2007 Paper 1 Question 1

Foundations of Computer Science

(a) Code the ML function `merge`, which combines two ordered lists to form an ordered list containing the elements of both. [2 marks]

(b) Code a top-down merge sort function in ML. You may assume that basic functions on lists are given, provided you describe them briefly. [3 marks]

(c) State the time complexities of merge and merge sort, justifying your answer carefully. [5 marks]