Office Hours: You Should Go!

You are not alone!

http://cs61a.org/office-hours.html

Environments for Higher-Order Functions

Environments Enable Higher-Order Functions

Functions are first-class: Functions are values in our programming language

Higher-order function: A function that takes a function as an argument value or
A function that returns a function as a return value

Environment diagrams describe how higher-order functions work!

(Demo)

Names can be Bound to Functional Arguments

Environment Diagrams for Nested Def Statements

(Demo)
How to Draw an Environment Diagram

When a function is defined:
Create a function value: func <name>(<formal parameters>) [parent=<label>]
Its parent is the current frame.

Bind <name> to the function value in the current frame.

When a function is called:
1. Add a local frame, titled with the name of the function being called.
2. Copy the parent of the function to the local frame: parent=<label>
3. Bind the <formal parameters> to the arguments in the local frame.
4. Execute the body of the function in the environment that starts with the local frame.