

CS2104 - Programming Language Concepts

HOMEWORK 9

October 18, 2002

Guidelines

Please prepare your homework according to the following guidelines:

1. Please prepare your answers in MSWord (.doc file) or plain text (.txt file) format.
 2. All answers should be placed in a single .doc file or .txt file.
 3. You have to upload your homework before the deadline. **No late submission is allowed!**
 4. You must upload your homework using the file name given below.
 5. To upload your homework, follow the link **Workbin** from the course web-site:
<http://www.comp.nus.edu.sg/~cs2104>
 6. Upload your file into the **HW9** folder of workbin. For file transfer, please FTP only in binary mode (not in ASCII mode).
 7. In the “*Description*” of the file just input a single digit indicating your tutorial group number.
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Questions

Deadline: Thu 24 Oct 2002, 11:59 PM (*i.e.* before midnight)

The system might be busy just before the deadline.

It is your responsibility to submit well ahead of deadline.

File name: <NUSNet (Windows) user-name>.doc (for example: isc90000.doc) OR

<NUSNet (Windows) user-name>.txt (for example: isc90000.txt)

First two lines of file: Your name (first line), Your matric (second line)

You can use SML syntax to write your functional programs. Reading on ML appears in the tutorials posted in the course web-site.

QUESTION 1 (2 mark) Define a Prolog predicate to *merge* two sorted lists (you had previously used *merge* when you wrote mergesort as a functional program). Thus you should define a ternary predicate `merge(L1,L2,L3)` in which L1 and L2 are the lists being merged and L3 is the merged list.

QUESTION 2 (1 mark) Let L and L1 denote two lists of terms. Write a Prolog predicate to delete all occurrences of an element X in L, giving the result in L1. The predicate will be ternary: `delete_x(L, X, L1)`.

QUESTION 3 (1 mark) Let L and L1 denote two lists of terms. Write a Prolog predicate to delete the Nth element in L, leaving the rest in L1. The predicate will be ternary: `delete_n(L, N, L1)`.