1997 Paper 5 Question 7

Prolog for Artificial Intelligence

The *next-highest member* of a list of integers is the second-largest member of the list. For example, for the list [1, 4, 1, 5, 2], the next-highest member is 4.

Write a Prolog program to find the next-highest member of a list of integers. For example, the goal nexthi([1, 4, 1, 5, 2], X) should instantiate X to 4. Your program may assume that the largest member is not repeated in the list. The goal should fail if the next-highest member does not exist.

[20 marks]