

Lecture 2

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“Beware of bugs in the above code; I have only
proved it correct, not tried it.”

–Donald Knuth

Homework

Recall

Data Types

Basic Data Types

- ◆ Booleans
- ◆ Numbers
- ◆ Characters (letters)
- ◆ Collections

Numbers

- ◆ How do Computers use numbers?
- ◆ Think about it, how can we represent numbers in binary.

Integers

- ◆ Powers of 2 using math to expand
- ◆ Utilizing all bits for the whole number

Float

- ◆ Floating point numbers symbolize real numbers
- ◆ Utilizing bits for decimal numbers

Why are numbers useful

- ◆ Allow automatic calculation, in logically bound environment
- ◆ Easily provable logic

Collections

- ◆ Arrays, Sets,..... in general a collection
- ◆ In general homogeneous

Why Collections?

- ◆ They exist in nature
- ◆ “Big Data” simply put is a collection
- ◆ Combinatorially sound.