Introduction to Computer Science and Programming in Python (MIT)

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1 Lecture 1: What is Computation?

- **int** İntegers
- **float** Real numbers
- **bool** Boolean
- **NoneType** Special none value
- **type()** can use type() to see type of an object.

2 Branching and Iteration

3 String Manipulation, Guess and Check, Approximations, Bisection

- >>> s = "abc"
- >>> len(s)
- >>> 3

4 Decomposition, Abstraction, and Functions

in programming, divide code into modules:

- are self-contained
- used to break up code
- intended to be reusable

- keep code organized
- keep code coherent

5 Tuples, Lists, Aliasing, Mutability, and Cloning

5.1 Tuples

- Immutable
- >>> tuple = ()

5.2 List

hot is an alias for warm - changing one changes another.
append() has a side effect.

- >>> a = 1
- >>> b = a
- >>> print(a)
- >>> print(b)
- >>>
- >>> warm = [”red”, ”yellow”, ”orange”]
- >>> hot = warm
- >>> hot.append(”pink”)
- >>> print(hot)
- >>> print(warm)
- >>> [”red”, ”yellow”, ”orange”, ”pink”]
- >>> [”red”, ”yellow”, ”orange”, ”pink”]