CSC151.02 2013F, Class 16: Making and Manipulating Groups of Drawings

Overview

- Preliminaries.
  - Admin.
  - About HW 4.
- Context: What and Why Lists?
- Building Lists.
- Mapping Lists.
- Other List Operations.
- Lab.

Admin

- I realize that there’s crud going around campus. Do yourself and your classmates a favor and get rest if you are sick. Drop me a note to let me know.
- Continue lab partners!
- I’m going to have an optional class this Thursday at 1:15 (and, I hope, most Thursdays) as a chance to talk to folks about more things that might be useful or interesting.
  - We won’t have the optional class Thursday the 3rd, as I’ll be unavailable.
- Work for Friday:
  - Review the homework assignment
  - Read Anonymous Procedures
  - Do lab writeup 5 if you haven’t done so already.
  - Do Lab writeup 6: Exercise 5 from the Lists of Drawings Lab
    - Due before class on Friday.
    - Title: "CSC 151.02 Lab Writeup 6: Lists (NAME)".
- EC Opportunities:
  - CS Extras Thursday @ 4:30: Jennelle Nystrom on working at Microsoft
  - CS Table Friday (The Story of Mel)
  - Football, 1pm, Saturday against Beloit
  - Orchestra, 2pm, Saturday, Sebring-Lewis or somewhere similar
  - Folksyish music with Seth at Relish, TONIGHT at 10pm
  - Knitting club, Saturday at 10am. Do good and have fun!
  - More ...?
- Other things you might do (no EC, but possibly a good idea)
  - Facing the Bear, 7-9 pm Wednesday
  - Swipe your P-Card at the Football or Soccer game
  - Poweshiek CARES March Thursday. Leave from Herrick at 4:45 p.m. Email
chenjerem@gmail.com for more info. I can also forward you the email.

- Poweshiek CARES March Thursday, Oct. 3. Meet at Drake Library at 5 p.m.
- GHS Homecoming Parade Thursday, Oct. 3. If you’ve never seen a small-town homecoming parade, it’s worth it. (And last year’s homecoming queen is a current Grinnell student.)

**HW4**

- We have a new homework assignment. The only thing my random procedure paid attention to was whether or not you asked to work alone.
- Yes, I can try for pairs on an assignment

**Context: What and Why Lists?**

- Collections of information
  - "Numbers between 1 and 10"
  - "Names of all the students in this class"
  - "A few drawings that I want to render"
  - "A list of homework assignments to complete"
  - "A list of the valid colors"
- "List of things" is a new type
  - What do values look like? Syntax `(value value value)` Looks a lot like a procedure call
  - How to make them? Constructors `(list value value value value)` `(make-list num value)` `(iota num)`
    
    -> 0 1 2 3 ... num-1
  - What procedures are available `(append list1 list2)` -> join together `(reverse list)` `(take list n)` -> First n elements of a list `(drop list n)` -> Drop first n elements
- These are non-mutating operations: The original list does not change

**Mapping Lists**

- Given a procedure and a list, you can apply the procedure to every value in the list
- You need lists
- They must be the same size

**Lab**

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