Reference Module

Help

Good news! This module's programs are **much** shorter than those from HtDW and Compound.

The videos this module range in length. But there isn't a half hour one! As before, the longer ones are mostly just a step-by-step working through of a problem, so while it takes time to watch, it isn't all new content.

The material in this module should take **approximately 4-6 hours** of dedicated time to complete, including working along with the lecture videos, doing the practice problems, doing the homework problems and the short quiz.

Learning Goals

- Be able to predict and identify the correspondence between references in a data definition and helper function calls in functions that operate on the data.
- Be able to write functions that operate on naturals.

Lecture Videos, Notes and Starter Files

Topic	Length (mm:ss)	Starter File	Downloads
Ref - The Reference Rule Part 1 In the next three videos we take a small but very significant step in terms of the complexity of the information we can represent as data. We will start to have designs with more than one data definition each for representing one part of the overall information. As we have seen before this difference will arise in the information, be reflected in the type comments, be carried into the templates by the template rules and show up in the structure of the final function definitions and tests.	10:42	tuition-graph-starter.rkt	
Ref - The Reference Rule Part 2 This video focuses almost entirely on the examples for the `chart` function. This provides a good example of the incremental process of working out more complex image producing functions and also reinforces why we do the recipe steps in the order we do. Even though this video does not address the reference rule directly it is absolutely essential that you watch it before part 3.	14:47	tuition-graph-v3.rkt	
Ref - The Reference Rule Part 3 The final reference rule video completes the design of the		tuition-	

`chart` function. When we encounter the natural helper in the template for `ListOfSchool` we make a wish for the problem to get simpler - and it does.	11:33	graph-v3.rkt	

Practice Problems

Module Kind #	Assignment	Duration	Difficulty	Code Files	Requires Lecture
Ref P1	Design the tuition graph bar chart function based on an alternative data definition for School.	50 min.	◆	alternative-tuition-graph-starter.rkt alternative-tuition-graph-solution.rkt	Ref - part-3

Homework Problems

Module Kind #	Assignment	Duration	Difficulty	Code Files	Requires Lecture
Ref H1	Design a function to find the lowest tuition, and a function to produce a list of school names.	45 min.	◆	tuition-graph-c-starter.rkt	Ref - part-3

Lecture Problems

Module Kind #	Assignment	Duration	Difficulty	Code Files	Requires Lecture
Ref L1	A tuition graphing program and intermediate solutions.	60 min.	◆	tuition-graph-starter.rkt tuition-graph-v1.rkt tuition-graph-v2.rkt tuition-graph-v3.rkt tuition-graph-v4.rkt	Ref - part-1-2-3

				tuition-graph-v5.rkt tuition-graph-v6.rkt	

Module Quiz

Be sure to complete the homework problems before you do the module quiz. The quiz itself can be found on the All Quizzes page.

Tips for Success

The programs are shorter in this module, but it's still important to practice a lot.

Trust the method to guide you through these problems.

Created Thu 29 Aug 2013 7:18 PM EDT (UTC -0400)
Last Modified Mon 23 Sep 2013 12:07 AM EDT (UTC -0400)