Finishing the Data Definition Recipe

CS 5010 Program Design Paradigms

Lesson 1.5

Learning Objectives for This Lesson

- By the time you finish this lesson, you should be able to:
  - explain why it is so important to get the template correct
  - write a complete data definition, including template and examples
  - list the 4 questions you should ask yourself when reviewing a data definition

There is only one correct template

- Going from the data definition to the template is completely mechanical
- For every data definition there is one and only one correct template

Get the template right!

- Getting templates right is important:
  - the template tells you *exactly* how to go about writing a function for manipulating the values from the data definition
  - a large portion of student errors come from getting the template wrong, or from not following the template *exactly*.

DDR Step 6: Examples

- Our coding standard: examples are required only for mixed data
- Provide one example for each alternative.
- Provide each example as a constant
- Usually you will need these for testing

Examples for Bar Order

```
;; A BarOrder is one of
;; -- (make-coffee Size CoffeeType Boolean)
;; -- (make-wine Vineyard Year)
;; -- (make-tea Size TeaType)
;; INTERP: ....

(define coffee-order1 (make-coffee 12 "kona" true))
(define coffee-order2 (make-coffee 16 "decaf" false))

(define wine-order1 (make-wine "Chateau St. Jean" 2005))

(define tea-order1 (make-tea 12 "Oolong"))
```

DDR Step 7: Review

- Nothing is done until you review it!
- Before you move on, look at your data definition and ask the following questions

Reviewing a Data Design

Reviewing a Data Design
1. Is the interpretation clear and unambiguous?
2. Can you represent all the information you need for your program?
3. Do you *need* all of the data in your representation?
4. Does every combination of values make sense? If not, document the meaningful combinations with a WHERE clause.

Next Steps

- If you have questions about this lesson, ask them on the Discussion Board
- Go on to the next lesson