January 2020

CECS 424 Spring 2020

Assignment 1

Homework 1

1. Git
   1. Read chapter 1 and 2 of “Pro Git”: https://git-scm.com/book/en/v2.
   2. Find, download and install a git client for your preferred OS.
   3. If you don’t have one yet: Create a https://bitbucket.org account.
   4. Create a ***private*** repository named **"CECS 424 Spring 2020 Assignment 1"** and add me **claus.jurgensen@csulb.edu** as a reader.
2. Haskell
   1. Browse the Haskell website: https://www.haskell.org
   2. Read (at least the first two chapters of) “Learn You a Haskell for Great Good!”: http://learnyouahaskell.com/chapters

Lab Assignment 1

1. Remember the sorting algorithms quick sort (Tony Hoare, 1959) and merge sort (John von Neumann, 1945).
2. Write each sorting algorithm in C and in Haskell by implementing the following functions:

```
void qsort2(int *a, int n);   // quick sort array a with n elements in place in C
void msort(int *a, int n);    // merge sort array a with n elements in place in C

qsort :: Ord a => [a] -> [a]  -- quick sort a list in Haskell
msort :: Ord a => [a] -> [a]  -- merge sort a list in Haskell
```

3. Write a brief comment for *every* line of your code explaining what it does.
4. In a separate text file write a few sentences explaining how and why the C and Haskell implementations of the same algorithms differ.
5. Write a simple main function (one in C and one in Haskell) to test your sort functions with the input sequence 4, 65, 2, -31, 0, 99, 2, 83, 782, 1 and print the result to the console.

Deliverable:
A private git repository named **"CECS 424 Spring 2020 Assignment 1"** with me **claus.jurgensen@csulb.edu** (and only for section 01 **jared.coleman@student.csulb.edu** as well) added as a reader, that contains your C and Haskell code and the text file.

Due dates: *Section 01: Wednesday 12 February 2020,*
Section 03: Tuesday 11 February 2020,
Section 05: Friday 14 February 2020,
Section 07: Tuesday 11 February 2020, all at the beginning of lecture.