Announcements
- There’s plenty of room in live lecture if you want to come (but videos are still better)
- Please don’t make noise outside of the previous lecture!
- Homework 1 is due next Wednesday 9/10 at 2pm (changed from original time!)
- Homework is graded on effort, but the bar is high — you must make substantial progress
- Monday homework parties 3pm-6pm in Mountain Lounge and 6pm-9pm in 2050 VLSB
- Take-home quiz released next Wednesday 9/10 at 3pm, due Thursday 9/12 at 11:59pm
- 3 points, similar in format to homework, but graded for correctness
- If you score 0/3, you will need to talk to the course staff or be dropped
- Open-computer: You can use the Python interpreter, watch course videos, etc.
- Closed-help: Please don’t talk to your classmates, search for answers, etc.
- Project 1 due Wednesday 9/17 at 11:59pm

Life Cycle of a User-Defined Function

Multiple Environments

Multiple Environments in One Diagram!

Multiple Environments in One Diagram!

Multiple Environments in One Diagram!

An environment is a sequence of frames.
- The global frame alone
- A local, then the global frame

Names Have No Meaning Without Environments

Every expression is evaluated in the context of an environment.

A name evaluates to the value bound to that name in the earliest frame of the current environment in which that name is found.

Interactive Diagram
Names Have Different Meanings in Different Environments

A call expression and the body of the function being called are evaluated in different environments

Every expression is evaluated in the context of an environment.
A name evaluates to the value bound to that name in the earliest frame of the current environment in which that name is found.

Interactive Diagram

Conditional Statements

A statement is executed by the interpreter to perform an action

Compound statements:

The first header determines a statement's type
The header of a clause "controls" the suite that follows
def statements are compound statements

Conditional Statements

A suite is a sequence of statements
To "execute" a suite means to execute its sequence of statements, in order

Execution Rule for a sequence of statements:
• Execute the first statement
• Unless directed otherwise, execute the rest

Syntax Tips:
1. Always starts with "if" clause.
2. Zero or more "elif" clauses.
3. Zero or one "else" clause, always at the end.

Boolean Contexts

False values in Python:
False, 0, '', None

True values in Python:
Anything else (True)

(More to come)

Read Section 1.5.4!
While Statements

Execution Rule for While Statements:
1. Evaluate the header’s expression.
2. If it is a true value, execute the (whole) suite, then return to step 1.

Demo:
1. total = 0, 0
2. while i < 3
3. i = i + 1
4. total = total + i

Global frame:

i R 3
total R 6