CS61A

CONTROL, ENVIRONMENT DIAGRAMS

LOGISTICS AND REMINDERS

- Lab00, Lab01 due **Today**
- HW01 due **Tomorrow**
- Hog project due **Friday 9/10**
  - Phase 1 due next Tuesday, Submit **Thursday 9/9** for 1 pt EC
- Okpy?

AGENDA

- Stuff in Python
- Expressions / Order of Evaluation
- Assignment
- Controls
- Functions / Environment Diagrams

PYTHON

Blocks:

- Numbers(ex. 1, 0.5)
- Objects(ex. Strings like ‘hi’)
- Functions
- None

Build:

- Expressions
- Functions
- If Statements
- Loops

NUMBER EXPRESSIONS

- Just numbers(ex. 5, 0.2)
- Numbers combined with operations such as +, -, *, **, /, //, %)

- Important Notes:
  - Decimals can occur with /, use // to avoid this when you want an integer(ex. 10 / 2 gives 5.0 and 10 // 2 gives 5)
  - Modulo(%) is useful for getting last digit or checking divisibility(ex. 10 % 2 == 0 implies 10 is even)

BOOLEANS

- Truthy Values
  - Anything not Falsey
- Falsey Values
  - False, 0, ‘’, “”, None, [], {}
- Operations:
  - not, and, or
  - above is in priority order
- Boolean Expressions:
  - Just Booleans(ex. True)
  - Booleans combined with boolean operations

IMPORTANT BOOLEAN STUFF

- Boolean Operators do **NOT** always return True or False, except for not
- Short Circuiting
  - True or 1 / 0
  - False and 1 / 0

SOME EXAMPLES

- True **or** False
- 1 **or** 0 **and** 0
  - Show both ways
- 8 **and** ‘’ **and** 1
- 5 **and** ‘False’ **or** 4 **or** 1/0

CODING PROBLEM TIPS

- Look at input/output data types
- What is the goal of your code?
- What tools might be relevant to solve it(loops, modulo)?
- Can you figure out one small thing, even if you can’t get the entire problem?
- For if-statements can you translate the condition into a boolean expression?

ENVIRONMENT DIAGRAMS

- How to keep track of and understand code(VERY useful for class examples, or small segments of code)
- Usually 1-2 draw the environment diagram questions per exam
- If you get stuck use a resource like PythonTutor

THANKS FOR COMING!
FEEL FREE TO STAY AND ASK QUESTIONS