

CS 101 Computer Science I (Spring 2001) Assignment 10

In this final assignment, you will write the Matchmaker program. To assist you in this purpose, we have prepared file called "`cs101-dating.scm`" that defines a set of people and several relations that represent facts about the people. Your solution should use the definitions in this file. Your solution should also make use of definitions from the file called "`cs101-sets.scm`". Both of these files are available on the class web page.

1. Write a Scheme program to implement a procedure called "`couples`". This procedure takes a set people as its argument. It returns a set of ordered pairs of people as its result. It operates according to the following rules:
 - Each person appearing in an ordered pair is single.
 - The two people in each pair have compatible sexual orientation.
 - The two people in each pair have a common interest.

Your definition should use a fast method of generating pairs of compatible people, based on experiments you ran in the lab exercise.

2. Notice that each pair appears twice in the set of couples. Find a way to remove such duplication by retaining only pairs `op` in which `(op-1st op)` comes before `(op-2nd op)` in alphabetical order. You may do this by defining a data structure that records the alphabetical order of symbols representing people and modifying the couples procedure to make appropriate use of this new data structure.

Due Dates

- Section 51 (Professor Welty): Monday, April 30, 2001
- Section 52 (Professor Ellman): Tuesday, May 1, 2001