CS 360 Homework 3 Individual Evaluation

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Homework 3 Problems:

1 Theory Problems

1.1 Scores

Problem #	Score
1	20
2	20
Total	40

1.2 Point deductions

1. No deductions, the answers provided are valid predicate logic expressions for prime numbers, twin primes, and infinitely many primes/twin primes, along with justification.

2. No deductions, I checked the parse trees and the values look correct, and the trees mimic the grammar/structure seen in PLP. I do not see any issues with our answer.

2 Programming Problems

2.1 Scores

Problem #	Score
1	20
2	20
3	20
4	20
5	20
Total	100

2.2   Point deductions

1. No deductions, the Racket code provided implements lookup functions for association lists and environments, and tests verify this. The solutions for SICP problems 4.4, 4.9, and 4.11 look correct and follow through the examples provided in the SICP book.

2. No deductions, the height/preorder/postorder issues were fixed from HW2 for this code (we misunderstood the structure of the tree). On our tests, the code correctly builds the trees and gives correct height. It alternates between the roles of 0 and 1 as the two parenthesis symbols in the recursive descent parser, and uses the recursion stack to keep track of which number it needs to match.

3. No deductions, the Haskell code provided is a port of the Huffman encoding/decoding from Scheme, and is shown to work properly on multiple tests (including figures 1-2 of week 3 files).

4. No deductions, the first program implements LL (top down) parser on the example 2.24, and it computes the same height and preorder/postorder listings for the tree in figure 2.18. The second program implements LR (bottom up) parser on example 2.38, the book did not provide a tree figure for this one but we drew out the tree and got the same height along with preorder and postorder listings.

5. No deductions. The Prolog code correctly answers the query of FCS 14.3.1 and proves the facts (the course prerequisites) in FCS 14.9.2. The SICP query system code does the same, albeit written for the query system implemented in SICP rather than in Prolog.

All of the problems were fully solved by the group.