CMSC 305 Lab Meeting 1

9/2/13 8:26 AM

1. Setup
   - a. Create a directory on Desktop.
   - b. Open a Terminal window.
   - c. Exit and close the windown.
   - d. Open another window and cd to that directory.
   - e. Run the GHCi interpreter. (Type ghci at the terminal prompt.)
   - f. Close the interpreter.
   - g. Run it again.
2. Basic Evaluation (Enter each expression after the Prelude> prompt.)
   - a. Arithmetic expressions (Int)
     - i. 3
     - ii. 3 + 7
     - iii. 3 + 7*5
     - iv. (3 + 7)*5
   - b. Arithmetic expressions (Float)
     - i. 2.0
     - ii. 2.0 * 4
     - iii. 2.0 + 5.0*4
   - c. Boolean expressions
     - i. True (constructor)
     - ii. False
     - iii. True && False
     - iv. True || False
     - v. True && (False || True)
     - vi. Not (True && (False || True))
     - vii. 5 == 7
     - viii. 5 <= 7
   - d. String expressions
     - i. “Shannon”
     - ii. “Shannon” ++ “Gray”
   - e. Conditional expressions
     - i. if 8 == 3 + 5 then 4 else 7
   - f. Lambda expressions and function application
     - i. (\ n -> n + 1) 5
   - g. Let expressions
     - i. let a = 4 in a + 3

        ii. let f = \ n -> n + 1 in f 4
    h. List expressions
        i. []
        ii. 3:[]
        iii. [3, 2, 5]
3. Haskell Files
    a. Have them open Aquamacs Emacs.
    b. Create a new file (test.hs).
    c. Place a single variable binding in there.
        i. value = 7
    d. Save it to the student’s subfolder of Desktop.
    e. Load in Haskell and evaluate the variable by name.
4. Recursion
    a. Factorial (regular and with patterns)
    b. Member
    c. Sum
5. Introduce them to Laboratory Assignment 1