

CS4450 Lecture 23 Notes

Friday, October 12, 2018

3:02 PM

We've finished Chapter 3 right now (what is a variable)

Now we'll be learning about functions (procedures)

What do you do with top-level functions? You can define them or you can call them.

The two things you have to represent:

1. Function definition
2. Procedure call

What is a program? A program is a function environment with main expression.

How do we evaluate a function call? We have to look up the function name in the "function environment". If the function is defined, it will return the function body (the parameter list and the body).

Formal parameters are parameters where you give names to the arguments you pass in. Arguments are the things that you pass in yourself, sometimes called "actual arguments"

First-class Functions

A first-class value is a value that can be used like any other value. Specifically:

1. A value is first class if it can be passed to functions,
2. Returned from functions, and
3. Represented in a variable binding

For example, functions are first-class values in Haskell.

You can extend an environment in Haskell, this was called "tweek" in previous slides

Read section 4.4.4 (Currying) and skip section 4.4.5 (Church Numerals)

