

1996 Paper 1 Question 10

Programming in Modula-3

A priority queue maintains a list of pairs, each consisting of a priority (a natural number) and a name (a text string), sorted into increasing order of priority. Consider the implementation of such a queue as an object in Modula-3. This should have two methods — `insert` taking a pair as its arguments to be placed at the appropriate point in the list, and `next` taking no arguments but removing the first pair from the list and returning its text string component.

Give type definitions and default method implementations for this queue object.
[20 marks]