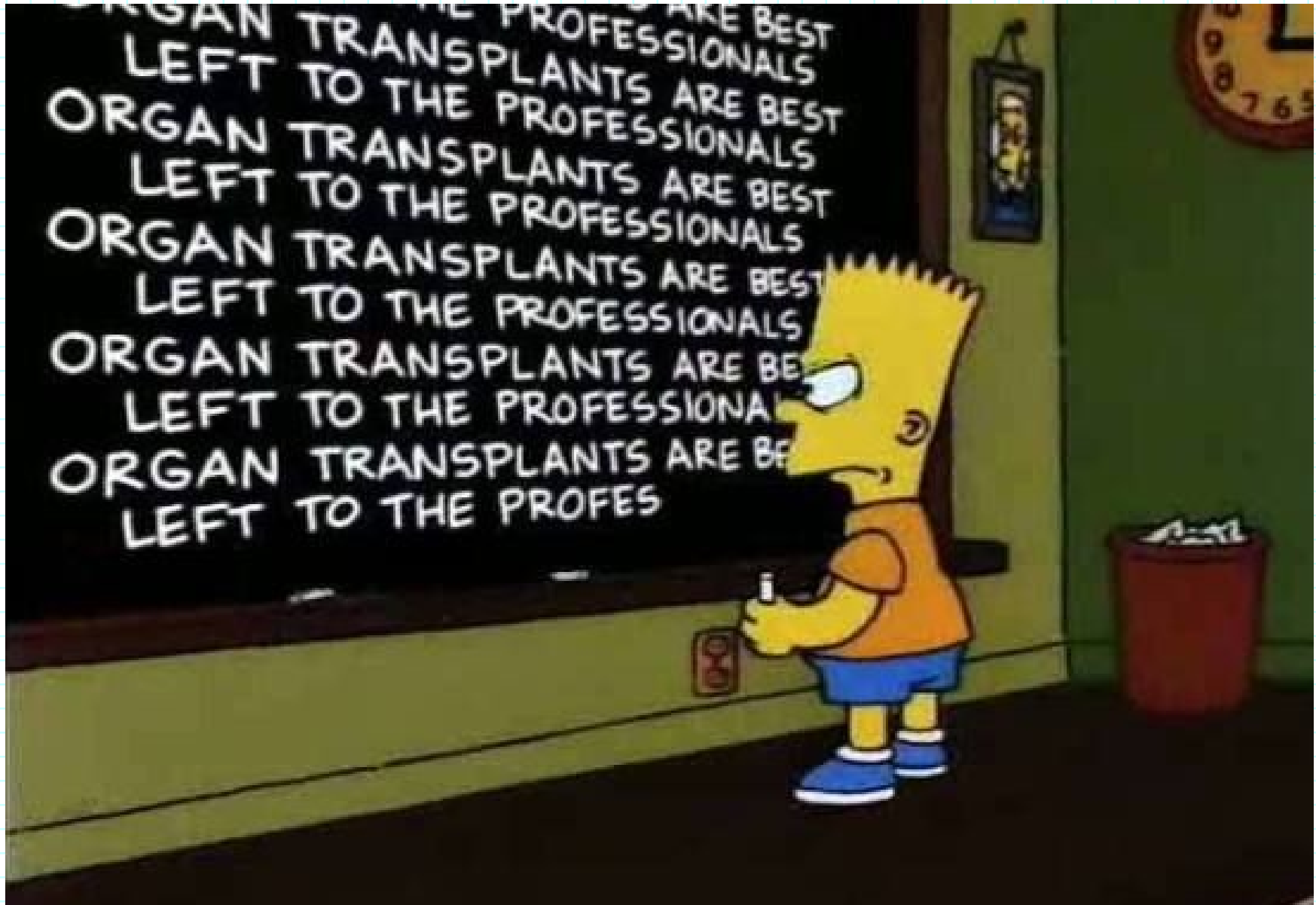
# Choice



# Exercise

- You are given two variables,  $x$  and  $y$ 
  - Write code that ensures that  $x$  will always be larger than  $y$ , swapping them if necessary

# Iteration



# Exercises

- Write code (using loops!) that prints:
  - The values from 0 to 10 (inclusive)
  - The values from 1 to 10 (inclusive)
  - The values from 4 to 19 (inclusive)
  - Even values between 5 and 12 (inclusive)



# Exercises

- The fibonacci sequence is given as:

0, 1, 1, 2, 3, 5, 8, 13, ....

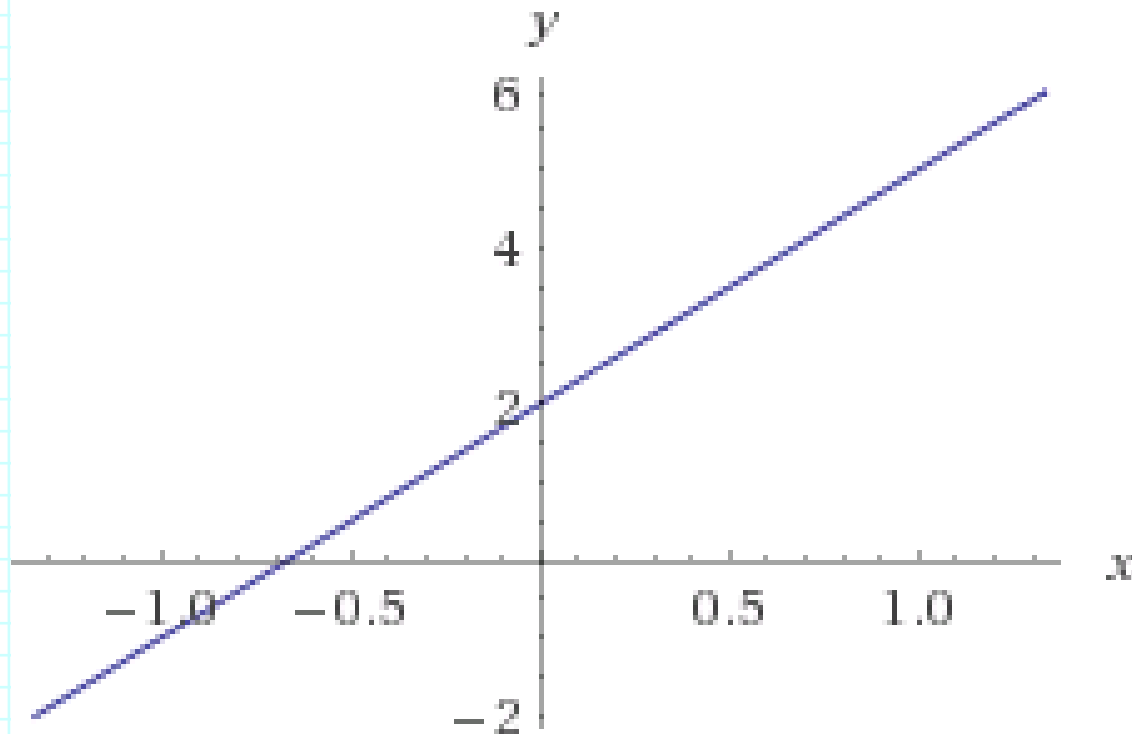
- Write pseudocode to print the first 50 fibonacci numbers

# Exercises

- Write code to do the following:
  - Your code should count from 0 to 100
  - If the current number is divisible by 3, print "fizz"
  - If the current number is divisible by 5 print "buzz"
  - If it is divisible by 3 and 5, print "fizzbuzz"
  - Otherwise, print the number

# Functions

$$f(x) = 3x + 2$$



(x from -1 to 1)

# Exercises

- Change your fibonacci code to be a function. The function should take in a value called  $N$  and return the  $N$ th fibonacci number. So if  $N = 1$  then return 0, if  $N = 2$  then return 1, etc.
- Write a function called `mult` that takes in two values,  $x$  and  $y$ , and returns the product. You may not use `*` to accomplish this.