CSC151.02 2014S, Class 18: Boolean Values and Predicate Procedures

Overview

- Preliminaries.
  - Admin.
  - Upcoming work.
  - Questions on the HW.
- Boolean values.
- Predicates - Procedures that return Boolean values.
- Combining booleans and other values with `and` and `or`.
- Lab.

Preliminaries

Admin

- Cookies!
- It’s "Pick your own partner" week.
- I apologize for the problems in MathLAN. (They are not my fault, but I do worry that they affect your ability to get work done.)
  - I have made HW 4 optional.
- I have virtual computers for 151 that you can run on your own computer.
  - Get a flash drive from Ajuna.
  - Use the file called Xubuntu151-v1.2.vba.o??, open it with VirtualBox.
  - I’ll also email a link.
- Some folks have asked me about the email posters around campus. Do you want me to give my perspective on these matters?
- Extra credit:
  - Thursday extra: Technical Interviews.
  - Friday CS Table: Skip Lists.
  - Improv Saturday, 7pm, Younker.
Upcoming Work

- Reading for Wednesday: Conditionals
- NO WRITEUP, Except for the people who failed to read this.
- Today’s lab writeup: Exercises 4a, 4b, and 5
  - Subject: CSC 151.02 Writeup 13: Booleans and Predicates (OPTIONAL NAME)
- Review exam answer key.
- Sign up for a meeting if you invoked "there’s more to life" (sign up sheet outside my office)

Questions on the homework?

Boolean values

What questions do we ask when we learn a new data type?

- What are they?
  - Truth!
- What do we use them for?
  - To make decisions
- What are the legal values?
  - True and false
  - In Scheme, there’s false and "everything else"
- How do we express them?
  - #t
  - #f
- How does the computer display/show the data types to us?
  - #t
  - #f

Predicates - Procedures that return Boolean values

- Questions we can ask
  - Is x < 2?
  - Is this an RGB color?
  - Is this an active image?
- Some built in
- Some we write

Combining booleans and other values with and and or

and combines two (or more values)
• Gives true if all of the things are true
• Gives false if any of the things are false
• What if some are neither true nor false?
  ○ If all of them are trueish, it returns the last one.

\texttt{or} combines two (or more values)

• If any of them are truish, returns the first truish one.
• Returns \texttt{#f} if all of the values are false.

What do expect to get for

• \texttt{(or)}
• \texttt{(and)}

\textbf{Lab}

Samuel A. Rebelsky, rebelsky@grinnell.edu

Copyright (c) 2007-2014 Janet Davis, Samuel A. Rebelsky, and Jerod Weinman. (Selected materials are copyright by John David Stone or Henry Walker and are used with permission.)

\begin{center}
\includegraphics[width=0.1\textwidth]{cc}
\end{center}

This work is licensed under a [Creative Commons Attribution 3.0 Unported License](http://creativecommons.org/licenses/by-nc/3.0/) To view a copy of this license, visit [http://creativecommons.org/licenses/by-nc/3.0/](http://creativecommons.org/licenses/by-nc/3.0/) or send a letter to Creative Commons, 543 Howard Street, 5th Floor, San Francisco, California, 94105, USA.